



The uncomfortable truth about land disputes in Bangladesh: Insights from a household survey

Ashikur Rahman^{a,1}, Rafi Hossain^{b,*,1}

^a Senior Economist, Policy Research Institute, Dhaka, Bangladesh

^b Economist, Policy Research Institute, Dhaka, Bangladesh



ARTICLE INFO

Keywords:

Land Dispute
Property Dispute
Socio-economic

ABSTRACT

This research investigates three types of land disputes using a survey of 1050 household from 14 districts spanning across all 7 administrative division of Bangladesh. Moreover, not only we undertake a descriptive evaluation of the survey to understand the severity of land disputes within our sample, we empirically explore the role of land and household factors to understand what makes some land parcels more prone to disputes than others. Furthermore, four interesting findings emerge from our estimations. First, the base line results indicate that approximately 17.7% households had or have disputes in one of their land parcels. This means approximately one in five households in our sample is or was suffering from land dispute(s). Second, approximately half of all land parcels are maintained through un-registered documents, especially for inherited land parcels. This is remarkably low if we compare the state of land registrations to other countries. Third, households with 'registered' land parcels on average experience both lower pending disputes and fear of future disputes. On the whole, while we do not attribute causation to our estimates, these correlations motivate further empirical assessments, so that we can improve our understanding of the state of land disputes in Bangladesh.

1. Introduction

Land has emerged as an invaluable asset for its people in Bangladesh. The economic transformation over the last four decades also means that the use of land has witnessed drastic changes, as the conversion rate of agricultural land to non-agricultural units has witnessed substantial rise. Land, in essence, is considered as an instrumental capital for enhancing both livelihoods and economic opportunities. In addition, since ownership of land or property remains the most important nucleus of economic development in a capitalist economic framework, access and rights to land creates opportunities for investment and economic returns (Besley, 1995). This has also raised the prospects of land dispute as the economic importance of land ownership has exponentially increased. Further, closely tied to the notion of land disputes is the issue of property rights. Economic historians argue that societies that were able to offer sound property rights created the early conditions for economic development (North, 1981; DeLong and Shleifer, 1992; Acemoglu and Robinson, 2012). For Bangladesh, which aims to embark on an accelerated development trajectory, this issue is imperative as sound management of land will create essential economic and social benefits.

Against that backdrop, the principal objective of this study is to understand the state of land disputes in Bangladesh. In particular, this investigation is concerned with exploring the severity of land disputes, understanding its possible causes at the household and land parcel level, and isolating the broader socio-economic implications of land disputes for the victims. In terms of definition, land dispute refers to a situation where at least two parties oppose each other due to dissimilar interests over the property rights to land. This includes: the right to use the land, to manage the land, to generate an income from the land, to exclude others from the land, to transfer it and the right to compensation for it (Wehrmann, 2005). Property or land disputes mostly occur when there is a likelihood of obtaining property for low cost – no matter if it belongs to the state, common or private entities. Such incidents are generally facilitated by demographic and economic factors like increased population, technological change, improved terms of trade for agriculture, or non-agricultural demand for land, which results in higher competition for land due to steep appreciation of land value (Castagnini and Deininger, 2005). Property disputes that are common are inheritance disputes, disputes between neighbors and over ownership.

Property disputes are a widespread phenomenon and have occurred across space and time. However, it is difficult to arrive at a reliable

* Corresponding author.

E-mail addresses: ashrahman83@gmail.com (A. Rahman), mdrafiHossain@gmail.com (R. Hossain).

¹ Current affiliation: Consultant, The World Bank, Plot E 32, Syed Mahub Morshed Avenue, Dhaka 1207.

estimate of property disputes. Developing countries, in particular, suffer from poor availability of data on such issues; hence, estimates are rare. Although land disputes handled by the courts give an idea about the severity of the problem, estimates of land disputes and its consequences are difficult to pinpoint in Bangladesh. While government estimates indicate that there were 8 Lac land-related cases pending until 2004 (Sarwar et al., 2007), Barakat and Roy (2004) suggest that the annual number of land litigation pending with major courts are 1.4 million and 120 million people are affected by land related disputes. It is further observed that land related cases need an average of 9.5 years for settlement. Unquestionably, with these diverging estimates, it is difficult to settle the severity of the issue although anecdotal evidence is indicative that a substantial proportion of litigations in the judiciary are related to land disputes.²

Accordingly, this paper aims to fill the void as it assesses the severity of land disputes across households, scrutinizes who suffers from such disputes, attempts to identify its possible drivers and estimates the socio-economic costs of land dispute at the household-level. This is, nonetheless, a difficult empirical undertaking for numerous reasons. First, while some of the costs associated with land disputes are measurable, the psychological (and often physical) and emotional costs associated with land disputes are often difficult to quantify. Second, land is often illegally expropriated by the powerful quarters of the society who can utilize them in a reasonable economic manner. Yet, the powerless quarters whose rights are violated through the illegal expropriation of land raises an essential equity issue. Collectively, these concerns make it troublesome to estimate the impact of land dispute on social welfare at the national level. As a result, a prudent and pragmatic technique for understanding various dynamics associated with land dispute is to examine the phenomenon at the household level, which forms the core methodological highlight of this study.

Consequently, in this paper, we employ a linear probability model to investigate land disputes at three stages: {i} pending dispute; {ii} fear of future dispute; and {iii} resolved dispute. We conducted separate regressions for each type of disputes to identify the various factors that drive their variation in the sample. The categorization of land disputes into these three types is of paramount importance as the decision-making process of rational economic agents' (even under the assumption of bounded rationality) evaluates their respective past and present experiences, and their expectations for the future. Thus, evaluating land disputes under these categories is essential to understand the nature of optimism and pessimism among land or property owners. Likewise, the noted categorization of disputes also allows the study to note their separate possible causes and consequences.

Overall, while the research avoids causal interpretation of its result, the empirical scrutiny is indeed the first of its kind to highlight useful insights into the state of land disputes in Bangladesh. Even so, it is important to mention that the overall endeavor remains exploratory in nature and it aims to provide useful insights for both policymakers and future academic pursuits on the severity, causes and consequences of land disputes. In the next section, we review the literature on land disputes. Section 3 elaborates our methodological approach and the data. Section 4 offers various descriptive statistics. In section 5 and 6, we provide the base-line results on the possible causes and consequences of land dispute. Lastly, section 7 offers the concluding remarks.

2. Literature Review

Land is often the epicenter of conflict due to its vital social and

²For example, in 2010, it was noted that more than two-thirds of our 1.9 million litigations in the judiciary are concerned with disputes on land. For more information, please see <http://www.trust.org/item/?map=land-disputes-choke-up-bangladeshs-courts-is-help-at-hand/>

economic characteristics. A land conflict is usually understood to be 'competing or conflicting claims to land, often to large areas of land, typically by groups...which are not easily resolved through negotiation or adjudication within the existing legal framework' (Bruce and Holt, 2011, p. 15). The notion of conflict specifically entails tension and danger of violence, and may only escalate to violence if vulnerabilities escalate (Lombard and Rakodi, 2016). The primary drivers of land dispute can vary a great deal in both nature and intensity, and one needs to develop a deeper understanding of the determinants of land dispute for articulating an effective land market. From South America to Africa and Asia, monumental political and social transformations were in part ignited by factors associated with one's 'right to land' and inequality in its distribution. For example, in Latin America, acute land concentration and entrenched power of land-based elites have long been observed as both the cause and manifestation of poverty, and aspiration for agrarian reform remains a powerful source of political and social struggle (Paige, 1975, 1996; Tutino, 1986; Seligson, 1995; Diskin, 1996; Mason, 1998; Kay, 2002). In Africa, demographic pressure due to a rise in population, agricultural commercialization and urbanization have contributed to the increasing number of property disputes, with a land tenure system which is not well-equipped to resolve such disputes (Cotula et al., 2004; van Donge, 1999). Others have argued that a leading cause of land disputes is the poor definitions surrounding land-ownership system in terms of responsibility, land-administration and formal institutions (Deininger, 2003).

Apart from macro and structural determinants of land dispute, specific household and land characteristics have also been identified as potential causes of dispute. Deininger and Yamano (2005) examine the state of land dispute in Kenya and report that unregistered parcels are more likely to have pending disputes than registered land parcels. The authors also note that for widows, having land parcels registered under the names of their deceased husbands increases the likelihood of dispute relative to a situation where land parcels are registered under their own names. Similar evidence is also noticed in Uganda, where Castagnini and Deininger (2005) affirmed that households headed by females and widows experience more land disputes in comparison to male headed households. Agarwal's (1994) study on gender and land rights in South Asia also point that women are denied of land rights in countries like India, Pakistan, Bangladesh, Nepal and Sri Lanka due to various reasons. According to Menon (2014), a safeguarded land ownership can bring security to women beyond economic gains but also make them prone to violence by male relatives in efforts to gain control on property. Collectively, these evidences highlight the importance of further scrutinizing the role land titling, gender and marital status of the owners in shaping land disputes across household.

Apart from gender dimensions, other features of individuals or groups such as ethnicity, religion may also assist or refrain possibility of conflict over land or property (Fonseka and Raheem, 2010; Lombard and Rakodi, 2016). The negotiation power of occupant or conflict party based on the support they may receive from political party, local leader or civil society organization may also affect the conflict resolution process. Obala and Mattingly (2013) found that corruption and ethnicity may have separately or in conjunction resulted in conflict over land in Nairobi, Kenya. Household characteristics must therefore be closely administered while exploring inherent causes of land conflict.

In terms of intensity, Deininger and Yamano (2005) propose that land-disputes do not necessarily arise from large-scale civil strife and unrest but also from small-scale disputes with neighbors, relatives, land-lords and local government. Additionally, existing work does argue that even trivial land disputes can be continued for generations and in some context can trigger unintentional ethnic tension (Kuran, 1993; Fred-Mensah, 1999). Biezeveld (2004) argues that due to the presence of informal land management practices besides formal ones, the parties involved in dispute make their own arguments and justifications according to their own norms and rules. More so, the presence of customary dispute resolution mechanisms through the involvement

of traditional leaders may focus on communal well-being rather than entrenching individual rights (Henrysson and Joireman, 2009). There is paramount evidence globally that absence of land governance in terms of poor transparency, accountability and the rule of law encourages corruption. This may occur within statutory or customary systems and range from small-scale bribes to abuse of higher level agency power by political or bureaucratic officers (Transparency Institute, 2011). Administrative corruption level in land administration ranks among the top three institutions in Bangladesh. It demonstrates extremely high rates of bribery at 71.2 % based on national household survey estimations from people seeking their service.³

It must be acknowledged here that this report will not evaluate whether the possible determinants of land dispute discussed above have a significant role in explaining land dispute propensity in Bangladesh. The research design depends on empirically examining dispute at the household level, so the methodology is unlikely to pinpoint structural, political and institutional determinants since they are common to all units of observations in the sample. Our empirical examination is designed to help us isolate household and land characteristics that can increase the likelihood of disputes across land parcels. In particular, we aim to separately examine the possible determinants of experiencing: {i} pending dispute; {ii} fear of future dispute; {iii} resolved dispute. This will help understand whether the possible drivers of land dispute vary across these three types of dispute. It will also be a novel exercise as we are unaware of any investigation that has empirically examined the possible sources of land dispute at these three levels in Bangladesh, even though some work does indicate that such a disaggregate examination can provide useful insights (Deininger and Yamano, 2005).

3. Methodology and data

Our research objective aims to infer an understanding of the severity of land disputes in Bangladesh. We also aim to isolate its possible determinants and socio-economic implications. This necessitates that we study a random sample of households owning land parcels, which will allow us to calculate the share of households who currently suffers or have previously suffered from land disputes. Hence, we undertook a survey across 1050 households who own at least one land parcel.⁴ As noted in Household Income and Expenditure Survey (2010), 95.41 % of households own at least one land parcel. Hence, our sample is likely to offer valuable insights that are relevant for a large share of the population. This approach will also help us investigate the extent to which households have suffered land disputes in the past or fear future dispute on their land parcel.

An alternate approach is to randomly study a sample of court litigations to find the share of land related litigations. However, a limitation of such methodological approach is that not all land disputes evolve into court litigations. Moreover, it will be difficult to capture households who fear disputes in the future. A detailed set of information at the household and land parcel level will also facilitate empirical examinations that are designed to isolate the possible household and land parcel level determinants of land dispute and help explain why some households are more prone to land disputes than others. In addition, since this study also aims to document and examine various socio-economic costs associated with land disputes at the household level to shed insights on the consequences of land disputes, the methodological choice of examining households is

likely to aid all three objectives.⁵

On the whole, given the undertaken empirical inquiry – to the best of our knowledge – is first of its kind on the severity, possible causes and consequences of land disputes in Bangladesh, it will provide interesting insights on a grave socio-economic phenomenon that has received limited systematic examination in Bangladesh. Likewise, we are optimistic that the derived findings will motivate other types of examinations on land disputes to either substantiate or disqualify the key inferences we articulate from the present research endeavor.

3.1. Data

We designed questionnaires with a view to document a wide-ranging set of information on issues related to land disputes. Primary field level data across all the seven divisions (Dhaka, Chittagong, Sylhet, Rajshahi, Khulna, Rangpur and Barisal) of Bangladesh were collected. A sample size of 1050 respondents who own at least one land parcel is considered and a stratified random sampling technique is employed across all the seven administrative divisions. That is, from each of the seven divisions, two districts are chosen randomly. Moreover, from each district, the *sadar upazila* is selected along with two randomly selected *upazilas*. In total, household level information is derived from 14 districts (which constitute of 14 *Sadar Upazilas* and 28 *Upazilas*).

Furthermore, each *Upazila* is divided into units called *mouzas*. A *mouza* is referred to as a type of administrative district, within which there may be one or more settlements corresponding to a specific land area. One *mouza* is randomly selected from the municipality/city corporation area from the *Sadar Upazilas*. In addition, with respect to the other *upazilas*, one *union* is randomly chosen from which a single '*mouza*' unit was selected at random. Thus, our sample includes a total of 42 *mouzas*. Subsequently, 25 random households with land ownership are selected from each of the *mouza* unit, giving rise to a total of 1050 households being surveyed.⁶ This method of stratification helps attain an overall representation of both urban and rural population, since recent population census is indicative that nearly one third of the population lives within urban arrangements.

A structured questionnaire is used for the survey with a few open-ended questions where similar responses are clustered into a common group and coded. A detailed set of information on household characteristics of land parcel owners, such as age and gender of household head, monthly income, etc. is also collected. In line with our classification of disputes at three stages, namely *pending dispute*, *resolved dispute* and *fear of future dispute*, we compute three indicator variables corresponding to these disputes. More specifically, *pending dispute* measures whether a household has an ongoing dispute on a land parcel; *resolved dispute* refers to a past dispute, whereas *fear of future dispute* captures whether a household head fears dispute on their respective land parcel in the future. In addition, to determine land characteristics, we construct multiple variables to account for size of the land, value of the land, method of ownership – i.e. inherited or purchased, type of land, nature of the document – registered or un-registered.

3.2. Econometric model: causes of land dispute

The econometric model presented below helps us to explore

⁵ In design, this study is similar to existing work on Kenya and Uganda on the causes and consequences undertaken by Deininger and Yamano, (2005), and Deininger and Castagnini (2005).

⁶ Each respondent is allowed to provide information on nine types of land parcels with three options for each type. This allowed the survey to accumulate information on 27 land parcels (max). This is done with the intention to gather data on disputes from a wide range of assets that each respondent might possess. This scope for reporting a wide range of assets will also allow the study to infer some useful insights on the state of land ownership in Bangladesh across people with at least one land parcel.

³ Based on a survey of 6,000 households. Transparency International Bangladesh, National Household Survey 2010 on Corruption in Bangladesh (Dhaka: TI Bangladesh, 2010). www.ti-bangladesh.org.

⁴ We did not look at khas land since in Bangladesh it does not have any property rights. We only looked at land that can be bought, sold, inherited and registered with clearly defined property rights.

whether land and household characteristics shape the distribution of land disputes in the sample. Given that we study disputes at three levels, we employ separate regressions to see the exact combination of factors that shape their variation in the sample. More specifically, the following base-line specifications allow us to discern household and land characteristics that are associated with the occurrence or fear of dispute across land parcels. We control household and land characteristics that are observed in the literature as essential determinants of land dispute (Deininger and Yamano, 2005; Deininger and Castagnini, 2006).

$$\text{Pending Dispute}_{i,h,u} = \alpha + \delta L_{i,h,u} + \mu HC_{i,h,u} + \zeta_u + \epsilon_{i,h,u}$$

$$\text{Fear of Future Dispute}_{i,h,u} = \alpha + \delta L_{i,h,u} + \mu HC_{i,h,u} + \zeta_u + \epsilon_{i,h,u}$$

$$\text{Resolved Dispute}_{i,h,u} = \alpha + \delta L_{i,h,u} + \mu HC_{i,h,u} + \zeta_u + \epsilon_{i,h,u}$$

Here, $L_{i,h,u}$ is a vector of land characteristics for land parcel (i) owned by household (h) from upazila (u). Similarly, $HC_{i,h,u}$ is a vector of household characteristics for household (h) who owns land parcel (i) from upazila (u). We also incorporate upazila dummy variable ζ_u to account for basic regional differences, and $\epsilon_{i,h,u}$ is the random error term.

These baseline specifications allow us to see if land disputes have any robust association with various household characteristics. We also estimate the relationship between land parcel characteristics and method of ownership – i.e., inherited or purchased, and the likelihood that it experiences dispute. Collectively, the employed methodology allows us to isolate factors that can shape the occurrence of land dispute across the households in our sample.

It is essential to note that the aforementioned empirical strategy will only allow us to detect a correlation between the variables of interest, since the results might suffer from endogeneity problem. Nevertheless, if the findings do indicate significant correlations between the variables of interest, then they will provide adequate motivation for future research endeavours to investigate a possible causal role of noted factors in shaping land dispute across households. This is also an important undertaking since we are aware of no existing econometric examination that has scrutinized this issue in Bangladesh across such a large sample. Hence, a systematic analysis of household level data will not only offer some insight on the severity of land dispute in Bangladesh, but also its possible determinants.

4. Descriptive statistics

Having stated our methodology and scope of this study, we now examine various characteristics of our sample consisting of 1050 households, which correspond to 2122 owned land parcels. In Table 1, we compare household characteristics between our sample and the Population and Housing Census 2011 to see if patterns are broadly similar across the socio-economic characteristics. The table shows that our sample is similar in characteristics to the larger population, although it does show signs of modest improvement. For instance, 68.1 % of households in our sample have access to sanitary toilet facilities, as opposed to 61.6 % of households according to the census. Two issues may have driven this outcome. First, given that we only survey households who own at least one land parcel, our sample is unlikely to include extremely poor households. Second, given that our survey occurs in 2014 while the census was carried out in 2011, the time difference and the associated socio-economic transformation may partly be responsible for the difference. Nonetheless, given that we include households from all seven divisions, including both advanced and lagging regions of the country, we can derive valuable insights for the larger population based on our sample.

Our data illustrates the severity of land dispute in Bangladesh, with 186 households out of 1050 (17.7 %) having a pending or resolved dispute, as shown in Table 2. Thus, roughly one in five households in our sample is going through or previously experienced land dispute. Now,

Table 1
Socio Economic Characteristics: Sample versus Population Census 2011.
Source: BBS.

Socio-Economic Indicators	Report Sample 2014	Population and Housing Census 2011
Household Size	4.75	4.35
Watching Television	56.4	44.8
Source of Drinking Water		
Tube-well	83	89.1
Pond/River/Ditch/Canal	2.29	1.7
Toilet Facilities		
Sanitary	68.1	61.6
Non-sanitary/Kutcha	31.4	31.4
Open Space	0.5	7
Construction Material		
Wall		
Mud	9.62	16.7
Tin	40.7	40.6
Wood	2.57	1.7
Brick/Cement	39.6	26.1
Roof		
Tin	85.5	83
Brick/Cement	12.9	10.7
Floor		
Mud	63.81	74
Brick/Cement	35.8	23.2

while we do not use this finding to make any direct inference regarding the state of land dispute at the national level, the estimates do strongly indicate that state of land dispute in Bangladesh might be very severe. It also allows us to derive some “educated assumptions” regarding the state of land dispute in Bangladesh. For example, according to HIES (2010), 4.59 percent of households in Bangladesh are landless which means that approximately 30 million households own at least one land parcel. Hence, if 17.7 percent households with at least one land parcel had or have dispute with their land parcel, then approximately 5 million households are directly affected by land dispute in Bangladesh. It also follows that roughly 4 million households might be facing land dispute at present. Concurrently, approximately 6.6 % households fear a dispute on their land in future. The collective findings are indicative that land dispute is a serious issue in Bangladesh and a considerable share of the population might be suffering from such a phenomenon. The examination also provides motivation for a more in-depth scrutiny of this issue at the national level since all estimates highlight that land dispute might be a severe phenomenon in Bangladesh.

Table 2 also shows the breakdown of households and disputes by sex and religion of household head. Only 5.24 % of households are headed by females and approximately 13.14 % are Hindu through religious beliefs. Moreover, across female headed households, approximately 18.18 % experience dispute at present with their land parcels. For male headed households, this ratio is 13.17 %. The data is also indicative that female headed households are more likely to fear future dispute on their land parcels. For instance, we observe that nearly 11 % female headed households fear future dispute on their land parcels and only 6.33 % male headed households fear such outcomes. There is, however, not much noticeable heterogeneity between Muslim and Hindu households across land dispute outcomes. Although beyond the scope of this study, it is interesting to note that 89 out of 186 households with dispute went to court for settlement. These results illustrate a consistency with women’s property rights study in Kenya which found that females have weak property rights and limited access to formal dispute resolution systems due to the high costs involved (Henrysson and Joireman, 2009).

Table 2
Sampled Households and Land Disputes by Sex and Religion of HH head.

	Number of Households Number	Number of Households %	Land Disputes at the Household Level					
			Pending Disputes Number	Pending Disputes %	Resolved Disputes Number	Resolved Disputes %	Fear of Future Disputes Number	Fear of Future Disputes %
All	1050	100	141	13.43	53	5.05	69	6.57
Went to Court for Settlement ¹	89	8.5	74	83.15	20	22.47		
Sex of HH head								
Male	995	94.76	131	13.17	51	5.13	63	6.33
Female	55	5.24	10	18.18	2	3.64	6	10.91
Religion								
Muslim	911	86.76	123	13.50	46	5.05	62	6.81
Hindu	138	13.14	17	12.32	7	5.07	6	4.35

¹ The data indicates that 7% of households with at least one land parcel have a land dispute related litigation at the lower or upper judiciary at present.

Table 3
Land Disputes by Divisions.

	Disputes across land parcels							
	Owned Number of Land Parcels Number	Owned Number of Land Parcels %	Pending Disputes Number	Pending Disputes %	Resolved Disputes Number	Resolved Disputes %	Fear of Future Disputes Number	Fear of Future Disputes %
All	2122	100.00	162	7.63	58	2.73	79	3.72
Divisions								
Dhaka	342	16.12	27	7.89	21	6.14	25	7.31
Rajshahi	345	16.26	25	7.25	5	1.45	5	1.45
Khulna	289	13.62	27	9.34	6	2.08	8	2.77
Chittagong	283	13.34	9	3.18	2	0.71	14	4.95
Barisal	309	14.56	25	8.09	4	1.29	9	2.91
Sylhet	284	13.38	29	10.21	7	2.46	6	2.11
Rangpur	270	12.72	20	7.41	13	4.81	12	4.44

Looking at variation of land disputes across different administrative division (Table 3), we notice that Sylhet division has the highest ratio of pending disputes across land parcels and Chittagong division has the lowest. Interestingly, in terms of land parcels whose owners fear dispute over them in future, Dhaka division hosts the highest share of land parcels with fear of future land dispute – closely followed by Chittagong division. Additionally, when we jointly evaluate pending and resolved disputes, more than 14 % land parcels from Dhaka division have or had dispute over them, which makes Dhaka the most land dispute prone region of the country. This, certainly, can be a resultant outcome of many factors, such as increased value of land, growing need for urban space due to demographic pressure, etc.

In Table 4, we show the distribution in the type of document that shapes ownership of land. As noted earlier, land ownership can be maintained through both formal registered documents and non-registered documents - which mostly depend on informal arrangements between people who inherited or purchased the land. As depicted in Table 4, we can see that a large proportion of all the land parcels in the sample remains un-registered. To be precise, almost half the land parcels in the sample (nearly 45.2 %) are informally owned. This phenomenon is noticeable for land types such as unused land, jungle, ponds, etc. Shops and businesses fare somewhat better in comparison, with around 28 % being unregistered. Surprisingly, more than 40 % of households and agricultural land parcels (the two dominant land parcel types in our sample) do not have registered documentation. The analysis also detects a substantial variation in the proportion of registered and un-registered documents for land parcels across the administrative

divisions of Bangladesh. For example, less than half of all the land parcels in Dhaka division have registered land documents while approximately 80 % land parcels in Khulna have registered documents.

The estimate of the overall proportion of land parcels with registered land documents is also very low in comparison with some African countries. For example, a study in Kenya highlights that approximately 81 percent of all land parcels have registered documentation (Deininger and Yamano, 2005). Hence, this acute state of land registration in Bangladesh demands greater introspection, so that we can understand whether households avoid land registration processes due to institutional/administrative deficits or are there demographic/awareness related explanations for this phenomenon.⁷ It is also essential to question to what extent land title security shapes land tenure security in Bangladesh. From existing development literature, we know that land tenure security and land title security are related but are not necessarily synonymous. In fact, land tenure security can sometimes exist without adequate documentation if only the land user feels that he or she will not lose the physical possession of the land. There exists such evidence in Africa where in some work have found that land registration does not ensure property ownership security (Abdulai and Domeher, 2011) The

⁷ In development literature, two issues identified as important steps in developing a modern land market are: (i) defining land rights adequately; (ii) efficient documentation of land rights (Hanstad, 1998). Hence, in this context, the low registration rates across land parcels in our study raises concern as it highlights the poor state of land rights documentation in Bangladesh.

Table 4
Registered and Non-Registered Land by Type and District.

	Total Number of Land Parcels	Number of Registered Land Parcels	Number of Registered Land Parcels %	Number of Non-Registered Land Parcels	Number of Non-Registered Land Parcels %
All	2122	1163	54.81	959	45.19
Type of Land					
Household Agriculture/ Farming	1156	638	55.19	518	44.81
Shop/ Business	608	346	56.91	262	43.09
Pond	28	20	71.43	8	28.57
Fallow/ Un-used Lands	198	96	48.48	102	51.52
Jungle	46	23	50.00	23	50.00
Others	25	6	24.00	19	76.00
Divisions	61	34	55.74	27	44.26
Dhaka	342	159	46.49	183	53.51
Rajshahi	345	196	56.81	149	43.19
Khulna	289	231	79.93	58	20.07
Chittagong	283	91	32.16	192	67.84
Barisal	309	146	47.25	163	52.75
Sylhet	284	167	58.80	117	41.20
Rangpur	270	173	64.07	97	35.93

paper asserts a similar scenario for other developing countries. Therefore, future studies on land issues in Bangladesh must examine this issue thoroughly and bring forward the exact relationship between land title security and land tenure security.

5. Possible determinants of land disputes: base-line results

This section reports the base-line results after the application of the econometric models discussed earlier. The principle objective is to examine if there is a systematic relationship between household and land characteristics and the occurrence of land dispute. Moreover, we do acknowledge that this methodological approach is largely exploratory and will be unable to pinpoint an exact causal relationship between the variables of interest. Nonetheless, given that such an empirical exercise has never been done at this scale in Bangladesh, the analysis is likely to provide useful insights on the possible determinants of land dispute in the country.

We first look at various factors that explain the variation in pending disputes on land parcels across households. We begin with a parsimonious specification including only the land characteristics. As shown in column-1 of Table 5, being registered reduces the likelihood of dispute by 3%. This is in line with existing evidence which notes that land registration can have an important role in shaping the occurrence of land dispute (Deininger and Yamano, 2005).⁸ However, the size of this coefficient is small which raises the possibility of other factors influencing the likelihood of dispute.

Our results also show that larger land parcels are more likely to witness pending land dispute, which is expected as large land parcels often engender boundary disputes and disputes among family members. Interestingly, land value fails to have a systematic relationship with pending land dispute across households. We further observe that

⁸ We do not, however, argue that the estimations pinpoint a causal relationship since land conflict can itself reduce the possibility of undertaking land registration by owners due to legal complications.

Table 5
Characteristics of Land Dispute at Present.

	Dependent Variable: Pending Dispute				
	1	2	3	4	5
Registered	(-)0.031** {0.0132}	(-)0.032** {0.014}	(-)0.032** {0.014}	(-)0.045*** {0.015}	(-)0.045** {0.017}
Present homestead	0.013 {0.015}	0.019 {0.018}	0.018 {0.018}	0.007 {0.020}	0.007 {0.024}
In this city (far and near residen. area)	0.086*** {0.018}	0.093*** {0.019}	0.092*** {0.019}	0.086*** {0.022}	0.086*** {0.028}
Ln Land Value	0.003 {0.006}	0.002 {0.006}	0.002 {0.006}	0.005 {0.007}	0.005 {0.006}
Size of Land	0.011* {0.006}	0.011* {0.006}	0.011* {0.006}	0.011* {0.007}	0.011 {0.007}
By Inheritance (parents)	(-)0.006 {0.014}	0.002 {0.014}	0.002 {0.014}	(-)0.005 {0.015}	(-)0.005 {0.015}
Household	0.043** {0.017}	0.041** {0.018}	0.041** {0.018}	0.040** {0.018}	0.040* {0.022}
Total Members in HH		(-)0.003 {0.003}	(-)0.002 {0.003}	(-)0.002 {0.004}	(-)0.002 {0.003}
Age		0.001** {0.0004}	0.001** {0.000}	0.001* {0.000}	0.001* {0.001}
Female		(-)0.001 {0.037}	0.004 {0.039}	(-)0.031 {0.039}	(-)0.031 {0.043}
Hindu		(-)0.004 {0.017}	(-)0.006 {0.017}	(-)0.064*** {0.023}	(-)0.064*** {0.027}
Widow/ Widower		0.064 {0.042}	0.061 {0.042}	0.077* {0.041}	0.077 {0.051}
Educated		(-)0.017 {0.019}	(-)0.019 {0.020}	(-)0.025 {0.021}	(-)0.025 {0.024}
Ln Monthly Household Income		0.003 {0.010}	0.005 {0.011}	0.001 {0.011}	0.001 {0.014}
Original inhabitant/ Autochthon		(-)0.023 {0.018}	(-)0.023 {0.018}	(-)0.025 {0.019}	(-)0.025* {0.015}
HH Member in Political Party			(-)0.010 {0.018}	(-)0.020 {0.018}	(-)0.020 {0.020}
HH Member stayed abroad (for 5 m +)			(-)0.021 {0.021}	(-)0.012 {0.021}	(-)0.012 {0.025}
NGO Participant			0.013 {0.028}	0.017 {0.028}	0.017 {0.041}
Government Employee			0.007 {0.029}	0.003 {0.029}	0.003 {0.031}
Constant	(-)0.026 {0.065}	(-)0.065 {0.096}	(-)0.090 {0.098}	(-)0.075 {0.109}	(-)0.075 {0.121}
Upazila Effect	NO	NO	NO	YES	YES
N	2122	2122	2122	2122	2122
R-square	0.018	0.024	0.024	0.061	0.061

(*), (**) and (***) denote significance at 10 %, 5% and 1%. Robust Standard Errors are clustered at Upazila Level ln 5.

household land parcels are associated with a 4.3 % higher likelihood of experiencing current dispute. Land parcels located in the town/city of the household also have a higher likelihood of experiencing land dispute. On the other hand, we find no relationship between mode of acquisition – inherited from parents – and pending land disputes.

After incorporating household characteristics (column-2), we see that only the age of the household head has any meaningful relationship with the likelihood of pending dispute. While elderly people are more prone to land disputes, other household characteristics such as gender, religion and marital status appear to have no bearing on the probability of dispute. Column-3 introduces professional affiliation of the household head or members of the household to see whether the derived estimates change significantly. The results, however, show that professional affiliation has no meaningful correlation with pending dispute.

To conduct more robustness checks, in column-4 we incorporate *upazila* dummies to control for *upazila* fixed effects which are common to all land parcels and households within an *upazila*, and in column-5 we cluster standard error at the *upazila* level. Additionally, there is an indication now that size of the land parcel is no longer a significant predictor of current land dispute. From column-4 it can also be noted that household heads who are widows are 7.7 % more likely to experience land dispute at present. This outcome, however, is not significant when we cluster standard errors at the *upazila* level in column-5. In contrast, results from column-5 show that Hindu or female headed households do not necessarily experience more dispute than others. In fact, the findings show that the coefficient for Hindu is -0.064 and is significant at 5%. This point out that Hindu households are on average associated with 6.4 % lower probability of experiencing dispute on their land parcel at present. On the role of being ‘original inhabitants,’ the results suggest that such households are less likely to have pending land disputes. This implies that migrating population is in greater risk of facing pending land disputes, and it brings to attention the security and welfare of households who settle in new areas to pursue better socio-economic opportunities. Finally, there is no indication that a household head that has engagement with NGOs or is a government employee is

less likely to experience a land dispute at present. A similar message is true for households who have a member in political parties. There is also no relationship between household income or education and the possibility of experiencing land dispute at present. On the other hand, households with registered land documents continue to have a lower likelihood of experiencing land dispute at present, underscoring the need to expound the issue of land being unregistered.

We repeated the exact same analysis to identify possible determinants of fear of future dispute and the results are shown in Table 6. Similar to the previous case, land registration continues to be associated with a lower likelihood of dispute. To be more precise, households with registered land parcels have a 2.6 % lower likelihood of fearing future dispute. Although different in magnitude, land registration continues to play a similar role in shaping fear of future dispute when we add household characteristics, professional affiliation, *upazila* fixed effects and clustered standard errors. It is essential to mention that while in our earlier estimates we discussed the concern that pending disputes can also stop households from undertaking land registration; the present estimates do not suffer from the same issue. In fact, given households are more prone to fear of future dispute over un-registered land parcels we are provided with further motivation to derive a better

Table 6
Characteristics of Fear of Future Land Dispute.

	Dependent Variable: Fear of Future Dispute				
	1	2	3	4	5
Registered	(-)0.026*** {0.010}	(-)0.024** {0.010}	(-)0.025** {0.010}	(-)0.018* {0.010}	(-)0.018* {0.010}
Present homestead	0.025** {0.012}	0.020 {0.013}	0.019 {0.013}	0.015 {0.014}	0.015 {0.013}
In this city (far and near residen. area)	0.017 {0.012}	0.014 {0.012}	0.013 {0.012}	0.015 {0.015}	0.015 {0.016}
Ln Land Value	0.002 {0.004}	0.003 {0.004}	0.003 {0.004}	(-)0.002 {0.004}	(-)0.002 {0.004}
Size of Land	(-)0.001 {0.004}	(-)0.001 {0.004}	(-)0.001 {0.004}	0.003 {0.005}	0.003 {0.005}
By Inheritance (parents)	(-)0.018* {0.011}	(-)0.015 {0.0105}	(-)0.016 {0.011}	(-)0.014 {0.011}	(-)0.014 {0.011}
Household	(-)0.004 {0.013}	(-)0.004 {0.013}	(-)0.004 {0.013}	0.002 {0.014}	0.002 {0.013}
Total Members in HH		0.002 {0.003}	0.002 {0.003}	0.003 {0.003}	0.003 {0.003}
Age		0.00003 {0.0003}	0.0001 {0.0003}	(-)0.00004 {0.0003}	(-)0.00004 {0.0004}
Female		0.035 {0.033}	0.045 {0.034}	0.052 {0.035}	0.052 {0.033}
Hindu		(-)0.012 {0.010}	(-)0.015 {0.010}	(-)0.006 {0.013}	(-)0.006 {0.013}
Widow/Widower		0.007 {0.030}	0.003 {0.029}	(-)0.002 {0.032}	(-)0.002 {0.030}
Educated		(-)0.014 {0.012}	(-)0.017 {0.012}	(-)0.016 {0.013}	(-)0.016 {0.015}
Ln Monthly Household Income		(-)0.004 {0.008}	(-)0.002 {0.008}	0.001 {0.009}	0.001 {0.011}
Original inhabitant/ Autochthon		(-)0.002 {0.011}	(-)0.002 {0.011}	(-)0.005 {0.014}	(-)0.005 {0.014}
HH Member in Political Party			(-)0.004 {0.011}	(-)0.012 {0.013}	(-)0.012 {0.011}
HH Member stayed abroad (for 5 m+)			(-)0.030** {0.012}	(-)0.037*** {0.013}	(-)0.037*** {0.017}
NGO Participant			0.008 {0.021}	0.003 {0.022}	0.003 {0.023}
Government Employee			0.020 {0.023}	0.016 {0.023}	0.016 {0.028}
Constant	0.032** {0.046}	0.048 {0.080}	0.024 {0.083}	0.050 {0.089}	0.050 {0.130}
<i>Upazila</i> Effect	NO	NO	NO	YES	YES
N	2122	2122	2122	2122	2122
R-square	0.006	0.009	0.012	0.040	0.040

(*), (**) and (***) denote significance at 10 %, 5% and 1%. Robust Standard Errors are clustered at Upazila Level in column 5.

understanding as to why land registration is so low in Bangladesh and what exact combination of factors can improve this scenario. Perhaps one reason why people still keep land unregistered is that its overall relationship with land dispute, despite being significant is still very small is the coefficient varies between 3–5 %

Table 6 also shows household traits such as age, religion, gender, education and marital status fail to emerge as meaningful predictor of fear of land disputes across households. Surprisingly, economic status of households also has no influence in shaping fear of future land disputes. Lastly, the findings are suggestive that households with a member working abroad for more than six months in last five years has a 3.7 % lower probability of fearing future land dispute on their land parcel. The underlying factors driving this result are not exactly known, but it is possible that individuals who have access to remittance often invest their foreign earning on their land and property. This, in turn, can enhance their sense of property right and make them feel more secured about the land. However, since we did not systematically explore this issue, this only remains a hypothetical conjecture.

We then repeat the same exercise for resolved disputes on land parcels across households. In this case, we encounter results that are somewhat different compared to previous cases. For instance, the role of land registration in resolved disputes is in stark contrast to its role in shaping current and future dispute. As shown in Table 7, the state of land registration has no significant relationship with past disputes. There is also no suggestion that household heads who are female, Hindu or widow/widower experienced greater share of land disputes in the past. There is, nonetheless, some evidence that land value has a positive association with past experience of land dispute. The coefficient for land value is significant at 10 % under the first three columns, but not when accounting for the *upazila* fixed effects. Unlike previous scenarios, the size of the household appears to have a positive relationship with the probability of past disputes. Our estimations also provide no indication that household heads with an affiliation to NGOs or the government have experienced lower land dispute in the past. A similar relationship is also true for households with a member in political parties.

In spite of being able to explore the possible factors that shape the occurrence and fear of land disputes, under all three cases (as shown in Tables 5–7), the employed econometric model suffers from a very poor fit, leaving a large share of variation in the data unexplained. In fact, the R-square is not greater than 0.061 in the noted three tables. This remains an important drawback of the undertaken exercise, even though the overall significance of the regressions is not rejected when we examine the variation in pending and fear of future dispute with *upazila* dummies.

Likewise, the undertaken exercise has also brought to attention that a possible predictor of pending and fear of future dispute is the nature of documentation of land parcels – registered versus un-registered. This is interesting since it will allow us to disentangle further the issue that only a little over half of the land parcels in our sample is registered, as this might have a causal role in explaining the variation in land dispute across land parcels. More specifically, we know from Table 4 and Table 8 that approximately 54.8 % land parcels in our sample have registered documents. This is surprisingly low given improper documentation can create scope for unjust and illegal claims on the land by other economic actors. Additionally, Table 8 brings to notice that a larger share of inherited land parcels remains unregistered. That is, only 45 % of land parcels received through inheritance remains registered. On the other hand, more than 82 % of land parcels either purchased or received through other means are registered.

Therefore, this raises questions regarding the state of land registration rates, especially across inherited and non-inherited land parcels. We have already seen that land registration is associated with a lower likelihood of pending disputes and fear of future disputes. However, the low share of registered land parcels in our sample underline a tendency to avoid formal land registration, for reasons unknown. Is it because

Table 7
Characteristics of Past Land Dispute.

	Dependent Variable: Resolved Dispute				
	1	2	3	4	5
Registered	0.012 {0.008}	0.010 {0.008}	0.011 {0.008}	0.01 {0.008}	0.01 {0.010}
Present homestead	0.029*** {0.010}	0.033*** {0.011}	0.031*** {0.011}	0.032*** {0.012}	0.032** {0.013}
In this city (far and near residen. area)	0.014* {0.008}	0.017* {0.009}	0.016* {0.009}	0.016 {0.012}	0.016 {0.012}
Ln Land Value	0.005* {0.003}	0.006* {0.003}	0.006* {0.003}	0.001 {0.004}	0.001 {0.004}
Size of Land	0.001 {0.004}	0.000 {0.004}	0.000 {0.004}	0.005 {0.004}	0.005 {0.004}
By Inheritance (parents)	0.011 {0.009}	0.013 {0.009}	0.014* {0.009}	0.014 {0.009}	0.014 {0.009}
Household	(-)0.006 {0.010}	(-)0.008 {0.010}	(-)0.006 {0.010}	(-)0.007 {0.010}	(-)0.007 {0.008}
Total Members in HH		0.005* {0.003}	0.005* {0.003}	0.006** {0.003}	0.006** {0.003}
Age		0.0002 {0.0002}	0.0002 {0.0002}	0.0001 {0.0002}	0.0001 {0.0002}
Female		(-)0.005 {0.017}	(-)0.007 {0.018}	(-)0.009 {0.019}	(-)0.009 {0.020}
Hindu		0.004 {0.011}	0.003 {0.011}	0.02 {0.014}	0.020 {0.021}
Widow/Widower		0.012 {0.022}	0.012 {0.022}	0.014 {0.023}	0.014 {0.026}
Educated		0.007 {0.013}	0.008 {0.013}	0.0004 {0.013}	0.0004 {0.016}
Ln Monthly Household Income		(-)0.006 {0.008}	(-)0.006 {0.008}	(-)0.009 {0.009}	(-)0.009 {0.008}
Original inhabitant/Autochthon		(-)0.012 {0.011}	(-)0.011 {0.011}	(-)0.009 {0.013}	(-)0.009 {0.013}
HH Member in Political Party			(-)0.003 {0.010}	(-)0.005 {0.012}	(-)0.005 {0.011}
HH Member stayed abroad (for 5 m +)			(-)0.003 {0.013}	(-)0.007 {0.013}	(-)0.007 {0.012}
NGO Participant			0.034 {0.021}	0.024 {0.022}	0.024 {0.023}
Government Employee			0.007 {0.016}	(-)0.004 {0.015}	(-)0.004 {0.022}
Constant	(-)0.077* {0.039}	(-)0.049 {0.076}	(-)0.050 {0.079}	0.062 {0.083}	0.062 {0.080}
<i>Upazila</i> Effect	NO	NO	NO	YES	YES
N	2122	2122	2122	2122	2122
R-square	0.008	0.012	0.015	0.049	0.049

(*), (**) and (***) denote significance at 10 %, 5% and 1%. Robust Standard Errors are clustered at *Upazila* Level in – 5.

Table 8
Variation of Registered Land Parcels.

Share of Registered Land Parcels.	54.80 %
Share of Registered Land Parcels for Inherited Land Parcels.	45.20 %
Share of Registered Land Parcels for Non-Inherited Land Parcels.	82.20 %

households are deterred by administrative costs and complex procedures and are more comfortable relying on informal arrangements to maintain ownership? Or could it be due to the indifference of land owners to undergo such procedures until the situation demands it?

The low registration rate of inherited land parcels in particular is another area worth scrutiny. Are the low registration rates of inherited land parcels a result of the limited capacity of the nature of documentation to resolve disputes? Or, is there a gender centric demographic argument? For example, it is very likely that male household heads who inherited land parcels might be unwilling to undergo land registration as it will compel them to accommodate their sisters by giving them their hereditary dues. However, without a deeper anthropological examination of such issues, it is difficult to argue whether such gender-bias centric argument can explain the low level

registrations across inherited land parcels. Lastly, why do some countries have better land registration rates than others? More precisely, what can policymakers do to develop a modern land management arrangement that reduces the risks and propensity of land dispute?

Although providing concrete answers to the above-mentioned questions is beyond the scope of this research, we do offer some quantitative analysis of these questions. We separately evaluate the possible causes of dispute over land parcels that are owned through inheritance. This is important as 1570 out of 2122 land parcels in our sample are attained through inheritance. We also look at possible determinants of disputes by separately evaluating land parcels that have registered documentations and those which are unregistered. This should help us pinpoint factors that might make people within each of the specified categories vulnerable to land dispute.

5.1. Households with inherited land parcels

Table 9 lists the results of our evaluation of inherited land parcels. From column-1, which focuses on pending disputes, registered land parcels continue to have a strong negative association with pending disputes. In fact, the estimates show that registered inherited land parcels are associated with 4% lower probability of experiencing a

Table 9
Relationship for Inherited Property.

	Dispute at Present	Fear of Future Dispute	Dispute in Past
Registered	(-)0.040** {0.018}	(-)0.011 {0.008}	0.008 {0.010}
Present homestead	0.014 {0.027}	0.007 {0.020}	0.024 {0.017}
In this city (far and near residen. area)	0.093*** {0.034}	0.011 {0.017}	0.009 {0.015}
Ln Land Value	0.008 {0.007}	(-)0.0003 {0.006}	0.002 {0.006}
Size of Land	0.005 {0.009}	0.002 {0.007}	0.003 {0.005}
By Inheritance (husband)	0.040 {0.050}	0.091* {0.046}	(-)0.030** {0.014}
Household	0.036 {0.022}	0.005 {0.015}	(-)0.002 {0.011}
Total Members in HH	(-)0.005 {0.004}	0.003 {0.003}	0.008** {0.004}
Age	0.001 {0.001}	(-)0.0001 {0.0004}	0.00003 {0.0003}
Female	(-)0.084* {0.051}	0.021 {0.038}	0.003 {0.020}
Hindu	(-)0.045* {0.025}	(-)0.001 {0.015}	0.025 {0.022}
Widow/Widower	0.099 {0.064}	0.001 {0.043}	(-)0.009 {0.021}
Educated	(-)0.026 {0.028}	0.003 {0.016}	0.001 {0.013}
Ln Monthly Household Income	0.005 {0.018}	0.005 {0.013}	(-)0.012 {0.010}
Original inhabitant/ Autochthon	(-)0.036 {0.029}	0.006 {0.019}	0.007 {0.014}
HH Member in Political Party	(-)0.046** {0.022}	(-)0.038*** {0.011}	(-)0.011 {0.012}
HH Member stayed abroad (for 5 m +)	(-)0.012 {0.029}	(-)0.028 {0.018}	0.008 {0.013}
NGO Participant	0.028 {0.058}	(-)0.013 {0.032}	0.021 {0.031}
Government Employee	0.033 {0.045}	0.042 {0.039}	(-)0.002 {0.016}
Constant	(-)0.119 {0.175}	(-)0.028 {0.120}	0.093 {0.106}
Upazila Effect	YES	YES	YES
N	1570	1570	1570
R-square	0.075	0.063	0.062

(*), (**) and (***) denote significance at 10 %, 5% and 1%. Robust Standard Errors are clustered at Upazila Level.

dispute at present. This finding is quite robust as the coefficient is significant at 5%. The results also show that household heads that are female or Hindu are less likely to experience a dispute on their land parcel at present. Female headed households are associated with an 8% lower likelihood of experiencing dispute at present and Hindu households are associated with a 5% lower probability of experiencing a land dispute at present. Interestingly, the estimations are suggestive that households with a member in political party are 4% less likely to face a dispute on their land parcel at present. This probably indicates that affiliation with political parties can work as an implicit protective mechanism from such disputes and provides motivation to thoroughly examine the role of informal and formal institutions in mitigating such phenomenon. There is, however, no indication that professional affiliation of households or their income has any association with pending disputes across inherited land parcels.

In column-2, we scrutinize the possible determinants of fear of future land disputes for inherited land parcels. In this case, registered land parcels no longer have any meaningful role in influencing the fear of future land disputes on inherited land parcels. The results, nonetheless, point out that, across all inherited land parcels, household heads inheriting land from their husbands have a 9% more likelihood of fearing future dispute on their land parcel. This is indicative that females are more vulnerable to such a phenomenon, which highlights an important gender-centric equity issue. On the role of household head characteristics, such as age, gender, religious belief or marital status, there is no evidence of significant relationship with fear of future land dispute. Household characteristics such income also plays no role in explaining the variation in fear of future dispute. In line with column-1, nonetheless, the estimations show that households with a member in a political party are 3.8 % less likely to experience fear of future dispute on their land parcel.

Lastly, column-3 studies possible factors that shaped past disputes on inherited land parcels. The results, in line with Table 7, are suggestive that registered land parcel documents have no relationship with the occurrence of past disputes on inherited land parcels. The findings also point out that across all inherited land parcels, a household head inheriting land from husband has a 2% lower probability of experiencing past dispute. This is suggestive that disputes are probably higher among siblings who inherited land from their parents. Our examination also shows that household size has a positive correlation with past land dispute on inherited land parcels, and this reiterates our earlier assertion that tension between siblings who inherited land can be an important source of dispute. Except for household size, there is no indication of any other type of household or land characteristics providing a significant explanation for the variation in past disputes.

Taken together, the inquiry discussed above allows us to make some important inferences. First, registered land documents continue to have a negative association with pending disputes for households with inherited land parcels. Thus, there is no support for the notion that the nature of documentation does not have any role in influencing dispute across households with inherited land parcels. It also makes it essential to investigate why more than half of all inherited land parcels across households with inherited land parcels remain un-registered, since (as shown earlier) the nature of documentation can predict pending disputes for households with inherited land parcels. Second, across households with inherited land parcels, female and Hindu headed households are less likely to experience pending dispute, which mitigates the concern that minority or female headed households are in greater threat of land dispute when the land is received through inheritance. Third, there is a robust negative relationship between being affiliated with a political party and the likelihood of experiencing or fearing future land dispute. This is an interesting result and it influences us to further examine why such affiliation can matter and how it determines the choice of formal and informal institutions in resolving land dispute. Our findings also show that households with land parcels that are inherited from husbands experience a greater fear of future dispute.

Finally, size of the household has a positive correlation with the occurrence of past disputes.

5.2. Households with registered and un-registered land parcels

We have previously seen that the state of land registration is an important predictor of pending and fear of future disputes. As such, we now explore the likely determinants of land disputes by separately evaluating registered and unregistered land parcels.

Table 10 shows the results of our evaluation of registered property. As column-1 illustrates, other types of land characteristics such as size of the land and the value of the land fail to be an important predictor of pending disputes, along with the manner of inheritance. Individual characteristics, such as age and gender also cease to play a role in predicting current disputes. Interestingly, the estimations do indicate that household head who is a government employee experiences lower land dispute at present. In column-2, we examine the determinants of fear of future dispute for land parcels that have registered documentation. The only variable that maintains a significant relationship with our outcome variables of interest is households with a member who stayed abroad for more than six months in the last five years, which has a negative association with fear of future dispute on land parcel. Lastly, when we examine the factors that shape the variation in

Table 10
Relationship for Registered Property.

	Dispute at Present	Fear of Future Dispute	Dispute in Past
Present homestead	(-0.021 {0.032}	0.011 {0.012}	0.053*** {0.016}
In this city (far and near residen. area)	0.058* {0.031}	0.028 {0.019}	0.044*** {0.014}
Ln Land Value	0.008 {0.010}	(-0.0002 {0.006}	0.002 {0.005}
Size of Land	0.011 {0.009}	0.003 {0.005}	0.005 {0.004}
By Inheritance (parents)	(-0.003 {0.017}	(-0.004 {0.011}	0.017 {0.011}
Household	0.039 {0.027}	(-0.0020544 {0.0158971}	(-0.017 {0.014}
Total Members in HH	0.001 {0.004}	0.002 {0.003}	0.006 {0.004}
Age	(-0.0002 {0.001}	(-0.00007 {0.001}	0.0002 {0.0003}
Female	(-0.020 {0.065}	0.025 {0.057}	0.003 {0.036}
Hindu	(-0.058 {0.045}	0.003 {0.022}	0.025 {0.031}
Widow/Widower	0.090 {0.074}	(-0.007 {0.026}	0.032 {0.048}
Educated	(-0.016 {0.028}	(-0.031 {0.022}	0.003 {0.022}
Ln Monthly Household Income	0.003 {0.013}	0.006 {0.014}	(-0.010 {0.013}
Original inhabitant/Autochthon	(-0.020 {0.014}	(-0.020 {0.018}	(-0.025 {0.019}
HH Member in Political Party	(-0.000 {0.028}	0.015 {0.016}	(-0.001 {0.014}
HH Member stayed abroad (for 5 m +)	(-0.006 {0.038}	(-0.051*** {0.017}	(-0.022 {0.015}
NGO Participant	(-0.023 {0.044}	0.011 {0.021}	0.021 {0.024}
Government Employee	(-0.048* {0.027}	(-0.023 {0.021}	0.001 {0.035}
Constant	(-0.095 {0.134}	(-0.017 {0.160}	0.060 {0.125}
Upazila Effect	YES	YES	YES
N	1163	1163	1163
R-square	0.065	0.055	0.068

(*), (**) and (***) denote significance at 10 %, 5% and 1%. Robust Standard Errors are clustered at Upazila Level.

resolved disputes for registered land parcels, we note that variables that have some predictive capacity are locations of the land parcels.

Table 11 studies the possible determinants of pending, resolved and fear of future dispute for households with unregistered land parcels. Column-1 shows that the age of a household head has a positive association with the possibility of pending disputes. Other individual characteristics, such as gender and marital status, however, do not explain the variation in pending disputes. Surprisingly, Hindu households are associated with a 7.9 % lower likelihood of experiencing pending dispute. This does not substantiate the view that such groups will be more vulnerable if they have incomplete documentation. Other than this, land characteristics such as value of land, size of land or type of land or professional affiliation of household head fail to explain the variation in pending disputes.

Column-2 studies the factors that can shape the variation in fear of future dispute across non-registered land parcels. The results show that individual characteristics such as age, gender, religious belief and marital status of the household head do not explain the variation in fear of future disputes. Interestingly, the findings are indicative that those who inherited land parcels from their parents face a 9% lower likelihood of experiencing fear of future dispute. Likewise, if a household has a member in the political party there is a 3.7 % lower possibility for the household to fear a future dispute on their unregistered land parcel.

Table 11
Relationship for Unregistered Property.

	Dispute at Present	Fear of Future Dispute	Dispute in Past
Present homestead	0.031 {0.040}	0.005 {0.032}	(-0.012 {0.017}
In this city (far and near residen. area)	0.116** {0.047}	(-0.001 {0.023}	(-0.032** {0.013}
Ln Land Value	0.004 {0.008}	(-0.002 {0.008}	(-0.003 {0.009}
Size of Land	0.008 {0.009}	0.004 {0.008}	0.007 {0.009}
By Inheritance (parents)	(-0.035 {0.054}	(-0.093* {0.049}	0.011 {0.008}
Household	0.044 {0.031}	0.016 {0.023}	0.016 {0.012}
Total Members in HH	(-0.007 {0.007}	0.002 {0.004}	0.006* {0.004}
Age	0.002** {0.001}	0.00008 {0.001}	0.0001 {0.0003}
Female	(-0.034 {0.047}	0.056 {0.053}	(-0.010 {0.020}
Hindu	(-0.077* {0.043}	0.001 {0.022}	0.010 {0.018}
Widow/Widower	0.052 {0.061}	(-0.008 {0.058}	(-0.008 {0.019}
Educated	(-0.030 {0.039}	0.006 {0.024}	0.010 {0.015}
Ln Monthly Household Income	(-0.004 {0.025}	0.003 {0.016}	(-0.005 {0.012}
Original inhabitant/Autochthon	(-0.044 {0.043}	0.015 {0.030}	0.027*** {0.010}
HH Member in Political Party	(-0.047 {0.029}	(-0.041*** {0.015}	(-0.012 {0.016}
HH Member stayed abroad (for 5 m +)	(-0.027 {0.047}	(-0.029 {0.030}	0.013 {0.016}
NGO Participant	0.048 {0.069}	(-0.014 {0.044}	0.036 {0.045}
Government Employee	0.072 {0.076}	0.075 {0.056}	(-0.013 {0.011}
Constant	(-0.055 {0.250}	0.079 {0.194}	0.051 {0.090}
Upazila Effect	YES	YES	YES
N	959	959	959
R-square	0.106	0.087	0.083

(*), (**) and (***) denote significance at 10 %, 5% and 1%. Robust Standard Errors are clustered at Upazila Level.

Table 12
Socio-Economic Activity and Land Dispute.

Socio-Economic Activity for HH with Land Dispute	Yes %	Not Applicable %	No %	Avg. Time Cost No. Days	Avg. Financial Cost Taka
Economic Activity					
Business Stopped	13.4	58.6	28	87.4	76400
New investment was stopped	2.2	56.4	41.4	42.5	9125
Unable to go to working place	25.3	–	74.7	38.4	8398
Bribe					
Thana/Police	18.3	–	81.7	–	22270
Salishkar	25.3	–	74.7	–	5483
Chairmen/Members	3.8	–	96.2	–	6642
Political Leaders	10.2	–	89.8	–	16236

N = 186 {No. of households with pending or resolved disputes}.

Lastly, column-3 shows that the only relevant factor that shapes resolved disputes within un-registered land parcels is the size of the household. This is also in line with our earlier outcomes in Table 7.

The results discussed have allowed this study to infer some broad insights on the possible causes of land dispute across households in Bangladesh. In particular, the empirical examination pinpoints specific household and land parcel characteristics that can expedite the likelihood of a household to experience land dispute. We come across several factors that are associated with the likelihood of dispute. For instance, inadequate documentation appears to be an important source of land dispute across households. While we do not use a casual interpretation to evaluate our findings, the results nonetheless provide specific direction for future research by pointing out factors that might explain the variation in land dispute across households.

5.3. Socio-economic activity and cost of land dispute

Table 12 highlights various socio-economic activities that are observed across households with land disputes. Moreover, it brings to attention numerous insights relevant for understanding the various socioeconomic costs incurred due to land disputes. To start with, our examination shows that out of the 186 households who has or had land disputes, 13.4 % reported that their business was stopped. In addition, the average time cost (i.e. the number of days the business was stopped) is approximately three months and the average loss is reported to be Taka 76,400.32 Our analysis also pinpoints that land dispute stopped new investment for 2.2 % households with land dispute and it delayed investments by an average of 1.4 months. Moreover, 25.3 % households with current or previous land dispute report that they could not go to work for an average of 38 days which resulted in a loss of approximately Taka 8400. Altogether, the patterns observed are broadly in line with economic intuition since the losses incurred through halted business are much larger in comparison to the losses that amounted from delays in new investment or work life interruption.

Lastly, we also explore the incidence of bribe and its relationship with land dispute. For example, the examination of survey data reveals that 18.3 % households with pending or resolved land one average paid Taka 22,270 as bribe to police.⁹ This is suggestive that approximately one in five people with land disputes are exposed to illegal behavior. We also notice that when it comes to employing informal means – salishkar - to resolve land dispute, approximately one in four households have paid bribe. Besides, the average bribe to shalishkar is about Taka 5483. This finding is in fact worrying given salishkar is the second most sought agent that people employ as a first choice to resolve land disputes.¹⁰ In contrast, the

⁹ The maximum bribe that was paid to police official is Taka 200000 with the minimum amount being Taka 500

¹⁰ The maximum bribe that was paid to salishkar is Taka 50000 and the minimum is Taka 200

incidence of bribe to chairman/member or political leaders is very low.

Table 13 contributes further to our understanding of the possible consequences of land dispute by exploring the relationship between costs associated with land dispute and time since dispute. To this end, we compute the following variables for each household with land dispute: {i} Lawyer fee so far: it is the cumulative legal expenses incurred by a household with a pending dispute up till May 2014; {ii} Lawyer fee incurred: it is the cumulative legal expenses incurred by a household with a resolved dispute; {iii} Total Cost So Far: it is the cumulative total costs associated with land dispute incurred by a household with a pending dispute up till May 2014; {iv} Total Cost Incurred: it is the cumulative total costs associated with land dispute incurred by the a household with a resolved dispute.

In Table 13 we depict time and costs associated both pending and resolved disputes. Additionally, our estimates reveal that there is considerable variation in costs and time associated with land dispute for both pending and resolved dispute. For instance, we notice that for resolved disputes, cumulative lawyer fee ranges between Taka 115,000 and Taka 500 and cumulative total cost incurred ranges between Taka 200,000 and Taka 0. In addition, the average lawyer fee for resolved dispute is Taka 21,000 and average total cost for resolved dispute Taka 37,894. The average time taken for resolved disputes to find settlement is approximately three years, even though there are cases where a land dispute found settlement after 17 years. Furthermore, when we examine the distribution of time taken for resolved disputes, we can see that almost 57.4 % found settlement within a year and only 6% resolved disputes took more than 10 years for settlement.

In the case of pending dispute, average cumulative lawyer fee is Taka 57,471, even though it ranges between Taka 200 and Taka 800,000. Similarly, average cumulative total cost associated with pending dispute is Taka 93492, and it ranges between no costs to Taka 128,500. Interestingly, average time spent on pending disputes is approximately 8 years, with some disputes enduring for nearly 50 years. Moreover, when we study the distribution of time spent till now on pending disputes, we can see that 20 % disputes are going on for less than a year and 25 % pending disputes are there for more than 10 years.

It is interesting to see that the weight average of total cumulative costs is approximately Taka 80,000 which is roughly equal to 45 % of a household's annual income.¹¹ Thus, there is clear chance that land dispute can trigger substantial economic loss at the household level. It is also important to mention that since we could not calculate the present value of all the costs that were incurred before or during early stages of land litigation, this ratio is approximately a lower bound of the incidence of land dispute and its share of annual income of households. From un-reported results, we also know that only 48 % households with

¹¹ Coincidentally, Barkat and Roy (2004) stated that the average expenditure on one dispute by one party is approximately Taka 90000. This is somewhat similar to our estimate, but it is nevertheless larger.

Table 13
Time and Costs Associated with Resolved and Pending Land Conflict.

	Average	Min	Max
Resolved Conflict			
Time (years)	3.5	0	17
Lawyer Fee (Tk)	21058.82	500	115000
Total Cost (Tk)	37894.4	0	200000
Pending Conflict			
Time (Months)	95.4	0	50
Lawyer Fee (Tk)	57471.25	200	800000
Total Cost (Tk)	93492	0	1285000
Weighted Average Total Cost Tk	79036		
Average Annual HH Income Tk	172272		
Cost as a Proportion of Annual Income	0.46		
Time Distribution of Resolved Disputes		Cumulative Distribution %	
0 -1 years		57.5	
1- 5 years		79.6	
5 -10 years		93.9	
10 years +		100	
Time Distribution of Pending Disputes		Cumulative Distribution %	
0 -1 years		20.3	
1- 5 years		58.7	
5 -10 years		74.6	
10 years +		100	

current or past land disputes go to court for settlement and approximately 52 % households with pending disputes approach court for settlement.¹²

6. Concluding remarks

This analysis derives fresh empirical insights for deriving an informed understanding of the state of land disputes in Bangladesh and facilitate a meaningful discourse on policies and issues related to it. This is argued to be a vital exercise, since an efficient land market with effective property rights is viewed to be fundamental for the process of economic growth and long-term development (Acemoglu and Robinson, 2012).

Accordingly, this research is primarily motivated by three core objectives: {i} to offer empirical insights for assessing the severity of land dispute in Bangladesh; {ii} to isolate the factors that makes some households and land parcels more prone to land dispute than others; {iii} to estimate its possible impact at the household level. Furthermore, given that we aim to derive an understanding of the severity of land disputes within Bangladesh, the research objective necessitate that we systematically study a stratified random sample of households who own at least one land parcel. This helps us understand what proportion of households suffer from pending dispute and fear of future dispute and what share of households experienced land dispute in the past. In addition, we offer a descriptive scrutiny of a diverse set of costs associated with land dispute and examine if such phenomenon can significantly undermine the households’ financial welfare.

We employ a linear probability model to find out whether certain land parcel and household characteristics are associated with pending, resolved or fear of future dispute. We also use a similar baseline specification to investigate if the financial condition of households deteriorated as a result of pending dispute. Taken together, while our empirical methodology does not allow us to attribute causation to the noted estimates, it does provide us several useful insights into the state of land dispute in Bangladesh.

First, we find evidence suggesting that land dispute is a severe issue

¹² As we have discussed earlier, our sample size does not allow us to make an inference at the national level. Nonetheless, it does indicate that nearly 4 million households might be experiencing land dispute at present.

in Bangladesh. The base line results indicate that approximately 17.7 % households have or had dispute in one of their land parcels. In other words, approximately one in five households in our sample is or was suffering from land dispute. Notwithstanding our sample selection that covers all districts, including advanced and lagging regions, a larger estimation is required to correctly predict the intensity of land dispute at the national level. In this regard, Bangladesh Bureau of Statistics (BBS), which conducts a national household level survey every five years, can (with minimum effort) effectively derive better estimates of the share of land disputes at the national level.

Second, we have noticed the relatively small size of the coefficients which is suggestive that registration of properties only influences the risk of dispute by 3–5 % approximately. These results are statistically significant. However, the size of coefficient raises few questions: if property registration only reduces the chance of land dispute by 3–5 % then, what exact factor determine the real chance of facing land dispute? The possibility of this result could indicate that households rely on informal institutions to mitigate the risks associated with property disputes. This needs further research to better understand the exact combination of factors that shapes land disputes across households. In particular, there is a need to critically examine how land tenure is related with land titling in Bangladesh and whether and how land tenure can be maintained through other means. Based on our sample, approximately half of all land parcels are maintained through un-registered documents, especially for inherited land parcels. This is suggestive that inadequate documentation might be a source of land disputes, but it might not be the only mechanism through which property rights are maintained. Hence, future research can investigate these issues more thoroughly to explore the nature and quality of property rights in Bangladesh.

Third, several household and land parcel characteristics can determine land dispute. For instance, there is an indication that senior citizens on average experience more land dispute at present. In contrast, we also notice that there is no evidence to suggest that Hindu household head or female household head are at a greater risk of land dispute. Our estimates also reveal that there is no relationship between household’s income and pending, resolved or fear of future dispute. For households with inherited land parcels, the empirical exercise shows that households with a member in a political party have a lower likelihood of experiencing both pending and fear of future dispute on their land parcel. The findings also show that for households with un-registered land parcels, affiliation with a political party has a strong negative association with fear of future dispute. This, in some sense, indicates that political affiliation can offer an implicit protection from land disputes.

There is some indication that those who have inherited land from their husband (as oppose to parents) experience greater fear of future dispute when we only focus on households with inherited land parcels. On the whole, the empirical examination of the possible causes of land dispute at the household and land parcel level indicates that household and land parcel characteristics can make some households more prone to land dispute than others. Besides, while we avoid causal interpretation of the findings due to mentioned econometric concerns, the empirical scrutiny provides sufficient motivation for rigorously examining these issues in future.

Lastly, households with land disputes incur a wide range of costs, even though some of them are not quantifiable in monetary terms. For instance, our evaluation reveals that from closing down business to not being able to go to work and from experiencing violence to fearing future violence – a number of consequences are observed for households with land dispute. We also notice that female household heads are more prone to both violence and fear of violence when they are facing land dispute. A large literature on the empowerment of women and entrusting of legal rights show direct positive correlation to GDP and development goals in the global south. In addition, studies have revealed the potential contribution of women’s rights to land and

property in improving socio-economic conditions within a society (Burroway, 2015). Whether the protection of women's land and property rights will mobilize and ensure economic and social progress in Bangladesh like in the case of India as demonstrated by Kapadia (1996); Agarwal (1994) and Menon (2014) leaves scope for further research.

Finally, it is important to note that in this paper we did not offer an exhaustive account of all the issues that needs to be addressed to design an effective land market in Bangladesh. Rather, the objective was to derive specific empirical insights on the severity, possible causes and consequences of land disputes. In this context, the study offered a systematic analysis of issues associated with land and land disputes and has brought to attention areas that call for further research. Land, while being an important source of economic and social well-being in Bangladesh, has received very scarce scientific inquiry and existing knowledge on land disputes is largely anecdotal. Therefore, this examination tries to address this dearth of empirical inquiry on such a pertinent subject.

Funding

This research was commissioned by BRAC Human Rights and Legal Aid Services (HRLS).

CRedit authorship contribution statement

Ashikur Rahman: Conceptualization, Methodology, Software, Data curation, Writing - review & editing, Formal analysis. **Rafi Hossain:** Software, Validation, Writing - original draft, Project administration, Investigation, Formal analysis.

Acknowledgements

We would like to thank Dr. Ahsan Mansur and Dr. Faustina Pereira for their valuable comments at different stages of the draft. We would also like to thank Ms. Munira Chowdhury for providing research support. Lastly, we would like to thank Development Research Initiative (DRI) for conducting the field level survey.

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