Keeping It in the Family: Female Inheritance, Inmarriage, and the Status of Women

Duman Bahrami-Rad*

March 20, 2019

Abstract

While female property ownership is associated with positive outcomes for women, their right to inherit property in male-dominated societies may also result in more constraining marriage and gender norms. I develop and test the following hypothesis: Where a woman inherits property, her male relatives are more likely to arrange her marriage to a cousin in order to avoid fragmentation of the family land. Arranging the marriage also requires controlling the woman's premarital relations, which negatively impacts her participation in society. By analyzing datasets on pre-industrial societies and Indonesian individuals, I find that female inheritance is associated with a higher prevalence of cousin and arranged marriages as well as lower female economic participation and premarital sexual freedom. Using a difference-in-differences design that exploits exogenous variation induced by a reform of inheritance laws in India, I also provide evidence for a causal effect of female inheritance on cousin marriage and female premarital sex rates. These findings have implications for the evolution of marriage and gender norms in Islamic societies, where female inheritance is mandated by Islamic law.

JEL classifications: D01, J12, J16, N30, Z12, Z13

Keywords: female inheritance, culture, religion, gender inequality, marriage customs, kinship

*Harvard University, Department of Human Evolutionary Biology. Email: duman_b_rad@fas.harvard.edu. I would like to thank Marcella Alsan, Siwan Anderson, Jonathan Beauchamp, Anke Becker, Jeanet Bentzen, Chris Bidner, Jean-Paul Carvalho, Greg Dow, James Fenske, Oded Galor, Joseph Henrich, Larry Iannaccone, David Jacks, Alex Karaivanov, Erik Kimbrough, Brian Krauth, Arthur Lewbel, Sara Lowes, Stelios Michalopoulos, Melanie Morten, Suresh Naidu, Nathan Nunn, Krishna Pendakur, Jared Rubin, Jonathan Schulz, Nico Voigtländer, Brian Wheaton, Jeff Weaver, David Weil, Simon Woodcock, and participants at the IRES 2016 and LSE 2018 graduate student workshops, CDED 2017 and CAGE & IAS 2018 summer schools, CEA, EHA, and NEUDC 2017 conferences, MEEA/ASSA, ASREC and PacDev 2019 conferences, Economic History and Political Economy Workshops at Harvard University, the Growth Lab seminar at Brown University, and the Culture, Cognition, and Coevolution lab meeting at Harvard University for helpful comments.

Electronic copy available at: https://ssrn.com/abstract=3250395

> "This is what the LORD commands . . . Every daughter who inherits land in any Israelite tribe must marry someone in her father's tribal clan, so that every Israelite will possess the inheritance of his fathers."
>
> (The Bible, Numbers 36)

1 Introduction

Much of the economics literature argues that granting women rights to inherit property empowers women, increases their autonomy, and promotes gender equality (see, e.g., Deininger et al., 2013; Roy, 2015; Heath and Tan, 2019; Anderson, 2018). However, female inheritance may also result in constraining marriage and gender norms for young women if it is not accompanied by actual property ownership.

In the modern world, women's inheritance rights enable them to control and exploit their property and therefore improve their social and economic prospects. However, in a patrilineal society, female inheritance transmits property through women, not to women. Here, women function mainly as carriers of property from father to husband, and on to children, rather than as active managers of wealth (Goody, 1976; Kertzer, 1993; Korotayev, 2000; Howell, 2010). Therefore, under female inheritance, a woman's marriage determines whom her family will have to share their land with. Thus, her male relatives have incentive to arrange her marriage to a cousin in order to keep her share of property among themselves. Arranging her marriage also requires controlling her premarital romantic and sexual relationships. These arrangements and controls may negatively impact the woman's role and participation in society.

In this paper, I propose that under female inheritance, patrilineal societies encourage inmarriage—in the form of cousin marriage or endogamy (marriage within the limits of a local community such as a clan or village)—and control over women's sexuality to keep property within the male lineage, prevent property fragmentation, and limit conflicting claims on the estate. Using different community- and individual-level datasets, I confirm that female inheritance is associated with more cousin marriage, endogamy, and arranged marriage, as well as with less female economic participation and premarital sexual freedom. In a difference-in-differences analysis using a policy reform on inheritance laws, I also provide causal evidence that female inheritance has a positive effect on the cousin marriage rate and a negative effect on the female premarital sex rate.

I develop hypotheses relying on the following assumptions based on the literature. First, I take patrilineal bias—in succession of names, rights, titles, properties, and so on—as given based on the fact that patrilineal systems have historically been widespread (Giuliano, 2017). As Adam Smith noted, patrilineal systems incorporate the patrilineal bias in order to preserve male lineages as their basic social units (Smith, 1776; Chu, 1991). Second, capital markets are imperfect, and most land is acquired through inheritance as a non-market mechanism of land transmission between close kin. This assumption characterizes pre-industrial agricultural societies and many contemporary developing countries (Chu, 1991; Platteau and Baland, 2001; Beckert, 2008; Jain, 2014). Third, production technology exhibits increasing returns to

Electronic copy available at: https://ssrn.com/abstract=3250395

scale up to a point, due to the size of the land required for plowing and harrowing, or to maintain a base of local political power (such as a feudal estate).[1]

Using insights from anthropological studies such as Goody (1976), I propose two hypotheses. The first hypothesis is that when women are included in inheritance, inmarriage is more frequent. Several possible mechanisms are involved. Cousin marriage keeps the land within the male lineage; where a family head marries his granddaughter to his son's son (her first cousin), her share of inheritance still serves to maintain the male lineage. Inmarriage also decreases land and capital fragmentation: a man can marry a woman within the kin or community to pool land parcels and capital goods. Such arrangements with outsiders are costly, because of imperfect capital markets. Finally, cousin marriage decreases rivalry and conflict between siblings over inheritance by creating overlapping interests among their offspring; a sister's offspring will benefit from the property of a brother when it passes to his offspring.

The second hypothesis is that under female inheritance, more restrictions are imposed on women's premarital sexual behavior and their economic participation. Several potential mechanisms are involved. The first mechanism is through inmarriage. Female inheritance promotes cousin and endogamous marriages, which are usually arranged by parents because such family ties are not central in unarranged (love) marriages. Arranging marriage requires controlling premarital courtship and sexual relationships through gender segregation and restrictions on contact between opposite sexes. Under these restrictions, not only are young people less likely to form romantic attachments with outsiders, but they are also more likely to meet and fall in love with their cousins, who are among the few people of the opposite sex it is appropriate for them to socialize with. However, restrictions on contact between opposite sexes tend to disadvantage women more than men, because women's sexual behavior can more easily be screened (through virginity and unwanted pregnancy). Gender segregation might also manifest as women being secluded at home and wearing the veil, which are incompatible with participation in agriculture and may intensify the pre-existing division of labor within the agricultural family. The second mechanism is through maternity certainty.[2] Female sexual freedom is a threat to a family's property because out-of-wedlock children are connected to the family due to maternity certainty and therefore are considered potential heirs. Avoiding illegitimate children by requiring women's virginity before marriage protects the kin group from dispersion of property by illegitimate children and also limits the possibility of conflicting claims on the estate in which a woman has rights. Finally, the prospect of female inheritance might discourage the need for women's education, mobility, and entrepreneurship.

In the empirical section, I use pre-industrial society-level data from the Ethnographic Atlas and individual-level data from Indonesia to test the correlations predicted by the hypotheses. I also use individual-level data from India to provide evidence for the causal relationships predicted by the hypotheses.

[1] I base my arguments on inheritance of land only, both for the sake of clarity and because land was historically the most important form of property, factor of production, and source of wealth. However, my arguments and hypotheses may well apply to other property such as herds or commercial property.

[2] It is always known who a child's mother is, and the mother knows her children, since she produces them.

Electronic copy available at: https://ssrn.com/abstract=3250395

Regression analysis on the Ethnographic Atlas data confirms that female inheritance is associated with lower female participation in agriculture and higher cousin marriage, endogamy, and female premarital sex prohibitions. The reduced female participation in agriculture associated with female inheritance is of a comparable magnitude to that of plow agriculture. This is an important finding considering the famous study by Alesina et al. (2013) on the negative impact of plow agriculture on women's participation in agriculture. As they argued, such a negative impact may carry over to beliefs about the role and participation of women in society generally.

I also examine contemporary data from developing countries. Using the Indonesian Family Life Survey and the ethnographic data on inheritance practices of Indonesian ethnicities, I show that females of ethnicities that traditionally included women in inheritance are more likely to marry endogamously within the village, are more likely to be in arranged marriages, and are less likely to be self-employed.

I also find that Indonesian women who inherit property—even after marriage—are more likely to be in endogamous and arranged marriages. This effect is obtained from a regression analysis controlling for individual characteristics and village-level, religion, and ethnicity fixed effects. This shows not only that different traditional inheritance systems have different consequences for marriage practices and gender norms *across societies*—as established through previous empirical strategies—but also that different potentials for inheritance may create different marriage outcomes for individuals living in the *same society*. The analysis also shows that inheriting property from parents is positively associated with self-employment among men. However, this positive association is missing for women.

In my last empirical strategy, I use the amendment of the Hindu Succession Act in 2005—which substantially improved Hindu women's inheritance rights on land—in a difference-in-differences approach to provide evidence of the causal impact of female inheritance on inmarriage and the status of women. The Hindu Succession Act applies only to Hindus, and explicitly exempts Muslims and Christians. For this analysis, I use data from the Indian National Family Health Survey. I show that the cousin marriage rate was significantly higher and the premarital sex rate was significantly lower in the treated group, Hindu women married in or after 2005. I also provide tests to confirm the identical counterfactual trends of the two outcome variables for treatment and control groups (see Figure 1 for a visual inspection).

These findings contribute to our knowledge of marriage and the status of young women in developing countries and highlight a potential unintended consequence of exogenously introduced policies to improve female inheritance under patrilineal restrictions. They also suggest that female inheritance affects marriage practices and the status of women even in the short term. However, this short-term mechanism has operated for a long time and for a larger share of the population in some patrilineal societies that traditionally practiced female inheritance. The long-term practice of female inheritance in a patrilineal society may create persistent cultural traits and beliefs regarding marriage and the status of women that affect people—even those who do not receive inheritance—even in an era in which, through industrialization, inheritance is no longer the only source of wealth and means of production. This has an important implication for the

Electronic copy available at: https://ssrn.com/abstract=3250395

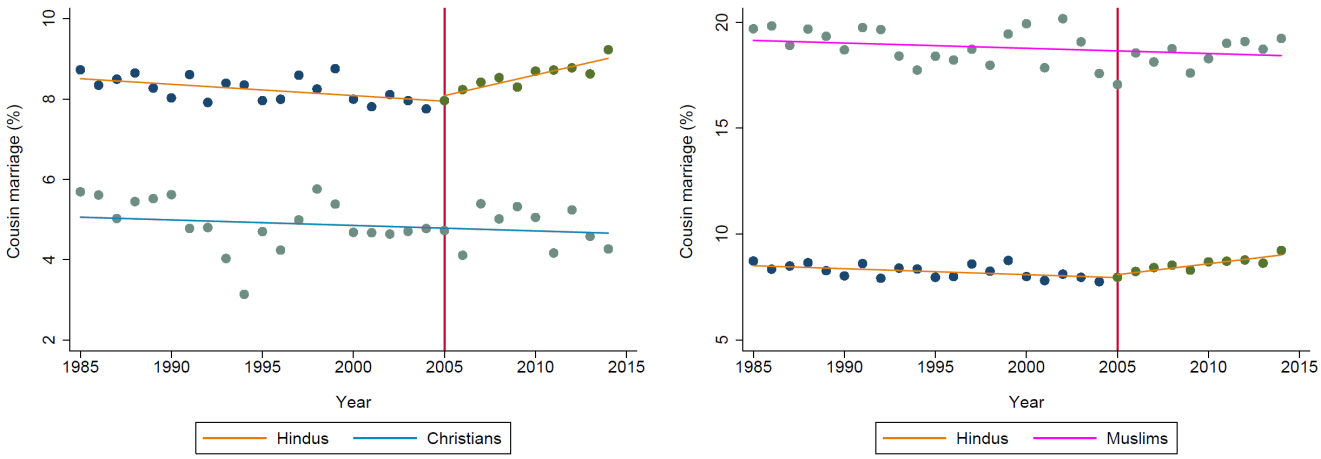


Figure 1: Compared with the five-year period (2000–2004) before the amendment of the Hindu Succession Act in 2005, the average cousin marriage rate of women married after the amendment increased significantly among Hindu women (from 7.93% to 8.72%, Wald test p-value$<$0.001), while it did not change significantly among Muslims and Christians (Wald test p-value=0.417 and 0.371 respectively).

evolution of norms encouraging inmarriage and seclusion of women in Islamic societies where Sharia has mandated female inheritance.

In the Qur'an, there is no specific guidance that encourages cousin marriage (Bittles, 2012) and no explicit prescription on the veiling of women (Ahmed, 1992). But, of all the economic rules in the Qur'an, the most detailed are those of inheritance (Kuran, 2012). The Qur'an, the main source of Islamic law, explicitly states the Islamic inheritance rules in such detail (the Qur'an 4:11) that no space is left for different interpretations regarding female inheritance. Islamic religious authorities often paid great attention to the observance of female inheritance, while similar legal rights for women did not exist in the West until the nineteenth century (Korotayev, 2000). Islam, in fact, may be the only religion that formally specifies women's inheritance rights. In line with my arguments in the hypotheses, this may explain why cousin marriage (mean 32%), gender segregation, seclusion of women inside homes, and the veiling of women are most common, and female economic participation (mean 27%) is lowest, in the Middle East and North Africa (see the world maps in Figure 5). Studying these cultural traits is important for understanding the political economy and human development status of the region.[3]

The paper is organized as follows. Section 2 reviews the literature, introduces different inheritance systems, and discusses their origins and persistence. Section 3 develops a conceptual framework for analyzing the effect of female inheritance on inmarriage and the status of women. Sections 4 and 5 describe the empirical strategies and present results using data on pre-industrial societies and individual-level datasets respectively. Finally, section 6 presents the conclusion and discussion.

[3]For example, cousin marriage has historically provided one means of creating and maintaining tight kinship groups such as tribes and clans in Islamic countries (Greif, 2006), with possibly important consequences, such as encouraging corruption, impairing the development of an individualistic social psychology, and undermining generalized trust, large-scale cooperation, and democratic institutions (Akbari et al., 2016; Enke, 2017; Schulz, 2017; Schulz et al., 2018).

Electronic copy available at: https://ssrn.com/abstract=3250395

2 Inheritance system as a determinant of kinship pattern

Social scientists discuss marriage practices and the status of women in the larger context of kinship patterns, for which inheritance is considered an important determinant.[4] Anthropological studies clearly emphasize that inheritance can affect marriage patterns, residence arrangements, family structures, patriarchy, courtship and sex, kinship terminology, and so on.[5]

To understand why the link between inheritance and kinship is important, we need to consider the institutional environment of pre-industrial societies and many contemporary developing countries. In pre-industrial agricultural societies, which were characterized by imperfect capital markets (Chu, 1991), land as the basic source of wealth and means of production was universally transmitted between close kin by the process of inheritance (Goody, 1969; Smith, 1984). Even today in many developing countries, land sales are rare, and most land is acquired through inheritance as a non-market mechanism (Platteau and Baland, 2001; Jain, 2014). It is not surprising that in such a world, “kinship and property are closely interlocked" (Goody, 1969, p.70).

I follow the literature and focus on examining the causal impact of inheritance rules on marriage practices and gender norms. To reach this end, I use different datasets that include my variables of interests and provide evidence for not only the correlations but also the causal relationships predicted by the literature. Next, after introducing different inheritance systems, I discuss their origins and persistence, with some historical examples that reflect the chain of causation suggested in the literature.

2.1 Classification of inheritance systems

It is important first to define what I refer to as "inheritance systems". I classify different inheritance systems using combinations of possible modes of property transmission. The first dimension involves lineal versus lateral inheritance systems. In lineal inheritance systems, property is transmitted vertically to children. In lateral inheritance systems, property is transmitted horizontally to siblings or indirectly vertically to siblings’ children. The second dimension involves impartible versus partible inheritance systems. In impartible inheritance systems, a land parcel is preserved intact from generation to generation, and only one lineal or lateral heir inherits property. The examples are primogeniture (inheritance by a senior child, sibling, or sibling’s child) and ultimogeniture (inheritance by a junior child, sibling, or sibling’s child). In partible inheritance systems, the land parcel is not preserved intact. Instead, each parcel is divided up

[4] Max Weber perceived a kin group as “a group of expectant heirs" (Weber, 1978, p.365). Lewis Morgan argued that the family grew out of the development of a knowledge of property and its transmission by inheritance, and that even in the face of other factors, “with more effective power the rights of property might influence the system of relationship" (Morgan, 1871, p.14). Jack Goody noted that inheritance is an institution “in which interpersonal relationships are structured" (Goody, 1976, p.1). David Sabean suggested that “there is no system of obligations and duties" that is not mediated through property (Sabean, 1984, p.171).

[5] See, e.g., Morgan (1871); Dole (1965); Berkner (1972); Goody et al. (1976); Medick (1976); Medick and Sabean (1984); Smith (1984); Segalen (1986); Goldstein (1987); Korotayev (2000); Heady and Grandits (2003); Shenk et al. (2016).

Electronic copy available at: https://ssrn.com/abstract=3250395

lineally or laterally, among some or all of the children, siblings, or siblings' children. The third dimension involves female inclusion versus female exclusion in inheritance.

To see how different inheritance systems can be characterized by the combinations of these three categories, consider the following historical examples. Primogeniture, in practice carried out by preference given to the senior son—found in Japan, Korea, and northwest Europe (Nakane et al., 1967; Goldschmidt and Kunkel, 1971; Thirsk, 1976; Platteau and Baland, 2001; Mitterauer, 2003; Beckert, 2008)—can be characterized as lineal and impartible, with female exclusion. The inheritance system of equal division of land property among sons—common in eastern Europe, Russia, China, and South Asia (Goldschmidt and Kunkel, 1971; Platteau and Baland, 2001; Kaser, 2003)—can be characterized as lineal and partible, with female exclusion. Dividing inheritance among all sons and daughters—common in Mediterranean Europe, Latin America, and Islamic societies (Goldschmidt and Kunkel, 1971; Mitterauer, 2003; Kuran, 2012)—can be characterized as lineal and partible, with female inclusion. A lateral inheritance system was common in Africa south of the Sahara. In theory, this system could be partible or impartible, and with female inclusion or exclusion. But in practice, lateral inheritance in sub-Saharan Africa excluded women (Goody, 1976).[6] The mode of property transmission can also be characterized by the absence of any rules of inheritance or any private property rights.[7] The global distribution of inheritance systems in the pre-industrial world (see Figure 3 in section 4) coincides with the historical examples mentioned above.

2.2 Origins and persistence of inheritance systems

The differences between inheritance systems are thought to be deep-rooted in agricultural and political organization. Capital-intensive (e.g., involving plows), open-field, and manorial agriculture might favor impartible inheritance due to economies of scale. However, agricultural organization itself is determined by geographic factors and political organization. For example, heavy soils usually required large plows pulled by several horses, which were expensive and practical only on large land holdings, while sandy light soils could be cultivated by handheld tools like the hoe and digging stick on small family farms. In terms of political organization, manorial agriculture, for example, was closely linked to feudalism.[8]

Despite the influence of agriculture, the literature suggests that inheritance systems are best explained by the political organization of societies. In societies with impartible inheritance, such as Japan or north-

[6] In the conceptual framework, I focus only on lineal inheritance, i.e., inheritance by sons and daughters. In the empirical sections, whenever lateral inheritance is also the case, I check the robustness of the results by distinguishing lateral and lineal inheritance systems.

[7] For example, in many hunting and gathering societies (such as Native American societies) individuals had little property except personal equipment, which was often destroyed at death (Goody, 1976). Other societies had communal ownership of land, in which individuals inherited from their parents a general right of access to the whole of the community's resources that continued to exist after the head of the family passed away. Communal inheritance could be patrilineal (from father to sons), such as in the Russian peasantry, or matrilineal (from mother to daughters), such as among the Minang in Indonesia.

[8] See Platteau and Baland (2001) for a comprehensive discussion on different agricultural organizations and the involved political and geographic factors.

Electronic copy available at: https://ssrn.com/abstract=3250395

west Europe, lands were controlled by powerful nobility whose interests were best served by maintaining their holdings intact through impartible inheritance because the political and military functions associated with the estate were indivisible (Smith, 1776; Platteau and Baland, 2001; Beckert, 2008). Also, in the European countries, large estates came with seats on parliamentary bodies. Therefore, property became indivisible because the office was indivisible (Beckert, 2008).

On the other hand, a necessary condition for partible inheritance was a strong central government (Alston and Schapiro, 1984). In places such as China, India, Russia, and the Mediterranean, inheritance rules were subject to the legislation of strong central bureaucracies with an interest in restricting the development of powerful landholding families by fragmenting their properties through partible inheritance (Wittfogel, 1959; Goldschmidt and Kunkel, 1971; Platteau and Baland, 2001; Kuran, 2012). But contrary to patrilineal partible inheritance in China, India, and Russia, partible inheritance in the Mediterranean region (including the Middle East) included both sons and daughters. Inclusion of women in inheritance in the Mediterranean region had Roman-Byzantine roots (Kaser, 2003).

Again, it seems that geographic factors had a role here. For example, Wittfogel (1959) suggests that in regions such as the Middle East, states had centralized power by controlling large-scale irrigation systems essential to the agriculture. Bentzen et al. (2015) provide general evidence on this account. Michalopoulos et al. (2016, 2017) argue and present evidence that a centralized Islamic state featuring redistributive principles such as partible inheritance emerged to address economic inequalities resulting from geographic features of the region—this is, unequal agricultural potential with few fertile places and a large share of arid lands—and their interaction with the diversion of trade routes in seventh-century Arabia.

Whatever the deep-rooted sources are, once they determine the form of an inheritance system, its development "very much tends to follow the track that has been laid down, and is relatively independent of changing socio-economic conditions" (Beckert, 2008, p.82). One can find a strong continuity and a systematic pattern through all changes (Goody et al., 1976; Beckert, 2008). Two important aspects of inheritance contributed to its persistence and path dependency. First, inheritance practices cannot be understood as purely individual decisions. Rather, they are regulated by secular or religious institutions and laws. Inheritance laws frequently "continue in force long after the circumstances which first gave occasion to them" (Smith, 1776, p.305). Second, inheritance is a non-market institution (Platteau and Baland, 2001; Beckert, 2008).

For example, primogeniture was legally recognized through *entails*,[9] which were "respected through the greater part of Europe" (Smith, 1776, p.384). By entail, the testator not only determined the heir, but also decided to whom the land must be bequeathed after the death of the heir. If real property was entailed, it could not be sold by the heir, and it had to be passed on automatically from generation to generation according to the succession determined by the founder. Entails prevented the division of property through sale or inheritance. Therefore, an entailed property was removed from the market process. Aside from en-

[9] *Fideikommiss* (in German), *substitutions* and *majorats* (in French).

Electronic copy available at: https://ssrn.com/abstract=3250395

joying legal recognition for centuries—until 1780 in the United States, 1848 in France, 1919 in Germany, and 1925 in Britain (Beckert, 2008)—supporters of primogeniture collected more than a dozen biblical verses[10] to give it a Christian foundation (Kuran, 2012). Under strict manorial controls in Europe, even peasants had no right to divide or alienate the land (Platteau and Baland, 2001; Kaser, 2003).

In contrast, inheritance has been subject to the partible Qur'anic inheritance law in Islamic societies. Islamic inheritance law clearly subordinated personal preferences and strengthened the inheritance rights of women.[11] The law took shape in the Mediterranean Middle East region, in Syria and Iraq, which were already accustomed to partible inheritance practices and inclusion of women. However, by entering into the text of the Qur'an, the law became a path-dependent institution for all populations that were introduced to Islam through conquests. Although some Muslim populations attempted to exclude women from inheritance, they were still more likely to inherit than their counterparts in Christian societies (Brunnbauer, 2003) because the Qur'an left no space for different interpretations regarding female inheritance.

Finally, communal and joint property persists in many developing countries and even Europe.[12] Under these "archaic regimes" (Ostrom and Hess, 2000), access to land is possible only through membership in a communal assembly or a joint family composed of several generations, and a single member can hardly transfer or alienate their membership right. Thus, land sales and partitions are rare (Ostrom and Hess, 2000; Jain, 2014; Casari and Lisciandra, 2016).

Due to its deep-rooted origins and its persistence, inheritance is a process critical to the reproduction of the social system itself. It is true that the differences in inheritance systems were a marked feature of the pre-industrial era. But, as Goody et al. (1976) argued, "whatever the reasons, these differences have consequences for the position of women, the structure of social roles, the behaviour of kin, and the strategies of family organization" (p.35).

3 Conceptual framework

An implicit assumption of studies on inheritance, such as in Adam Smith's *The Wealth of Nations*, is an overlapping generations perspective, where the objective of the family head is to preserve the patrilineal succession and perpetuate his male lineage.[13] This objective is embedded in the nature of patrilineal

[10] E.g. Isaac's first-born son, Esau, sold his "birthright" to his younger brother, Jacob, for a bowl of stew (the Bible, Genesis 25).

[11] Verses 11, 12, and 176 in the fourth chapter of the Qur'an, Surah An-Nisa. Islamic inheritance law limits an individual's power of testamentary disposition to one-third of his estate, and two-thirds of the estate passes to the legal heirs of the deceased under the compulsory rules of inheritance. Legal heirs include children, spouses, parents, and siblings of both sexes. The females among these relatives take only half the share of the male relative of the same degree of relation to the decedent. However, a female must have her firm share of inheritance in all types of property left by her father.

[12] See, e.g., Agarwal (1995) for joint property in India, and Momigliano (2016) for communal lands in some Italian towns.

[13] Adam Smith (1776) suggested that primogeniture was introduced in Europe "to preserve a certain lineal succession [...] and to hinder any part of the original estate from being carried out of the proposed line" (p.384). Similarly, Cole and Wolf (1999) describe primogeniture as an attempt for "perpetuation of the family line" (p.176). Nakane et al. (1967) note that the

Electronic copy available at: https://ssrn.com/abstract=3250395

societies, where male lineages are the basic social and economic units, and the succession of names, lordly rights, titles, and other valuables tends to be passed on in the male line. Patrilineal systems have been historically widespread, such as in Western cultures (Giuliano, 2017).[14] Many religions, specifically Abrahamic religions, offer an extensive demonstration of patrilineal relationships (see, e.g., Thomas et al., 2017).

Of course, a family head would also like to support all his sons and daughters, and their families. However, in a disorderly time (such as the pre-industrial era) or poor environment (such as in some developing countries), to divide the land among all children is to expose every parcel and family to extinction. On the other hand, leaving large land parcels for few children increases their families' chances of survival and therefore continuation of the lineage for another generation. Three factors contribute to this trade-off between supporting all children and preserving the lineage: economies of scale, high mortality rates, and imperfect capital markets.

First, division of land might decrease the total production of the offspring due to economies of scale in land size. Some forms of agricultural organization require larger land parcels. For example, plowing and harrowing can take place only on large parcels. Moreover, larger land parcels are associated with more political and bargaining power. For example, the size of a feudal estate determined the political and military power of the lord who owned it. Political power, such as a parliamentary seat, and military functions and obligations of lords were indivisible by nature (Platteau and Baland, 2001; Beckert, 2008). As Adam Smith (1776) noted, "to divide it [i.e. the land] was to ruin it, and to expose every part of it to be oppressed and swallowed up by the incursions of its neighbours" (p.383).

Second, since land is the basic means of production, under high mortality rates a larger land parcel provides a family with more production and higher income, which means better nutrition, hygiene, and health—in short, a better chance of survival. Third, imperfect capital markets imply rigid intergenerational mobility of income groups. Since land is the main source of wealth, a child who gets a large land parcel would stands a better chance of staying rich or even moving up the social ladder, increasing the family's chance of survival. Emphasizing the role of high mortality rates and imperfect capital markets, Chu (1991) develops an economic model and simulations to show that even in the absence of economies of scale, the optimal strategy of a family head seeking to perpetuate his lineage is primogeniture. However, he also

purpose of primogeniture in Japan is to "keep the succession line firm" (p.11). Kertzer (1993) notes that in Medieval Italy, "the transmission of property through sons was in harmony with the desire to preserve the family estate intact, whereas property given to daughters was thought to be lost from the family of origin" (p.17). Srinivas (1980) reports that not having a son in an Indian village "meant the end of the lineage, a disaster that no one liked even to contemplate" (p.112). Abbott (2013) presents historical examples of the "justifiable fear of extinction" of the family name among English aristocrats and the strategies that were devised to procure continuity, such as transmitting land to men prepared to trade their family names (p.43). In the case of female inheritance, strategies such as cousin marriage are described as the means "to preserve house and holdings in the male line" (Colclough, 2003, p.154), to prevent "plots of land from escaping the control of an identifiable patrilineage" (Gabaccia and Iacovetta, 2002, p.86), and to "keep parcels of land intact and within families" (Shenk et al., 2016, p.S169), which all appear to be linked to the ideology of the "family line" (Segalen, 1986, p.64).

[14] "A patrilineal bias can coexist with cognatic descent groups and bilateral patterns of affiliation" (Borofsky, 1987, p.19).

Electronic copy available at: https://ssrn.com/abstract=3250395

acknowledges that economies of scale alone are enough to rationalize primogeniture.[15]

Therefore, a family head seeking to protect the welfare of all his children and preserve his lineage might find himself with insufficient resources to fulfill both goals. In this case, sacrificing the welfare of some of his children is the only way to reach the objective of perpetuating his lineage. Since in a patrilineal society "the male sex is universally preferred to the female" (Smith, 1776, p.383) and lineal succession "refers to the preservation of a family name by sons" (Chu, 1991, p.83), sons are preferred to daughters in the succession of land. Patrilineal primogeniture manifests the extent of the sacrifice of families to preserve male lineages: family heads attempt to prevent the extinction of the male lineage by leaving the land intact for only one son, knowing that this "beggars all the rest of the children" (Smith, 1776, p.384). In imperial China, the whole clan, not just immediate family members, often pooled their money to subsidize the education of just one child, hoping that he would pass the civil service examination, and bring honor and prestige to the clan by becoming an official (Chu, 1991). The patrilineal bias in succession persists even today in family farms of rural Europe (see, e.g., Plas, 1994, Ch.5) and many developing countries (see, e.g., Jain, 2014, for India).

3.1 Female inheritance and inmarriage

Bequeathing land to sons only (such as in primogeniture) is not always an option. As discussed earlier, female inheritance is mandated in some patrilineal societies. In this section, I will describe three mechanisms through which inmarriage arises in this specific institutional environment characterized by the intersection of a patrilineal system and female inheritance.

First, preserving land within the male lineage. Where female inheritance is mandated, marriage of a granddaughter to an outsider means that her share of land will eventually leave the male lineage. As anthropologists have noted,[16] inmarriage provides a way to avoid this problem. If the granddaughter marries a son's son (a first-cousin marriage), her share of inheritance will still serve to perpetuate the male lineage of the family head by increasing the chance of survival of the grandson's family. [17]

If there is no eligible partner among the family head's descendants, marriage of his granddaughter to his brother's son (a first-cousin-once-removed marriage) or his brother's son's son (a second-cousin

[15] Similarly, in an evolutionary model, Rogers (1990) shows that under poor environment or positive correlation between earned and inherited wealth, the optimal strategy is to limit the number of heirs and maximize the wealth inherited by them. Harpending and Rogers (1990) and Scheidel (2009) argue that heritable wealth has reproductive value independent of number of offspring because it increases the reproductive chances of offspring by improving their quality as measured by status, health, nutrition, and so on. Therefore, a strategy favoring offspring quality, such as primogeniture, may better serve to enhance inclusive fitness in the long run. In other words, inheritance of wealth in humans alters the equilibrium favored by solely genetic inheritance of reproductive strategies.

[16] See, e.g., Goody (1969); Holỳ (1989); Harrell (1997); Korotayev (2000); Heady and Grandits (2003); Shenk et al. (2016).

[17] Goody (1969) considers a similar mechanism for the effect of dowry—the wealth transferred at marriage from the bride's family to the groom—on inmarriage. Focusing on the role of *mahr*—a payment by the groom to the bride according to Islamic law—Edlund (2018) considers cousin marriage as a form of marriage by exchange in which the bride giver's reward is a bride in return.

Electronic copy available at: https://ssrn.com/abstract=3250395

marriage)—who are carriers of the same family name—could be arranged to keep the parcels of lands under the family name and within the higher-level segment of the male lineage (all male descendants of the family head's deceased father). Attempts to keep the land within the larger segments of the lineage (all male descendants of a remote common ancestor) lead to marriage between remote (and even unidentifiable) cousins. This creates endogamy within the lineage or clan.

Of all first-cousin marriages, marriage of a daughter to her father's brother's son is the most straightforward union to keep her inheritance within the male lineage. Her marriage to her father's sister's son or her maternal cousins will serve her father's lineage only if those cousins are also members of the male lineage of the father.[18] It is not surprising that marriage of a daughter to her father's brother's son—or equivalently marriage of a son to his father's brother's daughter—is the most preferential form of cousin marriage in Islamic countries, where female inheritance is mandated (Holý, 1989; Korotayev, 2000).

Following the arguments above, cousin marriage might even arise under impartible inheritance (such as primogeniture) or partible inheritance by males only, if daughters inherit property in the absence of male offspring. In his study of cousin marriage in Japan, Schull (1958) notes that a family head who has only daughters faces a problem because a wife takes the family name of her husband. "Pride in family name" and "attempts to ensure the perpetuation of the family name" lead him to "select her spouse from among her male relatives having the same family name, in which case the headship does not leave the family" (p.295). Schull (1958) presents statistics that show cousin marriage is higher among families with no male offspring. Using data from rural Bangladesh, Shenk et al. (2016) also report that women without brothers are more likely to be in cousin marriages. This calls to mind the biblical account about female inheritance in the absence of sons (the Bible, Numbers 27), in which the daughter is compelled to marry someone from the same clan as her father (the Bible, Numbers 36).

Second, decreasing land fragmentation. Partible inheritance could fragment the land until it is no longer viable because of decreased economies of scale (Platteau and Baland, 2001).[19] Under the constraint of partible inheritance by both sexes, cousin marriage emerges as a solution to decrease land fragmentation. Avoiding fragmentation of land by the means of inmarriage is well documented in the literature.[20] Cousin marriage provides the possibility for pooling farms and resources, and the continual recombining of portions by adding the claims of the groom and the bride in new conjugal estates. In the case of double cousin marriage—between a brother and sister of one family to a cousin sister and brother of another family—in fact no land changes hands at the marriage, which avoids land fragmentation with zero transaction costs. The same arrangement of exchanging daughters between unrelated but neighbor farmers within

[18]For example, if the father's sister herself is married to a first cousin within the male lineage, her son is also considered a member of the same male lineage—although not through his mother, but through his father and as a second cousin.

[19]There is supporting evidence in fact that partible inheritance fragments the land and that land fragmentation sacrifices economies of scale, for example in nineteenth-century France (Beckert, 2008, p.45), and today's China (Nguyen et al., 1996; Wan and Cheng, 2001; Tan et al., 2006), Indonesia and India (World Bank, 1978), and Africa (Anthony, 1978).

[20]See, e.g., Goody et al. (1976); Korotayev (2000); Heady and Grandits (2003); Cavalli-Sforza et al. (2004); Shenk et al. (2016).

Electronic copy available at: https://ssrn.com/abstract=3250395

the same village leaves both lineages with unfragmented lands (Pine, 2003). This creates endogamy within the village.

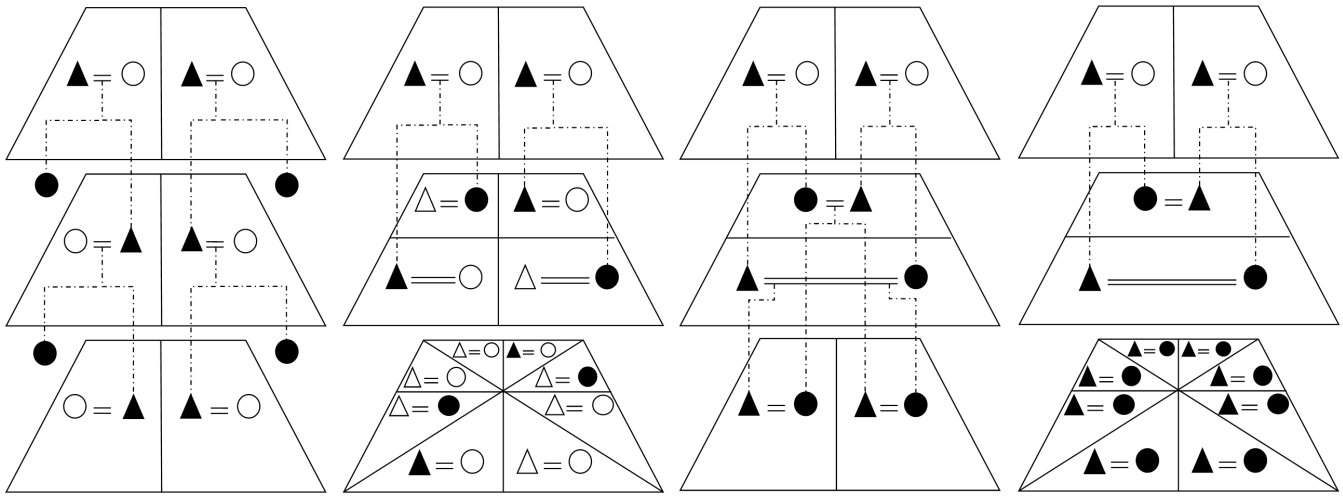


Figure 2: Triangles, circles, lines, and "=" represent males, females, descent bonds, and marriage respectively. The first generation starts with two brothers, and thereafter, every family has one son and one daughter. Black triangles and circles represent anyone within the male lineage. Chart (a): Impartible inheritance: primogeniture retains the family land intact, only at the cost of creating many landless offspring. Chart (b): Partible inheritance by both sexes, and outmarriage: female offspring marrying outsiders rapidly fragments the land and also diffuses land parcels out of the male lineage, since thereafter next generations are carrying a different family name. Chart (c): Partible inheritance by both sexes, and double cousin marriage: inmarriage decreases land fragmentation and, contrary to impartible inheritance, does so without leaving landless offspring. Chart (d): Partible inheritance by both sexes, double cousin marriage, and population growth: higher fertility (four sons and four daughters) creates the same land fragmentation in the third generation as the case with outmarriage (chart c), but still all land parcels remain under the family name.

Figure 2 shows that compared with outmarriage in chart (b), double cousin marriage in chart (c) keeps land parcels within the male lineage and decreases land fragmentation. To highlight the former mechanism, population growth is added in chart (d). Note that the dimension of inheritance systems relevant for inmarriage is inclusion of women, not partibility. Under partible inheritance by sons only, keeping land parcels within the male lineage is irrelevant, and there is no possibility to decrease land fragmentation by inmarriage.

It is also important to recall the assumption of imperfect capital markets. Under this assumption, pooling land parcels (through markets) with landed outsiders is costly. Moreover, outmarriage might be associated with negative externalities for the community, such as the diminished stock of knowledge over time and conflict over inheritance (see below). Therefore, a marriage partner with a plot of land within the community is a better candidate to preserve the property of the male lineage than an outsider with the same size and quality of land plot. For the same reasons, other landed communities also prefer inmarriage. Thus, outmarriage most likely attracts landless outsiders and creates immigration pressure (Casari and Lisciandra, 2016) such as by non-inheriting children from communities under impartible inheritance

Electronic copy available at: https://ssrn.com/abstract=3250395

(Colclough, 2003).

Third, decreasing conflict over inheritance. Cousin marriage also reduces the rivalries and conflicts over inheritance. In fact, the "solution of inheritance fights" was one of the situations that could be used to support a dispensation request from the Catholic Church to marry a relative (Cavalli-Sforza et al., 2004, p.37). By excluding outsiders, cousin marriage reduces the number of claimants on property and increases biological and cultural ties among those involved in the division of land after the death of the family head. By cousin marriage, men also take advantage of existing relationships. They know each other and have a sense of each other's personalities and how to work together, which is an advantage for the male lineage as a group of cooperators (Shenk et al., 2016). In contrast, outmarriage might diminish local skills and the stock of knowledge over time and across generations (Bidner and Eswaran, 2015).

Cousin marriage also decreases the potential for conflict among siblings over inheritance by creating overlapping interests and doubly relating them to each other through the young couple and their grandchildren (Shenk et al., 2016). A sister's offspring will benefit from a brother's property when it passes to his offspring. In the case of double cousin marriage, siblings' conflict over inheritance becomes irrelevant because in the next generation, the land will be reallocated only between their grandchildren (see Figure 2, chart (c)). Therefore, where women are legally entitled to a share of an inheritance—such as in Islamic societies—cousin marriage offers a way to deny them inheritance but at the same time keep them content to not take legal action, such as through Sharia courts. Even if a Muslim community disinherits women in practice—despite Islamic law for female inheritance—cousin marriage could at least alleviate the potential for conflict stemming from the mandatory law.

3.2 Female inheritance and the status of women

An important line of research has recently developed to study how contemporary differences in gender norms are determined by various historical factors.[21] This study aims to contribute to this literature by highlighting the role of female inheritance as another deep-rooted factor influencing gender norms. Some potential mechanisms are as follows.

Arranged marriages. As discussed earlier, female inheritance promotes cousin marriage and endogamy. If not controlled, love and premarital sexual relationships might lead to marriage with outsiders because ties of descent are not central in these relationships (Harrell, 1997; Mitterauer, 2010). Therefore, cousin and endogamous marriages are generally arranged by parents controlling courtship and premarital

[21] Such as subsistence technology of agriculture and herding (Qian, 2008; Alesina et al., 2013; Giuliano, 2015; Hansen et al., 2015; Becker, 2017), language (Sarid et al., 2017), geography (Carranza, 2014), family structures (Alesina and Giuliano, 2010; Tur-Prats, 2015; Alesina et al., 2016), religion (Guiso et al., 2003; Becker and Woessmann, 2008; Nunn et al., 2011), historical shocks (Nunn et al., 2011; Grosjean and Khattar, 2015; Campa et al., 2016; Teso, 2016; Xue, 2016), and pre-industrial societal characteristics such as matrilineality (Gneezy et al., 2009; Gong and Yang, 2012; Lowes, 2016), modes of residence after marriage (Levine and Kevane, 2003), and dowry versus bride price (Ashraf et al., 2018). For more references see Giuliano (2017).

Electronic copy available at: https://ssrn.com/abstract=3250395

sexual relationships of their children through gender segregation and restrictions on contact between opposite sexes. Under such restrictions, not only are young people less likely to form romantic relationships, have premarital sex, and have out-of-wedlock children—which makes arranging their marriages easier—but they are also much more likely to meet and thus form romantic attachments to their cousins, who are among the few young people of the opposite sex it is appropriate for them to socialize with (Goody, 1976; Shenk et al., 2016).

Restrictions on contact between opposite sexes tend to disadvantage women for several reasons. First, sexual behaviors of women can easily be screened (through virginity and unwanted pregnancy) and punished. Therefore, male relatives restricting a woman's premarital sexuality is a means of arranging a good marriage—one that would allow access to her inheritance. Female premarital sex is usually controlled by encouraging early marriage, stressing virginity at marriage, veiling, and chaperoning post-pubertal daughters (Goody, 1969; Harrell, 1997).

Second, men have higher productivity in traditional agriculture (Alesina et al., 2013; Hansen et al., 2015). Therefore, gender segregation likely leads to women's seclusion and more involvement in activities within the home because men are needed outside the home in the fields. In other words, gender segregation intensifies the pre-existing division of labor within the agricultural family. Moreover, whenever women appear outside the home, restrictions on contact between opposite sexes require them to wear veils, which is also incompatible with strenuous manual work in agriculture.

Illegitimate children. Female inheritance also exposes the kin group to another threat from female sexuality: any out-of-wedlock children of female members are undeniably tied to the kin group due to maternity certainty and therefore are considered potential heirs. Thus, maternity certainty creates unequal gender norms regarding premarital sexual contact. Historical evidence confirms that societies gave "the father the option of refusing to acknowledge an illegitimate child [which] was intended to protect the property of the legitimate paternal kin from the claims of illegitimate children" (Beckert, 2008, p.102). Until the early twentieth century, in France, Germany, and the United States, illegitimate children had the right to acknowledgement only in relation to the mother, took their mother's name, and "were granted inheritance rights from the maternal side of the family much earlier than from the paternal side" (Beckert, 2008, p.102). This is still the law today in many Islamic countries.[22]

Giving birth to children outside of regulated sexual relationships is to attribute free membership to the lineage (Weber, 1978). Therefore, controlling women's sexuality is a means of controlling arbitrary distribution of property. Conflict and fights over inheritance play an important role here as well. Avoiding illegitimate children by controlling female premarital sex also limits the possibility of conflicting claims on the estate in which a woman has rights (Goody, 1969). Goody (1969) concluded that the link between

[22] According to Sunni law, illegitimate children do not bear the name of the father, but that of the mother's family. They also inherit only from the mother's side of the family and not from the father's. According to Shia law, illegitimate children do not inherit from either parent. However, a child who is denied paternity by the father (who is married at the time to the mother) inherits from its mothers' family (Ishaque, 2008).

Electronic copy available at: https://ssrn.com/abstract=3250395

female inheritance, family honor, and veiling that marks the Mediterranean world cannot be separated from the position of women as carriers of property. Anthropological evidence suggests that within the same community, women with lower status and without access to land have more sexual freedom (Harrell, 1997; Pine, 2003).

Female mobility and entrepreneurship. One famous argument about the effect of different inheritance systems on economic development is that impartible inheritance stimulated the development of new economic opportunities by encouraging mobility, emigration, and entrepreneurship among landless offspring. People who did not acquire landed property had to move to cities to join the industrial labor force (Platteau and Baland, 2001; Beckert, 2008). Also, the lack of any future inheritance encouraged the need for education, training, mobility, and entrepreneurship (Todd, 1990; Duranton et al., 2009).

The same argument can apply to landless versus landed women. All else being equal, a woman with no prospect of inheritance had more incentive to be educated and independent, to migrate and work in industrial settings, to be an entrepreneur and create her own business. In fact, women in Europe migrated more often than men because men inherited land more often and had to stay in their home village (Cavalli-Sforza et al., 2004). Women's informal learning, as servants or teachers, is considered a significant contributor to the intergenerational transmission and accumulation of human capital during the industrial revolution (Foreman-Peck and Zhou, 2017).

These factors, as possible consequences of women's exclusion from inheritance, might have contributed to women's higher social and economic participation in Europe. In the Middle East, on the other hand, women as carriers of property were immobile, engaged in cousin marriages, and under the strict control of their male relatives.

The arguments presented above on the relationship of female inheritance with inmarriage and the status of women can be summarized in two hypotheses. **Hypothesis 1:** Female inheritance has a positive effect on cousin marriage, endogamy, and arranged marriage. **Hypothesis 2:** Female inheritance has a negative effect on female economic participation and premarital sexual freedom.

4 Empirical strategies and results using community-level data

In this section, I provide big-picture evidence on the correlations predicted by my two hypotheses. I describe historical data on pre-industrial societies from the Ethnographic Atlas to test the association of female inheritance with outcome variables. I show that female inheritance is associated with higher cousin marriage and endogamy (as stated in hypothesis 1) and lower female participation in agriculture and premarital sexual freedom (as stated in hypothesis 2).

Electronic copy available at: https://ssrn.com/abstract=3250395

Pre-industrial societies

The Ethnographic Atlas[23] includes data on 1,291 pre-industrial societies distributed globally and mostly sampled between 1800 and 1950, ranging from societies with complex agricultural economies and political systems to small hunter-gatherer groups. Table A1 of Appendix A shows a detailed description of all variables used in this section. If a variable is defined in previous empirical studies using the Ethnographic Atlas, I have used exactly the same definitions to construct the variable, in which case the related study is also mentioned in the table.

Inheritance systems. Earlier, I defined female inheritance as partible inheritance by both sexes. Therefore, I construct indicator variables for inheritance systems using entries in the Ethnographic Atlas on female inclusion in inheritance (EA074) and partibility of inheritance (EA075). With the available data, we can clearly characterize the inheritance systems of 820 Ethnographic Atlas societies[24] as summarized in Table 1.

EA074 EA075	(1) Absence of private property	(2) Sisters' sons	(3) & (6) Younger brothers	(4) & (5) Sons and daughters	(7) Sons only	Total	Percent
(1) Equally distributed	0	10	20	86	191	307	%37.44
(2) Best qualified	0	0	9	3	8	20	%2.44
(3) Ultimogeniture	0	0	2	1	19	22	%2.68
(4) Primogeniture	0	11	107	8	122	248	%30.24
(9) Absence of private property	223	0	0	0	0	223	%27.20
Total	223	21	138	98	340	820	
Percent	%27.20	%2.56	%16.83	%11.95	%41.46	%100.00	

Table 1: Frequency of pre-industrial societies from the Ethnographic Atlas classified by (1) inheritance of real property by different individuals (entry EA074), and (2) distribution of inheritance among several individuals of the same category (entry EA075).

Based on the two entries, I construct dummy variables for the following categories: *impartible inheritance* (categories 2, 3, and 4 of EA075), *partible inheritance by males only* (intersection of category 1 of EA075 and categories 2, 3, 6, and 7 of EA074), *partible inheritance by both sexes* (intersection of category 1 of EA075 and categories 4 and 5 of entry EA074), and *absence of private property* (category 1 of entry EA074, or equivalently category 9 of entry EA075). Figure 3 follows this categorization to portray the distribution of inheritance systems globally for Ethnographic Atlas societies.

[23] Murdock (1962–1971); Barry (1980); Gray (1999); Korotayev et al. (2004); Bondarenko et al. (2005); Kirby et al. (2016)

[24] EA074 is available only for 856 societies, and EA075 is available only for 820 societies.

Electronic copy available at: https://ssrn.com/abstract=3250395

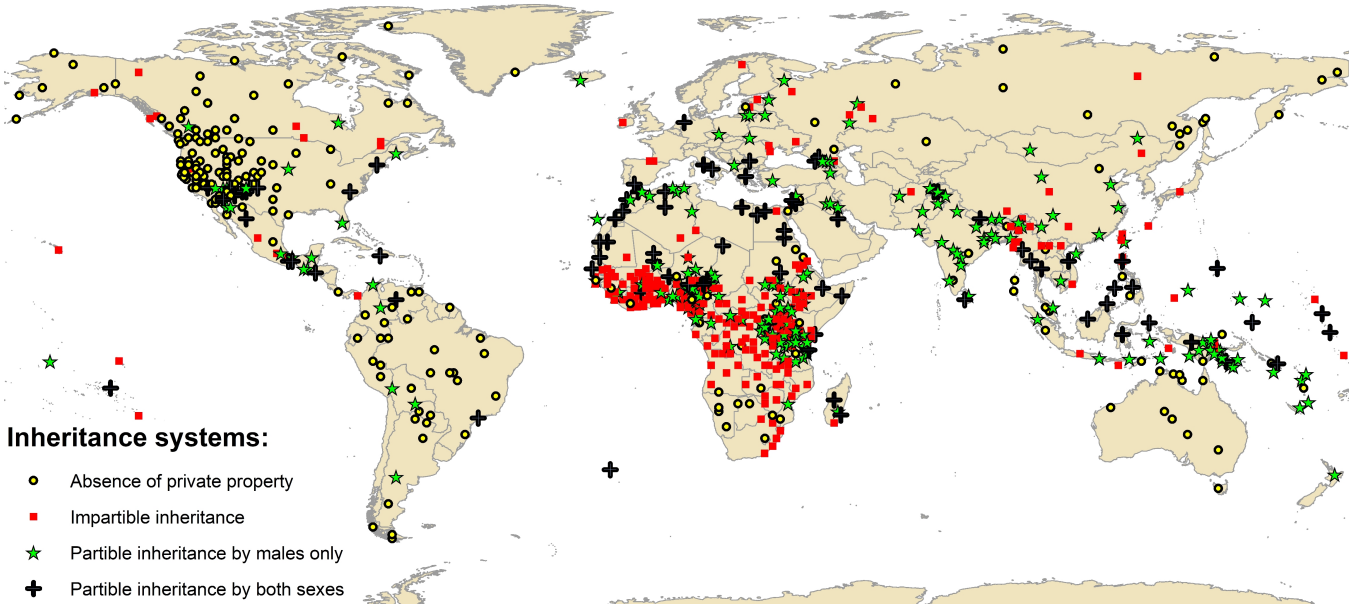


Figure 3: Inheritance systems of pre-industrial societies from the Ethnographic Atlas, distinguishing *impartible* and *partible* inheritance systems, and for the latter, distinguishing *female inclusion* and *female exclusion* in inheritance. The impartible inheritance category includes only a few societies with female inclusion in inheritance.

Dependent variables. As a measure of cousin marriage in the Ethnographic Atlas societies, I use entry EA023 on the rules governing cousin marriage. I construct a variable for cousin marriage that takes on integer values ranging from 1 to 4, where higher values indicate tighter cousin marriage culture. The highest value is assigned if first-cousin marriage is allowed with a father's brother's daughter, since this is the ideal marriage to keep the property within the male lineage. Value 3 is assigned if marriage with any first cousins except a father's brother's daughter is allowed. Value 2 is assigned if only second-cousin marriages are allowed. Finally, value 1 is assigned if no first- or second-cousin marriages are allowed. The variable is positively correlated with partible inheritance by both sexes (Spearman's r=0.125, p-value=0.001, N=651).

To construct a variable for endogamy, I use entry EA015, which classifies the prevalence of local endogamy, agamy, and exogamy. I construct a variable for endogamy, which takes on integer values ranging from 1 to 3, where higher values indicate higher endogamy: value 1 is assigned for exogamous communities, value 2 is assigned for societies with no marked tendency toward endogamy or exogamy, and value 3 is assigned for endogamous communities. The variable is positively correlated with partible inheritance by both sexes (Spearman's r=0.198, p-value$<$0.001, N=686).

Entry EA078 classifies prevailing standards of sexual behavior for unmarried women. I construct an indicator variable for female premarital sex prohibition, which takes value 1 if premarital sex of unmarried women is precluded or prohibited, and value 0 if it is permitted. The variable is positively correlated with partible inheritance by both sexes (Spearman's r=0.120, p-value=0.013, N=427).

Following Alesina et al. (2013), I also construct a variable for female participation in agriculture that

Electronic copy available at: https://ssrn.com/abstract=3250395

takes on integer values ranging from 1 to 5, where higher values indicate more participation of women in agriculture. The variable is negatively correlated with partible inheritance by both sexes (Spearman's r=-0.204, p-value<0.001, N=489).

Minimal controls (Alesina et al., 2013)	Traditional plough use, Settlement complexity, Political hierarchies, Presence of large animals, Tropical climate, Suitability for agriculture
Maximal controls	**Ethnographic controls:** Traditional plough use, Non-irrigated intensive agriculture, Irrigated intensive agriculture, Settlement complexity, Political hierarchies, Presence of large animals, Year society sampled, Patrilineal descent, Matrilineal descent, Dowry, Brice price **Geographic controls:** Latitude, Mean temperature, Temperature predictability, Mean precipitation, Precipitation predictability, Tropical climate, Suitability for agriculture, Distance to coast, Slope, Ruggedness, Elevation
Robustness controls	Population, Proportion of subsistence from herding, Proportion of subsistence from hunting, Proportion of subsistence from gathering, Patrilocal marriages, Matrilocal marriages, Extended family, Nuclear family

Table 2: Set of control variables used in different specifications for the Ethnographic Atlas data analyses.

Control variables. Table 2 lists all control variables used in the regression analyses. To test hypotheses with the Ethnographic Atlas data, I report three sets of regressions, which in addition to dummy variables for inheritance systems include the following set of controls: first, the regression specification from Alesina et al. (2013) as the specification with minimal controls; second, a large set of ethnographic and geographic controls, including those from Alesina et al. (2013); third, the set of robustness controls, including those mentioned as "historical controls" by Alesina et al. (2013). See Table A1 of Appendix A for a detailed description of all dependent and control variables.

The set of control variables controls for possible factors that can affect inheritance systems, inmarriage, and the status of women, including agricultural organization, economic and political development, subsistence economy, kinship structure, transfers at marriage, and a large set of geographic variables.

In a regression analysis, I also add region fixed effects and cluster standard errors in the region level to address concerns about possible confounding with religion and culture. Based on the Ethnographic Atlas data, I created 17 subcontinent regions, importantly including 7 regions within the Islamic world—that has a history of encouraging cousin marriage practice (Courbage and Todd, 2014; Bittles, 2012)—2 in its core (Middle East and Northern Africa) and 5 in its periphery (Caucasus, Middle Asia, Indian Subcontinent, Malesia and Papuasia, and Northern Tropical Africa) where Islam might be mixed with other religions or local traditions. I also defined 4 regions within the Christian world—that has a history of discouraging cousin marriage practice (Goody, 1983; Schulz et al., 2018)—northwest Europe, southeast Europe, eastern Europe, and Siberia. Figure C1 of Appendix C includes a map of the regions.

Results. Table C1 of Appendix C reports descriptive statistics for all dependent and control variables based on available observations in the full sample. The number of observations varies across regressions

Electronic copy available at: https://ssrn.com/abstract=3250395

due to missing observations in the outcome variables. Tables C2–C10 of Appendix C report descriptive statistics for the sample of societies in regression analyses of each outcome variable, as well as full regression results with minimal, maximal, and robustness controls, and region fixed effects.

Table 3 reports the summary results from OLS estimations. Since the results are robust to inclusion of robustness controls, I do not report them here. For the ease of interpretation and similar to Alesina et al. (2013)'s analyses, I report OLS estimation results here. However, binary and ordered logit regressions yield qualitatively similar results (see below).

The omitted category in the regressions is impartible inheritance. Consistent with the hypothesis, Table 3 shows that relative to impartible inheritance, partible inheritance by both sexes has a significant positive association with cousin marriage, endogamy, and female premarital sex prohibition, and a significant negative association with female participation in agriculture.[25]

The estimated coefficients of the dummy variable for partible inheritance by both sexes are large, considering the standard deviations of dependent variables and also comparing with the coefficient of the dummy variable for traditional plough use—which is considered as an important determinant of pre-industrial characteristics of societies. For example, in the regression on female participation in agriculture, the coefficient of partible inheritance by both sexes is not significantly different from the coefficient of plough use (Wald test p-value=0.814 and 0.566 in the minimal and maximal regression specifications respectively). In Table C11 of Appendix C, I show how the regression on female participation in agriculture is compared to the one using the same specification and data from Alesina et al. (2013).[26]

The coefficients of partible inheritance (by males only) are insignificant in the regressions on cousin marriage, endogamy, and female premarital sex prohibitions, confirming that the dimension of inheritance systems relevant for these outcomes is female inheritance, not partibility of inheritance. In the regression on female participation in agriculture, partible inheritance by males only is also significant—although not in the regression with region dummies. This could indicate that partibility of inheritance also partly contributes to the difference in coefficients of impartible and partible inheritances. Therefore, I am cautious not to attribute the full magnitude of the coefficient of partible inheritance by both sexes to the described mechanism in the conceptual framework.[27]

[25] Absence of private property is also significantly associated with cousin marriage—although not in the regression with region dummies (see Tables C3 and C10 of Appendix C). This association is not the focus of my study, but it can be attributed to efforts to keep the property within the commune.

[26] The new version of the Ethnographic Atlas used in this study includes more societies. Also, the data is improved by linking each data point to one or more of the 3,502 ethnographic sources. Moreover, data sources and radius around societies used for tropical climate and suitability for agriculture are different than those in Alesina et al. (2013). With available data from Alesina et al. (2013), it is possible to run the same regressions with the minimal controls. Table C12 of Appendix C presents the regression results, indicating that results are robust across the two versions of the Ethnographic Atlas.

[27] One possible mechanism described by Tur-Prats (2015) is that under impartible inheritance, usually two generations live together (stem family). This gives wives more time to work on the farm because co-residence with the mother-in-law reduces the burden of household work, freeing up the wife's time for non-domestic work. This requires the assumption that on the other hand, under partible inheritance, all sons start their own independent households.

Electronic copy available at: https://ssrn.com/abstract=3250395

	Cousin marriage (SD=0.990)				Endogamy (SD=0.580)			
VARIABLES	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Partible inheritance by males only	0.050	0.046	0.145	0.067	0.037	0.011	0.013	-0.002
	(0.098)	(0.098)	(0.096)	(0.080)	(0.057)	(0.056)	(0.056)	(0.048)
Partible inheritance by both sexes	0.429***	0.284*	0.376**	0.238*	0.404***	0.365***	0.233***	0.180*
	(0.156)	(0.151)	(0.150)	(0.135)	(0.075)	(0.078)	(0.079)	(0.089)
Absence of private property	yes	yes	yes	yes	yes	yes	yes	yes
Minimal controls		yes				yes		
Maximal controls			yes	yes			yes	yes
Region fixed effects				yes				yes
Observations	651	651	651	651	686	686	686	686
R-squared	0.031	0.088	0.218	0.349	0.044	0.067	0.144	0.213

	Female premarital sex prohibitions (SD=0.499)				Female participation in agriculture (SD=0.985)			
VARIABLES	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Partible inheritance by males only	0.069	0.032	0.005	0.000	-0.347***	-0.244**	-0.190**	-0.166
	(0.066)	(0.062)	(0.064)	(0.050)	(0.103)	(0.097)	(0.092)	(0.101)
Partible inheritance by both sexes	0.261***	0.258***	0.238***	0.180*	-0.686***	-0.570***	-0.278**	-0.246**
	(0.081)	(0.081)	(0.083)	(0.103)	(0.127)	(0.128)	(0.129)	(0.109)
Absence of private property	yes	yes	yes	yes	yes	yes	yes	yes
Minimal controls		yes				yes		
Maximal controls			yes	yes			yes	yes
Region fixed effects				yes				yes
Observations	427	427	427	427	489	489	489	489
R-squared	0.024	0.138	0.171	0.215	0.070	0.183	0.326	0.435

Table 3: Regression analyses of outcome variables using data on pre-industrial societies. OLS estimates are reported with robust standard errors in parentheses, clustered at the region level in regression (4). ***, **, and * indicate significance at the 1, 5, and 10% levels.

Robustness checks. I also run some additional robustness checks using the maximal regression specification. One concern with estimations based on Ethnographic Atlas data is spatial auto-correlation (across nearby units). Table C13 of Appendix C reports OLS estimates with Conley (1999) standard errors for spatial dependence with cutoffs of 60 decimal degrees. Since the outcome variables are ordinal and not cardinal, I also report regression results using binary and ordered logit estimations in Table C14 of Appendix C. In both Tables C13 and C14, the coefficients of partible inheritance by both sexes remain significant at 1% and 5% levels.

In the above analyses, I have not distinguished between lineal and lateral inheritance systems. For example, the impartible inheritance category also includes primogeniture by younger brothers and a sister's sons. In Table C15 of the appendix, I define separate indicator variables for lateral inheritance systems—that is, inheritance by matrilineal heirs (such as sister's sons) and inheritance by patrilineal heirs (such as younger brothers). Regression analyses report qualitatively similar results for partible inheritance by both sexes.

Electronic copy available at: https://ssrn.com/abstract=3250395

5 Empirical strategies and results using individual-level data from developing countries

Economic empowerment of women increases their control over decisions and bargaining power within the household, and it creates positive outcomes such as reduced domestic violence against women (see, e.g., Aizer, 2010; Anderberg et al., 2016). However, it is not clear whether policies designed to empower women in developing countries have this effect. Some studies suggest that such policies create positive outcomes for women (Deininger et al., 2013; Mathur and Slavov, 2013; Harari, 2014; Roy, 2015; Heath and Tan, 2019; Amaral, 2017; Anderson, 2018). Others report unintended negative consequences, such as increased female child mortality (Rosenblum, 2014), domestic violence and suicides (Anderson and Genicot, 2015; Guarnieri and Rainer, 2018), and so on (for some other studies see, e.g., Mabsout and Van Staveren, 2010).

In their patrilineal nature, many developing countries resemble the pre-industrial world and fit the conceptual framework of my study. The effect of this patrilineal bias may be even more significant for women's premarital and marital outcomes that are formed in their parental households when they are very young.[28] They either have not received inheritance yet—because their fathers are still alive—or they have received inheritance but have not had much opportunity to gain bargaining power in premarital and marital decisions made for them in the paternal household.

In this section, I present findings using individual-level data from Indonesia and India. In section 5.1, using data from Indonesian Family Life Surveys, I examine the association of female inheritance with endogamy and arranged marriage (as stated in hypothesis 1) and economic participation (as stated in hypothesis 2). Then, in section 5.2, I use the national amendment of the Hindu Succession Act in 2005 for a difference-in-differences analysis of the effect of female inheritance on cousin marriage and premarital sex rates (as predicted by hypotheses 1 and 2 respectively) among Indian women.

5.1 Individual-level analysis using Indonesian data

The Indonesian Family Life Survey (IFLS) is a longitudinal survey conducted between 1993 and 2014 in Indonesia. The sample is representative of about 83% of the Indonesian population and contains over 30,000 individuals of 7,224 households living in 13 of the 26 provinces, which captures the cultural and socioeconomic diversity of Indonesia.

I use data on male and female adults (household heads, their spouses, and selected seniors in the household) to construct outcome variables. The IFLS has no information on cousin marriages, but the data allows creation of a proxy for endogamy. In the case of female inheritance, we should expect women to marry their relatives or neighbors more often, which usually means marrying from the same village. In

[28] In my study samples, most women in Indonesia and India married before age 20.

Electronic copy available at: https://ssrn.com/abstract=3250395

contrast, where women are excluded from inheritance, men inherit the land and stay in the same village, but landless women are likely to outmarry and join their husbands in other villages. Therefore, I construct a variable for endogamy that indicates staying within the same village after marriage. The constructed indicator variable for endogamy takes value 0 if the respondent moved to another village after the wedding in the latest marriage, and takes value 1 otherwise. I dropped a few (less than 0.02%) observations where the respondents did not start living with their spouses after the wedding.[29]

The second outcome variable indicates whether the respondent's marriage was an arranged marriage (versus a love marriage). Respondents are asked who chose their spouse in their first marriage. I create a dummy variable for arranged marriage that takes value 1 if parents or family members chose the respondent's spouse, and takes value 0 if the respondent chose their spouse by themselves. It is positively correlated with the endogamy variable (Spearman's r=0.048, p-value=0.000, N=13819). While 23% of women are engaged in arranged marriages, this percentage for men is only 13%. This difference—which also shows up in the coefficients of female inheritance in the regression analyses—reflects another aspect of unequal gender norms. As Edlund (2018) notes, in arranged marriage regimes, while men are free to make their own marriage decisions, women are subject to guardianship. Men are more likely to choose their wives and ask their parents to arrange the marriage. Therefore, what is a choice for the husband can be perceived as an arranged marriage by the wife. Another aspect of unequal gender norms in arranged marriages is the underage marriage (below age 16 in Indonesia). More than 90% of underage marriages involve girls, of which 37% are arranged marriages; among women married at the legal age, this percentage is only 20%.

For economic participation as my third outcome variable, I create three indicator variables to capture any economic activity by the respondent. The first variable takes value 1 if the respondent is self-employed, and takes value 0 otherwise. The second variable takes value 1 if she is employed in public or private sectors (working for others), and takes value 0 otherwise. The third variable takes value 1 if she works unpaid for her family. To define these variables, I dropped observations for those over 60 years old.

Indonesian ethnic groups with female inheritance tradition:

In the line with the community-level analyses in previous sections, I first investigate the effect of traditional inheritance systems of Indonesian ethnicities on the outcome variables. Following the strategy in Ashraf et al. (2018), I use ethnographic data to link individuals to traditional inheritance systems through their self-reported ethnicity in the IFLS. I construct an indicator variable for female inheritance, which takes value 1 if the ethnicity to which the individual belongs has traditionally included women in inheritance. Consistent with the hypotheses, regression analyses show that women from ethnicities with

[29] In unreported regressions on endogamy, to make sure that moving to the new residence after wedding was not temporary, I dropped some observations (around 11%) where the respondent stayed less than a year in their first residence (whether in another village or within the same village) after the wedding. The results do not change.

Electronic copy available at: https://ssrn.com/abstract=3250395

traditional female inheritance are more likely to be engaged in endogamous and arranged marriages, and less likely to be self-employed. Appendix B presents the methodology, variables, and regression analyses in detail.

Indonesian women receiving inheritance:

Here, instead of traditions of the ethnic groups, I focus on the actual inheritance individuals received. In the first survey of the IFLS, adults were asked if either of their parents died, and if so, whether and what the parent bequeathed to them: house, land, livestock, jewelry, or money. Using this information, I construct an indicator variable for receiving inheritance that takes value 1 if the respondent inherited house, land, and livestock (properties subject to economies of scale) from either parents, and takes value 0 otherwise. Of the sample, 36% reported that they received an inheritance in the form of house, land, and livestock.

To capture the effect of received inheritance on individual-level outcomes, I follow a strict strategy. The smallest administrative division in Indonesia (and in the IFLS data) is community (*desa/kelurahan*). Therefore, controlling for fixed effects of 312 IFLS communities, I make sure there is no confounding due to economic, geographic, and other differences across communities. In other words, the regressions capture only the variation of the inheritance indicator within communities, not across communities. Using fixed effects of religions and ethnicities, I also control for variation due to different religious and ethnic attitudes. In addition, I include controls for education (five categories), quadratic in age, and quadratic in marriage age. I also cluster standard errors at the community level.

Since the ethnicity information was collected in 2000 for the first time, there is a rate of attrition. Table 4 presents results for both male and female adults without ethnicity fixed effects. The results are unchanged when ethnicity fixed effects are controlled for. Tables C20–C23 in Appendix C show the descriptive statistics of variables, full regression results—including those with ethnicity fixed effects—and logistic estimations with qualitatively similar results. Unreported regression analyses show that the results are also unchanged if standard errors are clustered at the province level.

Receiving inheritance from parents is highly significant in endogamy and arranged marriage regressions in the women's sample, and comparable with the coefficient of education. The coefficient of inheritance in the regression on endogamy in the men's sample is not significantly different than in the women's sample (Wald test p-value=0.456 and 0.861). This makes sense, since men and women are sampled from the same communities, and endogamy entails staying within the same community after marriage. However, the coefficients in arranged marriage regressions in the men's sample are smaller and insignificant. Since both men and women are sampled from the same communities, this reflects the different perception men and women have about the nature of their marriages. Men have more freedom choosing the spouses who are arranged to marry them.

Inheritance is insignificant in regressions on all three economic participation variables in the women's

Electronic copy available at: https://ssrn.com/abstract=3250395

VARIABLES	Endogamy	Arranged marriage	Economic participation		
			Self	Private/Public	Family
Panel A: Women's sample	(SD=0.438)	(SD=0.486)	(SD=0.445)	(SD=0.351)	(SD=0.347)
Inheritance dummy	0.050***	0.035**	0.029	-0.006	0.007
	(0.015)	(0.015)	(0.019)	(0.013)	(0.012)
Education	-0.034***	-0.050***	-0.029***	0.054***	-0.020***
	(0.011)	(0.008)	(0.009)	(0.011)	(0.006)
Observations	4,231	4,289	3,656	3,656	3,656
R-squared	0.179	0.382	0.161	0.194	0.338
Panel B: Men's sample	(SD=0.441)	(SD=0.427)	(SD=0.500)	(SD=0.495)	(SD=0.079)
Inheritance dummy	0.065***	0.020	0.041**	-0.038**	0.002
	(0.015)	(0.014)	(0.019)	(0.019)	(0.003)
Education	-0.032***	-0.026***	-0.095***	0.091***	-0.001
	(0.009)	(0.007)	(0.010)	(0.010)	(0.001)
Observations	3,702	3,776	3,059	3,059	3,059
R-squared	0.180	0.301	0.348	0.346	0.121
Quadratic in age	yes	yes	yes	yes	yes
Quadratic in marriage age	yes	yes	yes	yes	yes
Religion FE	yes	yes	yes	yes	yes
Community FE	yes	yes	yes	yes	yes

Table 4: Regression analyses of outcome variables using data on Indonesian individuals. OLS estimates are reported with robust standard errors, clustered at the community level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels. See Tables C20–C23 for the full regression results, including regressions with ethnicity fixed effects, and those using logit estimation.

sample. While inheritance is associated with higher self-employment and lower private/public sector employment in the men's sample, it does not show a positive association with self-employment in the women's sample. Recall that in the ethnic-level regression analysis, we found a negative association between female inheritance practice and self-employment. Therefore, higher self-employment in the men's sample may be considered the positive effect of inheriting property in the developing world, which is missing for women, likely due to the patrilineal restrictions on women's empowerment.

There is a possibility of reverse causality in the above analyses. That is, those who marry within the village or by their parents' choice are more likely to inherit property from their parents just because they are closer to them physically or emotionally. To address this concern, I split the inheritance indicator into two separate variables: an indicator variable called post-marriage inheritance that takes value 1 if the respondent inherited house, land, and livestock after their marriage, and an indicator variable for pre-marriage inheritance that takes value 1 if the respondent inherited house, land, and livestock before their marriage. These categories are defined by comparing the respondent's date of marriage and the date of death of the parent who left the inheritance, and are based on the assumption that the inheritance is transferred upon the death of the parent. Around 54% of respondents received inheritance post-marriage.

Table 5 reports regression results for the full sample (including both men and women) with pre- and

Electronic copy available at: https://ssrn.com/abstract=3250395

VARIABLES	Endogamy (SD=0.439)	Arranged marriage (SD=465)
Post-marriage inheritance	0.057***	0.028**
	(0.013)	(0.013)
Pre-marriage inheritance	0.077***	0.042***
	(0.012)	(0.012)
Education	-0.028***	-0.034***
	(0.007)	(0.006)
Male	0.015	-0.112***
	(0.014)	(0.010)
Quadratic in age	yes	yes
Quadratic in marriage age	yes	yes
Religion FE	yes	yes
Community FE	yes	yes
Observations	7,933	8,065
R-squared	0.117	0.336
Number of clusters	312	312

Table 5: Regression analyses of outcome variables using full sample (both men and women) data on Indonesian individuals. OLS estimates are reported with robust standard errors, clustered at the community level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels.

post-marriage inheritance variables.[30] See Tables C24 for the full regression results, including regressions with ethnicity fixed effects, and with the inheritance variable as defined in earlier analyses. Both post- and pre-marriage inheritance indicators are significant in the regressions. The Wald test results indicate that the difference of the coefficients is not significant. This implies that expecting to inherit property has the same association with marriage outcomes as actually inheriting the property. The potential for future inheritance can be predicted based on ethnicity, religion, and local customs, and whether the parent has a property to bequest. Those with high potential to receive an inheritance are subject to the same marriage restrictions as they would be if they actually received the inheritance.

5.2 Difference-in-differences analysis using the Hindu Succession (Amendment) Act of India

Since 1956, property rights for Hindus (also Sikhs, Jains, and Buddhists) in India have been governed by the Hindu Succession Act (HSA). The Act applies to all states except Jammu and Kashmir, and it explicitly exempts Muslims, Christians, Parsis, and Jews. As in traditional Hindu law, under the HSA women had no rights to joint family property (including land and other ancestral assets). Since 1956, some states have amended the Act so that both sons and daughters have a right to joint family property (Kerala in 1976; Andhra Pradesh in 1986; Tamil Nadu in 1989; Maharashtra and Karnataka in 1994). However, these amendments applied only to women who were not yet married at the time of the reform in their state. In

[30] When pre- and post-marriage inheritance categories are used for male and female samples separately, I end up with around 700 observations for each inheritance-sex combination, which is not enough to get robust results. Therefore, here I ignore the male and female distinction, and instead focus on the pre- and post-marriage distinction.

Electronic copy available at: https://ssrn.com/abstract=3250395

the other 29 states,[31] men remained the sole joint heirs of family property until 2005. Under the Hindu Succession (Amendment) Act of 2005, all daughters, including married daughters, are also joint heirs in family property such as agricultural land.[32] The amendment was a response to international agreements—such as Beijing Platform for Action—that emphasized on the importance of women's land and property rights.[33]

The states that passed amendments to the HSA before 2005 are the farthest southern states, whose traditional schools of law (the Madras and Bombay sub-schools) were more gender equal, and they agreed to include female inheritance rights when the HSA was passed in 1956. However, the northern states dismissed the idea by a majority vote, and the traditional laws of female exclusion in joint property were maintained until 2005 (Anderson and Genicot, 2015). Interestingly, Hindus in southern India have historically experienced much higher cousin marriage rates compared with Hindus in the other states (see Figure 4); in the sample of those married in or after 2000, the rate was 22.5% in the states that passed local amendments in the past versus 6.5% in other 29 states. This historical difference in the marriage patterns of the southern and northern states might partly be a consequence of their different traditional attitudes to female inheritance. Therefore, there might be concerns regarding the endogeneity of the amendments in the five states.

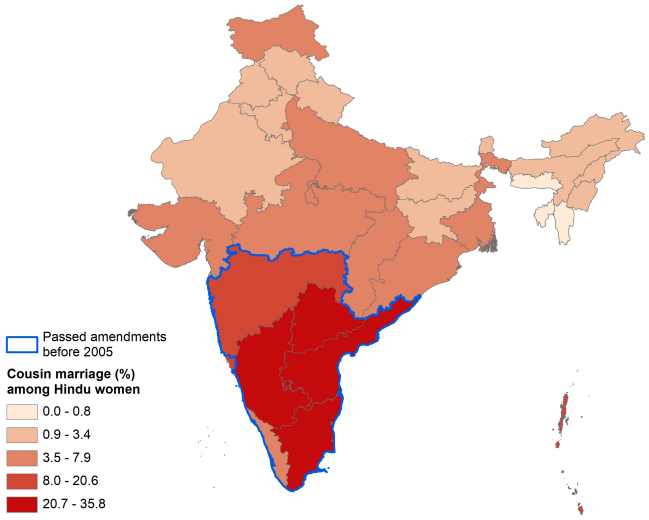


Figure 4: Cousin marriage rates among Hindu women across Indian states, the National Family Health Survey of India.

[31] Excluding Jammu and Kashmir, which was exempt from the HSA, and Telangana, which was part of Andhra Pradesh until 2014.

[32] In a joint Hindu family coparcenary, when person A inherits a property from his father, then that property also becomes the coparcenary property of person A's children, grandchildren, and great grandchildren, and they will acquire equal coparcenary right in such property by virtue of their birth. Therefore, person A can will only his share of joint property or any self-acquired property, and he cannot disinherit his sons and daughters by will.

[33] Government of India, National review on the Implementation of Beijing Declaration and Platform for Action, 2015, p.12. See Agarwal (1995); Anderson and Genicot (2015); Ayilyath (2014); Kharat (2017) for more details on the HSA and its amendments in different states and the national level. The Hindu Succession (Amendment) Act was passed on September 5, 2005, and applied to any disposition, alienation, and partition of property that had taken place after December 20, 2004.

Electronic copy available at: https://ssrn.com/abstract=3250395

For four reasons, here I focus on other 29 states and the 2005 amendment only. First, endogeneity of the amendments in the five states is possible, as discussed above. Second, under the past amendments in the five states, only unmarried women were eligible to inherit. Therefore, timing of marriages might have responded to the amendments. With the anticipation of the amendments, families who did not want their daughters to be eligible married them just before the law passed. This is not a concern for the 2005 amendment, under which both married and unmarried women were eligible for inheritance. Third, past amendments not only were different from the 2005 amendment, but also might have been different from each other. For example, the amendment of the state of Kerala removed the legal status of the joint family altogether. Fourth, theoretically it is not obvious whether in each of the five states the national 2005 amendment imposed female inheritance even more strictly or led to its looser imposition.

To estimate the impact of the 2005 amendment—which substantially improved female inheritance—on two outcome variables, I exploit a difference-in-differences approach using data collected from adult women (15–49 years old) by the National Family Health Survey (NFHS) of India (repeated cross-sectional surveys conducted in four rounds between 1992 and 2016). I dropped observations of respondents with unknown religions and a few observations on Jews and Parsis.

The first outcome variable is cousin marriage, which takes value 1 if a woman's husband in her *first* marriage is a blood relative (first cousin, second cousin, or other blood relatives such as uncle), and takes value 0 otherwise. The second outcome variable is premarital sex, which takes value 1 if a married woman had her first sexual intercourse before her first union with her first husband, and takes value 0 if she had her first sexual intercourse at or after her first union or if she has never had sex with her first husband.[34] Contrary to variables on economic and social activities, both first marriage and first sexual intercourse are retrospective variables and can be projected backward from cross-sectional data to before 2005. This allows us to examine the impact of the amendment on these variables.

The first difference I use is the religion of the respondent. The amendment should have had an impact on Hindu women (Hindus, Sikhs, Jains, or Buddhists) but not women from the exempted religions (Muslims, Christians). The second difference I use is exposure to the amendment, as measured by the year of the first marriage. The decision to marry a relative could have been affected by the amendment only if the marriage took place in or after 2005.[35] Therefore, the marriage decision of those Hindu women who married before 2005 could not have been affected by the amendment. Similarly, the premarital sex

[34]Contrary to the cousin marriage variable, the sample for the premarital sex variable includes only those women who are currently married. This is because the age at first union was not asked of other groups, such as those who are widowed, divorced, or separated. I have created the premarital sex variable using information on age at first union and age at first sexual intercourse. The latter includes a category labelled as "at first union". In addition, whenever age at first union and age at first sexual intercourse are the same, because of strong norms against premarital sex, I considered it as sex at first union with husband. However, it is possible for age at first union and age at first sexual intercourse to be the same, but for first sexual intercourse to have occurred before the marriage.

[35]Here, I assume that before the amendment, the respondent (and her family) did not know that she would become a joint heir in the future. Later, I will address the potential endogeneity concern.

Electronic copy available at: https://ssrn.com/abstract=3250395

attitudes of those Hindu women who married before 2005 could not have been affected by the amendment because by definition premarital sex takes place before the first marriage.

I assume that an outcome y for woman i of religion r married for the first time in year t in state s is a function with the following form:

$$y_{irts} = \alpha + \beta_1 T_{irt} + \beta_2 \gamma_r + \beta_3 \delta_t + \beta_4 \theta_s + \beta_5 (\theta_s \times \delta_t) + \beta_6 (\theta_s \times \gamma_r) + \beta_7 X_{irts} + \epsilon_{irts}$$

T_{irt} captures a woman's treatment status and takes value 1 if she is a Hindu (i.e., Hindu, Sikh, Jain, or Buddhist) and married for the first time in or after 2005. The coefficient of interest is β_1, which identifies the effect of exposure to the amendment. Religion dummy (γ_r) takes value 1 if a woman is a Hindu, and takes value 0 if she is a Muslim or Christian. It captures time-invariant characteristics of Hindus. Marriage year fixed effects (δ_t) control for time-series changes of the outcome variable. State fixed effects (θ_s) control for time-invariant characteristics of the states. State-marriage year fixed effects ($\theta_s \times \delta_t$) control for state-specific changes over time. Religion-state fixed effects ($\theta_s \times \gamma_r$) control for time-invariant characteristics of Hindus across the states. Finally, a vector of observable characteristics (X_{irts}) controls for respondent's education (four categories); wealth quintile; dummy variables for whether she lives in an urban region, whether she is a member of a scheduled caste, and whether she is a member of a scheduled tribe; and finally fixed effects for rounds in which respondents are surveyed.

	Cousin marriage (Hindu sample mean=0.047, SD=0.212)				Premarital sex (Hindu sample mean= 0.090, SD=0.286)			
VARIABLES	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Subject to amendment	0.015***	0.014***	0.012***	0.012***	-0.038***	-0.037***	-0.012***	-0.012***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Hindu	-0.079***	-0.119***	-0.099***	-0.099***	-0.020***	0.004*	0.004	0.004
	(0.002)	(0.003)	(0.009)	(0.009)	(0.002)	(0.002)	(0.007)	(0.007)
Marriage year FE	yes	yes	yes	yes	yes	yes	yes	yes
State FE		yes	yes	yes		yes	yes	yes
State × Marriage year FE			yes	yes			yes	yes
State × Hindu FE			yes	yes			yes	yes
Individual-level controls				yes				yes
Observations	461,746	461,746	461,746	461,746	419,252	419,252	419,252	419,252
R-squared	0.015	0.043	0.056	0.056	0.007	0.054	0.063	0.071
Number of clusters	22,751	22751	22751	22751	25131	25131	25131	25131

Table 6: Difference-in-differences analyses of outcome variables using data on Indian women. Individual-level controls include caste, tribe, and urban dummy variables; education and wealth; and survey round fixed effects. OLS estimates are reported with robust standard errors, clustered at the level of the primary sampling unit, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels. Full regression results are reported in Table C26 of Appendix C.

Table 6 presents regression results for cousin marriage and premarital sex with a subset or all of the controls in the full specification. Being a Hindu is negatively associated with cousin marriage, since Muslims—who constitute 59% of the dropped category—have much higher cousin marriage rates (with 17.1% versus 4.7% among Hindus). Among Hindu women, exposure to the amendment significantly

Electronic copy available at: https://ssrn.com/abstract=3250395

increased the likelihood of marrying a blood relative and decreased the likelihood of having premarital sex. The coefficients are large compared with the coefficients of individual-level controls and considering the mean of dependent variables for the Hindu sample. Table C25 of Appendix C presents the descriptive statistics and description of variables in the regressions.

In Table C27 of Appendix C, I run two sets of robustness regressions for each dependent variable. Instead of primary sampling units, I report standard errors clustered at the state level, and also two-way clustered at state level and religion level. The coefficient of exposure to the amendment (β_1) remains significant in all regressions. To address concerns due to the low number of clusters, I also provide the Wald test results using the wild cluster bootstrap (Cameron et al., 2008; Roodman et al., 2018), which reject the null hypothesis of $\beta_1 = 0$.

In Table C28 of Appendix C, I run another two sets of robustness regressions. First, in addition to year and state-year fixed effects based on first marriage year, I also control for those based on birth year. I have not included birth year fixed effects in the baseline regressions because later I use them to create instrumental variables. The results are robust. Second, I run the regressions with the full sample from all Indian states. The coefficients remain highly significant and in the predicted directions.

The identifying assumption of the difference-in-differences approach is the identical counterfactual trends in treatment and control groups. Here, I provide some robustness and falsification tests on this account. In the first column of Table 7, I include an additional variable called "near-treated Hindus", which takes value 1 for Hindu women married for the first time within the two-year span (2003 and 2004) just before the amendment. Its coefficient is insignificant in the regressions on cousin marriage and premarital sex, meaning that there is no evidence that the trend in outcome variables for Hindu women had diverged from non-Hindu women even before the amendment.

Next, I conduct a placebo test in time. This involves re-estimating the difference in differences model over the pre-treatment period, but with the assumption that the treatment took effect at an earlier date. Column 2 shows the regression results assuming that the amendment took place in 2003. The difference-in-differences estimator is statistically insignificant, implying zero placebo effect. Column 3 repeats the analysis for 2002.[36] In the next regressions, I conduct a placebo test in space using untreated groups. In column 4, I falsely pretend that Christian women have been treated, although they have not been treated, and I use Muslims as their control group. In column 5, I use Muslims and Christians as treatment and control groups respectively. Again, the results show zero placebo effect.

Unlike the past amendments in the five states, under the 2005 amendment both unmarried and married women were eligible for inheritance. Therefore, endogeneity of the year of marriage is less of a concern for the 2005 amendment. As column 1 of Table 7 shows, there is little evidence that variables of interest

[36]Moving backward for the placebo test in time, by 1996, difference-in-differences estimators become significant in regressions on both dependent variables. This might be due to expectations created by the local reforms in Maharashtra and Karnataka provinces that took place in 1994.

Electronic copy available at: https://ssrn.com/abstract=3250395

VARIABLES	Hindus before the amendment (1)	Amendment in 2003 (2)	Amendment in 2002 (3)	Christians treated (4)	Muslims treated (5)
Panel A: Cousin marriage					
Subject to amend.	0.012***	0.003	0.003	0.006	-0.006
	(0.004)	(0.007)	(0.006)	(0.009)	(0.009)
Near-treated Hindus	0.004				
	(0.007)				
Hindu	-0.099***	-0.109***	-0.109***		
	(0.009)	(0.010)	(0.010)		
Christian				-0.029	
				(0.032)	
Muslim					0.029
					(0.032)
Observations	461,746	302,565	302,565	80,768	80,768
R-squared	0.056	0.060	0.060	0.103	0.103
Number of clusters	22751	22684	22684	9584	9584
Panel B: Premarital sex					
Subject to amend.	-0.012***	-0.002	-0.002	0.004	-0.003
	(0.003)	(0.006)	(0.005)	(0.011)	(0.011)
Near-treated Hindus	-0.002				
	(0.006)				
Hindu	0.004	0.004	0.004		
	(0.007)	(0.007)	(0.007)		
Christian				0.011	
				(0.031)	
Muslim					-0.011
					(0.031)
Observations	419,252	266,848	266,848	71,622	71,622
R-squared	0.071	0.070	0.070	0.092	0.092
Number of clusters	25131	24996	24996	10380	10380
Marriage year FE	yes	yes	yes	yes	yes
State FE	yes	yes	yes	yes	yes
State × Marriage year FE	yes	yes	yes	yes	yes
State × Hindu FE	yes	yes	yes		
State × Christian FE				yes	
State × Muslim FE					yes
Individual-level controls	yes	yes	yes	yes	yes

Table 7: Robustness and falsification tests for the difference-in-differences analyses. OLS estimates are reported with robust standard errors, clustered at the level of the primary sampling unit, in parentheses. Individual-level controls include caste, tribe, and urban dummy variables; education and wealth; and survey round fixed effects. ***, **, and * indicate significance at the 1, 5, and 10% levels.

were affected by the anticipation of the 2005 amendment. However, to address any such concerns and to show the robustness of the results, here I follow two strategies. First, in an approach similar to Heath and Tan (2019), I use an instrumental variable approach where woman's treatment status (T_{irt})—which is a function of religion-year of marriage cells—is instrumented by fixed effects for each religion-year of birth cell, i.e., $\gamma_r \times \lambda_\tau$ where γ_r is the Hindu dummy and λ_τ is year of birth fixed effects. Therefore, in this approach, exogenous variation in year of birth is used as a measure of exposure to the treatment.

The second approach is similar to Duflo (2001), Osili and Long (2008), and Heath and Tan (2019). I compare younger cohorts likely to be subject to the amendment with older cohorts who were likely

Electronic copy available at: https://ssrn.com/abstract=3250395

to have been married by the time the amendment was passed and thus were probably not affected by the amendment in their marriage and premarital sex decisions. I define the treatment group to be *Hindu* women aged 14 or younger (the 10th percentile of the first marriage age distribution for females) in 2005—when the amendment was passed—and the control group to be women of all religions aged 24 or older (the 90th percentile of the distribution) in 2005. Defined based on the described age cohorts, 97.5% of the treatment group were actually exposed to the amendment, and 98% of the control group were not exposed to the amendment. Table C29 of Appendix C reports the results from the instrumental variable and age cohort comparison approaches. The direction and significance of the coefficients of the exposure to the amendment remain unchanged.

6 Conclusion and discussion

Theories on how inheritance systems shape family relationships, marriage patterns, and the status of women have been advanced over a century by social scientists. Following this literature, and standing on the shoulders of giants such as Adam Smith, Lewis Morgan, Max Weber, and Jack Goody, I developed two hypotheses with important implications for today's cultural differences across societies. Due to deep-rooted differences in their geography, subsistence economy, and agricultural and political organization, patrilineal societies ended up with different prevailing inheritance systems. I argued that patrilineal societies that traditionally included women in inheritance have developed practices encouraging inmarriage and controlling women's sexuality in order to preserve the property within the patrilineage, prevent its fragmentation, and limit conflicting claims on the estate.

The findings of the study show that ethnicities and women whose ancestors practiced female inheritance have experienced higher cousin marriage, endogamy, and arranged marriages, and lower female economic participation and sexual freedom. I also find that women who receive inheritance are more likely to be in arranged and endogamous marriages. In an attempt to identify the causal effects of female inheritance, I use a difference-in-differences approach to estimate the impact of a reform of inheritance regulations in India that substantially improved women's rights on land. Consistent with the causal direction stated by the hypotheses, the results indicate that women exposed to the reform had higher cousin marriage and lower premarital sex rates.

These findings have several important implications. First, female inheritance imposed by Sharia law might be a major historical factor explaining why today the Middle Eastern countries experience the highest cousin marriage rates and the lowest female participation rates in the world (see Figure 5).

Second, there is growing evidence on how tight kinship systems undermine generalized trust, large-scale cooperation, and democratic institutions; and encourage corruption and conflict.[37] Cousin and ar-

[37] See, e.g., Ermisch and Gambetta (2010); Alesina and Giuliano (2011); Greif and Tabellini (2015); Akbari et al. (2016); Schulz (2017); Enke (2017); Moscona et al. (2017); Schulz et al. (2018); Moscona et al. (2018)

Electronic copy available at: https://ssrn.com/abstract=3250395

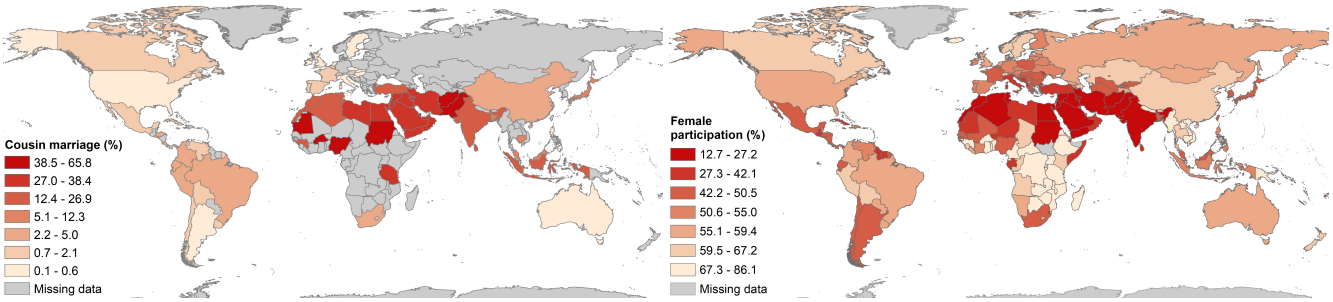


Figure 5: Left: Cousin marriage rates (up to and including second cousins) around the world (Bittles and Black, 2015). Right: Labor force participation rate of women above 15 years old, 2010–2016 estimates by the International Labour Organization, with darker colors indicating lower percentages.

ranged marriages, as means of creating and maintaining kin-based groups such as clans and tribes (Greif, 2006; Mitterauer, 2010), are considered as important elements of kinship patterns. Therefore, I also add to the literature by highlighting how inheritance systems contribute to the heterogeneity of kinship patterns across societies. For example, it has been suggested that the Catholic Church's prohibitions on cousin marriages and promotion of consensual (or love) marriages played an important role in dismantling tribes and clans in Europe and stimulating its divergent development (Goody, 1983; Herlihy, 1985; Ekelund et al., 1996; Korotayev et al., 2004; Greif, 2006; Mitterauer, 2010; Schulz et al., 2018). It is true that cousin and arranged marriage rates have been historically low in Christian countries. However, these low cousin and arranged marriage rates are also consistent with the fact that by putting no emphasis on female inheritance, European inheritance systems did not create economic incentives for cousin or arranged marriages, and provided an incentive-compatible institutional environment for the Church's marriage policies.[38]

Finally, under patrilineal restrictions on women's empowerment in developing countries, the mere enacting of female inheritance might create unintended consequences for young women's sexual lives and marital choices.

[38]The Church's family and marriage regulations might have formed and evolved partly in response to inheritance rules. According to Goody (1983), an edict of a Roman emperor allowed the Church to possess properties that did not belong to any individual. Therefore, the Church could only benefit by leaving a deceased without eligible heirs. It does not seem accidental that the Church would have condemned polygyny, cousin marriage, remarriage, adoption, and concubinage. By providing heirs, these practices could deprive the Church of property. The Church prohibited cousin marriages within seven degree of kinship because it was the degree considered for the purpose of inheritance by Roman law. Therefore, one could no longer marry anyone from whom one could have inherited. Greif (2006) also agrees that the Church's marriage laws were "self-serving" (p.308).

Electronic copy available at: https://ssrn.com/abstract=3250395

References

Abbott, Mary (2013), *Family ties: English families 1540-1920*. Routledge.

Agarwal, Bina (1995), "Gender and legal rights in agricultural land in india." *Economic and Political Weekly*, A39–A56.

Ahmed, Leila (1992), *Women and gender in Islam: Historical roots of a modern debate*. Yale University Press.

Aizer, Anna (2010), "The gender wage gap and domestic violence." *American Economic Review*, 100, 1847–59.

Akbari, Mahsa, Duman Bahrami-Rad, and Erik O Kimbrough (2016), "Kinship, fractionalization and corruption." *SSRN Working Paper, 2847222*.

Alesina, Alberto, Benedetta Brioschi, and Eliana La Ferrara (2016), "Violence against women: A cross-cultural analysis for africa." *NBER Working Paper, 21901*.

Alesina, Alberto and Paola Giuliano (2010), "The power of the family." *Journal of Economic growth*, 15, 93–125.

Alesina, Alberto and Paola Giuliano (2011), "Family ties and political participation." *Journal of the European Economic Association*, 9, 817–839.

Alesina, Alberto, Paola Giuliano, and Nathan Nunn (2013), "On the origins of gender roles: Women and the plough." *The Quarterly journal of economics*, 128, 469–530.

Alston, Lee J and Morton Owen Schapiro (1984), "Inheritance laws across colonies: Causes and consequences." *The Journal of Economic History*, 44, 277–287.

Amaral, Sofia (2017), "Do improved property rights decrease violence against women in india?" *SSRN Working Paper, 2504579*.

Anderberg, Dan, Helmut Rainer, Jonathan Wadsworth, and Tanya Wilson (2016), "Unemployment and domestic violence: Theory and evidence." *The Economic Journal*, 126, 1947–1979.

Anderson, Siwan (2018), "Legal origins and female hiv." *American Economic Review, forthcoming*.

Anderson, Siwan and Garance Genicot (2015), "Suicide and property rights in india." *Journal of Development Economics*, 114, 64–78.

Anthony, Kenneth RM (1978), *Agricultural change in tropical Africa*. Cornell University Press.

Ashraf, Nava, Natalie Bau, Nathan Nunn, and Alessandra Voena (2018), "Bride price and female education." *NBER Working Paper, 22417*.

Ayilyath, Manoranjan (2014), "Did hindu succession act indeed outcast mitakshara coparcenary." *SSRN Working Paper, 2465531*.

Barry, Herbert (1980), "Ethnographic atlas xxviii." *Ethnology*, 19, 245–263.

Becker, Anke (2017), "Herding and male dominance." *SSRN Working Paper, 3069684*.

Becker, Sascha O and Ludger Woessmann (2008), "Luther and the girls: Religious denomination and the female education gap in nineteenth-century prussia." *The Scandinavian Journal of Economics*, 110, 777–805.

Beckert, Jens (2008), *Inherited wealth*. Princeton University Press.

Bentzen, Jeanet Sinding, Nicolai Kaarsen, and Asger Moll Wingender (2015), "Irrigation and autocracy." *European Economic Association. Journal*.

Berkner, Lutz K (1972), "The stem family and the developmental cycle of the peasant household: An eighteenth-century austrian example." *The American Historical Review*, 77, 398–418.

Bible, Holy (NIV), "New international version, 2011 by biblica." URL `www.biblegateway.com`.

Bidner, Chris and Mukesh Eswaran (2015), "A gender-based theory of the origin of the caste system of india." *Journal of Development Economics*, 114, 142–158.

Bittles, Alan and M. H. Black (2015), "Global patterns and tables of consanguinity." URL `www.consang.net`.

Bittles, Alan H (2012), *Consanguinity in context*, volume 63. Cambridge University Press.

Bondarenko, Dmitri, Alexander Kazankov, Daria Khaltourina, and Andrey Korotayev (2005), "Ethnographic atlas xxxi: Peoples of easternmost europe." *Ethnology*, 261–289.

Borofsky, Robert (1987), *Making history: Pukapukan and anthropological constructions of knowledge*. Cambridge University Press.

Brunnbauer, Ulf (2003), "Descent or territoriality: inheritance and family forms in the late ottoman and early post-ottoman balkans." *Distinct Inheritances. Property, family and Community in a Changing Europe*, 181–205.

Cameron, A Colin, Jonah B Gelbach, and Douglas L Miller (2008), "Bootstrap-based improvements for inference with clustered errors." *The Review of Economics and Statistics*, 90, 414–427.

Campa, Pamela, Michel Serafinelli, et al. (2016), "Politico-economic regimes and attitudes: Female workers under state-

Electronic copy available at: https://ssrn.com/abstract=3250395

socialism." URL www.econpapers.repec.org/RePEc:tor:tecipa:tecipa-553.
Carranza, Eliana (2014), "Soil endowments, female labor force participation, and the demographic deficit of women in india." *American Economic Journal: Applied Economics*, 6, 197–225.
Casari, Marco and Maurizio Lisciandra (2016), "Gender discrimination in property rights: six centuries of commons governance in the alps." *The Journal of Economic History*, 76, 559–594.
Cavalli-Sforza, Luigi Luca, Antonio Moroni, and Gianna Zei (2004), *Consanguinity, inbreeding, and genetic drift in Italy*, volume 39. Princeton University Press.
Chu, CY Cyrus (1991), "Primogeniture." *Journal of Political Economy*, 99, 78–99.
Colclough, Nevill (2003), "Invisible patrimonies–capitoli matrimoniali in ancien régime ascoli." *Distinct inheritances: property, family and community in a changing Europe*, 145–158.
Cole, John W and Eric R Wolf (1999), *The hidden frontier: ecology and ethnicity in an alpine valley*. Univ of California Press.
Colwell, Robert K (1974), "Predictability, constancy, and contingency of periodic phenomena." *Ecology*, 55, 1148–1153.
Conley, Timothy G (1999), "Gmm estimation with cross sectional dependence." *Journal of econometrics*, 92, 1–45.
Courbage, Youssef and Emmanuel Todd (2014), *A convergence of civilizations: The transformation of Muslim societies around the world*. Columbia University Press.
Deininger, Klaus, Aparajita Goyal, and Hari Nagarajan (2013), "Women's inheritance rights and intergenerational transmission of resources in india." *Journal of Human Resources*, 48, 114–141.
Dole, Gertrude E (1965), "The lineage pattern of kinship nomenclature: Its significance and development." *Southwestern Journal of Anthropology*, 36–62.
Duflo, Esther (2001), "Schooling and labor market consequences of school construction in indonesia: Evidence from an unusual policy experiment." *American economic review*, 91, 795–813.
Duranton, Gilles, Andrés Rodríguez-Pose, and Richard Sandall (2009), "Family types and the persistence of regional disparities in europe." *Economic Geography*, 85, 23–47.
Edlund, Lena (2018), "Cousin marriage is not choice: Muslim marriage and underdevelopment." *AEA Papers and Proceedings*, 108, 353–57.
Ekelund, Robert B, Robert D Tollison, Gary M Anderson, FH Robert, Audrey B Davidson, et al. (1996), *Sacred trust: the medieval church as an economic firm*. Oxford University Press.
Enke, Benjamin (2017), "Kinship systems, cooperation and the evolution of culture." *CESifo Working Paper, 6867*.
Ermisch, John and Diego Gambetta (2010), "Do strong family ties inhibit trust?" *Journal of Economic Behavior & Organization*, 75, 365–376.
Foreman-Peck, James and Peng Zhou (2017), "Late marriage as a contributor to the industrial revolution in england." *The Economic History Review*.
Gabaccia, Donna R and Franca Iacovetta (2002), *Women, gender and transnational lives: Italian workers of the world*. University of Toronto Press.
Giuliano, Paola (2015), "The role of women in society: from preindustrial to modern times." *CESifo Economic Studies*, 61, 33–52.
Giuliano, Paola (2017), "Gender: A historical perspective." *NBER Working Paper, 23635*.
Gneezy, Uri, Kenneth L Leonard, and John A List (2009), "Gender differences in competition: Evidence from a matrilineal and a patriarchal society." *Econometrica*, 77, 1637–1664.
Goldschmidt, Walter and Evalyn Jacobson Kunkel (1971), "The structure of the peasant family." *American Anthropologist*, 73, 1058–1076.
Goldstein, Melvyn C (1987), "When brothers share a wife." *Natural History*, 96, 109–112.
Gong, Binglin and Chun-Lei Yang (2012), "Gender differences in risk attitudes: Field experiments on the matrilineal mosuo and the patriarchal yi." *Journal of economic behavior & organization*, 83, 59–65.
Goodwin, Jan (2002), *Price of honor: Muslim women lift the veil of silence on the Islamic world*. Penguin.
Goody, Jack (1969), "Inheritance, property, and marriage in africa and eurasia." *Sociology*, 3, 55–76.
Goody, Jack (1976), "Production and reproduction: A comparative study of the domestic domain." *Cambridge Studies in Social Anthropology, 17*.
Goody, Jack (1983), *The development of the family and marriage in Europe*. Cambridge University Press.
Goody, Jack R, Joan Thirsk, and Edward Palmer Thompson (1976), "Family and inheritance." *Past and Present Publications (USA)*.
Gray, J Patrick (1999), "A corrected ethnographic atlas." *World Cultures*, 10, 24–85.
Greif, Avner (2006), "Family structure, institutions, and growth: the origins and implications of western corporations." *The American Economic Review*, 96, 308–312.

Electronic copy available at: https://ssrn.com/abstract=3250395

Greif, Avner and Guido Tabellini (2015), "The clan and the corporation: Sustaining cooperation in china and europe." *SSRN Working Paper, 2565120*.

Grosjean, Pauline and Rose Khattar (2015), "It's raining men! hallelujah?" *SSRN Working Paper, 2445285*.

Guarnieri, Eleonora and Helmut Rainer (2018), "Female empowerment and male backlash." *CESifo Working Paper, 7009*.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2003), "People's opium? religion and economic attitudes." *Journal of monetary economics*, 50, 225–282.

Hansen, Casper Worm, Peter Sandholt Jensen, and Christian Volmar Skovsgaard (2015), "Modern gender roles and agricultural history: the neolithic inheritance." *Journal of Economic Growth*, 20, 365–404.

Harari, Mariaflavia (2014), "Women's inheritance rights and bargaining power: Evidence from kenya." *Department of Economics of MIT*, 1–47.

Harpending, Henry and Alan Rogers (1990), "Fitness in stratified societies." *Ethology and sociobiology*, 11, 497–509.

Harrell, Stevan (1997), *Human families*. Westview Press.

Harris, IPDJ, PD Jones, TJ Osborn, and DH Lister (2014), "Updated high-resolution grids of monthly climatic observations–the cru ts3. 10 dataset." *International Journal of Climatology*, 34, 623–642.

Heady, Patrick and Hannes Grandits, eds. (2003), *Distinct inheritances: property, family and community in a changing Europe*. LIT Verlag Münster.

Heath, Rachel and Xu Tan (2019), "Intrahousehold bargaining, female autonomy, and labor supply: Theory and evidence from india." *forthcoming at Journal of the European Economic Association*.

Herlihy, David (1985), *Medieval households*. Harvard University Press.

Holỳ, Ladislav (1989), *Kinship, honour, and solidarity: cousin marriage in the Middle East*. Manchester University Press.

Howell, Martha C (2010), *Commerce before capitalism in Europe, 1300-1600*. Cambridge University Press.

Ishaque, Shabnam (2008), "Islamic principles on adoption: examining the impact of illegitimacy and inheritance related concerns in context of a child's right to an identity." *International Journal of Law, Policy and the Family*, 22, 393–420.

Jain, Tarun (2014), "Where there is a will fertility behavior and sex bias in large families." *Journal of Human Resources*, 49, 393–423.

Kaser, Karl (2003), "Power and inheritance: Male domination, property, and family in eastern europe, 1500–1900." *Distinct Inheritances. Property, family and Community in a Changing Europe*, 53–63.

Kertzer, David I (1993), *The family in Italy from antiquity to the present*. Yale University Press.

Kharat, Shital (2017), "Effect of the hindu succession (amendment) act 2005–judicial response." *SSRN Working Paper, 2912662*.

Kirby, Kathryn R, Russell D Gray, Simon J Greenhill, Fiona M Jordan, Stephanie Gomes-Ng, Hans-Jörg Bibiko, Damián E Blasi, Carlos A Botero, Claire Bowern, Carol R Ember, et al. (2016), "D-place: A global database of cultural, linguistic and environmental diversity." *PLoS One*, 11, e0158391.

Korotayev, Andrey (2000), "Parallel-cousin (fbd) marriage, islamization, and arabization." *Ethnology*, 395–407.

Korotayev, Andrey, Alexander Kazankov, Svetlana Borinskaya, Daria Khaltourina, and Dmitri Bondarenko (2004), "Ethnographic atlas xxx: peoples of siberia." *Ethnology*, 43, 83–92.

Kuran, Timur (2012), *The long divergence: How Islamic law held back the Middle East*. Princeton University Press.

LeBar, FM and GN Appell (1972), "Ethnic groups of insular southeast asia. new haven." *Human Relations Area Files Press*.

Levine, David and Michael Kevane (2003), "Are investments in daughters lower when daughters move away? evidence from indonesia." *World Development*, 31, 1065–1084.

Lowes, Sara (2016), "Kinship systems, gender norms, and household bargaining: Evidence from the matrilineal belt." *Working Paper, Harvard mimeo*.

Lynch, Katherine A (2003), *Individuals, families, and communities in Europe, 1200-1800: the urban foundations of Western society*, volume 37. Cambridge University Press.

Mabsout, Ramzi and Irene Van Staveren (2010), "Disentangling bargaining power from individual and household level to institutions: Evidence on women's position in ethiopia." *World Development*, 38, 783–796.

Mathur, Aparna and Sita Slavov (2013), "Escaping domestic violence: Empowering women through employment, earnings and wealth in india." *AEI Economic Policy Working Paper Series*.

Medick, Hans (1976), "The proto-industrial family economy: The structural function of household and family during the transition from peasant society to industrial capitalism." *Social History*, 1, 291–315.

Medick, Hans and David Warren Sabean (1984), *Interest and emotion: essays on the study of family and kinship*. Cambridge University Press.

Michalopoulos, Stelios, Alireza Naghavi, and Giovanni Prarolo (2016), "Islam, inequality and pre-industrial comparative development." *Journal of Development Economics*, 120, 86–98.

Electronic copy available at: https://ssrn.com/abstract=3250395

Michalopoulos, Stelios, Alireza Naghavi, and Giovanni Prarolo (2017), "Trade and geography in the spread of islam." *The Economic Journal*.

Mitterauer, Michael (2003), "European kinship systems and household structures: medieval origins." *Distinct inheritances. Property, family and community in a changing Europe*, 35–52.

Mitterauer, Michael (2010), *Why Europe?: The Medieval Origins of Its Special Path*. University of Chicago Press.

Momigliano, Anna (2016), "The town in italy where most women are barred from inheriting land." *The Atlantic*, URL `www.theatlantic.com/amp/article/484238/`.

Morgan, Lewis Henry (1871), *Systems of consanguinity and affinity of the human family*, volume 218. Smithsonian institution.

Moscona, Jacob, Nathan Nunn, and James A Robinson (2017), "Keeping it in the family: Lineage organization and the scope of trust in sub-saharan africa." *American Economic Review Papers and Proceedings*, 107, 565–71.

Moscona, Jacob, Nathan Nunn, and James A Robinson (2018), "Social structure and conflict: Evidence from sub-saharan africa." *NBER Working Paper, 24209*.

Murdock, George Peter (1962–1971), "Ethnographic atlas, installments i-xxvii." *Ethnology*, 1–10.

Nakane, Chie et al. (1967), "Kinship and economic organization in rural japan." *Kinship and economic organization in rural Japan.*

Nguyen, Tin, Enjiang Cheng, and Christopher Findlay (1996), "Land fragmentation and farm productivity in china in the 1990s." *China Economic Review*, 7, 169–180.

Nunn, Nathan, Emmanuel Akyeampong, Robert Bates, and James A Robinson (2011), "Gender and missionary influence in colonial africa." *African Development in Historical Perspective*.

Nunn, Nathan and Diego Puga (2012), "Ruggedness: The blessing of bad geography in africa." *Review of Economics and Statistics*, 94, 20–36.

Osili, Una Okonkwo and Bridget Terry Long (2008), "Does female schooling reduce fertility? evidence from nigeria." *Journal of development Economics*, 87, 57–75.

Ostrom, Elinor and Charlotte Hess (2000), "Private and common property rights." *Encyclopedia of law and economics*, 2, 53–106.

Pine, Francis (2003), "Reproducing the house: kinship, inheritance, and property relations in highland poland." *Distinct Inheritances: Property, Family and Community in a Changing Europe*, 279–295.

Plas, Leendert (1994), *Rural gender studies in Europe*. Van Gorcum.

Platteau, Jean-Philippe and Jean-Marie Baland (2001), *Access to land, rural poverty, and public action (Impartible Inheritance Versus Equal Division: a Comparative Perspective Centered on Europe and Subsaharan Africa).* Oxford University Press.

Qian, Nancy (2008), "Missing women and the price of tea in china: The effect of sex-specific earnings on sex imbalance." *The Quarterly Journal of Economics*, 123, 1251–1285.

Ramankutty, Navin, Jonathan A Foley, John Norman, and Kevin McSweeney (2002), "The global distribution of cultivable lands: current patterns and sensitivity to possible climate change." *Global Ecology and biogeography*, 11, 377–392.

Rogers, Alan R (1990), "Evolutionary economics of human reproduction." *Ethology and Sociobiology*, 11, 479–495.

Roodman, David Malin, James G MacKinnon, Morten Ørregaard Nielsen, and Matthew Webb (2018), "Fast and wild: Bootstrap inference in stata using boottest." Technical report, Queen's Economics Department Working Paper.

Rosenblum, Daniel (2014), "Unintended consequences of women's inheritance rights on female mortality in india." *Economic Development and Cultural Change*, 63, 223–248.

Roy, Sanchari (2015), "Empowering women? inheritance rights, female education and dowry payments in india." *Journal of Development Economics*, 114, 233–251.

Sabean, David W (1984), "Young bees in an empty hive: relations between brothers-in-law in a south german village around 1800." *Interest and Emotion: Essays on the Study of Family and Kinship. Cambridge: Cambridge University Press. p*, 171–186.

Sarid, Assaf, Oded Galor, and Omer Ozak (2017), "Geographical origins and economic consequences of language structures." *CESifo Working Paper, 6149*.

Scheidel, Walter (2009), *Sex and Empire*. New York: Oxford University Press.

Schull, William J (1958), "Empirical risks in consanguineous marriages: sex ratio, malformation, and viability." *American journal of human genetics*, 10, 294.

Schulz, Jonathan F (2017), "The churches' bans on consanguineous marriages, kin-networks and democracy." *SSRN Working Paper, 2877828*.

Schulz, Jonathan F, Duman Bahrami-Rad, Jonathan Beauchamp, and Joseph Henrich (2018), "Global psychological variation, intensive kinship and the church." *SSRN Working Paper, 3201031*.

Segalen, Martine (1986), *Historical anthropology of the family*. Cambridge University Press.

Electronic copy available at: https://ssrn.com/abstract=3250395

Shenk, Mary K, Mary C Towner, Emily A Voss, and Nurul Alam (2016), "Consanguineous marriage, kinship ecology, and market transition." *Current Anthropology*, 57, S167–S180.

Smith, Adam (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*. Vol. II of The Glasgow Edition of the Works and Correspondence of Adam Smith.

Smith, RM (1984), *Land, kinship and life-cycle*. Cambridge (UK) Cambridge Univ. Press.

Srinivas, Mysore Narasimhachar (1980), *The remembered village*. Univ of California Press.

Tan, Shuhao, Nico Heerink, and Futian Qu (2006), "Land fragmentation and its driving forces in china." *Land use policy*, 23, 272–285.

Teso, Edoardo (2016), "The long-term effect of demographic shocks on the evolution of gender roles: Evidence from the transatlantic slave trade." *SSRN Working Paper, 2927221*.

Thirsk, Joan (1976), "The european debate on customs of inheritance, 1500-1700." *Family and inheritance*, 177–191.

Thomas, Todne, Asiya Malik, and Rose Wellman (2017), *New Directions in Spiritual Kinship: Sacred Ties Across the Abrahamic Religions*. Springer.

Todd, Emmanuel (1990), *L'invention de l'Europe*. Seuil.

Tur-Prats, Ana (2015), "Family types and intimate-partner violence: A historical perspective." *Economics Working Papers 1486, Universitat Pompeu Fabra*.

Wan, Guang H and Enjiang Cheng (2001), "Effects of land fragmentation and returns to scale in the chinese farming sector." *Applied Economics*, 33, 183–194.

Weber, Max (1978), *Economy and society: an outline of interpretive sociology. Vol. 1*. University of Calif. Press.

Wittfogel, Karl August (1959), *Oriental despotism: A comparative study of total power*. Yale University Press.

World Bank, 1978 (1978), "World development report 1978." *Oxford University Press, New York*.

Xue, Melanie Meng (2016), "High-value work and the rise of women: The cotton revolution and gender equality in china." *SSRN Working Paper, 2389218*.

Electronic copy available at: https://ssrn.com/abstract=3250395

Appendices

A Empirical data description

Table A1: Description of the data on Ethnographic Atlas societies.

Ethnographic Atlas, Cultural Data.	Retrieved from D-PLACE (Murdock, 1962–1971; Barry, 1980; Gray, 1999; Korotayev et al., 2004; Bondarenko et al., 2005; Kirby et al., 2016)
Variable name	**Description**
Inheritance systems	Entry EA074 classifies "the rule or practice governing the disposition or transmission of a man's property in land" in the following categories: 1- no inheritance of real property (absence of individual property rights in land or of any rule of inheritance governing the transmission of such rights); 2- matrilineal by sister's sons; 3- matrilineal by heirs (who take precedence over sisters' sons); 4- children, less for daughters; 5- children; 6- patrilineal by heirs (who take precedence over sons); 7- patrilineal by sons. Entry EA075, following previous entry, "indicates how real property is distributed among several individuals of the same category" by the following categories: 1- equally distributed; 2- best qualified (adjudged either by the deceased or by his surviving relatives); 3- ultimogeniture (the junior member); 4- primogeniture (the senior member); 9- no inheritance of real property. For female inclusion and partibility of inheritance, four dummy variables are constructed by the intersection of categories from entry EA074 and EA075. 1- impartible inheritance (categories 2, 3, and 4 of EA075), 2- partible inheritance by males only (intersection of category 1 of EA075 and categories 2, 3, 6, and 7 of EA074), 3- partible inheritance by both sexes (intersection of category 1 of EA075 and categories 4 and 5 of entry EA074), and 4- no inheritance of real property (category 1 of entry EA074, or equivalently category 9 of entry EA075).
Cousin marriage	Entry EA024 classifies the rules governing the marriageability of a man's first or second cousins in the following categories: 1- cross-cousin; 2- paternal only; 3-maternal only; 4- father's/mother's brother's daughter only; 5- father's/mother's sister's daughter only; 6- matrilateral cross only; 7- no first/second cousins; 8- no first cousins; 9- patrilateral cross only; 10- any first cousins; 11- some second only; 12- only second cousins; 13- any first cousin except lineage mate. The constructed "cousin marriage" variable takes on integer values ranging from 1 to 4, where higher values indicate tighter cousin marriage range; value 1 is assigned for no first/second-cousin marriage allowed (category 7), value 2 for second-cousin marriage allowed (categories 8, 11, and 12), value 3 is assigned for first-cousin marriage allowed except with father's brother's daughter (categories 1, 3, 5, 6, 9, and 13), value 4 is assigned for cousin marriage allowed with father's brother's daughter (categories 2, 4, and 10). Category 2 and 4 include 1 and 0 observations respectively, while category 10 includes 117 observations. Therefore, value 4 is practically the case if marriage with any first cousins is allowed.

Electronic copy available at: https://ssrn.com/abstract=3250395

Endogamy	Entry EA015 classifies “the prevalence of local endogamy, agamy, and exogamy" in the following categories; 1- demes (a marked tendency toward local endogamy); 2- segmented, no exogamy; 3- agamous (without any marked tendency toward either local exogamy or local endogamy); 4- exogamous; 5- segmented, exogamy; 6- clans (each consisting of a single localized exogamous kin group). Following Goody (1976), only category 1 is considered as endogamous. The constructed “endogamy" variable takes on integer values ranging from 1 to 3 where higher values indicate higher endogamy; value 1 is assigned for exogamous societies (categories 4, 5, and 6), value 2 is assigned for societies with no marked tendency toward endogamy or exogamy (categories 2 and 3), and value 3 is assigned for endogamous societies (categories 1).
Female premarital sex prohibition	Entry EA078 classifies “prevailing standards of sex behavior for unmarried women" in the following categories: 1- precluded by early marriage; 2- prohibited, strongly sanctioned; 3- prohibited but weakly sanctioned; 4- permitted, sanctioned in the case of pregnancy; 5- trial marriage; 6- permitted, no sanctions. The constructed indicator variable for “female premarital sex prohibition" takes value 1 if premarital sex of unmarried women is precluded or prohibited (categories 1, 2, and 3), and 0 otherwise.
Female participation in agriculture	Entry EA054 classifies “specialization by sex in agriculture" in the following categories: 1- males alone; 2- both, males more; 3- differentiated but equal; 4- equal participation; 5- both, females more; 6- females alone; 7- sex irrelevant; 8- activity present, sex diff. unspecified; 9- activity is absent. Following Alesina et al. (2013), the constructed “female participation in agriculture" variable takes on integer values ranging from 1 to 5, where higher values indicate more participation of women in agriculture; value 3 is assigned for both categories 3 and 4; and categories 7, 8, and 9 are considered as missing data.
Traditional plough use	Entry EA039 “indicates whether or not animals are employed in plow cultivation, and whether plow cultivation is aboriginal or dates to the post-contact period" by the following categories: 1- absent; 2- not aboriginal but present; 3- present. Following Alesina et al. (2013), the constructed indicator variable for “traditional plough use" takes value 1 if the plough is present (categories 1 and 2), and 0 otherwise.
Non-irrigated/Irrigated intensive agriculture	Entry EA028 classifies “intensity of cultivation" in the following categories: 1- no agriculture, 2- casual; 3- extensive/shifting; 4- horticulture; 5- intensive; 6- intensive irrigated. The constructed indicator variable for “non-irrigated intensive agriculture" takes value 1 for category 5, and 0 otherwise. The constructed indicator variable for “irrigated intensive agriculture" takes value 1 for category 6, and 0 otherwise.
Settlement complexity	Entry EA030 classifies “settlement patterns" in the following categories: 1- nomadic; 2- seminomadic; 3- semisedentary; 4- impermanent; 5- dispersed homesteads; 6- hamlets; 7- village/town; 8- complex permanent. Following Alesina et al. (2013), the constructed “settlement complexity" variable takes on integer values ranging from 1 to 8, where higher values indicate higher settlement complexity.
Political hierarchies	Entry EA033 classifies “jurisdictional hierarchy beyond local community" in the following categories: 1- acephalous (e.g., autonomous bands and villages); 2- one level (e.g., petty chiefdoms); 3- two levels (e.g., larger chiefdoms); 4- three levels (e.g., states); 5- four levels (e.g., large states). Following Alesina et al. (2013), the constructed “political hierarchies" variable takes on integer values ranging from 1 to 5, where higher values indicate more political hierarchies.

Electronic copy available at: https://ssrn.com/abstract=3250395

Presence of large animals	Entry EA040 classifies “the predominant type of animals kept" in the following categories: 1- absence or near absence; 2- pigs; 3- sheep/goats; 4- equine; 5- deer; 6- camelids; 7- bovine. Following Alesina et al. (2013), the constructed “presence of large animals" variable takes value 1 for categories 2–7 and value 0 for category 1.
Year society sampled	D-PLACE data is tagged with a “focal year" indicating the year in which Ethnographic Atlas societies were sampled. Focal year is before 1800 for 3% of societies, in the nineteenth century for 25%, between 1900 and 1950 for 69%, and after 1950 for 2%; 1% of the 1,291 societies are missing a focal year.
Patrilineal/matrilineal descent	Entry EA043 indicates “major mode of descent " in the following categories: 1- patrilineal; 2- duolateral; 3- matrilineal; 4- quasi-lineages; 5- ambilineal; 6- bilateral; 7- mixed. Following Ashraf et al. (2018), the constructed indicator variable for “matrilineal descent" takes value 1 for category 3, and 0 otherwise. The constructed indicator variable for “patrilineal descent" takes value 1 for category 1, and 0 otherwise.
Bride price/dowry	Entry EA006 classifies "prevailing type of transfer or exchange at marriage" in the following categories: 1- bride wealth (or bride price); 2- bride service; 3- token bride wealth; 4- gift exchange; 5- woman exchange; 6- insignificant; 7- dowry. Following Ashraf et al. (2018), the constructed indicator variable for "bride price" takes value 1 for categories 1, and 0 otherwise. The constructed indicator variable for "dowry" takes value 1 for category 7, and 0 otherwise.
Population (in millions)	A continuous variable indicating the population of each society as a whole.
Proportion of subsistence from gathering/hunting/herding	Entries EA001, EA002, and EA004 indicate dependence on gathering, hunting, and animal husbandry respectively. Each entry takes the values 0 to 9 respectively for 0–5%, 6–15%, 16–25%, 26–35%, 36–45%, 46–55%, 56–65%, 66–75%, 76–85%, 86–100% dependence on the activity. Following Alesina et al. (2013), the median value of dependence on the activity is used to construct variables for “prop. of subsist. from gathering", “prop. of subsist. from hunting" and “prop. of subsist. from herding".
Patrilocal/matrilocal marriages	Entry EA011 indicates “the prevailing pattern of transfer of residence at marriage" in the following categories: 1- wife to husband; 2- ambi/neolocal; 3- husband to wife; 9- separate. The constructed indicator variable for “patrilocal marriages" takes value 1 for category 1, and 0 otherwise. The constructed indicator variable for “matrilocal marriages" takes value 1 for category 3, and 0 otherwise. These variables are equivalent to Alesina et al. (2013)’s constructed variables based on another entry describing marital residence with kin from which entry EA011 is summarized.
Extended/nuclear family	Entry EA008 indicates “the prevailing form of domestic or familial organization" in the following categories: 1- nuclear, monogamous; 2- nuclear, limited polygyny; 3- polyandrous; 4- polygyny, atypical cowives pattern; 5- polygyny, typical cowives pattern; 6- minimal extended; 7- small extended; 8- large extended. Following Alesina et al. (2013), the constructed indicator variable for “nuclear family" takes value 1 for categories 1 and 2, and 0 otherwise. The constructed indicator variable for “extended family" takes value 1 for categories 6–8, and 0 otherwise.

Electronic copy available at: https://ssrn.com/abstract=3250395

Ethnographic Atlas, Geographic data	
Variable name	**Description**
Latitude	D-PLACE data is tagged with a “revised latitude" indicating the corrected latitude data for Ethnographic Atlas societies. The constructed “latitude" variable is the absolute value of the revised latitude. Source: D-PLACE (Kirby et al., 2016).
Mean temperature (in Celsius degrees)/ mean precipitation (in meters)	The means of the entire annual cycles of precipitation and temperature are constructed for the time period between 1901 and 1950 (the time period in which the vast majority of Ethnographic Atlas societies were sampled) based on monthly global maps (0.5 by 0.5 degree cells) obtained from the CRU-TS 3.1 Climate Database, Harris et al. (2014). Source: D-PLACE (Kirby et al., 2016).
Temperature/precipitation predictability	The predictability measures of the entire annual cycles of precipitation and temperature are constructed for the time period between 1901 and 1950 based on monthly global maps (0.5 by 0.5 degree cells) obtained from the CRU-TS 3.1 Climate Database, Harris et al. (2014). Predictability was measured via Colwell (1974)’s Constancy, Contingency and Predictability indexes. These indexes capture the extent to which yearly cycles vary among years in terms of onset, intensity and duration, ranging from 0 (completely unpredictable) to 1 (fully predictable). Source: D-PLACE (Kirby et al., 2016).
Tropical climate	The indicator variable for “tropical climate" takes value 1 if the point location of an Ethnographic Atlas society is classified as being either tropical or subtropical, and 0 otherwise. The data is constructed based on Thermal Climate Zones of the World, a global raster datalayer with a resolution of 5 arc-minutes, with each pixel containing a class value for the dominant thermal climate found in the pixel. Source: FAO’s Food Insecurity, Poverty and Environment Global GIS Database (FGGD).
Suitability for agriculture	Suitability for agriculture represents the fraction of each grid cell that is suitable to be used for agriculture. It is based on the temperature and soil conditions of each grid cell. The data is constructed based on the global map (0.5 by 0.5 degree cells) obtained from Suitability for Agriculture. Source: Atlas of the Biosphere, Ramankutty et al. (2002).
Distance to coast (in 100 kilometers)	Distance of point locations of Ethnographic Atlas societies from the coast is constructed based on the coastline defined in the full-resolution Global Self-consistent, Hierarchical, High-resolution Geography Database. Source: D-PLACE (Kirby et al., 2016).
Slope (in degrees)	Mean incline in the terrain (unit of sample 0.5 by 0.5 degree cell) is constructed based on topographical data provided by the GTOPO30 data set. Source: D-PLACE (Kirby et al., 2016).
Elevation (in 100 meters)	Elevation is constructed based on the global map (30 by 30 arc-second cells) obtained from the Global 30 Arc-Second Elevation data set. For the consistency of data used for Ethnographic Atlas societies, I have aggregated the elevation data (waters excluded, and by taking mean) to a 0.5 by 0.5 degree resolution. Source: GTOPO30 data set.
Ruggedness (in 100 meters)	Ruggedness measures the elevation distance of each grid cell and its neighbors. The data is constructed based on the global map (30 by 30 arc-second cells) obtained from Grid-cell-level Data on Terrain Ruggedness. For the consistency of data used for Ethnographic Atlas societies, I have aggregated the Terrain Ruggedness data (waters excluded, and by taking mean) to a 0.5 by 0.5 degree resolution. Source: Nunn and Puga (2012).

Electronic copy available at: https://ssrn.com/abstract=3250395

B Indonesian ethnic groups with female inheritance tradition

Here, I investigate the effect of traditional inheritance systems of Indonesian ethnicities on the outcome variables. Following the strategy in Ashraf et al. (2018), I use ethnographic data from the Ethnographic Atlas and Ethnic Groups of Insular Southeast Asia (LeBar and Appell, 1972) to link individuals to their traditional inheritance systems through their self-reported ethnicity in the IFLS. Then I construct an indicator variable for female inheritance, which takes value 1 if the ethnicity to which the individual belongs has traditionally included women in inheritance.[1]

In the regression analysis, following Ashraf et al. (2018), I control for education (five categories), quadratic in marriage age, and ethnicity control variables, and I cluster standard errors at the ethnicity level. In addition to their ethnicity controls (traditional presence of female-dominated agriculture and traditional matrilinearity), I also control for bride price practice from their study.[2] Moreover, I control for religion fixed effects (Muslim, Protestant, Catholic, Hindu, and other), quadratic in age, type of residence (urban or rural), and province fixed effects. The latter is relevant because ethnicities that traditionally excluded women from inheritance have a majority in three provinces only. Table B1 reports regression results for the sample of female and male adults separately. Table C16–C19 of Appendix C show the descriptive statistics of variables, full regression results, and logistic estimation with qualitatively similar results.

Consistent with the hypotheses, women from ethnicities with traditional female inheritance are more likely to be engaged in endogamous and arranged marriages. The coefficients are significant and large considering the standard deviation of dependent variables and also compared with coefficients of other important variables such as Catholicism, education, and urban residence. Women from ethnicities with traditional female inheritance are also less likely to be self-employed.

In the men's sample, female inheritance is insignificant in all regressions except for arranged marriage. However, the coefficient of arranged marriage is smaller than the one in the women's sample (Wald test p-value=0.086), likely due to unequal power of sexes in their choice of spouse—as discussed before. Insignificance of the coefficient in the endogamy regression for the men's sample might imply that an ethnicity with female inheritance is different from an ethnicity without female inheritance in migration rates of brides (not grooms) across villages. Since men inherit land under both regimes and stick to their land in the village, female inheritance should not affect the average endogamy rate of men across regimes.

[1] The IFLS (2000) contains information on 23 ethnicities. As described in Table B2, 14 of the ethnicities (around 75% of the sample) can be directly matched to the ethnic groups for which the inheritance information is available from ethnographic records, meaning that the name of the society in ethnographic records and the name of the ethnicity in the IFLS are the same, and based on the coordinates in ethnographic records, the society is located in the same regions that the IFLS surveys took place.

[2] Following Ashraf et al. (2018), female-dominated agriculture is a dummy variable that takes value 1 if female participation in agriculture is higher than male participation. The matrilineal dummy variable takes value 1 for Minang ethnicity (the only ethnicity in the IFLS sample with matrilineal inheritance). The dummy variable for bride price takes value 1 if the ethnicity practices bride price.

Electronic copy available at: https://ssrn.com/abstract=3250395

VARIABLES	Endogamy	Arranged marriage	Economic participation		
			Self	Public/Private	Family
Panel A: Women's sample					
Female inheritance	0.111***	0.063***	-0.086***	0.018	0.005
	(0.014)	(0.018)	(0.011)	(0.016)	(0.036)
Education	-0.049***	-0.029**	-0.018***	0.035***	-0.018***
	(0.004)	(0.011)	(0.004)	(0.008)	(0.003)
Urban	-0.098***	-0.053***	-0.005	0.049***	-0.132***
	(0.009)	(0.014)	(0.021)	(0.014)	(0.016)
Observations	7,575	7,705	6,645	6,645	6,645
R-squared	0.058	0.231	0.074	0.063	0.089
Panel B: Men's sample					
Female inheritance	-0.018	0.023*	-0.022	0.041	-0.006
	(0.019)	(0.012)	(0.025)	(0.029)	(0.003)
Education	-0.041***	-0.019***	-0.056***	0.056***	-0.002*
	(0.003)	(0.005)	(0.010)	(0.011)	(0.001)
Urban	-0.114***	-0.035***	-0.176***	0.176***	-0.012**
	(0.009)	(0.004)	(0.019)	(0.015)	(0.004)
Observations	6,045	6,116	5,180	5,180	5,180
R-squared	0.083	0.130	0.123	0.126	0.016
Quadratic in age	yes	yes	yes	yes	yes
Quadratic in marriage age	yes	yes	yes	yes	yes
Ethnicity Controls	yes	yes	yes	yes	yes
Religion FE	yes	yes	yes	yes	yes
Province FE	yes	yes	yes	yes	yes

Table B1: Regression analyses of outcome variables using data on Indonesian individuals. OLS estimates are reported with robust standard errors, clustered at the ethnicity level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Table B2: Ethnic groups in IFLS sample, and ethnographic records on the inheritance of real property.

Ethnicity	Female inheritance	Ethnographic Atlas (EA074) (Kirby et al., 2016)	Ethnic Groups of Insular Southeast Asia (LeBar and Appell, 1972)
Jawa	1	Sons and daughters	Cultivable land, fruit trees, and domestic animals are inherited in equal shares by children of both sexes (p.51).
Sunda	1	No match	Cultivable lands are divided equally among the children of both sexes (p.56).
Bali	0	Sons only	One son only fully succeeds the father as head of the houseyard [...] The remainder of the father's property, especially his land, is divided equally among all sons (p.63).
Batak	0	Sons only	Patrilineal with preference to eldest and youngest sons (p.21).
Bugis	.	No match	Missing
Tionghoa	.	No match	Missing
Madura	.	No match	Missing
Sasak	0	No match	Land and buildings are inherited by males, while jewelry and households furnishings are passed down in the female line (p.67).
Minang	1	Absence of private property	Ancestral property is considered uninheritable, since it belongs to a corporate group, the matrilineage, which persists through time. Use rights to the main forms of ancestral property—land and houses—generally are divided among the senior women of a matrilineage and pass from mother to daughter (p.26).

Electronic copy available at: https://ssrn.com/abstract=3250395

Banjar	.	No match	No match
Bima-Dompu	1	No match	A man's widow and his children, including his daughters, share his inheritance equally among them (p.70).
Makassar	.	Missing	Missing
Nias	0	No match	Sons receive the bulk of the inheritance, including real property, with the first-born having first claim (p.40).
Palembang	.	No match	No match
Sumbawa	1	Missing	A man's widow and his children, including his daughters, share his inheritance equally among them (p.70).
Toraja	1	Sons and daughters	Sons and daughters have an equal chance to inherit their parents' property (p.135).
Betawi	.	No match	No match
Dayak	.	No match	Missing
Melayu-Deli	.	No match	No match
Komering	.	No match	No match
Ambon	0	Sons only	Parcels of agricultural land are owned or controlled by clans [...] Membership is restricted to male and unmarried female descendants of original or founder clans (p.117).
Manado	1	No match	Inheritance is equally divided among all children (p.126).
Aceh	1	No match	Inheritance follows Islamic law [...] modified by the practice of giving women houses at the time of marriage. The result is to give the bulk of village land resources to the men. However, regardless of the ownership of the land, control is generally in the hands of the women, since the men are so often away (p.18).

Electronic copy available at: https://ssrn.com/abstract=3250395

C Additional figures and tables

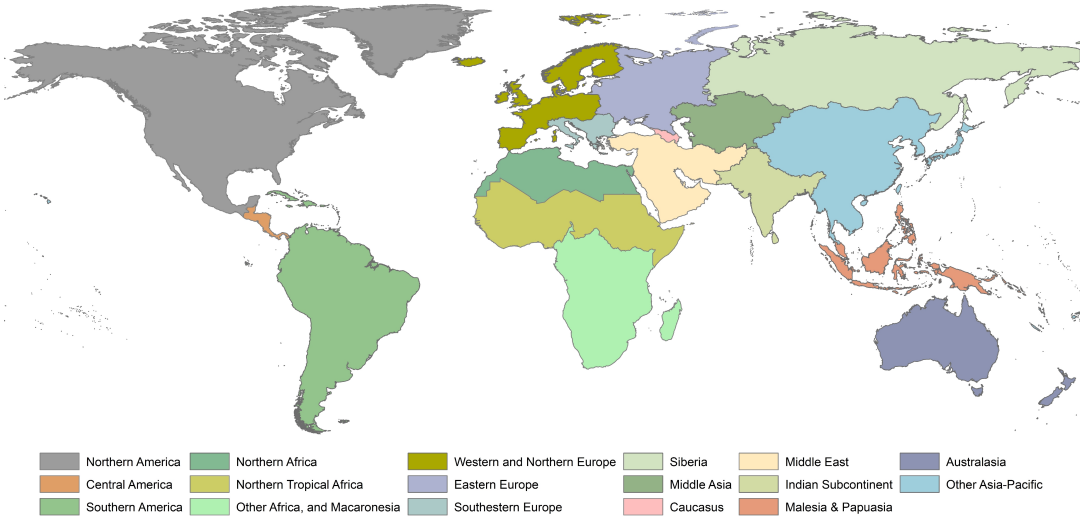


Figure C1: 17 regions used in the regression analyses of the Ethnographic Atlas data with regional fixed effects.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C1: Descriptive statistics of full sample.

VARIABLES	N	mean	sd
Cousin marriage	1,042	2.232	0.973
Endogamy	1,102	1.747	0.583
Female premarital sex prohibition	598	0.537	0.499
Polygyny	1,257	0.469	0.499
Female participation in agriculture	735	2.970	1.053
Impartible inheritance	820	0.354	0.478
Partible inheritance by males only	820	0.270	0.444
Partible inheritance by both sexes	820	0.105	0.307
Partible inheritance	820	0.374	0.484
Absence of private property	820	0.272	0.445
Traditional plough use	1,182	0.149	0.356
Non-irrigated intensive agriculture	1,188	0.174	0.379
Irrigated intensive agriculture	1,188	0.106	0.308
Settlement complexity	1,187	5.116	2.218
Political hierarchies	1,155	1.944	1.106
Presence of large animals	1,182	0.727	0.446
Year society sampled	1,283	1,891	195
Patrilineal descent	1,274	0.463	0.499
Matrilineal descent	1,274	0.126	0.332
Dowry	1,272	0.034	0.181
Bride price	1,272	0.517	0.500
Latitude	1,291	21.193	17.376
Mean temperature	1,291	18.470	8.784
Temperature predictability	1,291	0.705	0.102
Mean precipitation	1,291	114.440	71.810
Precipitation predictability	1,291	0.625	0.097
Tropical climate	1,291	0.832	0.374
Suitability for agriculture	1,291	0.315	0.307
Distance to coast	1,291	4.370	4.308
Slope	1,291	2.117	2.537
Ruggedness	1,291	1.187	1.423
Elevation	1,291	6.850	6.936
Population	953	0.434	3.203
Prop. of subsist. from herding	1,290	16.747	17.344
Prop. of subsist. from hunting	1,290	15.500	15.054
Prop. of subsist. from gathering	1,290	11.743	15.098
Patrilocal marriages	1,267	0.680	0.467
Matrilocal marriages	1,267	0.081	0.273
Nuclear family structure	1,263	0.302	0.460
Extended family structure	1,263	0.473	0.499

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C2: Descriptive statistics for regression analysis of cousin marriage.

VARIABLES	N	mean	sd
Cousin marriage	651	2.220	0.990
Impartible inheritance	651	0.338	0.473
Partible inheritance by males only	651	0.252	0.434
Partible inheritance by both sexes	651	0.104	0.306
Absence of private property	651	0.306	0.461
Traditional plough use	651	0.178	0.383
Non-irrigated intensive agriculture	651	0.203	0.402
Irrigated intensive agriculture	651	0.114	0.318
Settlement complexity	651	5.026	2.272
Political hierarchies	651	2.034	1.171
Presence of large animals	651	0.765	0.424
Year society sampled	651	1,893	189
Patrilineal descent	651	0.465	0.499
Matrilineal descent	651	0.106	0.308
Dowry	651	0.043	0.203
Bride price	651	0.522	0.500
Latitude	651	22.387	17.705
Mean temperature	651	17.958	9.204
Temperature predictability	651	0.698	0.102
Mean precipitation	651	108.742	70.227
Precipitation predictability	651	0.616	0.097
Tropical climate	651	0.820	0.384
Suitability for agriculture	651	0.314	0.300
Distance to coast	651	4.219	4.132
Slope	651	2.206	2.656
Ruggedness	651	1.226	1.438
Elevation	651	7.147	7.249
Population	511	0.585	4.109
Prop. of subsist. from herding	651	17.566	17.742
Prop. of subsist. from hunting	651	16.340	17.047
Prop. of subsist. from gathering	651	12.288	15.554
Patrilocal marriages	647	0.699	0.459
Matrilocal marriages	647	0.057	0.232
Nuclear family structure	646	0.294	0.456
Extended family structure	646	0.481	0.500

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C3: Regression analysis of cousin marriage.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Partible inheritance by males only	0.046	0.145	0.154	0.160*	0.143	0.173
	(0.098)	(0.096)	(0.107)	(0.095)	(0.097)	(0.109)
Partible inheritance by both sexes	0.284*	0.376**	0.363**	0.348**	0.435***	0.427**
	(0.151)	(0.150)	(0.166)	(0.150)	(0.151)	(0.165)
Absence of private property	0.191	0.319**	0.426***	0.348***	0.368***	0.508***
	(0.130)	(0.134)	(0.157)	(0.133)	(0.135)	(0.160)
Traditional plough use	0.217	0.356**	0.267	0.251	0.365**	0.232
	(0.135)	(0.154)	(0.179)	(0.156)	(0.152)	(0.175)
Non-irrigated intensive agriculture		-0.247**	-0.300**	-0.269**	-0.250**	-0.332***
		(0.113)	(0.123)	(0.116)	(0.112)	(0.124)
Irrigated intensive agriculture		0.221	0.248	0.247*	0.222	0.261*
		(0.148)	(0.163)	(0.143)	(0.147)	(0.157)
Settlement complexity	0.020	-0.007	-0.010	0.036	-0.010	0.027
	(0.024)	(0.026)	(0.029)	(0.032)	(0.026)	(0.037)
Political hierarchies	0.106**	0.125***	0.149***	0.091**	0.121***	0.115**
	(0.044)	(0.045)	(0.050)	(0.044)	(0.045)	(0.050)
Presence of large animals	0.218*	0.141	0.192	-0.136	0.176	0.003
	(0.118)	(0.122)	(0.139)	(0.130)	(0.123)	(0.153)
Year society sampled		-0.000***	-0.000	-0.000***	-0.000***	-0.000**
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Patrilineal descent		0.430***	0.370***	0.367***	0.360***	0.250**
		(0.095)	(0.108)	(0.096)	(0.104)	(0.117)
Matrilineal descent		0.657***	0.624***	0.667***	0.640***	0.606***
		(0.113)	(0.136)	(0.111)	(0.117)	(0.140)
Dowry		-0.365*	-0.312	-0.377*	-0.375*	-0.364
		(0.208)	(0.232)	(0.213)	(0.216)	(0.244)
Bride price		0.005	0.057	-0.071	-0.018	-0.011
		(0.086)	(0.100)	(0.088)	(0.088)	(0.103)
Latitude		0.011	0.015	0.013	0.010	0.016
		(0.009)	(0.010)	(0.009)	(0.009)	(0.011)
Mean temperature		-0.010	-0.008	-0.002	-0.010	-0.003
		(0.013)	(0.015)	(0.014)	(0.014)	(0.016)
Temperature predictability		3.733***	4.380***	3.141**	3.646**	3.725**
		(1.420)	(1.652)	(1.440)	(1.454)	(1.718)
Mean precipitation		-0.002***	-0.003***	-0.002**	-0.003***	-0.002**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Precipitation predictability		0.352	0.666	0.406	0.401	0.900
		(0.690)	(0.816)	(0.678)	(0.694)	(0.822)
Tropical climate	0.382***	0.338*	0.523**	0.359*	0.352*	0.557**
	(0.118)	(0.186)	(0.220)	(0.190)	(0.188)	(0.225)
Suitability for agriculture	-0.348***	-0.199	-0.187	-0.162	-0.165	-0.162
	(0.131)	(0.129)	(0.146)	(0.128)	(0.130)	(0.145)
Distance to coast		0.010	0.023	0.008	0.009	0.023
		(0.012)	(0.015)	(0.013)	(0.013)	(0.015)
Slope		0.041	0.034	0.041	0.038	0.030
		(0.035)	(0.040)	(0.035)	(0.035)	(0.041)
Ruggedness		-0.026	0.019	-0.040	-0.028	-0.001
		(0.065)	(0.074)	(0.064)	(0.065)	(0.073)
Elevation		-0.029***	-0.031***	-0.026***	-0.027***	-0.028***
		(0.009)	(0.010)	(0.009)	(0.009)	(0.010)
Population			0.009			0.010
			(0.007)			(0.006)
Prop. of subsist. from herding				0.014***		0.013***
				(0.004)		(0.004)
Prop. of subsist. from hunting				0.005		0.004
				(0.004)		(0.004)
Prop. of subsist. from gathering				-0.006		-0.002
				(0.004)		(0.004)
Patrilocal marriages					0.222**	0.274**
					(0.108)	(0.125)
Matrilocal marriages					0.057	0.164
					(0.148)	(0.163)
Nuclear family structure					0.066	0.029
					(0.103)	(0.118)
Extended family structure					0.051	0.013
					(0.095)	(0.106)
Constant	1.392***	-0.681	-2.070	-0.599	-0.768	-2.162
	(0.209)	(1.236)	(1.462)	(1.285)	(1.256)	(1.525)
Observations	651	651	511	651	642	503
R-squared	0.088	0.218	0.234	0.253	0.231	0.280
Adjusted R-squared	0.076	0.186	0.193	0.219	0.195	0.229

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C4: Descriptive statistics for regression analysis of endogamy.

VARIABLES	N	mean	sd
Endogamy	686	1.738	0.580
Impartible inheritance	686	0.341	0.474
Partible inheritance by males only	686	0.248	0.432
Partible inheritance by both sexes	686	0.111	0.314
Absence of private property	686	0.300	0.459
Traditional plough use	686	0.181	0.385
Non-irrigated intensive agriculture	686	0.207	0.405
Irrigated intensive agriculture	686	0.114	0.318
Settlement complexity	686	5.080	2.275
Political hierarchies	686	2.032	1.177
Presence of large animals	686	0.770	0.421
Year society sampled	686	1,899	138
Patrilineal descent	686	0.474	0.500
Matrilineal descent	686	0.101	0.301
Dowry	686	0.050	0.217
Bride price	686	0.525	0.500
Latitude	686	22.520	18.313
Mean temperature	686	17.717	9.384
Temperature predictability	686	0.697	0.103
Mean precipitation	686	110.481	69.474
Precipitation predictability	686	0.623	0.099
Tropical climate	686	0.808	0.394
Suitability for agriculture	686	0.321	0.301
Distance to coast	686	4.424	4.291
Slope	686	2.218	2.652
Ruggedness	686	1.233	1.466
Elevation	686	7.086	7.183
Population	536	0.562	4.013
Prop. of subsist. from herding	686	17.480	17.507
Prop. of subsist. from hunting	686	16.462	16.848
Prop. of subsist. from gathering	686	11.879	15.187
Patrilocal marriages	680	0.704	0.457
Matrilocal marriages	680	0.057	0.233
Nuclear family structure	681	0.289	0.454
Extended family structure	681	0.490	0.500

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C5: Regression analysis of endogamy.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Partible inheritance by males only	0.011	0.013	-0.005	0.013	0.013	-0.005
	(0.056)	(0.056)	(0.061)	(0.056)	(0.056)	(0.062)
Partible inheritance by both sexes	0.365***	0.233***	0.285***	0.230***	0.171**	0.213**
	(0.078)	(0.079)	(0.085)	(0.079)	(0.080)	(0.087)
Absence of private property	0.071	-0.022	-0.022	-0.003	-0.060	-0.039
	(0.074)	(0.078)	(0.087)	(0.079)	(0.080)	(0.089)
Traditional plough use	0.138*	0.009	-0.054	-0.011	0.002	-0.083
	(0.075)	(0.087)	(0.108)	(0.088)	(0.088)	(0.109)
Non-irrigated intensive agriculture		-0.048	0.004	-0.065	-0.053	-0.003
		(0.067)	(0.077)	(0.069)	(0.068)	(0.078)
Irrigated intensive agriculture		0.109	0.163*	0.098	0.078	0.128
		(0.084)	(0.093)	(0.083)	(0.086)	(0.096)
Settlement complexity	0.023	0.035**	0.054***	0.032*	0.035**	0.049**
	(0.014)	(0.015)	(0.016)	(0.017)	(0.016)	(0.019)
Political hierarchies	0.023	0.010	0.015	0.002	0.021	0.020
	(0.025)	(0.027)	(0.029)	(0.027)	(0.028)	(0.030)
Presence of large animals	-0.098	0.087	0.049	0.038	0.079	0.013
	(0.067)	(0.075)	(0.088)	(0.079)	(0.076)	(0.098)
Year society sampled		0.000	-0.000	0.000	0.000	-0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Patrilineal descent		-0.195***	-0.235***	-0.206***	-0.133**	-0.169**
		(0.056)	(0.062)	(0.056)	(0.059)	(0.068)
Matrilineal descent		-0.053	0.050	-0.057	-0.089	-0.001
		(0.075)	(0.082)	(0.074)	(0.078)	(0.087)
Dowry		-0.005	-0.072	-0.012	-0.001	-0.047
		(0.102)	(0.117)	(0.101)	(0.098)	(0.111)
Bride price		-0.107**	-0.080	-0.118**	-0.073	-0.054
		(0.052)	(0.060)	(0.054)	(0.053)	(0.061)
Latitude		0.006	0.009	0.006	0.005	0.009
		(0.005)	(0.006)	(0.005)	(0.005)	(0.006)
Mean temperature		0.004	0.002	0.007	0.004	0.005
		(0.008)	(0.009)	(0.008)	(0.008)	(0.010)
Temperature predictability		-0.573	-0.405	-0.837	-0.495	-0.444
		(0.760)	(0.894)	(0.787)	(0.768)	(0.947)
Mean precipitation		-0.001	-0.000	-0.000	-0.001	-0.001
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Precipitation predictability		0.041	0.062	0.056	0.084	0.042
		(0.382)	(0.424)	(0.393)	(0.385)	(0.447)
Tropical climate	-0.063	0.169	0.268**	0.175	0.183	0.300**
	(0.063)	(0.119)	(0.135)	(0.123)	(0.118)	(0.142)
Suitability for agriculture	0.022	0.025	0.061	0.037	0.016	0.057
	(0.076)	(0.075)	(0.086)	(0.076)	(0.075)	(0.086)
Distance to coast		-0.010	-0.011	-0.010	-0.010	-0.011
		(0.006)	(0.008)	(0.007)	(0.007)	(0.008)
Slope		0.008	0.006	0.009	0.008	0.012
		(0.019)	(0.022)	(0.020)	(0.020)	(0.023)
Ruggedness		-0.025	-0.026	-0.030	-0.028	-0.036
		(0.034)	(0.038)	(0.035)	(0.035)	(0.041)
Elevation		0.002	0.001	0.004	0.003	0.003
		(0.005)	(0.006)	(0.005)	(0.005)	(0.006)
Population			-0.004			-0.002
			(0.009)			(0.009)
Prop. of subsist. from herding				0.001		-0.000
				(0.002)		(0.002)
Prop. of subsist. from hunting				-0.001		-0.001
				(0.002)		(0.003)
Prop. of subsist. from gathering				-0.002		-0.003
				(0.002)		(0.003)
Patrilocal marriages					-0.146**	-0.186**
					(0.062)	(0.075)
Matrilocal marriages					0.113	0.132
					(0.108)	(0.120)
Nuclear family structure					0.155**	0.113
					(0.067)	(0.074)
Extended family structure					0.053	0.025
					(0.060)	(0.066)
Constant	1.604***	1.611**	1.418	1.859***	1.506**	1.823
	(0.112)	(0.680)	(1.150)	(0.715)	(0.693)	(1.255)
Observations	686	686	536	686	675	526
R-squared	0.067	0.144	0.199	0.148	0.166	0.223
Adjusted R-squared	0.0545	0.112	0.158	0.112	0.128	0.171

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C6: Descriptive statistics for regression analysis of female premarital sex prohibition.

VARIABLES	N	mean	sd
Female premarital sex prohibition	427	0.536	0.499
Impartible inheritance	427	0.307	0.462
Partible inheritance by males only	427	0.244	0.430
Partible inheritance by both sexes	427	0.105	0.307
Absence of private property	427	0.344	0.476
Traditional plough use	427	0.204	0.403
Non-irrigated intensive agriculture	427	0.201	0.402
Irrigated intensive agriculture	427	0.124	0.330
Settlement complexity	427	4.953	2.329
Political hierarchies	427	2.094	1.245
Presence of large animals	427	0.756	0.430
Year society sampled	427	1,881	286
Patrilineal descent	427	0.431	0.496
Matrilineal descent	427	0.080	0.271
Dowry	427	0.054	0.226
Bride price	427	0.473	0.500
Latitude	427	24.741	19.504
Mean temperature	427	16.588	10.230
Temperature predictability	427	0.688	0.110
Mean precipitation	427	110.641	72.582
Precipitation predictability	427	0.626	0.097
Tropical climate	427	0.759	0.428
Suitability for agriculture	427	0.314	0.307
Distance to coast	427	4.331	4.263
Slope	427	2.286	2.695
Ruggedness	427	1.221	1.429
Elevation	427	7.133	7.195
Population	330	0.764	5.073
Prop. of subsist. from herding	427	17.025	17.735
Prop. of subsist. from hunting	427	17.329	18.396
Prop. of subsist. from gathering	427	12.107	14.701
Patrilocal marriages	423	0.662	0.474
Matrilocal marriages	423	0.052	0.222
Nuclear family structure	424	0.330	0.471
Extended family structure	424	0.450	0.498

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C7: Regression analysis of female premarital sex prohibition.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Partible inheritance by males only	0.032	0.005	0.024	-0.002	0.010	0.024
	(0.062)	(0.064)	(0.074)	(0.065)	(0.066)	(0.077)
Partible inheritance by both sexes	0.258***	0.238***	0.243**	0.241***	0.253***	0.270**
	(0.081)	(0.083)	(0.104)	(0.084)	(0.083)	(0.104)
Absence of private property	0.152**	0.117	0.168*	0.110	0.133	0.185*
	(0.076)	(0.081)	(0.096)	(0.084)	(0.081)	(0.100)
Traditional plough use	0.184***	0.123	0.146	0.144*	0.145*	0.201*
	(0.071)	(0.080)	(0.106)	(0.080)	(0.081)	(0.108)
Non-irrigated intensive agriculture		-0.005	-0.024	-0.001	0.006	-0.006
		(0.081)	(0.098)	(0.082)	(0.082)	(0.100)
Irrigated intensive agriculture		-0.037	-0.094	-0.037	-0.032	-0.079
		(0.088)	(0.108)	(0.089)	(0.089)	(0.109)
Settlement complexity	-0.035***	-0.025	-0.014	-0.030	-0.021	-0.016
	(0.013)	(0.015)	(0.018)	(0.020)	(0.016)	(0.022)
Political hierarchies	0.084***	0.085***	0.081**	0.096***	0.080***	0.084**
	(0.025)	(0.028)	(0.034)	(0.028)	(0.028)	(0.034)
Presence of large animals	-0.135*	-0.144*	-0.185**	-0.084	-0.151**	-0.137
	(0.069)	(0.075)	(0.087)	(0.082)	(0.076)	(0.097)
Year society sampled		-0.000	0.000***	0.000	-0.000	0.000***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Patrilineal descent		0.038	0.023	0.062	0.011	0.018
		(0.063)	(0.074)	(0.063)	(0.067)	(0.078)
Matrilineal descent		-0.112	-0.113	-0.114	-0.142	-0.129
		(0.086)	(0.099)	(0.086)	(0.095)	(0.112)
Dowry		0.026	0.113	0.029	0.003	0.090
		(0.121)	(0.144)	(0.119)	(0.121)	(0.145)
Bride price		-0.007	0.033	0.008	-0.002	0.048
		(0.058)	(0.066)	(0.058)	(0.059)	(0.066)
Latitude		-0.002	-0.000	-0.003	-0.000	0.003
		(0.005)	(0.006)	(0.005)	(0.005)	(0.006)
Mean temperature		0.003	0.004	0.001	0.004	0.003
		(0.008)	(0.010)	(0.008)	(0.008)	(0.010)
Temperature predictability		-0.969	-0.986	-0.797	-0.720	-0.443
		(0.798)	(0.916)	(0.829)	(0.804)	(0.958)
Mean precipitation		0.001	0.001	0.000	0.001	0.000
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Precipitation predictability		-0.686*	-0.476	-0.701*	-0.733*	-0.623
		(0.378)	(0.442)	(0.380)	(0.378)	(0.459)
Tropical climate	0.068	0.037	0.094	0.034	0.036	0.091
	(0.061)	(0.114)	(0.150)	(0.116)	(0.114)	(0.156)
Suitability for agriculture	0.300***	0.276***	0.274***	0.264***	0.276***	0.278***
	(0.077)	(0.085)	(0.100)	(0.086)	(0.086)	(0.102)
Distance to coast		0.002	0.004	0.002	0.001	0.003
		(0.007)	(0.009)	(0.007)	(0.007)	(0.009)
Slope		0.014	0.006	0.013	0.018	0.013
		(0.023)	(0.025)	(0.023)	(0.024)	(0.027)
Ruggedness		0.013	0.023	0.017	-0.006	-0.004
		(0.040)	(0.044)	(0.040)	(0.041)	(0.047)
Elevation		-0.004	-0.002	-0.005	-0.002	-0.000
		(0.006)	(0.007)	(0.006)	(0.006)	(0.007)
Population			0.007**			0.006*
			(0.003)			(0.003)
Prop. of subsist. from herding				-0.003		-0.003
				(0.002)		(0.003)
Prop. of subsist. from hunting				-0.001		-0.001
				(0.002)		(0.003)
Prop. of subsist. from gathering				0.002		0.001
				(0.003)		(0.003)
Patrilocal marriages					0.059	0.038
					(0.063)	(0.076)
Matrilocal marriages					0.116	0.125
					(0.117)	(0.144)
Nuclear family structure					-0.047	-0.179**
					(0.074)	(0.086)
Extended family structure					-0.087	-0.133*
					(0.067)	(0.078)
Constant	0.364***	1.392**	0.763	1.334*	1.206*	0.530
	(0.112)	(0.647)	(0.769)	(0.683)	(0.646)	(0.813)
Observations	427	427	330	427	420	323
R-squared	0.138	0.171	0.172	0.180	0.177	0.193
Adjusted R-squared	0.119	0.119	0.101	0.122	0.116	0.101

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C8: Descriptive statistics for regression analysis of female participation in agriculture.

VARIABLES	N	mean	sd
Female participation in agriculture	489	2.881	0.985
Impartible inheritance	489	0.407	0.492
Partible inheritance by males only	489	0.325	0.469
Partible inheritance by both sexes	489	0.133	0.340
Absence of private property	489	0.135	0.342
Traditional plough use	489	0.252	0.434
Non-irrigated intensive agriculture	489	0.280	0.450
Irrigated intensive agriculture	489	0.155	0.363
Settlement complexity	489	5.980	1.581
Political hierarchies	489	2.344	1.235
Presence of large animals	489	0.908	0.289
Year society sampled	489	1,892	270
Patrilineal descent	489	0.552	0.498
Matrilineal descent	489	0.100	0.301
Dowry	489	0.063	0.244
Bride price	489	0.583	0.494
Latitude	489	16.947	14.591
Mean temperature	489	20.484	6.456
Temperature predictability	489	0.729	0.083
Mean precipitation	489	120.604	72.430
Precipitation predictability	489	0.626	0.095
Tropical climate	489	0.904	0.295
Suitability for agriculture	489	0.369	0.307
Distance to coast	489	4.675	4.397
Slope	489	2.042	2.538
Ruggedness	489	1.151	1.382
Elevation	489	7.245	7.740
Population	382	0.784	4.737
Prop. of subsist. from herding	489	19.788	13.977
Prop. of subsist. from hunting	489	10.042	9.414
Prop. of subsist. from gathering	489	7.138	9.821
Patrilocal marriages	487	0.760	0.428
Matrilocal marriages	487	0.060	0.237
Nuclear family structure	488	0.275	0.447
Extended family structure	488	0.482	0.500

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C9: Regression analysis of female participation in agriculture.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Partible inheritance by males only	-0.244**	-0.190**	-0.207**	-0.174*	-0.172*	-0.170*
	(0.097)	(0.092)	(0.100)	(0.089)	(0.091)	(0.095)
Partible inheritance by both sexes	-0.570***	-0.278**	-0.342**	-0.259**	-0.245*	-0.301**
	(0.128)	(0.129)	(0.142)	(0.127)	(0.133)	(0.141)
Absence of private property	0.090	0.172	0.179	0.127	0.263*	0.199
	(0.146)	(0.144)	(0.170)	(0.133)	(0.143)	(0.150)
Traditional plough use	-0.615***	-0.397***	-0.304*	-0.306**	-0.315**	-0.145
	(0.119)	(0.146)	(0.173)	(0.144)	(0.145)	(0.166)
Non-irrigated intensive agriculture		-0.217*	-0.260**	-0.080	-0.216**	-0.104
		(0.112)	(0.125)	(0.110)	(0.109)	(0.121)
Irrigated intensive agriculture		-0.290**	-0.269	-0.188	-0.242*	-0.087
		(0.144)	(0.168)	(0.143)	(0.142)	(0.158)
Settlement complexity	-0.010	-0.016	-0.027	-0.045	-0.002	-0.041
	(0.033)	(0.034)	(0.039)	(0.033)	(0.035)	(0.039)
Political hierarchies	-0.038	0.013	-0.000	0.041	-0.006	0.009
	(0.040)	(0.042)	(0.047)	(0.041)	(0.041)	(0.045)
Presence of large animals	0.367**	-0.028	-0.127	0.204	-0.019	0.148
	(0.157)	(0.152)	(0.170)	(0.148)	(0.150)	(0.164)
Year society sampled		0.000	0.000	0.000*	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Patrilineal descent		0.176*	0.080	0.210**	0.156	0.067
		(0.105)	(0.115)	(0.101)	(0.110)	(0.112)
Matrilineal descent		0.403***	0.255	0.375***	0.344**	0.157
		(0.142)	(0.170)	(0.130)	(0.141)	(0.157)
Dowry		0.386**	0.345	0.478***	0.343**	0.417**
		(0.173)	(0.215)	(0.171)	(0.171)	(0.210)
Bride price		0.219**	0.206**	0.337***	0.193**	0.274***
		(0.094)	(0.105)	(0.090)	(0.097)	(0.100)
Latitude		-0.034***	-0.040***	-0.032***	-0.028***	-0.032***
		(0.009)	(0.010)	(0.009)	(0.009)	(0.010)
Mean temperature		-0.067***	-0.068***	-0.069***	-0.057***	-0.061***
		(0.018)	(0.020)	(0.018)	(0.018)	(0.021)
Temperature predictability		0.125	0.568	1.747	0.437	2.684
		(1.566)	(1.821)	(1.573)	(1.579)	(1.824)
Mean precipitation		0.001	0.000	-0.000	0.000	-0.001
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Precipitation predictability		-0.169	-0.341	-0.753	-0.131	-1.012
		(0.712)	(0.833)	(0.709)	(0.739)	(0.885)
Tropical climate	0.057	-0.069	-0.401	-0.265	-0.111	-0.555*
	(0.178)	(0.272)	(0.339)	(0.257)	(0.274)	(0.308)
Suitability for agriculture	-0.441***	-0.404***	-0.447***	-0.396***	-0.443***	-0.449***
	(0.147)	(0.149)	(0.168)	(0.142)	(0.150)	(0.160)
Distance to coast		0.009	0.009	0.010	0.008	0.006
		(0.012)	(0.014)	(0.011)	(0.012)	(0.013)
Slope		-0.045	-0.076*	-0.051	-0.040	-0.075*
		(0.036)	(0.041)	(0.035)	(0.037)	(0.041)
Ruggedness		0.207***	0.225***	0.213***	0.187***	0.216***
		(0.059)	(0.066)	(0.060)	(0.060)	(0.070)
Elevation		-0.025**	-0.019	-0.022**	-0.022**	-0.016
		(0.010)	(0.012)	(0.010)	(0.010)	(0.012)
Population			-0.013**			-0.016**
			(0.006)			(0.006)
Prop. of subsist. from herding				-0.017***		-0.017***
				(0.004)		(0.006)
Prop. of subsist. from hunting				0.018***		0.024***
				(0.005)		(0.006)
Prop. of subsist. from gathering				-0.008		-0.012**
				(0.006)		(0.005)
Patrilocal marriages					0.084	0.131
					(0.131)	(0.148)
Matrilocal marriages					0.209	0.106
					(0.216)	(0.218)
Nuclear family structure					-0.350***	-0.336***
					(0.120)	(0.123)
Extended family structure					-0.417***	-0.422***
					(0.097)	(0.104)
Constant	3.104***	4.786***	5.512***	4.019***	4.419***	4.270***
	(0.320)	(1.254)	(1.468)	(1.346)	(1.289)	(1.578)
Observations	489	489	382	489	486	379
R-squared	0.183	0.326	0.341	0.379	0.349	0.436
Adjusted R-squared	0.167	0.290	0.293	0.342	0.307	0.382

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C10: Regression analyses of maximal specifications including region fixed effects.

VARIABLES	Cousin marriage	Endogamy	Female premarital sex prohibitions	Female participation in agriculture
Partible inheritance by males only	0.067	-0.002	0.000	-0.166
	(0.080)	(0.048)	(0.050)	(0.101)
Partible inheritance by both sexes	0.238*	0.180*	0.180*	-0.246**
	(0.135)	(0.089)	(0.103)	(0.109)
Absence of private property	0.222	-0.064	0.084	0.278
	(0.169)	(0.054)	(0.085)	(0.171)
Traditional plough use	0.043	-0.022	0.108	-0.251
	(0.131)	(0.076)	(0.087)	(0.154)
Non-irrigated intensive agriculture	-0.273***	-0.047	-0.002	-0.236**
	(0.092)	(0.053)	(0.056)	(0.091)
Irrigated intensive agriculture	0.126	0.042	-0.021	-0.252
	(0.122)	(0.076)	(0.081)	(0.146)
Settlement complexity	0.024	0.037**	-0.013	-0.002
	(0.019)	(0.017)	(0.023)	(0.039)
Political hierarchies	0.161***	0.027	0.095***	-0.035
	(0.037)	(0.037)	(0.023)	(0.056)
Presence of large animals	-0.030	0.075	-0.054	-0.039
	(0.088)	(0.065)	(0.062)	(0.113)
Year society sampled	-0.000	0.000**	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Patrilineal descent	0.270**	-0.188**	0.051	0.245**
	(0.114)	(0.073)	(0.046)	(0.094)
Matrilineal descent	0.568***	-0.015	-0.125	0.307**
	(0.112)	(0.082)	(0.097)	(0.119)
Dowry	-0.166	0.156	0.064	0.326
	(0.266)	(0.093)	(0.134)	(0.192)
Bride price	-0.060	-0.077	0.004	0.134**
	(0.067)	(0.061)	(0.027)	(0.051)
Latitude	0.012	-0.001	-0.006	-0.021**
	(0.012)	(0.006)	(0.006)	(0.007)
Mean Temperature	-0.005	-0.006	-0.003	-0.012
	(0.015)	(0.007)	(0.012)	(0.012)
Temperature predictability	1.344	-0.014	-0.301	-1.614
	(1.561)	(1.066)	(1.241)	(1.187)
Mean precipitation	-0.002*	-0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Precipitation Predictability	0.805	0.120	-0.696**	-0.275
	(0.788)	(0.545)	(0.322)	(1.154)
Tropical climate	0.017	0.184**	-0.006	-0.079
	(0.176)	(0.077)	(0.149)	(0.342)
Suitability for agriculture	-0.146	0.037	0.231***	-0.281**
	(0.207)	(0.088)	(0.050)	(0.113)
Distance to coast	0.003	-0.002	0.002	0.007
	(0.010)	(0.007)	(0.005)	(0.010)
Slope	0.005	0.008	0.011	0.006
	(0.057)	(0.016)	(0.023)	(0.034)
Ruggedness	0.004	-0.024	0.019	0.137**
	(0.087)	(0.031)	(0.028)	(0.062)
Elevation	-0.014	-0.001	-0.005	-0.015**
	(0.009)	(0.004)	(0.005)	(0.007)
Constant	0.525	1.032	0.702	5.441***
	(1.623)	(0.858)	(0.670)	(1.150)
Region fixed effects	yes	yes	yes	yes
Observations	651	686	427	489
R-squared	0.349	0.213	0.215	0.435
Adjusted R-squared	0.305	0.163	0.132	0.383
Number of clusters	17	17	17	17

Robust standard errors, clustered at the region level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C11: Model specification Table (1), column (1) from Alesina et al. (2013), updated with new sample, inheritance systems, and maximal controls.

	Alesina et al. (2013)			Updated data			Restricted sample		
VARIABLES	N	mean	sd	N	mean	sd	N	mean	sd
Female participation in agriculture	660	3.036	1.018	713	3.000	1.036	489	2.881	0.985
Traditional plough use	660	0.186	0.390	713	0.198	0.399	489	0.252	0.434
Settlement complexity	660	5.877	1.691	713	5.928	1.650	489	5.980	1.581
Political hierarchies	660	2.111	1.108	713	2.181	1.165	489	2.344	1.235
Presence of large animals	660	0.835	0.372	713	0.837	0.369	489	0.908	0.289
Suitability for agriculture	660	0.469	0.384	713	0.349	0.312	489	0.369	0.307
Tropical climate	660	0.917	0.266	713	0.902	0.298	489	0.904	0.295

	Female participation in agriculture				
	(SD=1.018)	(SD=1.036)	(SD=0.985)	(SD=0.985)	(SD=0.985)
	(1)	(2)	(3)	(4)	(5)
VARIABLES	Alesina et al. (2013)	Updated data	Restricted sample	and Inheritance	Updated controls
Partible inheritance by males only				-0.244**	-0.190**
				(0.097)	(0.092)
Partible inheritance by both sexes				-0.570***	-0.278**
				(0.128)	(0.129)
Traditional plough use	-0.883***	-0.848***	-0.751***	-0.615***	-0.397***
	(0.114)	(0.107)	(0.120)	(0.119)	(0.146)
Absence of private property				yes	yes
Minimal controls	yes	yes	yes	yes	
Maximal controls					yes
Observations	660	713	489	489	489
R-squared	0.135	0.135	0.143	0.183	0.326

Regression 1 of the Table replicates the regression result by Alesina et al. (2013) using the same specification and data. The resulting coefficient for plough agriculture is the same as in Alesina et al. (2013). In column 2, I estimate the same regression specification, but using the version of the Ethnographic Atlas data used in this study. The coefficient is almost the same. In column 3, the sample is restricted to observations with available inheritance data. Plough agriculture remains significant, and the coefficient is not significantly different than column 2 (Wald test p-value=0.105). Column 4 introduces the controls for inheritance systems. Both plough use and partible inheritance by both sexes are significant. This decreases the coefficient on plough use (Wald test p-value=0.000) relative to column 3. Moreover, the coefficient of partible inheritance by both sexes is not significantly different than the coefficient of plough use (Wald test p-value=0.814). In regression 5, where I use maximal controls, the coefficient of partible inheritance by both sexes is still significant and not significantly different from the coefficient of plough use (Wald test p-value=0.566).

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C12: Regression analyses of minimal specifications using data from Alesina et al. (2013).

VARIABLES	Cousin marriage	Endogamy	Female premarital sex prohibition	Female participation in agriculture
Partible inheritance by males only	0.017	0.003	0.033	-0.299***
	(0.100)	(0.057)	(0.068)	(0.102)
Partible inheritance by both sexes	0.321**	0.353***	0.189**	-0.648***
	(0.154)	(0.084)	(0.088)	(0.128)
Absence of private property	0.140	0.093	0.140*	-0.008
	(0.126)	(0.073)	(0.080)	(0.154)
Historical plough use	0.205	0.106	0.184**	-0.636***
	(0.136)	(0.076)	(0.074)	(0.127)
Settlement patterns	0.028	0.018	-0.029**	-0.019
	(0.025)	(0.014)	(0.014)	(0.033)
Jurisdictional hierarchy	0.171***	0.026	0.100***	-0.035
	(0.044)	(0.026)	(0.026)	(0.044)
Presence of large animals	0.147	-0.049	-0.106	0.298*
	(0.121)	(0.067)	(0.074)	(0.163)
Tropical climate	0.270**	-0.032	0.021	-0.072
	(0.126)	(0.068)	(0.074)	(0.228)
Suitability for agriculture	-0.190*	-0.157***	0.033	-0.197*
	(0.102)	(0.061)	(0.069)	(0.118)
Constant	1.403***	1.635***	0.426***	3.324***
	(0.207)	(0.112)	(0.119)	(0.345)
Observations	619	651	388	461
R-squared	0.116	0.068	0.105	0.165
Adjusted R-squared	0.103	0.0554	0.0832	0.148

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C13: Regression analyses of maximal specifications with Conley standard errors adjusted for spatial correlation with cutoffs of 60 decimal degrees.

VARIABLES	Cousin marriage	Endogamy	Female premarital sex prohibition	Female participation in agriculture
Partible inheritance by males only	0.145	0.013	0.005	-0.190**
	(0.097)	(0.058)	(0.065)	(0.093)
Partible inheritance by both sexes	0.376***	0.233***	0.238***	-0.278**
	(0.137)	(0.080)	(0.090)	(0.133)
Absence of private property	yes	yes	yes	yes
Maximal controls	yes	yes	yes	yes
Observations	651	686	427	489
R-squared	0.870	0.914	0.615	0.930
Adjusted R-squared	0.865	0.911	0.591	0.926

Conley standard errors adjusted for spatial correlation in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table C14: Regression analyses of maximal specifications using ordered logistic model for regressions 1, 2, and 4, and binary logistic model for regression 3. Odds ratios are reported in the table.

VARIABLES	Cousin marriage	Endogamy	Female premarital sex prohibition	Female participation in agriculture
Partible inheritance by males only	1.346	1.025	1.003	0.651**
	(0.265)	(0.216)	(0.304)	(0.137)
Partible inheritance by both sexes	2.391**	2.494***	3.344***	0.506**
	(0.814)	(0.787)	(1.452)	(0.149)
Absence of private property	yes	yes	yes	yes
Maximal controls	yes	yes	yes	yes
Observations	651	686	427	489
Pseudo R-squared	0.095	0.090	0.136	0.144

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C15: Regression analyses distinguishing lineal and lateral inheritance systems.

	Cousin marriage		Endogamy		Female premarital sex prohibition		Female participation in agriculture	
VARIABLES	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Inheritance by both sons and daughters	0.627***	0.332**	0.355***	0.223***	0.138*	0.129*	-0.423***	-0.112
	(0.238)	(0.140)	(0.069)	(0.073)	(0.073)	(0.077)	(0.120)	(0.123)
Matrilineal heirs	0.868***	0.441***	0.056	-0.091	-0.225***	-0.220*	0.065	0.042
	(0.194)	(0.156)	(0.065)	(0.098)	(0.078)	(0.127)	(0.140)	(0.196)
Patrilineal heirs	0.382*	0.299**		-0.037	0.085	0.056	0.172	0.242
	(0.197)	(0.128)		(0.076)	(0.074)	(0.079)	(0.142)	(0.149)
Absence of private property	yes	yes	yes	yes	yes	yes	yes	yes
Minimal controls	yes		yes		yes		yes	
Maximal controls		yes		yes		yes		yes
Observations	677	677	714	714	442	442	516	516
R-squared		0.208		0.145	0.138	0.165	0.169	0.327
Adjusted R-squared	0.102	0.176	0.0597	0.113	0.118	0.113	0.153	0.291

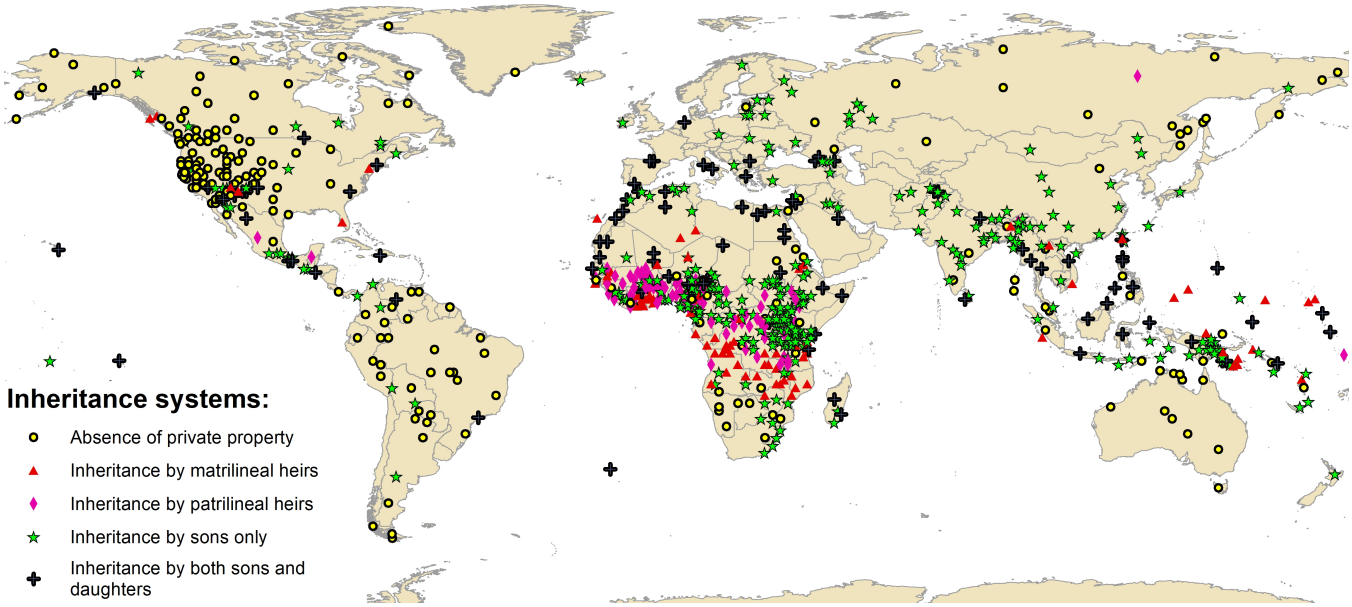


Figure shows inheritance systems of 856 Ethnographic Atlas societies, distinguishing lineal and lateral inheritance systems, and for the former, distinguishing female inclusion and female exclusion in inheritance. Lateral inheritance systems include inheritance by matrilineal or patrilineal heirs who take precedence over sons and daughters (indicator variables 3 and 4 below).

For the regression analysis, I define the following indicator variables based on entry EA074: 1- inheritance by both sons and daughters (categories 4 and 5); 2- inheritance by sons only (category 7); 3- inheritance by matrilineal heirs such as a sister's sons (categories 2, 3); 4- inheritance by patrilineal heirs such as younger brothers (category 6); and 5- no inheritance of real property (category 1).

Note that the omitted category in the regressions is inheritance by sons only, including both impartible and partible forms. With maximal controls, female inheritance is insignificant in the regression on female participation in agriculture. As noted before, partibility of inheritance is likely to have an effect on female participation in agriculture, which is not captured by this categorization. Interestingly, inheritance by matrilineal heirs is associated with higher cousin marriages but lower female premarital sex prohibitions.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C16: Descriptive statistics and ethnic-level regression analyses with the IFLS female adults sample.

VARIABLES	N	mean	sd
Endogamy	7,575	0.703	0.457
Arranged marriage	7,705	0.234	0.424
Self-employed	6,646	0.265	0.441
Public/private sector employee	6,646	0.207	0.405
Family worker	6,646	0.149	0.357
Female inheritance	7,705	0.842	0.364
Education	7,705	1.108	1.205
Urban	7,705	0.443	0.497
Age	7,705	41.448	15.687
Marriage age	7,705	20.121	5.783
Muslim	7,705	0.881	0.324
Protestant	7,705	0.044	0.205
Catholic	7,705	0.017	0.130
Hindu	7,705	0.056	0.231
Buddhist	7,705	0.002	0.039
Matrilineal	7,705	0.070	0.255
Bride price	7,705	0.075	0.264
Female–dominated agriculture	7,705	0.201	0.401

			Economic participation		
VARIABLES	Endogamy	Arranged marriage	Self	Public/Private	Family
Female inheritance	0.111***	0.063***	-0.086***	0.018	0.005
	(0.014)	(0.018)	(0.011)	(0.016)	(0.036)
Matrilineal	-0.019	0.166***	0.045**	-0.006	0.006
	(0.043)	(0.017)	(0.018)	(0.057)	(0.030)
Bride price	0.020	0.110***	0.054***	-0.134***	0.100***
	(0.024)	(0.019)	(0.016)	(0.014)	(0.027)
Female–dominated agriculture	-0.014	-0.067***	-0.042***	-0.023***	-0.032
	(0.022)	(0.008)	(0.008)	(0.005)	(0.026)
Protestant	-0.007	-0.094**	0.004	0.048	0.065
	(0.025)	(0.034)	(0.041)	(0.031)	(0.074)
Catholic	-0.054***	-0.047**	-0.101***	0.022	0.052
	(0.013)	(0.019)	(0.028)	(0.019)	(0.044)
Hindu	0.022	-0.035	-0.006	0.025	0.077***
	(0.053)	(0.029)	(0.025)	(0.039)	(0.017)
Other religions	-0.153	0.034	-0.065	-0.042	0.085
	(0.135)	(0.118)	(0.110)	(0.120)	(0.086)
Education	-0.049***	-0.029**	-0.018***	0.035***	-0.018***
	(0.004)	(0.011)	(0.004)	(0.008)	(0.003)
Urban	-0.098***	-0.053***	-0.005	0.049***	-0.132***
	(0.009)	(0.014)	(0.021)	(0.014)	(0.016)
Age	-0.001	0.009***	0.035***	0.023***	0.005***
	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)
Age^2	0.000	-0.000	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.004	-0.016***	-0.006*	0.009***	-0.008**
	(0.004)	(0.003)	(0.003)	(0.002)	(0.003)
Marriage age^2	0.000	0.000***	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Province FE	yes	yes	yes	yes	yes
Observations	7,575	7,705	6,645	6,645	6,645
R-squared	0.058	0.231	0.074	0.063	0.089
Number of clusters	12	12	12	12	12

OLS estimates are reported with robust standard errors, clustered at the ethnicity level, in parentheses.
***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C17: Ethnic-level logistic regression analyses with the IFLS female adults sample.

			Economic participation		
VARIABLES	Endogamy	Arranged marriage	Self	Public/Private	Family
Female inheritance	0.114***	0.088***	-0.083***	0.012	0.021
	(0.014)	(0.027)	(0.010)	(0.018)	(0.018)
Matrilineal	-0.007	0.183***	0.041**	0.007	0.073**
	(0.037)	(0.019)	(0.019)	(0.054)	(0.034)
Bride price	0.024	0.165***	0.050***	-0.124***	0.200***
	(0.022)	(0.027)	(0.017)	(0.008)	(0.043)
Female–dominated agriculture	-0.016	-0.080***	-0.046***	-0.022***	-0.061***
	(0.023)	(0.005)	(0.009)	(0.004)	(0.011)
Protestant	-0.007	-0.083***	0.001	0.046	0.090*
	(0.021)	(0.024)	(0.039)	(0.030)	(0.048)
Catholic	-0.049***	-0.044***	-0.091***	0.009	-0.007
	(0.013)	(0.013)	(0.027)	(0.020)	(0.021)
Hindu	0.019	-0.037	-0.006	0.018	0.051*
	(0.046)	(0.053)	(0.022)	(0.042)	(0.029)
Other religions	-0.162	-0.001	-0.051	-0.063	0.080
	(0.142)	(0.094)	(0.106)	(0.150)	(0.064)
Education	-0.045***	-0.036***	-0.017***	0.030***	-0.017***
	(0.004)	(0.009)	(0.004)	(0.008)	(0.003)
Urban	-0.100***	-0.054***	-0.005	0.049***	-0.088***
	(0.009)	(0.008)	(0.021)	(0.017)	(0.009)
Age	-0.001	0.014***	0.043***	0.025***	0.004**
	(0.001)	(0.001)	(0.003)	(0.002)	(0.002)
Age^2	0.000	-0.000***	-0.000***	-0.000***	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.004	-0.012***	-0.004	0.012***	0.003
	(0.005)	(0.002)	(0.003)	(0.002)	(0.003)
Marriage age^2	0.000	0.000***	0.000	-0.000***	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Province FE	yes	yes	yes	yes	yes
Observations	7,575	7,705	6,645	6,645	5,173
Pseudo R-squared	0.0473	0.236	0.0706	0.0653	0.151
Number of clusters	12	12	12	12	10

Average marginal effects of logit estimates are reported with robust delta method standard errors, clustered at the ethnicity level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C18: Ethnic-level regression analyses of the IFLS male adults sample.

			Economic participation		
VARIABLES	Endogamy	Arranged marriage	Self	Public/Private	Family
Female inheritance	-0.018	0.023*	-0.022	0.041	-0.006
	(0.019)	(0.012)	(0.025)	(0.029)	(0.003)
Matrilineal	-0.042*	0.081***	0.022	-0.035	-0.004
	(0.020)	(0.018)	(0.057)	(0.076)	(0.010)
Bride price	-0.011	0.056***	0.078**	-0.094**	0.004
	(0.028)	(0.012)	(0.027)	(0.031)	(0.002)
Female–dominated agriculture	-0.017	-0.039***	-0.030***	0.039***	-0.011***
	(0.011)	(0.004)	(0.007)	(0.006)	(0.002)
Protestant	0.017	-0.057**	-0.017	-0.011	0.023**
	(0.019)	(0.025)	(0.027)	(0.037)	(0.008)
Catholic	-0.059*	-0.039	-0.052	0.047	-0.002
	(0.027)	(0.042)	(0.038)	(0.041)	(0.010)
Hindu	0.138***	0.001	-0.144***	0.113*	-0.004
	(0.021)	(0.068)	(0.036)	(0.052)	(0.004)
Other religions	0.114	-0.015	0.424**	-0.361*	-0.016**
	(0.111)	(0.216)	(0.185)	(0.189)	(0.007)
Education	-0.041***	-0.019***	-0.056***	0.056***	-0.002*
	(0.003)	(0.005)	(0.010)	(0.011)	(0.001)
Urban	-0.114***	-0.035***	-0.176***	0.176***	-0.012**
	(0.009)	(0.004)	(0.019)	(0.015)	(0.004)
Age	-0.003	0.003	0.017***	0.005*	-0.009***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Age^2	0.000	0.000**	-0.000***	-0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.008***	-0.003	0.006*	-0.003	0.000
	(0.001)	(0.003)	(0.004)	(0.006)	(0.001)
Marriage age^2	0.000***	0.000	-0.000**	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Province FE	yes	yes	yes	yes	yes
Observations	6,045	6,116	5,180	5,180	5,180
R-squared	0.083	0.130	0.123	0.126	0.016
Number of clusters	12	12	11	11	11

OLS estimates are reported with robust standard errors, clustered at the ethnicity level, in parentheses.
***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C19: Ethnic-level logistic regression analyses of the IFLS male adults sample.

			Economic participation		
VARIABLES	Endogamy	Arranged marriage	Self	Public/Private	Family
Female inheritance	-0.029	0.042***	-0.020	0.039	0.001
	(0.025)	(0.016)	(0.023)	(0.028)	(0.008)
Matrilineal	-0.034*	0.097***	0.022	-0.032	-0.021**
	(0.019)	(0.032)	(0.056)	(0.075)	(0.010)
Bride price	-0.025	0.104***	0.077***	-0.091***	0.008
	(0.036)	(0.018)	(0.025)	(0.030)	(0.020)
Female–dominated agriculture	-0.017*	-0.053***	-0.032***	0.040***	-0.007
	(0.010)	(0.004)	(0.007)	(0.006)	(0.009)
Protestant	0.028*	-0.049***	-0.018	-0.016	0.034*
	(0.016)	(0.018)	(0.029)	(0.041)	(0.019)
Catholic	-0.052*	-0.030	-0.054	0.048	
	(0.028)	(0.025)	(0.040)	(0.042)	
Hindu	0.153***	0.035	-0.143***	0.112**	0.002
	(0.018)	(0.170)	(0.030)	(0.049)	(0.011)
Other religions	0.105	-0.002	0.413***	-0.354**	
	(0.107)	(0.182)	(0.149)	(0.149)	
Education	-0.039***	-0.024***	-0.055***	0.054***	-0.007
	(0.005)	(0.002)	(0.010)	(0.010)	(0.006)
Urban	-0.111***	-0.034***	-0.176***	0.176***	-0.035***
	(0.009)	(0.007)	(0.018)	(0.015)	(0.004)
Age	-0.004	0.010***	0.016***	0.006***	-0.012***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.004)
Age^2	0.000	-0.000***	-0.000***	-0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.008***	-0.002*	0.007*	-0.003	0.007**
	(0.002)	(0.001)	(0.004)	(0.006)	(0.003)
Marriage age^2	0.000***	0.000	-0.000***	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Province FE	yes	yes	yes	yes	yes
Observations	6,045	6,116	5,180	5,180	3,443
Pseudo R-squared	0.0717	0.172	0.0942	0.0967	0.180
Number of clusters	12	12	11	11	9

Average marginal effects of logit estimates are reported with robust delta method standard errors, clustered at the ethnicity level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C20: Descriptive statistics and individual-level regression analyses with the IFLS female adults sample.

VARIABLES	N	mean	sd
Endogamy	4,231	0.741	0.438
Arranged marriage	4,289	0.381	0.486
Self-employed	3,656	0.272	0.445
Public/private sector employee	3,656	0.144	0.351
Family worker	3,656	0.140	0.347
Inheritance dummy	4,289	0.334	0.472
Muslim	4,289	0.869	0.337
Protestant	4,289	0.047	0.212
Catholic	4,289	0.023	0.150
Hindu	4,289	0.041	0.198
Other religions	4,289	0.020	0.139
Education	4,289	0.594	0.941
Urban	4,289	0.465	0.499
Age	4,289	45.717	13.686
Marriage age	4,289	18.994	5.895

					Economic participation					
	Endogamy		Arranged marriage		Self		Private/Public		Family	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Inheritance	0.050***	0.053***	0.035**	0.036**	0.029	0.023	-0.006	-0.006	0.007	0.010
	(0.015)	(0.017)	(0.015)	(0.017)	(0.019)	(0.020)	(0.013)	(0.015)	(0.012)	(0.013)
Protestant	-0.126**	-0.133**	-0.081**	-0.075*	0.016	0.042	-0.046	-0.046	0.079***	0.062
	(0.054)	(0.066)	(0.037)	(0.044)	(0.059)	(0.069)	(0.036)	(0.041)	(0.030)	(0.041)
Catholic	-0.015	-0.051	-0.028	0.030	0.037	0.061	-0.122***	-0.103*	0.031	0.032
	(0.071)	(0.081)	(0.056)	(0.053)	(0.071)	(0.082)	(0.043)	(0.057)	(0.036)	(0.050)
Hindu	-0.163**	-0.220***	-0.056	0.024	-0.023	0.102	-0.026	0.042	0.037	0.092
	(0.068)	(0.063)	(0.078)	(0.135)	(0.123)	(0.140)	(0.072)	(0.085)	(0.027)	(0.068)
Other religions	-0.099	-0.182***	0.085	0.173**	-0.016	-0.048	-0.117***	-0.062	0.170**	0.184**
	(0.070)	(0.067)	(0.067)	(0.084)	(0.058)	(0.078)	(0.044)	(0.070)	(0.068)	(0.089)
Education	-0.034***	-0.028**	-0.050***	-0.053***	-0.029***	-0.032***	0.054***	0.066***	-0.020***	-0.022***
	(0.011)	(0.012)	(0.008)	(0.009)	(0.009)	(0.010)	(0.011)	(0.012)	(0.006)	(0.007)
Age	0.003	0.005	0.010***	0.011***	0.021***	0.018***	0.014***	0.015***	0.010**	0.010*
	(0.003)	(0.004)	(0.003)	(0.004)	(0.006)	(0.006)	(0.004)	(0.005)	(0.004)	(0.005)
Age^2	-0.000	-0.000	-0.000	-0.000	-0.000***	-0.000**	-0.000***	-0.000***	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.007	-0.008*	-0.016***	-0.014***	-0.002	-0.001	0.010**	0.008*	-0.007*	-0.007*
	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)	(0.007)	(0.005)	(0.005)	(0.004)	(0.004)
Marriage age^2	0.000	0.000	0.000**	0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Community FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Ethnicity FE		yes		yes		yes		yes		yes
Observations	4,231	3,615	4,289	3,657	3,656	3,269	3,656	3,269	3,656	3,269
R-squared	0.179	0.202	0.382	0.394	0.161	0.175	0.194	0.211	0.338	0.350
Number of clusters	312	310	312	310	311	309	311	309	311	309

OLS estimates are reported with robust standard errors, clustered at the community level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C21: Individual-level logistic regression analyses with the IFLS female adults sample.

					Economic participation					
	Endogamy		Arranged marriage		Self		Private/Public		Family	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Inheritance	0.053***	0.058***	0.036**	0.040**	0.030	0.023	-0.005	-0.005	0.015	0.010
	(0.014)	(0.016)	(0.015)	(0.018)	(0.019)	(0.017)	(0.012)	(0.012)	(0.024)	(0.010)
Protestant	-0.096**	-0.108*	-0.107**	-0.099*	0.019	0.045	-0.039*	-0.044	0.223**	0.072
	(0.046)	(0.057)	(0.048)	(0.057)	(0.063)	(0.068)	(0.023)	(0.027)	(0.088)	(0.050)
Catholic	-0.006	-0.034	-0.038	0.024	0.046	0.059	-0.088***	-0.089***	0.105	0.024
	(0.054)	(0.062)	(0.063)	(0.064)	(0.078)	(0.074)	(0.020)	(0.021)	(0.126)	(0.061)
Hindu	-0.156**	-0.244***	-0.067	0.035	-0.021	0.103	-0.009	0.116	0.162	0.066
	(0.069)	(0.078)	(0.119)	(0.447)	(0.102)	(0.127)	(0.050)	(0.143)	(0.158)	(0.100)
Other religions	-0.079	-0.161**	0.086	0.184**	-0.013	-0.041	-0.111***	-0.091	0.417***	0.275***
	(0.062)	(0.067)	(0.065)	(0.090)	(0.057)	(0.064)	(0.026)	(0.060)	(0.095)	(0.090)
Education	-0.028***	-0.023**	-0.062***	-0.069***	-0.033***	-0.034***	0.043***	0.052***	-0.064***	-0.032***
	(0.009)	(0.009)	(0.009)	(0.011)	(0.010)	(0.009)	(0.008)	(0.007)	(0.018)	(0.008)
Age	0.003	0.005	0.012***	0.013***	0.024***	0.021***	0.015***	0.014***	0.024**	0.010**
	(0.003)	(0.004)	(0.003)	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)	(0.010)	(0.004)
Age^2	-0.000	-0.000	-0.000	-0.000	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.007	-0.009	-0.016***	-0.015***	-0.002	-0.001	0.012**	0.010**	-0.014**	-0.007**
	(0.005)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.003)
Marriage age^2	0.000	0.000	0.000**	0.000*	-0.000	-0.000	-0.000*	-0.000	0.000*	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	4,054	3,405	3,944	3,216	3,418	2,974	2,665	2,308	2,033	1,761
Community FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Ethnicity FE		yes		yes		yes		yes		yes
Pseudo R-squared	0.146	0.160	0.300	0.298	0.117	0.122	0.145	0.158	0.217	0.221
Number of clusters	297	290	279	262	280	270	212	205	153	143

Average marginal effects of logit estimates are reported with robust delta method standard errors, clustered at the community level, in parentheses.
***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C22: Descriptive statistics and individual-level regression analyses with the IFLS male adults sample.

VARIABLES	N	mean	sd
Endogamy	3,702	0.737	0.441
Arranged marriage	3,776	0.240	0.427
Self-employed	3,059	0.524	0.500
Public/private sector employee	3,059	0.429	0.495
Family worker	3,059	0.006	0.079
Inheritance	3,776	0.399	0.490
Muslim	3,776	0.866	0.341
Protestant	3,776	0.051	0.219
Catholic	3,776	0.021	0.144
Hindu	3,776	0.045	0.207
Other religions	3,776	0.017	0.131
Education	3,776	0.952	1.131
Urban	3,776	0.470	0.499
Age	3,776	47.975	13.371
Marriage age	3,776	24.510	7.029

					Economic participation					
	Endogamy		Arranged marriage		Self		Private/Public		Family	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Inheritance	0.065***	0.058***	0.020	0.009	0.041**	0.039*	-0.038**	-0.041*	0.002	0.001
	(0.015)	(0.018)	(0.014)	(0.016)	(0.019)	(0.022)	(0.019)	(0.021)	(0.003)	(0.003)
Protestant	-0.039	-0.061	-0.017	-0.008	0.180***	0.171**	-0.164***	-0.163**	-0.001	-0.002
	(0.056)	(0.073)	(0.039)	(0.048)	(0.055)	(0.071)	(0.058)	(0.070)	(0.003)	(0.003)
Catholic	-0.101	-0.166*	-0.065	-0.028	0.093	0.062	-0.107	-0.081	-0.002	-0.001
	(0.079)	(0.096)	(0.056)	(0.056)	(0.064)	(0.081)	(0.069)	(0.086)	(0.002)	(0.003)
Hindu	0.050	0.190	-0.095	-0.086	0.025	0.188	-0.015	-0.064	0.000	0.002
	(0.174)	(0.155)	(0.071)	(0.099)	(0.138)	(0.268)	(0.119)	(0.204)	(0.001)	(0.002)
Other religions	0.080	-0.006	-0.101	-0.078	0.189**	0.130	-0.253***	-0.138	-0.000	0.001
	(0.062)	(0.102)	(0.066)	(0.073)	(0.093)	(0.102)	(0.091)	(0.104)	(0.001)	(0.002)
Education	-0.032***	-0.029***	-0.026***	-0.022***	-0.095***	-0.103***	0.091***	0.103***	-0.001	-0.001
	(0.009)	(0.010)	(0.007)	(0.008)	(0.010)	(0.011)	(0.010)	(0.011)	(0.001)	(0.001)
Age	0.002	0.003	0.007**	0.009**	0.011	0.008	0.008	0.010	-0.003	-0.003*
	(0.004)	(0.005)	(0.003)	(0.004)	(0.008)	(0.009)	(0.009)	(0.009)	(0.002)	(0.002)
Age^2	-0.000	-0.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.005	-0.004	-0.006	-0.010*	0.001	-0.003	-0.001	0.003	0.001*	0.001
	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)	(0.006)	(0.005)	(0.006)	(0.001)	(0.001)
Marriage age^2	0.000	0.000	0.000	0.000	-0.000	0.000	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Community FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Ethnicity FE		yes		yes		yes		yes		yes
Observations	3,702	3,018	3,776	3,073	3,059	2,612	3,059	2,612	3,059	2,612
R-squared	0.180	0.197	0.301	0.307	0.348	0.373	0.346	0.372	0.121	0.119
Number of clusters	312	311	312	311	312	311	312	311	312	311

OLS estimates are reported with robust standard errors, clustered at the community level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C23: Individual-level logistic regression analyses with the IFLS male adults sample.

					Economic participation					
	Endogamy		Arranged marriage		Self		Private/Public		Family	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Inheritance	0.066***	0.057***	0.029*	0.015	0.046**	0.041**	-0.040**	-0.047**		
	(0.014)	(0.017)	(0.017)	(0.017)	(0.019)	(0.019)	(0.019)	(0.019)		
Protestant	-0.028	-0.037	-0.001	-0.002	0.188***	0.187***	-0.161***	-0.177***		
	(0.049)	(0.061)	(0.064)	(0.071)	(0.048)	(0.061)	(0.047)	(0.056)		
Catholic	-0.093	-0.154*	-0.066	-0.007	0.085	0.069	-0.089	-0.086		
	(0.078)	(0.092)	(0.065)	(0.067)	(0.073)	(0.083)	(0.068)	(0.083)		
Hindu	0.046	0.169*	-0.135	-0.088	0.022	0.169	0.026	0.022		
	(0.151)	(0.090)	(0.107)	(0.115)	(0.146)	(0.239)	(0.132)	(0.194)		
Other religions	0.068	0.007	-0.122	-0.095	0.187**	0.147*	-0.235***	-0.167*		
	(0.047)	(0.088)	(0.091)	(0.101)	(0.080)	(0.084)	(0.069)	(0.087)		
Education	-0.031***	-0.026***	-0.040***	-0.033***	-0.098***	-0.111***	0.089***	0.109***		
	(0.008)	(0.009)	(0.010)	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)		
Age	0.002	0.003	0.017***	0.019***	0.014	0.011	0.008	0.011		
	(0.004)	(0.005)	(0.005)	(0.005)	(0.009)	(0.009)	(0.009)	(0.009)		
Age^2	-0.000	-0.000	-0.000*	-0.000**	-0.000	-0.000	-0.000	-0.000*		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Marriage age	-0.005	-0.003	-0.008*	-0.009*	0.001	-0.004	0.000	0.004		
	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)		
Marriage age^2	0.000	0.000	0.000	0.000	-0.000	0.000	0.000	-0.000		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Community FE	yes	yes	yes	yes	yes	yes	yes	yes		
Ethnicity FE		yes		yes		yes		yes		
Observations	3,406	2,731	3,115	2,334	2,729	2,291	2,731	2,263		
Pseudo R-squared	0.131	0.143	0.235	0.228	0.225	0.242	0.233	0.241		
Number of clusters	283	274	243	216	267	256	269	255		

Average marginal effects of logit estimates are reported with robust delta method standard errors, clustered at the community level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels. In regressions 9 and 10, many observations dropped because of collinearity in the logit estimation.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C24: Individual-level regression analyses with the IFLS full sample using pre- and post-marriage inheritance indicators.

VARIABLES	N	mean	sd
Endogamy	7,933	0.739	0.439
Arranged marriage	8,065	0.315	0.465
Inheritance dummy	8,065	0.364	0.481
Post-marriage inheritance	8,065	0.198	0.399
Pre-marriage inheritance	8,065	0.166	0.372
Muslim	8,065	0.868	0.339
Protestant	8,065	0.049	0.216
Catholic	8,065	0.022	0.147
Hindu	8,065	0.043	0.202
Other religions	8,065	0.019	0.135
Education	8,065	0.762	1.050
Urban	8,065	0.467	0.499
Age	8,065	46.774	13.586
Marriage age	8,065	21.577	7.013
Male	8,065	0.468	0.499

	Endogamy				Arranged marriage			
VARIABLES	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Inheritance	0.066***	0.067***			0.034***	0.029***		
	(0.010)	(0.012)			(0.010)	(0.011)		
Post-marriage inheritance			0.057***	0.056***			0.028**	0.025*
			(0.013)	(0.015)			(0.013)	(0.014)
Pre-marriage inheritance			0.077***	0.080***			0.042***	0.035**
			(0.012)	(0.014)			(0.012)	(0.014)
Protestant	-0.072**	-0.087*	-0.073**	-0.088**	-0.054*	-0.051	-0.055*	-0.051
	(0.036)	(0.044)	(0.035)	(0.044)	(0.029)	(0.032)	(0.029)	(0.032)
Catholic	-0.061	-0.090	-0.062	-0.090	-0.048	0.002	-0.049	0.001
	(0.052)	(0.063)	(0.052)	(0.063)	(0.044)	(0.032)	(0.044)	(0.032)
Hindu	-0.064	-0.034	-0.065	-0.035	-0.085	-0.040	-0.086	-0.040
	(0.103)	(0.081)	(0.103)	(0.082)	(0.066)	(0.101)	(0.066)	(0.101)
Other religions	-0.020	-0.076	-0.021	-0.077	0.002	0.064	0.002	0.064
	(0.054)	(0.062)	(0.054)	(0.062)	(0.050)	(0.059)	(0.050)	(0.059)
Education	-0.028***	-0.023***	-0.028***	-0.023***	-0.034***	-0.036***	-0.034***	-0.035***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)
Male	0.014	0.012	0.015	0.013	-0.112***	-0.114***	-0.112***	-0.114***
	(0.014)	(0.015)	(0.014)	(0.015)	(0.010)	(0.011)	(0.010)	(0.011)
Age	0.002	0.004	0.003	0.004	0.010***	0.010***	0.010***	0.010***
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
Age^2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Marriage age	-0.008***	-0.007**	-0.008***	-0.007**	-0.015***	-0.016***	-0.015***	-0.016***
	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Marriage age^2	0.000**	0.000	0.000**	0.000	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Community FE	yes	yes	yes	yes	yes	yes	yes	yes
Ethnicity FE		yes		yes		yes		yes
Observations	7,933	6,633	7,933	6,633	8,065	6,730	8,065	6,730
R-squared	0.117	0.127	0.117	0.127	0.336	0.342	0.336	0.342
Number of clusters	312	311	312	311	312	311	312	311

OLS estimates are reported with robust standard errors, clustered at the community level, in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C25: Descriptive statistics of analyses with the NFHS female adults.

VARIABLES	N	mean	sd
Cousin marriage	461,746	0.060	0.237
Subject to amendment	461,746	0.279	0.449
Hindu	461,746	0.825	0.380
Muslim	461,746	0.098	0.297
Christian	461,746	0.077	0.267
First marriage year	461,746	1,997.6	12.182
Caste	461,746	0.177	0.381
Tribe	461,746	0.187	0.390
Education	461,746	1.124	1.033
Wealth	461,746	2.900	1.430
Urban	461,746	0.272	0.445

The sample includes ever married women. Dummy variable "Cousin marriage" takes value 1 if a woman's husband in her first marriage is a blood relative, and takes value 0 otherwise. Dummy variable "Hindu" takes value 1 if the respondent is Hindu, Sikh, Jain, or Buddhist, and takes value 0 if the respondent is Muslim and Christian. Dummy variable "Caste/Tribe" takes value 1 if the respondent is a member of a scheduled caste/tribe, and takes value 0 otherwise. Education takes values 1 to 4 for no education, primary education, secondary education, and higher education respectively. Wealth takes values 1 to 5 for the poorest to the richest quintile respectively. Dummy variable "Urban" takes value 1 if the respondent resides in a urban region, and takes value 0 if the respondent resides in a rural region.

VARIABLES	N	mean	sd
Premarital sex	419,252	0.096	0.295
Subject to amendment	419,252	0.297	0.457
Hindu	419,252	0.829	0.376
Muslim	419,252	0.099	0.299
Christian	419,252	0.072	0.258
First marriage year	419,252	1,999.8	9.8
Caste	419,252	0.187	0.390
Tribe	419,252	0.179	0.383
Education	419,252	1.200	1.035
Wealth	419,252	2.934	1.436
Urban	419,252	0.287	0.452

The sample includes currently married women. Dummy variable "Premarital sex" takes value 1 if a woman had her first sexual intercourse before her first union (with a husband), and takes value 0 if she had her first sexual intercourse at or after her first union or if she never had sex with her first husband. Dummy variable "Caste/Tribe" takes value 1 if the respondent is a member of a scheduled caste/tribe, and takes value 0 otherwise. Education takes values 1 to 4 for no education, primary education, secondary education, and higher education respectively. Wealth takes values 1 to 5 for the poorest to the richest quintile respectively. Dummy variable "Urban" takes value 1 if the respondent resides in a urban region, and takes value 0 if the respondent resides in a rural region.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C26: Individual-level regression analyses with the NFHS female adults.

	Cousin marriage				Premarital sex			
VARIABLES	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Subject to amendment	0.015***	0.014***	0.012***	0.012***	-0.038***	-0.037***	-0.012***	-0.012***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Hindu	-0.079***	-0.119***	-0.099***	-0.099***	-0.020***	0.004*	0.004	0.004
	(0.002)	(0.003)	(0.009)	(0.009)	(0.002)	(0.002)	(0.007)	(0.007)
Marriage year FE	yes	yes	yes	yes	yes	yes	yes	yes
State FE		yes	yes	yes		yes	yes	yes
State × Marriage year FE			yes	yes			yes	yes
State × Hindu FE			yes	yes			yes	yes
Survey round FE				yes				yes
Caste				0.000				-0.000
				(0.001)				(0.001)
Tribe				0.001				-0.000
				(0.002)				(0.002)
Education				-0.001				-0.005***
				(0.000)				(0.001)
Wealth				0.001				-0.003***
				(0.000)				(0.001)
Urban				0.000				-0.007***
				(0.001)				(0.002)
Observations	461,746	461,746	461,746	461,746	419,252	419,252	419,252	419,252
R-squared	0.015	0.043	0.056	0.056	0.007	0.054	0.063	0.071
Number of clusters	22,751	22751	22751	22751	25131	25131	25131	25131

OLS estimates are reported with robust standard errors in parentheses, clustered at the level of the primary sampling unit in regressions 2. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C27: Individual-level regression analyses with the NFHS female adults with standard errors clustered at state level, and both state and religion levels.

	Cousin marriage		Premarital sex	
VARIABLES	(1)	(2)	(1)	(2)
Subject to amendment	0.012***	0.012***	-0.012**	-0.012***
	(0.004)	(0.004)	(0.005)	(0.004)
Hindu	-0.099***	-0.099***	0.004**	0.004
	(0.001)	(0.004)	(0.002)	(0.005)
Marriage year FE	yes	yes	yes	yes
State FE	yes	yes	yes	yes
State × Marriage year FE	yes	yes	yes	yes
State × Hindu	yes	yes	yes	yes
Individual-level controls	yes	yes	yes	yes
Observations	461,746	461,746	419,252	419,252
R-squared	0.056	0.056	0.071	0.071
Number of clusters	29	29 & 6	29	29 & 6
Wald test of H0: $\beta_1 = 0$	$t(28) = 3.073$	$t(5) = 3.183$	$t(28) = -2.347$	$t(5) = -4.449$
(wild cluster bootstrap)	$Prob > \|t\| = 0.028$	$Prob > \|t\| = 0.096$	$Prob > \|t\| = 0.002$	$Prob > \|t\| = 0.004$

OLS estimates are reported with robust standard errors in parentheses, clustered at the state level in regressions 1, and clustered at the level of the primary sampling unit in regressions 2. Individual-level controls include caste, tribe, and urban dummy variables; education and wealth; and survey round fixed effects. ***, **, and * indicate significance at the 1, 5, and 10% levels. Using one-way (state level)/two-way (state and religion levels) wild cluster bootstrap with 500 replications after regression (1)/(2), the Wald test rejects the null hypothesis of H0: $\beta_1 = 0$, that is, the coefficient of exposure to the amendment is significant at 5% or 10% levels. Religion level clusters are defined using six groups of Hindus, Sikhs, Jains, Buddhists, Christians, and Muslims. In a difference in differences setup, "wild cluster bootstrap methods perform well in cases with as few as six clusters" (Cameron et al., 2008, p.422). Wild test bootstrap is performed using *boottest* (Roodman et al., 2018).

Electronic copy available at: https://ssrn.com/abstract=3250395

Table C28: Individual-level regression analyses with the NFHS female adults using birth year fixed effects, and full sample.

	Cousin marriage		Premarital sex	
VARIABLES	(1)	(2)	(1)	(2)
Subject to amendment	0.012***	0.009***	-0.013***	-0.012***
	(0.004)	(0.003)	(0.003)	(0.003)
Hindu	-0.096***	-0.039	-0.007	-0.002
	(0.009)	(0.026)	(0.007)	(0.023)
Marriage year FE	yes	yes	yes	yes
State FE	yes	yes	yes	yes
State × Marriage year FE	yes	yes	yes	yes
State × Hindu	yes	yes	yes	yes
Individual-level controls	yes	yes	yes	yes
Birth year FE	yes		yes	
State × Birth year FE	yes		yes	
Observations	461,746	577,776	419,252	522,637
R-squared	0.061	0.119	0.114	0.069
Number of clusters	22751	28438	25131	31898

Estimates are reported with robust standard errors, clustered at the level of the primary sampling unit, in parentheses. Regression 1 reports results for states that locally passed similar amendments in the past. Regressions 2 reports results for all Indian states. Individual-level controls include caste, tribe, and urban dummy variables; education and wealth; and survey round fixed effects. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Table C29: Individual-level regression analyses with the NFHS female adults using instrumental variable and age cohort comparison approaches.

	Cousin marriage		Premarital sex	
VARIABLES	(1)	(2)	(1)	(2)
Subject to amendment	0.015***	0.015***	-0.011***	-0.071***
	(0.005)	(0.003)	(0.004)	(0.003)
Hindu	-0.100***	-0.105***	0.004	0.024***
	(0.009)	(0.010)	(0.007)	(0.008)
Marriage year FE	yes	yes	yes	yes
State FE	yes	yes	yes	yes
State × Marriage year FE	yes	yes	yes	yes
State × Hindu FE	yes	yes	yes	yes
Individual-level controls	yes	yes	yes	yes
Observations	461,746	323,895	419,252	278,676
R-squared	0.056	0.060	0.071	0.087
Number of clusters	22751	22712	25131	25051

Estimates are reported with robust standard errors, clustered at the level of the primary sampling unit, in parentheses. Regression 1 reports results from instrumental variable estimations. Regression 2 reports results from OLS estimations in which the treated group includes *Hindu* women aged 14 or younger in 2005, and the control group includes women (of all religions) aged 24 or older in 2005. ***, **, and * indicate significance at the 1, 5, and 10% levels.

Electronic copy available at: https://ssrn.com/abstract=3250395