

Why Marry A Cousin? Insights from Bangladesh

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1. Introduction

The practice of consanguineous marriage, or marriage between close biological relatives, shows significant heterogeneity across the world (Bittles, 1994; Bittles and Hussain 2000).¹ While such marriages are legal in the Middle East, Africa, the UK and Australia, they are prohibited by law in China, some parts of Europe, and the United States.² Prohibitions also vary by religion. While consanguineous marriages are permitted within Islam, Buddhism and Zoroastrianism, they are forbidden by Christian Orthodox churches and require special permission for members of the Roman Catholic church.

The variations in legislative and religious rules are also reflected in the prevalence of consanguineous marriage across regions. In the western world, consanguineous marriages currently constitute less than 1% of total marriages, but this practice remains widely prevalent in many other places. Estimates range from 30—50% in Middle Eastern countries, 20--40% in North Africa, and 10—20% in South Asia (Kapadia 1958: 117-137; Naderi 1979; Maian and Mushtaq 1994; Bittles 1998; Bittles, 2001; Bittles 2008). There is also significant variation within countries. In India for example, the National Family Health Survey 1992-93 (IIPS and ORC Macro International 1995) reveals that 16% of marriages are consanguineous marriages, but that this varies from 6% in the north to 36% in the south (Banerjee and Roy 2002: 22). Some new research also suggests that the practice is growing in popularity in Western countries, particularly in migrant communities (Bittles, 2001).

Most of research on consanguinity falls into two categories. The first branch of the literature focuses on biological determinants of consanguineous marriages. This research shows that when practiced over

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¹ In the field of clinical genetics, a consanguineous marriage is defined as "a union between a couple related as second cousins or closer, equivalent to a coefficient of inbreeding in their progeny of $F \geq 0.0156$ " (Bittles, 2001). This is the probability that two homologous alleles in an individual are identical by descent from a recent common ancestor. This means that children of such marriages are predicted to inherit copies of identical genes from each parent, which are 1.56 percent of all gene loci over and above the baseline level of homozygosity in the population at large; the closer the parents, the larger the coefficient of inbreeding.

² Marriage between first cousins is regarded as illegal in 31 American states and criminal offences in 8 additional states (Ottenheimer 1990). In China, a law passed in 1981 prohibits marriage between couples related as first cousins or closer all across the country (Bittles, 2001).

several generations, consanguinity translates into higher risks of congenital malformations in offspring and as a result higher levels of infant and child mortality and morbidity (Schull 1959, and Bittles 1994).³ Consanguineous marriage has also been linked to distinctive reproductive behavior – lower ages at first marriage, lower ages at first birth and higher levels of fertility (Bittles 1998 and 2001).

The second branch of the literature on consanguinity is best described as anthropological or sociological in nature. This literature clearly documents the social, cultural and religious aspects of this form of marriage within different countries. This literature provided rich insights into some of the advantages of such marriage arrangements for families: the preservation of tradition; the consolidation of family structure and property; the strengthening of family ties and avoidance of dowry or bridewealth payments (Bittles 1994; Hussain 1999).

In recent years, economists have increasingly studied marriage practices and marriage markets, using a variety of theoretical and empirical approaches. Central to these models is the recognition that marriage decisions typically involve tradeoffs between costs and benefits for an individual as well as the family. The approach that models these tradeoffs was initially pioneered by Gary Becker (1973) and has since been used to explain marriage-choices across the world in many contexts (Anderson 2007, Becker 1973, Becker 1991, Bloch and Rao 2002, Jacoby and Mansuri 2006, Rao 1993, Zhang and Chan 1999). This literature has so far suggested that many aspects of marriage decisions – the timing of marriage, characteristics of a partner, marriage payments, and divorce decisions and even the risks of violence in marriage – can in fact be linked to a careful analysis of the costs versus benefits of these actions. Moreover, this research has shown that marriage decisions are also affected by the characteristics of marriage markets. For example, when markets are “incomplete”, i.e. two families cannot credibly commit to some type of future behavior (such as ensuring no violence towards a bride), certain types of marriages --- such as watta satta marriages, or the exchange of sisters between families -- become more likely than others (Jacoby and Mansuri, 2006). In particular, a recent paper by Do, Iyer and Joshi (2009)

³ This is now understood to be the result of a greater probability of inheriting a recessive gene in such marriages. The extent to which this view shaped perceptions regarding consanguinity even before the genetic link was uncovered is evident in a 5 March 1810 in a letter by Thomas Jefferson to the Governor of New Hampshire John Langdon. He wrote that "The practice of Kings marrying only in the families of Kings, has been that of Europe for some centuries. Now, take any race of animals, confine them in idleness and inaction, whether in a sty, a stable or a state-room, pamper them with high diet, gratify all their sexual appetites, immerse them in sensualities, nourish their passions, let everything bend before them, and banish whatever might lead them to think, and in a few generations they become all body and no mind; and this, too, by a law of nature, by that very law by which we are in the constant practice of changing the characters and propensities of the animals we raise for our own purposes. Such is the regimen in raising Kings, and in this way they have gone on for centuries." (Bergh, 1907: 377-378).

shows how market incompleteness can also lead to consanguinity. The authors argue that where marriage payments such as dowry are customary, consanguinity may be chosen when a family can neither afford a dowry nor credibly commit to paying a dowry in the future. By marrying a relative, a family can leverage the trust in kinship ties to instead promise future transfers in the form of inheritances.

This paper reviews some existing explanations of consanguinity in light of empirical evidence from Bangladesh. In our data, we find evidence for higher rates of infant mortality in consanguineous marriages, confirming the insights of the biological literature. We also find some evidence for credit-constraints among families that made the choice to enter such marriages. Finally, as expected, we find that marriages to cousins are associated with lower levels of dowry, but higher levels of inheritance.

The paper is organized as follows: Section 2 discusses existing explanations for consanguinity. Section 3 presents a case study of cousin-marriage from Bangladesh. Section 4 concludes.

2. Existing Explanations of Consanguineous Marriage

The existence of consanguinity between spouses can be attributed to many causes, some of which are religious or social, and others which are primarily economic (Bittles 1994: 561-584). These are reviewed below.

2.1. Religion

One explanation for the popularity of consanguineous marriage is the sanction that is provided to it by some religions. In Europe, Protestant denominations permit first-cousin marriage in contrast to the Roman Catholic Church which requires permission from a diocese to allow them. Judaism permits consanguineous marriage in certain situations, such as for example, uncle-niece unions. Islam has also permitted some types of consanguineous marriages: for example, a Muslim man is prohibited from marrying his mother or grandmother, daughter or granddaughter, sister, niece or great niece, aunt or great aunt (Azim 1997: 169). A man is also forbidden to have two wives at the same time who are related to each other by consanguinity, affinity or fosterage implying that a man cannot marry two sisters (Azim 1997: 170). However, it is often cited that the Prophet Mohammad married his daughter Fatima to Ali, his paternal first cousin which has led researchers to argue that for Muslims first-cousin marriage might be permitted in practice (Bittles 2001: 91, Hussain 1999).

As already noted in the introduction to this paper, proscriptions on consanguinity within Hinduism vary between the North and the South of India. In the Aryan Hindu tradition of North India, marriage between relatives is usually prohibited (Kapadia 1958: 117-137). For example, early Indian economic historiography describes marriage within the Hindu caste system in North India as one in which a man is obliged to marry outside his family, but within the caste, and usually within the sub-caste, to which his family belongs. A family consists of persons reputed to be descended from a common ancestor, and between whom marriage is prohibited (Anstey 1952: 48). This tradition prohibits marriage to relatives for seven generations on the male side and for five generations on the female side (Balasubramaniam 2002). But the South Indian, or Dravidian, Hindu tradition however, permits consanguineous marriages (Balasubramaniam 2002, Epstein 1973, Reddy 1993, Vatuk 1982). For example, one form of marriage common among Tamils in South India is the gift in marriage of a girl to a suitable person of her maternal uncle or paternal aunt's family. The preponderance of consanguineous marriage in South India is also reflected in popular parlance: in the Tamil language, a wife is expected to address her husband traditionally, not by using his first name, but by calling him *athan*, which is the Tamil word for father's sister's son. Similarly the Tamil word for mother-in-law is *mamiyar* which translates to brother's sister's wife. This illustrates that consanguineous marriage has been quite common in South India in the past (Balasubramaniam 2002). This is also reflected in the average distance migrated by a woman at the time of marriage. This distance is above 12 miles in rural North India, but less than 8 miles in rural South India (Reddy 1993) ⁴

Overall, we believe religion may contribute to the prevalence of consanguinity in some parts of the world; yet it is not the primary driver of this practice. The religious sanctions and prohibitions around this practice are also quite diverse, and have changed over time.

⁴ Hindu mythology also provides many instances of consanguineous marriages, in particular between first cousins. For example, in the Hindu epic poem the Mahabharata, the Hindu god Krishna to niece Sasirekha (the daughter of Krishna's brother Balarama) is given in marriage to Abhimanyu, the son of Krishna's sister Subhadra. Krishna and Subhadra themselves were offspring of Vasudeva; Subhadra was married to the warrior hero of the Mahabharata, Arjuna, whose mother Kunthi was Vasudeva's sister. Thus, in this example from Hindu mythology, in two generations of the same family - Arjuna and Subhadra, Abhimanyu and Sasirekha - all married their first cousins. In the epic poem the Ramayana, the Hindu god Rama was married to Sita. Subsequently, Sita's father's brother's daughters Urmila, Sutakirti and Mandavi were given in marriage to Rama's three brothers, Lakshmana, Shatrugna and Bharata, evidence of more distant consanguineous marriages contracted in Hindu folklore. These examples may explain the popularity of consanguineous marriage among Hindus despite the Hindu Marriage Act of 1955 which prohibited uncle-niece marriages (Kapadia 1958), subsequently altered by the Hindu Code Bill of 1984 (Appaji Rao et al 2002).

2.2. Social capital

Consanguinity is often regarded as a valuable tool to strengthen economic, political and social ties between members of a single family. In other words, consanguinity builds "social capital" within a family.⁵ Two types of social capital are relevant to the interested researcher of consanguinity - *bridging* social capital and *bonding* social capital. The former is also termed cross-cutting social ties between disparate groups (Granovetter 1973 and 1985), while the latter is similar to horizontal associations, which links sameness and enables cooperation between groups for example, networks and clubs. A feature of bonding social capital is that the bigger the group that sustains it, the more powerful bonding social capital is.

It is easy to see how consanguineous marriage is both a form of bridging social capital and a form of bonding social capital. By uniting different descent groups under patrilineal kinship rules, it strengthens ties between family members, lowers the possibility for conflict within a family, and consolidates both assets and power.⁶ It also encourages cooperation about matters relating to production decisions, household decisions, property decisions, market work and interactions with the community. If the decision to undertake a consanguineous marriage is related to landholding and/or the desire to retain economic and political power in a local community, then the larger the group that practice consanguineous marriage, the more powerful the group would be in a rural society. This is reinforced if consanguinity has been practiced over many generations. Recent anecdotal evidence from the Middle East suggests that the larger the group that practices consanguineous marriage, the greater the control over resources such as land and wealth, and thus more powerful the group would be in a rural society (New York Times, September 23, 2003).

Consanguineous marriages have additional advantages when families are separated by great distance, as wider kinship networks also provide an important source of economic assistance and co-operation. The importance of such networks has been documented across the Middle-East and they are believed to

⁵ Putnam (1995) describes social capital as a set of horizontal associations between people networks and associated norms which have an effect on the productivity of a community, and which can be either positive or negative.

⁶ In a patrilineal system, parallel cousins are part of an individual's unilineage whereas cross cousins are not. If every man in a patrilineal society married his mother's brother's daughter, every man would be marrying someone from a different lineal group. This would unite members of the same family and build stronger relationships between them.

have been a critical factor in the establishment of strong trading networks in the Middle Ages (Kuran, 2002).

2.3. Marriage costs

In some cultures, marriage payments such as dowry and bride-price are customary. Recent estimates suggest that such transfers together with the costs of marriages themselves amount to approximately six times the annual household income in South Asia (Rao 1993), and four times in sub-Saharan Africa (Dekker and Hoogeveen 2002). In the Middle-East, inflows of oil-wealth have believed to have increased bride-prices significantly (Casterline, Mensch and Singh 2005). A family's ability to make such payments can have significant implications for a young person's marriage prospects. In the Middle East, for example, rising levels of bride-price together with the practice of polygamy (in which wealthy men typically have more than one wife) have had the combined effect of lowering the prospects of marriage for some men, and also increasing the average age at marriage in the overall population (Casterline, Mensch and Singh 2005).⁷

In South Asia, where dowries are very common if not almost universal, dowry payments are well-known to influence marriage decisions (Anderson 2007, Caldwell, Reddy and Caldwell 1983, Rao 1993). This is particularly in light of the fact that dowries have escalated over time.⁸

In situations where parents feel that they are unable to afford the costs of a wedding (and this is quite likely if there is more than one daughter to be married), marriage for the daughter (especially if she is of lower birth order) may be delayed (Epstein 1973: 193). In communities where it is permitted, marriage to a relative may also be desirable. Anecdotal evidence and evidence we provide later in this paper suggests that in a consanguineous marriage dowry payments may be reduced or non-obligatory.

2.4. Considerations of Inheritance

The practice of consanguinity by royalty and major landowning families has often been cited as a clear indication that it is motivated by considerations of inheritance and desire to maintain control over asset-

⁷ New research indicates that Middle Eastern men aged 25-29 who were married declined from 63 percent in the 1980s to 53 percent in the 1990s compared to an average decrease from 76 percent to 73 percent for the developing world as a whole.

⁸ Rao (1993) for example, shows that real dowry increased 15 percent annually between 1921 and 1981 in India, and this increase was robust to controlling for characteristics of the bride and groom, the wealth of both families, and the imposition of a real price index. Despite the passage of the Dowry Prohibition Act in 1961 that outlaws the practice, dowry inflation has persisted unabated in this region. The custom of giving dowries has also spread from India to neighboring Pakistan and Bangladesh (Anderson, 2007).

holdings (Bittles 1994: 563). This argument is further bolstered by the fact that in patrilineal systems, most consanguineous marriages occur between cross-cousins and not parallel cousins.⁹ By bringing individuals from outside the patriline into its fold, a family ensures that its assets are consolidated. This motivation for consanguineous marriage is particularly powerful in cases where women can inherit property, and where land is a significant determinant of political and economic power. Using data from India, Agarwal (1994) argues that in South Asian communities which recognized women's rights in landed property, land was kept within members of the extended family by means of strict rules on land alienation, post-marital residence in the village taking the form of uxorilocality or matrilocality, and close-kin marriages. Similarly, in the Islamic world, arranged marriages to individuals within the kinship network have helped families circumvent mandatory Islamic sharing rules for inheritances for several hundred years (Kuran 2002, Meriwether 1999). Though not as powerful as the European system of primogeniture, this system helped some families maintain control over their assets for two or even three generations.

Inheritance considerations are not just limited to land. Annan (1999) carefully documents the social history of academic dons in Cambridge, Oxford and elsewhere in the UK and argues that for several centuries, British academia has been dominated by a handful of families who have intermarried on an unprecedented scale in order to preserve power and influence on intellectual ideas. Annan writes that this was responsible for sustaining an 'intellectual aristocracy' that gave not only social benefits to its members but power and influence over the history of ideas.

2.5. Agency models of marriage

An alternative view of consanguinity --- one that integrates many of these ideas but acknowledges the costs as well as benefits of this form of marriage -- is provided by Do, Iyer and Joshi (2009). It relies several assumptions: (i) marriage requires two families to make a long-term commitment to support their offspring through gifts, bequests, transfers of movable and immovable capital, etc; (ii) divorce is very costly and once marriages are fixed, the relationship is difficult to sever; (iii) marriages to non-relatives have important advantages (diversification of networks and more importantly, genes); (iv) the greater the social distance between families, the harder it is to commit to future bequests and gifts, or make promises, since the two families do not have a familiarity with each other. This imposes pressure to make any requisite transfers prior to marriage or at the time of the marriage; and finally (v) it is difficult and expensive to borrow funds to make marriage payments.

⁹ See footnote 10.

Taken together, these assumptions lead to the conclusion that a marriage to a cousin is likely to occur when individuals are too poor and credit-constrained to afford a high-quality socially-distant match, since this would require high levels of marriage payments. Instead of making such payments, such individuals are able to leverage the trust within kinship bonds to promise transfers and bequests later on in life. In other words, cousin-marriage is likely to emerge in situations where marriage payments such as dowry and bride-price are customary and high.

In South Asia, where marriage is characterized by patrilocal exogamy, consanguineous marriage is likely to be related to the practice of dowry. The precise intuition behind this is as follows. Since the bride moves away from her natal home and into the home of her husband (and his family) at the time of marriage, her parents do not directly benefit from investments made in her household in the form of movable and immovable assets, rights to property, etc. Such investments are more valued by the groom's family, since they generally reside with the couple and depend on them for participation in income-generating opportunities, old-age support, etc. As a result of this asymmetry, the bride's parents have less incentive (than the groom's parents) to invest in their child's marriage after it has occurred. Since it is not possible to write an enforceable contract that requires both families to make binding commitments after marriage, the marriage contract is "incomplete". The incompleteness is typically addressed by dowry payments: the groom's family requires the bride's family to make these payments prior to marriage. In other words, the dowry transfers investments to those who have the highest incentives to invest in the marriage after it occurs.

When the families of the bride and groom are socially distant, they are likely to benefit from the diversification of genes and socio-economic networks, but the lack of familiarity or trust between the families means that there is little flexibility on the dowry payment: it must be paid in full at the time of marriage. Moreover, larger dowries may be necessary to mitigate any uncertainty about the timing and size of future transfers from the bride's family. When two families are related however (as is the case when cousins marry), ex-ante commitments are more credible arguably because informal contracts are easier to enforce within the extended family. In this case, a bride's family can easily promise to make transfers later. They will be more likely to uphold their promise to their own family members.

3. Insights from Bangladesh

In this section, we use data from Bangladesh to examine the prevalence of consanguinity in rural South Asia and also test some of the theories of consanguinity that have been discussed in this paper. The data

are drawn from the 1996 Matlab Health and Socioeconomic Survey (MHSS).¹⁰ We also supplement these data with that on climate data on annual rainfall levels in the Matlab area for the period 1950-1996.¹¹

The 1996 MHSS contains information on 4,364 households clustered in 2,687 *baris* in 141 villages.¹² Matlab is an Upazila (subdistrict) of Chandpur district, which is about 50 miles South of Dhaka, the capital of Bangladesh. 85 percent or more of the people in Matlab are Muslims and remainders are Hindus. Although it is geographically close to Dhaka, the area has been relatively isolated and inaccessible to communication and transportation and remains largely undeveloped and traditional (Fauveau, 1994). The society is predominantly an agricultural society, although 30 percent of the population reports being landless.

For the purpose of understanding the incidence of consanguineous marriage in the MHSS data, we rely on the section of the survey that asked men and women retrospective information about their marriage histories. The complete sample includes 5083 married men, and 6068 married women at the time of the survey. Information on first marriages was considered.¹³ For the purpose of our empirical tests however, we restrict our attention to a sub-sample of 4087 married women and 3357 married men who provided complete information on age and education, marriage (including age at marriage, relationships to their spouses, and payments of dowry), parental characteristics, parental assets, inheritances and inherited assets, numbers of brothers and sisters (as well as their ages). Descriptive summary statistics of the variables of interest for our subsample are provided in Table 1. A quick glance at the table does not reveal systematic differences in characteristics between the male and female samples. Admittedly, when looking at individual characteristics, males are more educated, and by construction of the data set are older.

¹⁰ This survey is a collaborative effort of RAND, the Harvard School of Public Health, the University of Pennsylvania, the University of Colorado at Boulder, Brown University, Mitra and Associates and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR).

¹¹ These data, the University of Delaware Air and Temperature Precipitation Data" are provided by the NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA, from their Web site at <http://www.cdc.noaa.gov/>.

¹² The *bari* is the basic unit of social organization in Matlab (Fauveau, 1994). *Bari* literally means "homestead", but commonly refers to a cluster of households in close physical proximity. The households are generally located around a common yard and may share resources such as a tube-well, a cowshed, latrine, and/or several jointly owned trees.

¹³ 15 percent of men and about 7 percent of women who reported that they have had more than one marriage. This difference is driven by the fact that while divorced and widowed men typically remarry, most women in these same circumstances do not (Joshi, 2004).

It is interesting to note that of all the female respondents in our sample, 10 percent married a first-cousin, 8 percent had married a relative other than a first-cousin and 14 percent had married a non-relative in the same village. It is interesting that 36 percent of women and only 18 percent of men report the payment of a dowry at the time of marriage. We believe the difference is in psychological biases in the interpretation of gifts and transfers as "dowries" between the giver (the bride) and the receiver (the groom): since women want their dowries to improve their status and acceptance in their new home, they will have a tendency to interpret all gifts given at marriage as dowry. Men on the other hand, do not want to interpret all gifts as dowry, since doing so would reduce their bargaining position with the new bride. For the remainder of this paper, we use the female sample to carry out our analysis, and thus include in our definition of the dowry, all transfers that were paid at the time of marriage.¹⁴

3.1. Biological impacts of consanguinity

The first step of our analysis is to examine the effect of consanguinity on fertility and child mortality. As mentioned earlier in this paper, consanguinity has often been associated with higher rates of infant and child mortality, lower ages at marriage, higher rates of fertility and high rates of child mortality. We analyze this issue in Bangladesh by considering five key variables: a woman's age at marriage, her age at first birth, her total number of births, the total number of child deaths and the number of deaths by gender. We look at these variables across three types of marriages: first cousin-marriages (henceforth just referred to as cousin marriages), marriages to relatives other than first-cousins and marriages to non-relatives within a village. Dummy variables corresponding to these three types of marriages are constructed and labeled as *Married a Cousin*, *Married a Relative* and *Married a non-relative in village* respectively. We consider these three types of marriages because they are decreasing in order of genetic and familial closeness, but yet all occur within a family's social network. A comparison of these three types of measures thus allows us to distinguish between genetic and social distance.

To examine whether reproductive behavior varies across these three groups, we perform a series of regressions in which we regress the variable of interest on the three types of marriage variables as well as a set of socio-economic variables that can also influence this relationship. The socio-economic

¹⁴ Dowry was assessed in two ways. First, respondents were asked whether or not they paid a dowry at the time of marriage (this is a binary variable) and whether this took the form of bride-wealth or gifts and transfers to the woman's in-laws. Respondents were also asked to provide an estimate of the dowry's value. In the analysis ahead, we use both the binary indicator as the logarithm of the dowry values. In constructing the series of the logarithm of the dowry value, we assign a value of 1 taka in cases where no dowry transfer is reported.

variables include a woman's age, her years of schooling, her husband's age, her husband's years of schooling, her religion (a dummy that indicates whether or not she is Muslim), her birth order, the number of her brothers and sisters, and the value of her household's land, agricultural and non-agricultural assets. A summary of all variables involved is presented in Table 1. The results of our regressions are presented in Table 2. We do find that marrying a relative is associated with a statistically significant effect on fertility as well as infant mortality. Note that marriage to a cousin or a relative is associated with a higher number of live births, though the result is statistically significant only in the case of marriage to relatives other than cousins. Marriage to cousins however, is clearly associated with a higher likelihood of experiencing the death of a child. This is presumably due to birth defects or the greater likelihood of inheriting a recessive gene, and confirms what many have already documented about the biological disadvantages of consanguineous marriages.

We view this as evidence in support of the existing evidence on the effects of consanguinity on reproductive behavior as well as reproductive outcomes. In the sections ahead, we explore the determinants of consanguineous marriage, keeping in mind that this form of marriage can often have negative effects on child survival.

3.2. Credit-constraints and consanguinity

In our next step, we begin to explore the extent to which credit-constraints and other socio-economic variables may affect an individual's decision to enter a consanguineous or other form of a socially "close" marriage. We again consider the three types of marriage we considered in the section above. Since these forms of marriage are in decreasing order of genetic and social closeness, we expect to see some differences in their determinants. To test the theories discussed earlier, our set of independent variables includes a range of socio-economic variables such as age, education, birth order, religion, and parental socioeconomic status. Since credit-constraints in agricultural societies can collectively vary across households in a region, we also condition on year-of-marriage fixed effects and deviations of rainfall from average values when the woman was of marriageable age.¹⁵ Summary statistics of all variables are presented in Table 1.

The results of the regressions are presented in Table 3. Note that all three forms of marriage -- to cousins, relatives other than cousins and non-relatives within a village -- are more common among

¹⁵ Since age at marriage and year of marriage are often not remembered with great precision, we define fixed-effects over 5 year windows. This allows us to control for local marriage market conditions (e.g. market squeeze).

Muslims than Hindus. This is interesting in light of the discussion of socio-religious factors mentioned earlier in this paper. As expected, consanguinity and marriages between "close" individuals is rare among Hindus, since Hindus in Bangladesh adhere to the form of Hinduism followed in Bengal (which lies in Northern India). Note also that cousin-marriages are negatively associated with age, years of schooling and birth-order. In other words, marriages to a cousin are likely to occur when a girl is younger, less educated and higher-up in birth-order than in cases where marriages are to non-relatives. This is consistent with the possibility of credit constraints: poorer families are less likely to have assets to draw on to pay high dowries and/or marriage expenses for later-born children. Further evidence of credit constraints comes from the negative and statistically significant coefficient of the variables that measure the number of brothers that a girl had at the time of marriage and her parent's farmland value.^{16,17}

Another important finding from Table 3 is that the socio-economic factors that drive marriages between relatives and/or non-relatives within a village are different from those that drive cousin-marriages. Birth order for example, is positively associated with marriage between relatives and does not have a statistically significant effect on marriages to non-relatives within a village. Having more brothers at the time of marriage has a positive effect on the probability of marrying within non-relatives within the village.

Overall, these results allow us to conclude that while religion (being Muslim) does play a role, there is also evidence that families who contract consanguineous marriages for their children may be poorer and credit-constrained. This is consistent with two of the theories of marriage presented earlier. Both the theory of marriage costs and the agency theory of cousin-marriage would predict that poorer individuals would prefer consanguineous marriage, since it would avoid the immediate requirement of marriage payments. Later in this section, we test this hypothesis directly, by examining the relationship between consanguinity and dowry.

3.3. Social Capital

As seen earlier, many commonly regarded explanation of consanguinity are built on the idea that consanguinity builds "social capital". To examine whether consanguineous and "close" marriages lead to

¹⁶ Since MHSS is a cross-sectional survey, there is limited information on parent's pre-marital wealth. We hence rely on proxies such as parental education and value of landholdings.

¹⁷ Since brothers are recipients of dowries, having more brothers is a measure of future wealth inflows.

higher levels of social capital, we consider a variety of variables that describe an individual's social network and social capital. We consider several aspects of a woman's well-being: whether or not she acts as an advisor (formally or informally) to anyone in her family or village (*Advisor*), whether or not she leaves her bari more than once a week (*OutBariOnceWeek*), whether or not relatives visit her bari more than once a week (*RelVisitOnceWeek*), whether or not she participates in household decisions (*PartHhdDecisions*), whether or not she wears a burqa or traditional veil (*Burqa*), whether or not she has ever been assaulted or abused (*Assault*), and finally, whether or not she participates in any kind of group in the village that includes savings groups, credit groups, social groups or religious groups (*GrMember*).¹⁸

To determine whether women in consanguineous relationships have different levels of autonomy, decision-making capability, social interaction and/or community participation, we regressed these variables on the three measures of social distance considered previously and a variety of controls that were featured in previous regressions. To the list of controls, we add contemporaneous measures of wealth -- the value of land, agricultural assets and also non-agricultural assets -- since these may have independent effects on these variables. The results are presented in Table 6. Note that there is almost no evidence in support of the fact that women in consanguineous marriages enjoy any overall significant advantage or disadvantage with respect to these variables. In results not shown here, we found this to be true in all the measures of social networks that we considered in our analysis.

While this is by no means sufficient evidence to rule out the idea that consanguineous marriages build stronger families and preserve traditions in families, we interpret this as evidence that a woman who marries her cousin does not appear to have significantly greater autonomy, greater decision making authority or greater participation in community matters. Though we found similar (non-) effects in every social-network variable we examined, we nevertheless acknowledge that she and the entire family may benefit in ways that are not examined here. To further explore a family's decision to contract a marriage with a relative, we turn now to a closer look at the relationship between consanguinity and two other variables -- marriage payments and inheritances.

3.4. Dowry and consanguinity

We examine the relationship between consanguinity and dowry by regressing the dummy variable *Dowry* on the three types of marriage-variables considered previously. We also control for additional

¹⁸ The MHSS contained information on a wide variety of social indicators. We chose these because they were most representative of all the indicators in the survey. In results not shown here, we use each and every indicator that is included in the MHSS and confirm that the results presented here are not anomalous in any way.

factors that may drive marriage decisions by including a set of controls. The results are in Table 4. Since a similar set of results has already been presented and discussed in Do, Iyer and Joshi (2009), we present here only the main coefficients and omit the other variables. Estimates in the first three columns indicate that compared to women who marry non-relatives, women who marry their first-cousins are 5 percentage points less likely to bring a dowry, and this effect remains even after we control for individual characteristics (age, years of schooling, religion and birth order), family characteristics (mother and father were alive at the time of marriage, number of brothers and sisters at the time of marriage and father's landholdings), and rainfall at the time that a woman was of marriageable age. Considering that in this population, about 35 percent of all women report the payment of a dowry at the time of marriage, this is a substantial and important difference.

The results are similar if we expand the definition of consanguinity to include marriages between second-cousin and other types of marriages between relatives (Table 4, Panels B and C, columns 1--3). It is interesting to note that marriages to other kin as well as marriages to non-kin within a village are also associated with a lower likelihood of dowry payment. We interpret this as evidence that other forms of social capital may also play a role in enforcing marriage contracts. Note however, the smaller magnitude of the coefficients in Panels B and C of Table 4 (columns 1--3). The relationship between dowry and social distance is strongest in the case of cousins.

To check the robustness of the finding, we also use the logarithm of the dowry values as a dependent variable and obtain similar qualitative results for marriages between relatives (Table 4, columns 4-6). After controlling for individual, household characteristics and year of marriage fixed-effects, the results show 7-8 percent lower dowry values when the two spouses are relative.

The negative relationship between consanguinity and dowry is consistent with two theories of consanguinity discussed earlier. The theory of marriage costs simply regards consanguinity as a method of avoiding high dowry and/or other marriage payments. The agency theory however, argues that low levels of dowry in consanguineous marriages involve lower marriage payments but higher inheritances in the long-run and thus it is the *timing* of payments that is key and not the magnitude. To distinguish between these two explanations of consanguinity, we turn to an examination of inheritances.

3.5. Inheritances

To analyze the relationship between inheritances and consanguinity, we consider several measures of inheritance levels on the three measures of social distance used in previous regressions. In particular,

we define dummy variables that take value 1 if an individual has inherited, or expects to inherit, a particular type of asset from their parents. Table 5 (columns 1--4) reports the results of the regressions of the inheritance measures on the three measures of social distance, as well as a list of controls. Again, since the full set of results has been presented and discussed in Do, Iyer and Joshi (2009), we present only the main coefficients here and refer readers to that paper for complete results.

As before, the regressions are first performed on the female sample. The positive and significant estimates for the variable *Married a Cousin* are consistent with the hypothesis that women in consanguineous unions are more likely to receive or expect to receive transfers from their parents. The level of bequests received by women who marry other relatives or non-relatives in the same village is not always statistically significant. This suggests that the commitment to bequeath their assets to their daughters is likely to be weaker when she marries more distant relatives or non-kin in a village, since the costs or consequences of non-payment are likely to be smaller in such relationships.

It is interesting that when we focus on the male sample (Table 5, columns 5--8), the coefficients for the variable *Married a cousin* are negative, although the coefficients are rarely statistically significant. Our explanation of this is that men inherit from their parents regardless of whether or not they marry a cousin. The effect is likely to be significant only for women, because cousin-marriage (and to a lesser extent, other types of kin-marriage) are the only means through which they are able to inherit property from their parents.

The strength of the findings on consanguinity and inheritance lend support to an agency view of consanguineous marriages. They also lead us to dismiss the idea that consanguinity is chosen simply to minimize the outflow of wealth in the form of marriage payments. If that *alone* was the driver of consanguineous marriage, we ought to see it in *all* segments of society and particularly among the wealthy, since they have the most to gain by keeping assets within a single family. The agency theory of marriage is the only explanation of consanguinity that can reconcile the three facts observed so far : credit-constraints among families that choose it, lower levels of dowry and higher levels of inheritances in consanguineous marriages.

Overall, the data from Bangladesh leads us to five conclusions:

1. The level of fertility and infant mortality is higher in consanguineous marriages than in marriages between non-kin.

2. Credit-constrained families are more likely to choose consanguineous marriages over non-kin marriages.
3. Women who marry their cousins are no different than those who marry non-kin when it comes to measures of female autonomy, decision-making authority within the home, respect in the community, or participation in village activities.
4. Dowry levels are lower in consanguineous marriages than in marriages between non-kin.
5. Inheritance levels are higher in consanguineous marriages than in marriages between non-kin.

Taken together, this evidence supports the agency theory of consanguinity, i.e. individuals marry their cousins when they can not afford expensive marriage payments, and they choose instead to make these transfers later on in life, in the form of bequests/inheritances instead. All other theories – with their emphasis on a single or else limited number of variables --- religion, credit-constraints, marriage payments, and social capital – explain at best only some of these facts.

4. Conclusion

An interesting observation about marriage in the developing world is that the practice of consanguinity persists in many places, despite significant awareness of the disadvantages of this practice. Explanations for its continued popularity in some parts of the world are often based on arguments about religious sanction, culture, preferences to keep wealth within a single family and the need to build alliances. We provide an explanation that synthesizes some of these ideas. We emphasize the agency view that closely relates consanguinity to the practice of dowry, so that both emerge from incomplete marriage contracts in developing countries. By assuming that the families of the bride and groom must both invest continually in a marriage, patrilocal residence creates an incentive for the bride's family to free-ride on the investments of their in-laws after the marriage is contracted. In this scenario, dowry can alleviate this by transferring control rights over assets to the family with the highest incentives to invest at the time of marriage. Where dowries are unaffordable, consanguinity emerges as an alternative. A bride's family relies on trust among kin, rather than on upfront payments, in order to make credible commitments to future transfers to their daughter's household. Evidence from Bangladesh confirms these findings.

Overall, the main contribution of this analysis is to demonstrate that economic factors such as credit constraints and high marriage-costs may be a significant driver of the decision to marry a relative. Other oft-cited factors -- religion, culture, social norms and the desire to build alliances -- may be important as well, but these do not explain why some individuals in a community or religious group make the choice to marry a relative while others do not. By presenting the choice of marriage to a relative as a trade-off between expanding a gene pool and social networks on the one hand, and raising capital on the other hand, we are able to explain the diversity of choices in a community that shares similar religious and social values. This research highlights the importance of analyzing marriage markets and marriage traditions through a prism that includes not only a deep understanding of culture and context, but equally a more precise focus on the main economic mechanisms.

References

1. Anderson, S. (2007), "The Economics of Dowry and Brideprice", *Journal of Economic Perspectives*, 21(4): 151-174.
2. Annan, N (1999), *The Dons: Mentors, Eccentrics and Geniuses*, Chicago: University of Chicago Press.
3. Appaji Rao N, HS Savithri and AH Bittles (2002), "A genetic perspective on the South Indian tradition of consanguineous marriage" In *Austral-Asian Encounters* (eds. C Vanden Driesen and S Nandan), 326-341. Prestige Books: New Delhi.
4. Banerjee SK and TK Roy (2002), "Parental consanguinity and offspring mortality: The search for possible linkage in the Indian context", *Asia-Pacific Population Journal* 17(1): 17-38.
5. Becker, G., 1973, "A Theory of Marriage: Part I", *Journal of Political Economy*, 81(4): 813-46.
6. Bergh, AE ed. (1907) "The Writings of Thomas Jefferson", Vol. XII, The Thomas Jefferson Memorial Association of the United States, Washington DC.
7. Bittles AH (2003), "Endogamy, consanguinity and community genetics", Centre for Human Genetics Working Paper, Edith Cowan University, Perth.
8. Bittles AH (2001), "Consanguinity and its relevance to clinical genetics", *Clinical Genetics* 60: 89-98.
9. Bittles, AH (1994), "The Role and Significance of Consanguinity as a Demographic Variable", *Population and Development Review*, 561-584.
10. Bittles AH, JM Cobles and N Appaji Rao (1993), "Trends in consanguineous marriage in Karnataka, South India, 1980-1989", *Journal of Biosocial Science* 25(1): 111-116.
11. Bittles AH, WM Mason, J Greene and N Appaji Rao (1993), "Reproductive behavior and health in consanguineous marriages", *Science New Series* 252(5007): 789-794.
12. Bloch, F and V Rao (2002), "Terror as a Bargaining Instrument: A Case Study of Dowry Violence in Rural India", *the American Economic Review* 92(4): 1029-1043.
13. Botticini M, and A Siow (2003), "Why Dowries?", *American Economic Review* 93(4): 1385-98.
14. Caldwell JC, PH Reddy and P Caldwell (1983), "The causes of marriage change in South India ", *Population Studies* 37(3): 343-361.
15. Casterline, JB, BS Mensch and S Singh (2005), "Trends in the Timing of First Marriage Among Men and Women in the Developing World ", Population Council Working Paper 202.

16. Do, QT, S Iyer and S Joshi (2009), "The economics of consanguineous marriage", Mimeo.
17. Epstein, TS (1973), *South India: Yesterday, Today and Tomorrow*, London: Macmillian.
18. Fauveau, V. ed. (1994), "Matlab: Women, Children and Health", International Center for Diarrhoeal Disease Research, Bangladesh.
19. Hussain, R (1999) "Community perceptions of reasons for preference for consanguineous marriages in Pakistan", *Journal of Biosocial Science* 31: 449-461.
20. Hussain, R and AH Bittles (2000), "Socio-demographic correlates of consanguineous marriage in the Muslim population of India", *Journal of Biosocial Science* 32: 433-442.
21. International Institute of Population Sciences, Mumbai, and ORC Macro International (1995) National Family Health Survey 1992-93. Mumbai: IIPS
22. Iyer, S (2002), *Demography and Religion in India*, Delhi, Oxford and New York: Oxford University Press.
23. Jacoby, H and G Mansuri (2006), "Watta Satta: Exchange Marriage and Women's Welfare in Rural Pakistan", manuscript, The World Bank.
24. Kuran, T. (2002), "The Islamic Commercial Crisis: Institutional Roots of Economic Underdevelopment in the Middle East ", USC Center for Law, Economics and Organization Research Paper No. C01-12.
25. Lewis, W. A. B. (1954), "Economic Development with Unlimited Supplies of Labor", *The Manchester School*, 22, May: 139-191.
26. Maian A and R Mushtaq (1994), "Consanguinity in population of Quetta (Pakistan): A preliminary study", *Journal of Human Ecology* 5: 49-53.
27. McCullough, JM and O'Rourke DH (1986), "Geographic distribution of consanguinity in Europe", *Annals of Human Biology* 13: 359-368.
28. Meriwether, ML (1999), "The Kin Who Count: Family and Society in Ottoman Aleppo, 1770-1840", Austin: University of Texas Press.
29. Ottenheimer, M (1996), "Forbidden relatives -- the American Myth of Cousin Marriage". Chicago: University of Illinois Press.
30. Putnam, R. (2000), "Bowling Alone: The Collapse and Renewal of American Community". Connecticut New York: Simon and Schuster.
31. Rao, V (1993), "The Rising Price of Husbands: A Hedonic Analysis of Dowry Increase in Rural India", *Journal of Political Economy* 101(3): 666-77.
32. Rao, PSS and SG Inbaraj (1977), "Inbreeding in Tamil Nadu, South India", *Social Biology* 24: 281-288.
33. Reddy, PG (1993), "Marriage practices in South India", Madras: University of Madras.
34. Rosenzweig, M and O Stark (1989), "Consumption Smoothing, Migration, and Marriage: Evidence from Rural India", *Journal of Political Economy* 97(4): 905-26.
35. Schull WJ (1959), "Inbreeding effects on man", *Eugenics Quarterly* 6:102-109.
36. Udry, C (1990), "Credit markets in northern Nigeria: Credit as insurance in a rural economy" *World Bank Economic Review* 4/3.
37. United Nations Development Program (2000), "Poverty and Distribution of Land", by Keith Griffin, Azizur Rahman Khan and Amy Ickowitz.
38. Vatuk, S (1982), "Purdah Revisited: A Comparison of Hindu and Muslim Interpretations of the Cultural Meaning of Purdah in South Asia", *Separate Worlds: Studies of Purdah in South Asia*, edited by Hanna Papanek and Gail Minault, Delhi: Chanakya Publications.
39. Walker, TS and JG, Ryan (1990), "Village and Household Economies in India's Semi-arid Tropics". Baltimore: Johns Hopkins University Press.
40. Zhang, J and W Chan (1999), "Dowry and Wife's Welfare: A Theoretical and Empirical Analysis", *Journal of Political Economy* 107(4): 786-808.

Table 1: Summary of key variables for female and male samples

Variable Name	Description	Female Sample		Male Sample	
		Mean	Std. Dev.	Mean	Std. Dev.
Married a cousin	Married a first cousin	0.1065	0.3085	0.1072	0.3094
Married a relative	Married a relative other than a first-cousin	0.0786	0.2692	0.0813	0.2733
Married non-relative within village	Married a non-relative within village	0.1429	0.35	0.14	0.347
Dowry	Dowry	0.3663	0.4819	0.14	0.347
Log of Dowry	Log of dowry value (in thousands of taka)	-1.6938	1.025	-2.0152	0.7589
Age at first birth	Age at first birth (in years)	22.937	5.102		
Live births	Number of live births	4.987	2.902		
Total children died	number of children who died	1.054	1.393		
Children died, boys	Total number of boys who died	0.519	0.884		
Children died, girls	Total number of girls who died	0.534	0.851		
Any inheritance	Inherited anything from parents	0.0967	0.2956	0.6942	0.4608
Inherited farmland	Inherited farmland from parents	0.0554	0.2289	0.5625	0.4961
Inherited homestead	Inherited homestead land from parents	0.0276	0.1638	0.6593	0.474
Inherited money	Inherited money from parents	0.0107	0.1031	0.0113	0.1058
Advisor	Advisor to anyone in community	0.367	0.482		
OutOnceWeek	Go out of the bari at least once a week	0.366	0.482		
RelOnceWeek	Visited by relatives at least once a week	0.368	0.482		
PartHhd	Participate in household decisions	0.767	0.423		
Burqa	Wear a burqa outside the home	0.759	0.428		
Assault	Ever a victim of assault at home	0.186	0.389		
GrMember	Member of any kind of organization/group	0.14	0.347		
Age	Age (in years)	36.652	10.135	47.4824	14.0885
Muslim	Muslim	0.8877	0.3158	0.8916	0.3109
Years of schooling	Years of schooling (in years)	2.2039	3.0021	3.3556	3.887
Birth order	Birth order	2.9201	1.8008	2.5116	1.5659
Mother alive at marriage	Mother alive at time of first marriage	0.9326	0.2507	0.8615	0.3454
Father alive at marriage	Father alive at time of first marriage	0.8415	0.3652	0.656	0.4751
Brothers at marriage	Brothers alive at time of marriage	2.2107	1.4692	1.6998	1.3904
Sisters at marriage	Sisters alive at time of marriage	1.9043	1.3681	1.7433	1.3379
Parents land	Log of parents farmland (log of 10 ³ , in decimals)	0.8535	5.0853	1.4366	4.7823
Rainfall dev when aged 11	Rainfall dev when aged 11 (in millimeters)	2.0792	0.3847		
Household land value	Household land value (%10 ⁵ taka)	1.533	3.315	1.533	3.315
Agricultural assets	Agricultural assets (10 ⁵ taka)	0.657	1.333	0.657	1.333
Non-Agricultural assets	Non-Agricultural assets (10 ⁵ taka)	1.093	3.002	1.093	3.002

Table 1: Summary statistics for key variables used in regression analysis. Note: (i) The variable “Married a Cousin” includes marriages to first-cousins; (ii) The variable “Married a Relative” includes marriages to all relatives other than first cousins

Table 2: Consanguinity, fertility and mortality

	Age at marriage	Age at first birth	Number of Live Births	Total	Child Deaths	
	(1)	(2)	(3)	(4)	Boys	Girls
	(1)	(2)	(3)	(4)	(5)	(6)
Married a cousin	-0.8629*** (0.1860)	-0.3955 (0.2493)	0.0633 (0.1039)	0.0924* (0.0509)	0.0372 (0.0316)	0.0552* (0.0336)
Married a relative	0.7647 (0.5294)	-0.4477* (0.2653)	0.1064 (0.1158)	0.0312 (0.0518)	0.0314 (0.0368)	-0.0002 (0.0350)
Married non-relative in village	-0.2494* (0.1514)	-1.0529*** (0.2665)	0.0221 (0.0871)	-0.0210 (0.0427)	0.0162 (0.0296)	-0.0372 (0.0249)
Age	0.0179 (0.0160)	-0.0593** (0.0239)	0.2122*** (0.0079)	0.0204*** (0.0033)	0.0091*** (0.0023)	0.0113*** (0.0021)
Spouse age	-0.0945*** (0.0138)	-0.1235*** (0.0199)	-0.0111* (0.0066)	0.0016 (0.0027)	0.0017 (0.0018)	-0.0001 (0.0017)
Years of schooling	0.1906*** (0.0268)	0.0794** (0.0369)	-0.0782*** (0.0117)	-0.0165*** (0.0052)	-0.0065* (0.0036)	-0.0100*** (0.0033)
Spouse years of schooling	-0.0060 (0.0195)	0.0111 (0.0256)	-0.0085 (0.0097)	-0.0038 (0.0041)	-0.0017 (0.0028)	-0.0021 (0.0027)
Muslim	-1.0513*** (0.2483)	-0.3378 (0.2449)	0.5313*** (0.0840)	-0.0132 (0.0441)	-0.0207 (0.0310)	0.0076 (0.0267)
Birth order	0.0777** (0.0390)	0.0489 (0.0450)	-0.0279 (0.0176)	-0.0059 (0.0074)	-0.0073 (0.0050)	0.0014 (0.0049)
Number of brothers	-0.0718* (0.0412)	-0.0080 (0.0521)	0.0439** (0.0208)	-0.0051 (0.0103)	-0.0004 (0.0068)	-0.0047 (0.0066)
Number of sisters	-0.0063 (0.0451)	0.0832 (0.0566)	0.0017 (0.0214)	-0.0132 (0.0106)	-0.0050 (0.0073)	-0.0082 (0.0066)
Father years of schooling	-0.0312 (0.0193)	-0.0052 (0.0242)	0.0109 (0.0091)	0.0033 (0.0042)	-0.0007 (0.0029)	0.0040 (0.0029)
Land value	0.0715 (0.1358)	0.1364 (0.1431)	0.0405 (0.0561)	-0.0290 (0.0227)	-0.0193 (0.0174)	-0.0098 (0.0147)
Value of agricultural assets	-0.0853 (0.1253)	-0.1523 (0.1300)	-0.0281 (0.0529)	0.0162 (0.0206)	0.0146 (0.0153)	0.0016 (0.0136)
Value of non-agricultural assets	-0.0318 (0.1187)	-0.1326 (0.1347)	-0.0359 (0.0514)	0.0248 (0.0218)	0.0167 (0.0165)	0.0081 (0.0142)
R-squared	0.0965	0.1898	0.5901	0.0854	0.0484	0.0528
N	3326	3177	3324	3218	3218	3218

Table 2: Fertility, mortality and consanguinity. Notes: (i) Standard errors—shown in parentheses—are clustered at the bari-level, * denotes significance at 10% level, ** significance at 5% level; and *** significance at 1% level.

Table 3: Determinants of social distance in marriages

	<i>Married Cousin</i>			<i>Married Relative</i>			<i>Married Non-Relative In Village</i>		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Age	-0.0029 (0.0037)	-0.0016 (0.0037)	-0.0156** (0.0067)	0.0055** (0.0027)	0.0059** (0.0028)	0.0107* (0.0061)	-0.0082* (0.0042)	-0.0081* (0.0042)	-0.0269*** (0.0074)
Age squared	0.0002 (0.0005)	0.0000 (0.0005)	0.0013 (0.0009)	-0.0007* (0.0004)	-0.0007* (0.0004)	-0.0009 (0.0008)	0.0011* (0.0006)	0.0011** (0.0006)	0.0035*** (0.0010)
Years of schooling	-0.0044*** (0.0016)	-0.0025 (0.0019)	-0.0016 (0.0019)	-0.0005 (0.0014)	-0.0001 (0.0016)	-0.0007 (0.0017)	-0.0070*** (0.0018)	-0.0052** (0.0021)	-0.0046** (0.0021)
Muslim	0.1201*** (0.0060)	0.1245*** (0.0068)	0.1205*** (0.0069)	0.0479*** (0.0100)	0.0520*** (0.0103)	0.0558*** (0.0103)	-0.0582*** (0.0218)	-0.0598*** (0.0220)	-0.0624*** (0.0219)
Birth order	-0.0093*** (0.0026)	-0.0049 (0.0031)	-0.0049 (0.0031)	0.0046** (0.0024)	0.0057** (0.0027)	0.0061** (0.0027)	0.0000 (0.0032)	-0.0034 (0.0038)	-0.0031 (0.0038)
Father alive at marriage		-0.0168 (0.0142)	-0.0222 (0.0142)		-0.0019 (0.0120)	0.0003 (0.0121)		-0.0028 (0.0159)	-0.0029 (0.0160)
Father years of schooling		-0.0008 (0.0015)	-0.0008 (0.0015)		0.0003 (0.0014)	0.0004 (0.0014)		-0.0029* (0.0015)	-0.0029* (0.0015)
Brothers at marriage		-0.0104*** (0.0038)	-0.0097** (0.0038)		0.0007 (0.0034)	-0.0002 (0.0034)		0.0123*** (0.0043)	0.0121*** (0.0043)
Sisters at marriage		-0.0055 (0.0040)	-0.0045 (0.0040)		-0.0047 (0.0033)	-0.0055 (0.0034)		-0.0003 (0.0043)	-0.0005 (0.0044)
Log of parents farmland		0.0010 (0.0012)	0.0009 (0.0012)		-0.0009 (0.0010)	-0.0008 (0.0010)		0.0005 (0.0014)	0.0005 (0.0014)
Log of parents farmland squared		-0.0013*** (0.0005)	-0.0013*** (0.0005)		-0.0002 (0.0004)	-0.0002 (0.0004)		-0.0006 (0.0006)	-0.0007 (0.0006)
R-squared	0.0196	0.0245	0.0314	0.0051	0.0062	0.0084	0.0074	0.0106	0.0134
N	4069	4069	4069	4069	4069	4069	4089	4089	4089

Table 3: Marriage and Social Distance. Notes: (i) Standard errors—shown in parentheses—are clustered at the bari-level, * denotes significance at 10% level, ** significance at 5% level; and *** significance at 1% level.

Table 4: Relationship between consanguinity and social networks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Advisor	OutOnceWeek	RelOnceWeek	PartHhd	Burqa	Assault	GrMember
Married a cousin	0.0333 (0.0255)	0.0392 (0.0250)	0.0146 (0.0249)	0.0217 (0.0174)	0.0026 (0.0184)	-0.0278 (0.0207)	0.0037 (0.0196)
Married a relative	0.0773*** (0.0292)	-0.0154 (0.0278)	0.0807*** (0.0292)	0.0272 (0.0190)	0.0083 (0.0205)	-0.0204 (0.0235)	0.0231 (0.0227)
Married a non-relative within village	0.0208 (0.0218)	0.0453** (0.0217)	0.0342 (0.0221)	-0.0248 (0.0165)	0.0082 (0.0165)	-0.0059 (0.0184)	0.0487*** (0.0186)
Age	0.0128 (0.0106)	-0.0003 (0.0098)	0.0095 (0.0114)	-0.0159 (0.0121)	0.0082 (0.0068)	-0.0001 (0.0087)	0.0025 (0.0110)
Years of schooling	0.0204*** (0.0030)	-0.0094*** (0.0031)	-0.0026 (0.0031)	0.0038* (0.0022)	-0.0025 (0.0025)	-0.0180*** (0.0023)	0.0028 (0.0025)
Muslim	-0.0071 (0.0245)	-0.0328 (0.0248)	0.0026 (0.0245)	0.0211 (0.0203)	0.1754*** (0.0235)	0.0684*** (0.0197)	-0.0518** (0.0233)
Birth order	-0.0023 (0.0046)	-0.0021 (0.0045)	0.0007 (0.0046)	0.0007 (0.0033)	-0.0051 (0.0035)	-0.0058 (0.0037)	0.0017 (0.0038)
Years of marriage	-0.0019 (0.0105)	0.0028 (0.0098)	-0.0081 (0.0114)	0.0229* (0.0120)	-0.0073 (0.0068)	-0.0019 (0.0086)	-0.0033 (0.0110)
Age at marriage	-0.0047 (0.0103)	0.0034 (0.0096)	-0.0106 (0.0112)	0.0194 (0.0119)	-0.0057 (0.0068)	-0.0018 (0.0085)	-0.0065 (0.0109)
Number of brothers	0.0128** (0.0054)	-0.0032 (0.0052)	0.0027 (0.0053)	0.0067* (0.0037)	0.0041 (0.0041)	-0.0040 (0.0044)	0.0021 (0.0042)
Number of sisters	0.0057 (0.0055)	0.0003 (0.0054)	0.0099* (0.0054)	0.0010 (0.0040)	0.0072* (0.0040)	-0.0045 (0.0046)	0.0108** (0.0046)
Father years of schooling	0.0045* (0.0024)	-0.0027 (0.0023)	-0.0000 (0.0024)	0.0055*** (0.0016)	0.0023 (0.0017)	-0.0023 (0.0019)	0.0022 (0.0019)
Value of land	-0.0179 (0.0122)	-0.0021 (0.0128)	0.0148 (0.0120)	-0.0215*** (0.0072)	0.0171* (0.0095)	0.0003 (0.0075)	-0.0195* (0.0104)
Agricultural assets	0.0196* (0.0113)	-0.0133 (0.0118)	-0.0094 (0.0115)	0.0101 (0.0069)	0.0018 (0.0085)	-0.0109 (0.0067)	0.0079 (0.0101)
Non-Agricultural assets	0.0168 (0.0121)	0.0048 (0.0124)	-0.0141 (0.0112)	0.0142** (0.0066)	-0.0160* (0.0097)	-0.0023 (0.0068)	0.0115 (0.0099)
R-squared	0.0598	0.0157	0.0056	0.0513	0.0316	0.0279	0.0121
N	4061	4046	4054	4028	4061	4038	4056

Table 4: Relationship between consanguinity and social distance. Notes: (i) Standard errors—shown in parentheses—are clustered at the bari-level, * denotes significance at 10% level, ** significance at 5% level; and *** significance at 1% level.

Table 5: Relationship between dowry and social distance

	Dowry			Log of Dowry Value		
	(1)	(2)	(3)	(4)	(5)	(6)
Married a cousin	-0.0845*** (0.0239)	-0.0690*** (0.0199)	-0.0609*** (0.0197)	-0.1533*** (0.0489)	-0.0957*** (0.0410)	-0.0730* (0.0410)
Married a relative	-0.0705** (0.0277)	-0.0414* (0.0239)	-0.0418* (0.0233)	-0.1572*** (0.0581)	-0.0764 (0.0492)	-0.0805* (0.0482)
Married non-relative in village	-0.0272 (0.0222)	-0.0379** (0.0186)	-0.0346* (0.0184)	-0.0789* (0.0462)	-0.0868** (0.0381)	-0.0731* (0.0378)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.0039	0.3226	0.3443	0.0036	0.3243	0.3375
N	4056	4056	4056	4056	4056	4056

Table 5: Relationship between dowry and social distance. Notes: The variable *Log of dowry value* assumes a dowry value of 1 taka if no dowry was paid; (ii) Standard errors—shown in parentheses—are clustered at the bari-level, * denotes significance at 10% level, ** significance at 5% level; and *** significance at 1% level.

Table 6: Relationship between consanguinity and inheritances

	Female Sample				Male Sample			
	Any Inheritance	Farmland	Home	Any Inheritance	Any Inheritance	Farmland	Home	Money
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Married a cousin	0.0429*** (0.0145)	0.0341*** (0.0116)	0.0160* (0.0083)	0.0098* (0.0053)	-0.0200 (0.0225)	-0.0392* (0.0221)	-0.0193 (0.0238)	-0.0105* (0.0063)
Married a relative	0.0419** (0.0168)	0.0299** (0.0134)	0.0237** (0.0096)	0.0076 (0.0062)	0.0191 (0.0249)	-0.0057 (0.0245)	0.0057 (0.0264)	-0.0101 (0.0069)
Married a non-relative within village	0.0374*** (0.0128)	0.0291*** (0.0102)	0.0107 (0.0073)	0.0038 (0.0047)	-0.0347* (0.0197)	-0.0280 (0.0193)	-0.0443** (0.0208)	0.0114** (0.0055)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.0913	0.0670	0.0422	0.0162	0.2914	0.4305	0.2565	0.0397
N	4795	4795	4795	4795	3242	3242	3242	3242

Table 6: Relationship between consanguinity and inheritance. Notes: (i) Standard errors—shown in parentheses—are clustered at the bari-level, * denotes significance at 10% level, ** significance at 5% level; and *** significance at 1% level.