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Is there a gender bias in deal making? Evidence from firm-level cross-country analysis

Sayema Haque Bidisha¹ and Kunal Sen²

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¹Department of Economics, University of Dhaka, Bangladesh
Email correspondence: sayemabidisha@gmail.com

² UNU-WIDER, Helsinki, Finland
Email correspondence: sen@wider.unu.edu

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Abstract

Women in developing countries are less likely to be entrepreneurs than men. In contrast to the previous literature on the determinants of female entrepreneurship, which looks at the role of imperfections in factor and product markets, this paper examines whether an important constraint on women starting a business is the time it takes to obtain a construction permit or operating licence, as compared to men. Using the insights of the deals and development framework, we suggest that 'de facto' deals between state and businesses, rather than 'de jure' rules, characterise the relationship that firm owners and managers have with the state. We argue that such deals are likely to be gender biased – the nature of such bias can, however, be in either direction and can differ across countries/regions too. Our analysis, based on recent rounds of World Enterprise Survey data, reveals that for most of the countries, though there is no significant difference between male- and female-owned firms in the average times taken to obtain relevant business documents, for a number of countries, the kernel densities reveal significant variation. Our econometric estimation of approximately 80 countries, however, clearly indicates gender bias of deals but the direction of bias, as a whole, is in favour of females – firms with a significant percentage of female ownership tend to require fewer days to obtain both operating licences and construction permits. Further analysis reflects distinctive patterns, based on different regions, in obtaining business-related deals.

Keywords: gender, entrepreneurship, deals

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I. Introduction

It is widely recognised that while there has been recent progress in the narrowing of gender gaps in education, health and political representation, this has not been matched by similar outcomes in women's economic empowerment (Jayachandran 2015, Heintz 2018). A growing literature has looked at the causes and consequences of women's lack of economic empowerment in relation to participation in the labour market – for example, the quantity and quality of women's access to paid work and why women are over-represented in some occupations and under-represented in others (Klasen 2019, Mahmud and Bidisha 2018, Raihan and Bidisha 2018). However, there has not been emphasis on understanding why women are significantly under-represented in entrepreneurial activities, and why the number of male entrepreneurs is much higher than the number of female entrepreneurs (Raghuvanshi et al. 2017).

The limited literature that has attempted to analyse women's entrepreneurial activities has primarily looked at the constraints that women face as entrepreneurs. In this connection, the focus of existing academic research has mainly been on imperfections in factor and product markets, such as the constraints that women face in accessing credit markets or their lack of property rights to land – an important asset in farm production (Agarwal 1984, Chapelle 2012, Raghuvanshi et al. 2017). Thus far, there is limited knowledge of whether there is gender bias in the relationship that entrepreneurs have with state actors. In particular, the existing literature has not focused on understanding the allocation of operating licences and construction permits, both of which are essential in starting a business in any country.

In an ideal world, if licences and permits would be allocated according to clearly defined rules, there would be no reason to expect that there would be any difference in the time that women owner-managers take in obtaining licences and permits, as compared to men. However, as recent literature suggests, deals – which are personalised relationships between state and business – characterise the investment climate in developing countries, rather than rules (Hallward-Driemer and Pritchett 2015, Pritchett, Sen and Werker 2017). Within such deals frameworks, instead of formal rules prevailing in the economy for conducting businesses, the actual outcomes of businesses of any particular entrepreneur are determined primarily by certain characteristics, like the relationship of investors with those in power, as well as certain actions, e.g. giving bribes, lobbying bureaucrats, etc. (Kar et al. 2019). Therefore, the relationship between entrepreneurs/business owners and political leaders and bureaucrats can play a crucial role in conducting businesses. Kar et al. (2019) also found that the quality of governance or regulatory measures might not alone explain the differences across countries in making business deals. Based on such a framework, if deals are common in the allocation of licences and permits in developing countries, business owners'/entrepreneurs' personal-level characteristics, e.g. capacity to negotiate with the existing bureaucracy, interest/disinterest in paying bribes to obtain licences/permits, and particularly knowledge of the existing deals environment, can play an important role in the case of business outcomes – e.g. time to obtain related business licences/permits. It is therefore quite plausible that,

depending on the socio-economic structure of the country as well as the position of women in the society, gender of ownership can have a differing effect in making such deals. There can be a gender bias in deal making in developing countries, disadvantaging female entrepreneurs as compared to male entrepreneurs. From a different point of view, the presence of this deals environment could therefore be an additional factor in explaining the limited number of female entrepreneurs in developing countries in particular.

Against this backdrop, in this paper, we systematically investigate the presence of gender bias in deal making, with firm-level data of around 135 countries drawn from the World Bank's enterprise surveys. In particular, we have 25,038 firms in our analysis of operating licences (OL) (of 135 countries) and 11,972 firms (of 134 countries) in the case of construction permits (CP). For several countries, we have more than one year of data. We now present the main findings of the analysis.

Our kernel density plots reflect that, for most of the countries, though we do not find any significant difference between male- and female-owned firms in obtaining operating licences and construction permits, for a number of countries, we can observe a distinctive pattern. For OL, for several African as well as Central Asian countries, male-owned firms are found to require more time than female-owned ones. On the other hand, for a number of Asian countries, female owners face additional hurdles to obtain OL. As for CP, although it is difficult to establish any pattern, females in several African countries appear to face additional obstacles in obtaining CP for their businesses.

- However, after controlling for relevant facts, our econometric analysis clearly indicates gender bias of deals, but the direction of bias, as a whole, is in favour of females – firms with a significant percentage of female ownership tending to require fewer days to obtain both operating licences and construction permits.
- Further analysis reflects a distinctive pattern, based on regions, in such biases. For example, in the context of OL, for Eastern and Central Asian countries, female-owned firms tend to require less time to obtain an OL, whereas for some other regions, e.g. South Asia and East Asia and Pacific, female-owned firms are found to require more time to obtain an OL, though the results are not statistically significant. In the case of CP, for Eastern and Central Asia, it takes relatively less time for female-owned firms to obtain a CP for a business, whereas the opposite can be found for African countries. Similarly, for high-income OECD countries, in contrast to the results of OL, positive coefficient estimates have been found – holding other things constant, female-owned firms of these countries, on average, require more time to obtain a CP. As for other regions, for countries of MENA (Middle East and North Africa) region, although the results of OL are not statistically significant and consistent across all specifications, the results of CP reflect the fact that female-owned firms in MENA countries requiring more time to obtain a CP.

The paper is organised as follows: Section II provides a literature review. Section III describes the data and methodology. Sections IV and V present the descriptive and econometric analysis, respectively. Finally, Section VI concludes.

II. Literature review

Although there exists quite a body of literature examining the effect of gender on entrepreneurship or employment, studies looking at the impact of gender on institutional features are quite scarce. This paper, in this context attempts to fill this gap in the literature, by looking at the impact of gender of firm owners on obtaining a number of business-related documents. It therefore attempts to shed light on whether female owners face additional obstacle to setting up business or whether they are in a better position than male counterparts.

Using the decision-making trial and evaluation laboratory (DEMATEL) approach, Raghuvanshi et al. (2017) found that lack of education, experience and training opportunities, spatial mobility and lack of institutional supports were the biggest challenges faced by the female entrepreneurs. Using a large-scale survey conducted in 36 countries, Bönte and Piegeler (2013), on the other hand, asserted that women were less competitively involved and less willing to take risks than man. A similar finding was revealed in the work of Gicheva and Link (2013), where, in their project data, they found that women-owned firms were less likely to attract private investment compared to their male counterparts. It also explored the disadvantages that female entrepreneurs face during the transition from one invention to another. Minniti and Nardone (2007), in their analysis, investigated whether low representation of women in entrepreneurial activities is the result of their personal characteristics or is the reflection of certain 'universal' factors. On the other hand, Yang and Aldrich (2014) explored how gender inequality arises in leadership in mixed-sex entrepreneurial teams. Their study speculated on the possible competing relationship between merit and gender, using nationally representative data on entrepreneurial teams. Bönte and Piegeler (2013), in this connection, explored the competitiveness-driven gender gap in latent and nascent entrepreneurship, with Alsos and Ljugrren (1998) examining whether the business start-up process of nascent enterprises differs by gender. The latter study, on the contrary, showed that although there existed differences in the start-up process between men and women, women did not necessarily have lower start-up possibilities than their male counterparts. Therefore, their data do not provide any evidence of less effectiveness of females as business founders. In addition, female entrepreneurs have a greater need for external capital early in the process and they tend to hire fewer employees.

In the context of South Africa, Chapelle (2012), on the other hand, assessed whether there is any gender difference in establishing firms, especially in terms of different barriers and liquidity constraints. He revealed that women were liquidity constrained and faced greater difficulty in accessing personal assets, leading them to rely on informal sources of credit. His work analysed entrepreneurs in the informal sector and found that, in comparison to their male counterparts, less educated and unemployed

women are mostly 'necessity based' and are 'push' entrepreneurs. Estrin and Mickiewicz (2011) studied the way that institutions could have a differing effect on men and women, particularly in the case of establishing new business ventures and found that, with large state sectors, women were less likely to get involved in entrepreneurial activities. Using data from a field experiment training poor self-employed women in India, Field et al. (2010) explored how traditional institutions may create barriers to female entrepreneurship and found significant differences in the impact of training interventions across different social groups. A number of country-specific studies also attempted to understand the lower participation and inferior position of women in Bangladesh's labour market and found that the importance of gender norm centric variables, rather than conventional labour market factors, were the key factors (Mahmud and Bidisha 2018, Raihan and Bidisha 2018, Kabeer 2008).

So far, the literature on constraints on female entrepreneurship has not looked at the woman owner-manager's relationship with the state – bureaucrats and politicians – as a possible additional constraint. As argued by the 'deals and development' (DD) framework (Pritchett, Sen and Werker 2017), a feature of the investment climate in developing countries is the personalised relationship between the state and business actors – that is, deals. A deal is defined as a *specific* action between two (or more) entities (or individuals) that is not the result of the impersonal application of a rule, but rather of *characteristics* or *actions* of specific entities which do not spill over with any precedential value to any other future transaction between other entities. In the DD framework, the deals space captures the range of informal and personalised relationships that are observed between economic actors and political elites in developing countries. While earlier literature on the institutional determinants of the investment climate has focused on rules, which are *de jure* policies or formal (parchment) institutions, such as courts and written contracts, the key feature that distinguishes 'developing' countries is the gap between the official, formal, legal, *de jure* laws and regulations and what actually happens (Kar et al. 2019).

Hallward-Driemeier and Pritchett (2015) provide compelling evidence on the pervasiveness of deals, as compared to rules, in developing countries. Comparing the Doing Business (DB) Reports, which are based on interviews of domain experts, with the World Bank's Enterprise Surveys (ES), which are based on a sample of firms in each country, their study shows that the two reports have very different answers for similar questions on the business environment. For example, according to the DB, the formal rules stipulate that it would take about 180 days to get a construction permit in India in 2014, but the ES data shows that during that same year, some firms needed only one day, while others needed up to 365 days to get the same permit, with the average being 33 days. This difference is due to the fact the DB reports reflect the '*de jure*' rules of business fixed by regulatory laws enacted by governments, while the ES data captures the '*de facto*' ground reality, where regulatory rules are routinely flouted by firms, based on 'deals' that they strike with the political leaders and bureaucrats.

Is there any reason to expect a gender bias in deal making in developing countries? There would be two important reasons why we would expect women to face more

hurdles in obtaining favourable deals as compared to men. Firstly, political connections and networks may matter in who gets the favourable deal and who does not, and it is widely recognised that women face greater disadvantages than men in access to the right political connections and networks (Fisman 2001, Chekir and Diwan 2014, Diwan, Keefer, and Schiffbauer 2015). Secondly, similar to the discrimination that women face in credit and product markets, it is likely that there will be a gender bias in the allocation of operating licences and construction permits by bureaucrats, who are more likely to be men, and would be more willing to favour men than women. Thus, a possible hypothesis is that women are more likely to face longer delays in obtaining operating licences and construction permits than men.

At the same time, we would expect regional differences in the gender bias of deal making, depending on the cultural context and the nature of gender roles in a specific society. In this connection, women, especially those who are entrepreneurs in certain countries, may possess better attributes in terms of observables (e.g. soft skills) and unobservables and that may even make them more 'efficient' than their male counterparts in terms of business transactions, which can result in fewer days taken to obtain business-related documents. There may be other country- and region-specific cultural factors that may explain a gender bias in deals. For example, in conservative and patriarchal societies like those of South Asian and Middle Eastern countries, women may face additional hurdles to setting up their businesses and to obtaining relevant documents. On the other hand, for women of some other relatively more advanced economies, like those of OECD countries, the scenario could be completely different. In addition, we can also think about a typical scenario of women's ownership in which a relatively shorter length of time for obtaining business deals for female-owned firms can be related to the fact that a rich and established business family may have ownership distributed among brothers and sisters, enabling them to obtain better deals. Therefore, gender bias in deals can be a result of a variety of economic, social, cultural as well as institutional factors, which can influence the time taken to obtain different business contractual documents, with the direction of the bias being indeterminate and worth investigating.

III. Data and methodology

The paper is based on the data of World Bank's Enterprise Survey (ES) of different rounds. The ES is a firm-level survey in which firms are asked a wide range of questions regarding their operation, infrastructure and profitability, along with business environment. In the latter case, questions are asked about the length of time the firms have to spend in obtaining different infrastructural/utility services and contractual formalities for establishing their business, e.g. electricity connection, operating licence, construction permit, telephone connection, etc. The firms are also asked about any informal payment/gift that they have to pay for obtaining such services.

Given our interest is to explore any plausible impact of the gender of ownership of a firm on obtaining business-oriented services, namely time spent on getting construction permit (CP) and operating licence (OL), we are required to know about

the gender of the owner(s). The survey asked the firms about the gender of ownership in two steps: (i) whether any of the owners of the firm was female; and (ii) if there was any female owner, the firm was asked about the exact percentage of female ownership. In this analysis, we considered only those firms as female owned whose female ownership was at least 20 percent. In most cases (for descriptive and also in first set of regression), we considered a female dummy as the key variable, which is 1 if there is a female owner with ownership of at least 20 percent and 0 otherwise. The descriptive analysis part of this study involves kernel density plots of selected countries and tabular representation of country-specific summary statistics.

For the econometric analysis, simple OLS regression has been used. In addition to a dummy of female ownership (at least 20 percent owned by females), in separate sets of regressions we also considered percentage of female ownership (a continuous variable) as a key explanatory variable. Besides, in the final sets of regression, a number of dummies for female ownership, e.g. less than 20 percent female ownership, female ownership between 20 to 50 percent and female ownership of more than 50 percent have been included simultaneously in the model, with male ownership (no female owners) being the base category.

The variables of interest to us are 'days to obtain CP' and 'days to obtain OL' and in the regression analysis these variables have been used in log form. In addition to female ownership, a number of controls have been used in the regressions. We used 'size of firm', in terms of number of people employed, as a dummy (if number of employees of the firm was five to 19 then it was a small firm and the dummy was assigned 1 and if the size of the firm was (a) between 20 and 99 and (b) 100 and above, then these firms could be termed as medium or large firms and the dummy was considered as 0). A dummy variable termed 'manufacturing' has been used in the regression analysis too.² In addition, another variable that has been used here is the establishment's total annual sales in the previous fiscal year in logarithmic form. Besides a dummy of whether the firm has paid any 'gift' for obtaining CP and OL has also been included in the analysis.

IV. Descriptive analysis

Obtaining OL

In Table A1, mean and standard deviation of length of time for getting OL for different countries is shown and it can be found that, irrespective of region or ownership, it takes on an average 27 days for a firm to obtain an OL. However, there exists significant variation across firms. Though we do not find any obvious pattern, it can be observed that, for many of the Latin American countries (Argentina, Brazil, Columbia), there is a long time lag in obtaining OL, whereas for many of the African (Zimbabwe, Malawi,

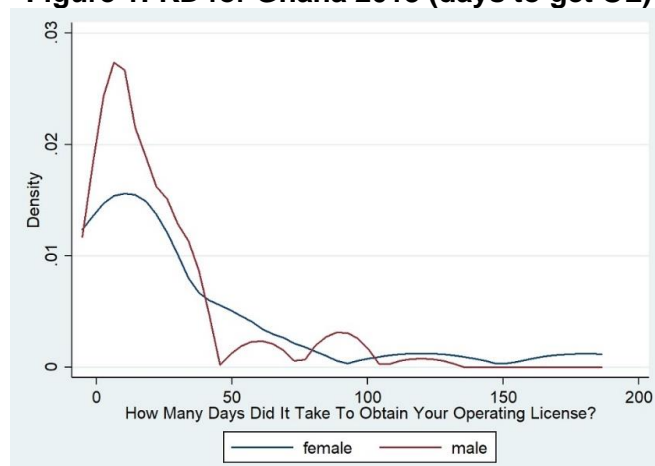
² Manufacturing firms include those in food, textiles, garments, chemicals, plastic and rubber, non-metallic mineral products, basic metals, fabricated metal products, machinery and equipment, electronics, other manufacturing. Firms that are in 'service' include wholesale, retail, IT, hotels and restaurant, other services. 'Other' firms include construction and transport. When a firm was reported to operate in manufacturing sector, the dummy was assigned a value of 1 and 0 otherwise.

Nigeria) as well as Asian (Indonesia, Bhutan, Uzbekistan) countries, the waiting time is relatively shorter.

It is not only the mean and standard deviation, but the distribution of the variable of our interest, 'days to obtain OL', can offer important insights too. While looking at the countrywise kernel density functions of time to obtain OL, three broad patterns can be observed: countries where male-owned firms required a longer time; where female-owned firms took a longer time; and where the gender of the owner did not have any significant impact on the length of time to acquire an OL. From these three patterns, in Figures 1, 2 and 3, three cases of kernels have been shown.³⁴ It should be kept in mind that these countries have been chosen randomly, without any particular reason, but to make a distinction among three different types of kernels. Here, Figure 1 shows a case (Ghana) where it takes longer for female-owned firms to get an OL, whereas in Figure 2 (Belarus) male owners need to stay for a longer time and in the case of Figure 3 (Kazakhstan), male- and female-owned firms require similar time to obtain an OL. Again, despite no distinct pattern, a number of observations can be made, based on the descriptive (Table 1):

- In most of the countries, we do not observe any significant difference between male- and female-owned firms. Especially for high standard deviation in several cases, the results should be interpreted with caution.
- For countries like Belarus, Sudan, Nigeria, Myanmar, Mongolia, Kyrgyz and Egypt, male-owned firms require more time than female-owned ones. Therefore, although we cannot be conclusive, for several African as well as Central Asian countries, this pattern appears more prominent.
- In the case of countries like Croatia, Nepal, Tajikistan, Tanzania and Thailand, female-owned firms require more time. Therefore, females appear to face additional obstacles for obtaining OL mostly in Asian countries.

Figure 1: KD for Ghana 2013 (days to get OL)

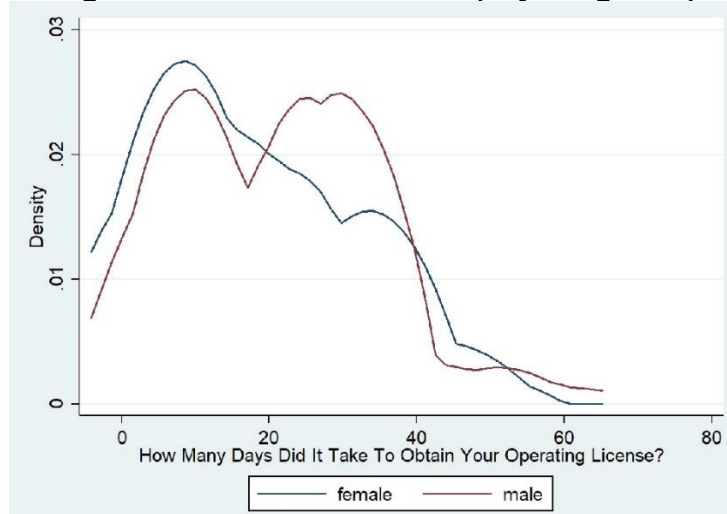


Source: Authors' calculation.

³⁴For our comparison, we considered only those countries with more than 50 firms.

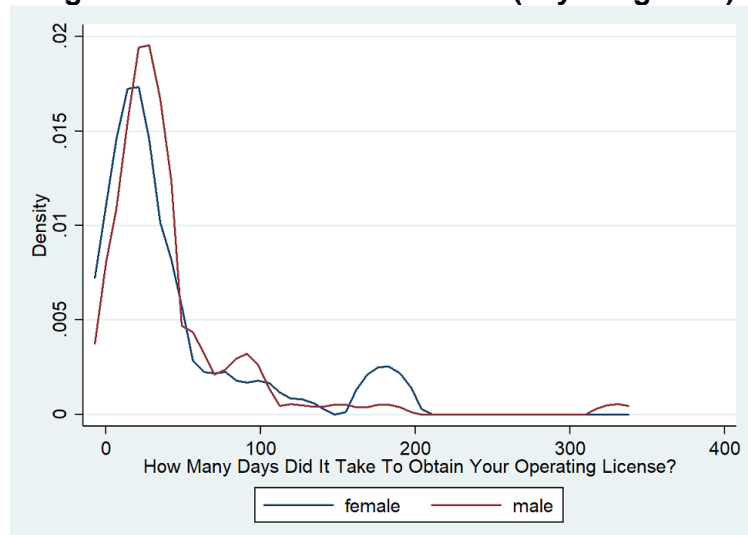
⁴ For the cases of kernels for 'share of female ownership less than 20 percent and greater than 20 percent' have a look at Figures A1, A2, and A3 of the annex section.

Figure 2: KD for Belarus 2013 (days to get OL)



Source: Authors' calculation.

Figure 3: KD for Kazakhstan 2013 (days to get OL)



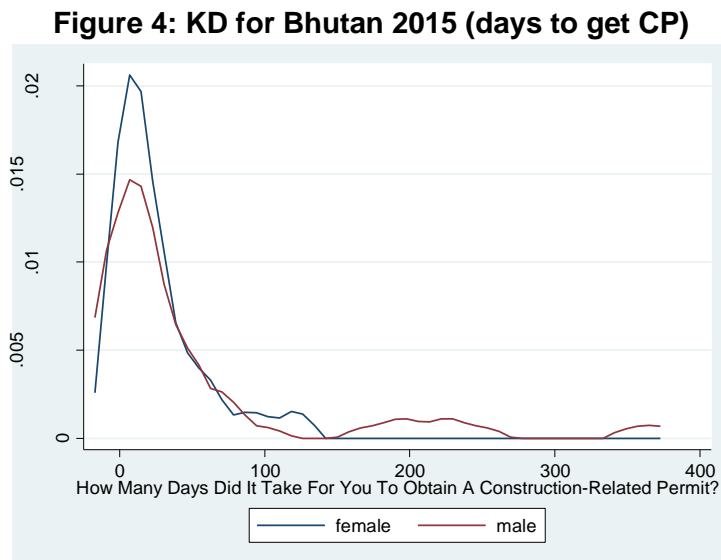
Source: Authors' calculation.

Obtaining CP

Just like Table A1, mean and standard deviation of length of time for getting CP for different countries has been shown in Table A2. In the case of CP, on an average it takes 71 days for a firm to obtain a CP, with significant variation across firms. For countries like Argentina, Bolivia, Bosnia and Herzegovina, Brazil, Croatia, Bulgaria, Chile, Uruguay, Serbia, Russia, Slovenia and Poland, i.e. in Latin American as well as in Central and South-East European countries, it took a relatively longer time for getting a CP, whereas, for countries like Vietnam, Uzbekistan, Angola, Belarus, China, India, Indonesia and Nigeria, i.e. for many of the Asian and African countries, the waiting time was relatively short.

In Figures 4, 5 and 6, three cases of distribution of the variable of our interest, 'time to obtain CP', have been shown, each depicting three distinct scenarios.⁵⁶ We should, however, be cautious to come to any conclusion based on these kernels because in most of the countries there is no significant difference between male- and female-owned firms.

Here, in Figure 4, it can be observed that in Bhutan it took longer for male-owned firms to get a CP. Similar countries were Sweden, Namibia, Kyrgyz Republic, Czech Republic, El Salvador, etc. As for the opposite scenario of female-owned firms taking more time, relevant countries were Egypt, Kazakhstan, Lebanon, Malawi, Morocco, Uzbekistan, Belarus (e.g. Figure 5 shows the case of Egypt). In many other countries, e.g. Vietnam, Indonesia, Malaysia, Ukraine, India (i.e. in Asian countries), we did not observe any significant difference between male- and female-owned firms (e.g. Figure 6).

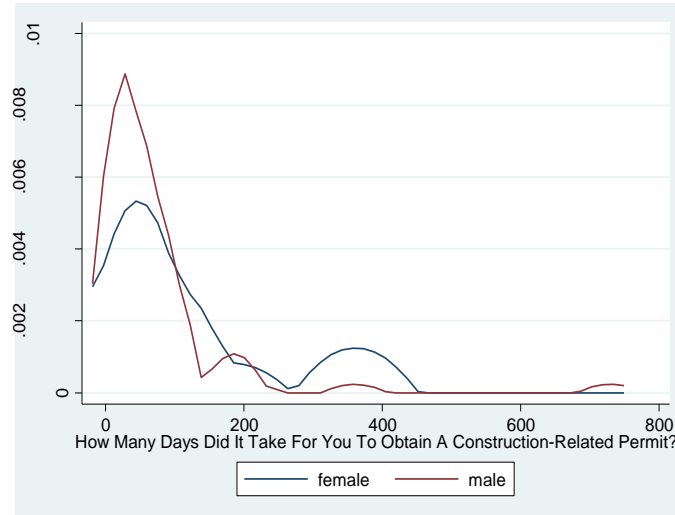


Source: Authors' calculation.

⁵ For our comparison, we considered only those countries with more than 50 firms.

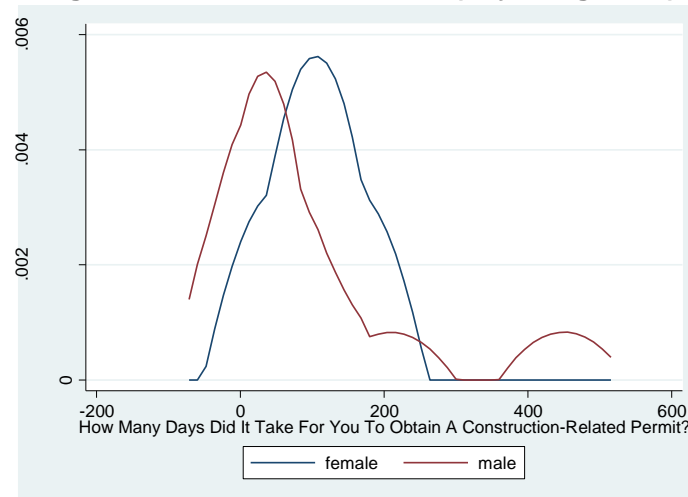
⁶ For the cases of kernels for 'share of female ownership less than 20 percent and greater than 20 percent', have a look at Figures A4, A5, and A6 of the annexe section.

Figure 5: KD for Egypt 2013 (days to get CP)



Source: Authors' calculation.

Figure 6: KD for Croatia 2013 (days to get CP)



Source: Authors' calculation.

V. Econometric analysis

The main objective of our research is to understand the plausible relationship of the gender of the owner and the firm's capacity to obtain different types of documents for starting their business. According to our data set, on average it takes 27 days for a firm to obtain OL, whereas the corresponding number for CP is 71 days. The logarithmic forms of these two variables are the dependent variables in our analysis.⁷

⁷ While conducting the analysis, we should keep in mind that the firms which are not hopeful of being able to obtain the licence/permit through 'deals' might not apply as well, so this may introduce a selection bias in the sample.

In this aspect, the key variable of our interest, as discussed in Section III, is a dummy (female_20) which is 1 if more than 20 percent of the firms are owned by females and 0 otherwise. In the data set around 11.97 percent of firms are owned by females with more than 20 percent ownership. In addition to female ownership, a number of controls have also been used in our analysis and, as shown in Table 1, 42 percent of firms are of a smaller size, with fewer than 19 employees, and 56 percent of firms are in the manufacturing sector. As high as 16 percent and 21 percent of firms reported to have paid a 'gift' to relevant authorities for obtaining OL and CP, respectively. Another variable that has been used as a control is the logarithm of total annual sale of firm. Given that sector-specific constraints might have influence in obtaining OL/CP, in all our regressions, sector-specific dummies have been used as controls.⁸⁹

Obtaining OL

A bivariate regression of OL (Reg1) showed a negative and significant coefficient – for female-owned firms, it took less time to obtain an OL (Table 2). In the next steps, additional controls have been added to this simple regression (Reg2–Reg4) and the result of Reg4, Table 2, reflected that even after adding firm-specific controls, the negative coefficient estimate of female ownership held. In terms of the controls, the negative coefficient of 'size' dummy indicates that smaller firms need to wait for a shorter period to obtain an OL for their businesses. These firms might be relatively newer ones, involving more efficient, younger entrepreneurs, who might have simplified businesses to operate; as a result, they can obtain the required documents in a relatively shorter time. In terms of sales, positive and significant coefficient estimates indicated that for firms with higher sales, it took a longer time to obtain an OL. This result is consistent with that of size, and relatively larger firms with higher sales might require a relatively longer time to obtain business-related documents. Finally, firms required to offer gifts for obtaining an OL were found to spend more time to obtain an OL. This result, though, appears counterintuitive, and might be due to the fact that firms which pay gifts are those with underlying problems related to the requirements for obtaining a licence/permit; therefore it may take more time to acquire a licence for these firms, even after paying gifts.¹⁰

Given the prime interest of this research is to understand whether gender of ownership is correlated with the time taken in obtaining OL, in Reg5–Reg8 of Table 2, instead of a female dummy of ownership (female_20), a continuous variable (percent female) of female ownership in percentage form has been used as the key explanatory variable. The sign and significance of the variables remain more or less similar as in Reg1–Reg4 of Table 1, and without some exceptions (size dummy has come as insignificant in one of the specifications), coefficient of female ownership as in percentage has come with negative coefficient estimate, therefore it takes less time for these firms to obtain an OL. Finally, we have constructed a third set of regressions (Reg9–Reg12, Table 2), where we attempted to capture the effect of the gender of ownership through

⁸ For brevity, in Table 2– Table 5, we have not shown the sector dummies.

⁹ We have considered few other regression specifications while including size dummies and manufacturing sector dummy as regressors (see annex, Tables A3 to A6).

¹⁰ A similar argument can be considered for construction permit (CP) too.

a number of dummies – female ownership less than 20, ownership between 20 to 50 percent, ownership more than 50 percent, with male ownership being the base category. As shown in Reg9 to Reg12 of Table 2, the sign and significance of the controls remain similar to other models. In terms of female ownership dummies, in comparison to those firms owned by only males, firms with less than 20 percent female ownership as well as those with more than 50 percent ownership, require less time to obtain an OL.

Obtaining CP

Similar regression models as with OL have been estimated with ‘days to obtain CP’ as the dependent variable (Table 3). Here, the effect of gender (female ownership) on obtaining CP has been found negative when a single dummy of female ownership of at least 20 percent (female_20) and when separate dummies of female ownership based on the percentage of ownership have been used. Just like the estimates of OL, although female ownership of less than 20 percent and more than 50 percent were found to be consistent with the findings of OL, for the firms with female ownership of 20 to 50 percent, the results were not conclusive. Besides, when a continuous variable of percentage of female ownership has been used, the regressions reflect insignificant coefficient estimates (Reg5–Reg8, Table 3). For the controls used in this regression, the results of CP were consistent with those of OL; with firms having higher sales, the waiting time was higher, as is the case with large-sized firms and for firm required to pay gifts to the relevant authority.

Table 1: Descriptive statistics of the variables used in regression

Variable name		
female_20		Percentage
Yes	2,213	11.97
No	16,269	88.03
Size		
Small (< 20)	10,548	42.13
Medium (20-99)	8,844	35.32
Large (100 and above)	5,646	22.55
Gift_OL		
Yes	20,030	84.30
No	3,730	15.70
Gift_CP		
Yes	2,382	20.84
No	9,046	79.16
Manufacturing		
Yes	10,395	43.98
No	13,242	56.02
Lnsales		
Mean	16.92	
Standard deviation	3.21	

Source: Authors' calculation.

Table 2: Estimation results of OL (for all countries)

	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5	Reg 6	Reg 7	Reg 8	Reg 9	Reg 10	Reg 11	Reg 12
Constant	2.30***	2.45***	1.35***	1.27***	2.28**	2.35***	1.02***	0.86***	2.34***	2.48***	1.51***	1.43***
Female_20	-0.15***	-0.11***	-0.11***	-0.11***								
Size		-.35***	-0.17***	-.17***		-.27***	-.097*	-.092		-.33***	-.17***	-.17***
Lnsale			0.06***	0.063***			0.07***	0.078***			0.05***	0.06***
GiftOL				0.35***				0.51***				0.33***
percent_female					-0.002***	-0.001*	-0.0004	0.00071				
female_less_20									-0.17***	-.18***	-.23***	-0.22***
female_20to50									-0.04	-.042***	-.034	-.05
female_more_50									-0.31***	-.24***	-.23***	-0.26***
N	18,480	18,482	16,297	15,501	3446	3446	3067	2943	25,033	25,033	21,088	21,088

Source: Authors' calculation.

*sector dummies have been included in the estimation but not shown, for the sake of brevity.

Table 3: Estimation results of CP (for all countries)

Variable	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5	Reg 6	Reg 7	Reg 8	Reg 9	Reg 10	Reg 11	Reg 12
Constant	3.32***	3.4***	2.93**	2.89***	3.12***	3.15**	2.39***	2.45***	3.39***	3.46***	3.03***	2.98***
Female_20	-0.13***	-0.10**	-0.12**	-0.13***								
Size		-.32***	-.23***	-.22***		-0.2**	-.09	-.09		-.29***	-.19***	-0.20***
Lnsale			0.03**	0.03***			0.04***	0.04***			0.02***	0.02***
GiftCP				0.13***				0.30***				0.20***
percent_female					0.00012	0.0007	0.0006	0.00001				
female_less_20									-0.29***	-0.31***	-0.30***	-0.28***
female_20to50									-0.11*	-0.1	-0.13*	-0.13*
female_more_50									-0.32***	-0.26***	-0.28***	-0.29***
N	8400	8400	7477	7158	1647	1647	1467	1402	11,972	11,972	10,669	10,203

Source: Authors' calculation.

*sector dummies have been included in the estimation but not shown, for the sake of brevity.

Given the descriptive statistics indicated significant variation across countries, it is worth investigating the effect (if any) of region on obtaining OL and CP. In Table 4, the first set of estimations of OL (Reg1–Reg4, Table 2) have been re-estimated for different regions.¹¹ Table 4 reflected that, in the context of OL, in all four of the specifications, we get negative and statistically significant coefficient estimates for Eastern and Central Asia – for the countries of this region, female-owned firms tend to require less time to obtain an OL. In the case of some other regions, e.g. Africa and high-income OECD countries, negative coefficient estimates are found as well but the

¹¹ The regions as defined in the Enterprise Survey are: Africa, East Asia and Pacific, Eastern and Central Asia, Latin America and Caribbean, MENA, South Asian Region, high-income OECD, high-income non-OECD countries.

results are not statistically significant. For some other regions, e.g. South Asia and East Asia and Pacific, female-owned firms are found to require more time to obtain an OL, though the results are not statistically significant. For other regions, the sign and significant of coefficient estimates vary across specifications, so no concrete conclusion could be drawn.

As for CP, region-specific estimation results, as in Table 5 (similar sets of regressions as Reg1–Reg4, Table 3), revealed that, for Eastern and Central Asia, just like OL, it takes relatively less time for female-owned firms to obtain a CP for business. In the case of African countries, in contrast to the results of OL, it has been revealed that female-owned firms require a longer time to obtain a CP and the result is statistically significant too. Similarly, for high-income OECD countries, in contrast to the results of OL, positive coefficient estimates have been found – holding other things constant, female-owned firms of these countries require more time to obtain a CP. As for other regions, for countries of MENA region, although the results of OL are not statistically significant and consistent across all specifications, the results of CP reflect that female-owned firms of MENA countries require relatively more time to obtain a CP.

Table 4: Estimation results of OL (for different regions)

Region	Variable	Reg 1	Reg 2	Reg 3	Reg 4
Africa	Constant	1.89***	1.92***	1.00***	1.03***
	Female_20	-0.024	-0.021	-0.081	-0.095*
	Size		-0.051	0.122**	0.126**
	Lnsale			0.053***	0.06***
	GiftOL				0.30***
East Asia and Pacific	Constant	2.21***	2.26***	0.65***	0.73***
	Female_20	0.045	0.052	0.13**	0.15**
	Size		-0.128***	0.1126**	0.15***
	Lnsale			0.083***	0.07***
	GifyOL				0.56***
Eastern and Central Asia	Constant	2.86***	2.96***	1.96***	1.71***
	Female_20	-0.28***	-0.24***	-0.17**	-0.18**
	Size		-0.26***	-0.93	-0.81
	Lnsale			0.06***	0.067***
	GiftOL				0.60***
Latin America and Caribbean	Constant	2.79***	2.97***	2.7***	2.63***
	Female_20	-0.14	-0.049	0.085	0.13
	Size		-0.61***	-0.59***	-0.57***
	Lnsale			0.017	0.016
	GiftOL				1.07***
MENA	Constant	1.71***	1.72***	-2.3***	-2.01***
	Female_20	0.018	0.0167	0.315*	0.35*
	Size		-0.15	0.48***	0.21***
	Lnsale			0.23***	0.75***
	GiftOL				0.73***
South Asian region	Constant	2.16***	2.26***	0.88***	0.64***
	Female_20	0.058	0.060	0.036	0.024
	Size		-0.26***	-0.076	-0.061***
	Lnsale			0.079***	0.088***
	GiftOL				0.34***
High-income OECD	Constant	2.86***	3.065***	0.811	0.84
	Female_20	-0.56**	-0.40*	-0.089	-0.208
	Size		-0.76***	-0.27	-0.336
	Lnsale			0.11***	0.11***
	GiftOL				0.74
High-income non-OECD	Constant	2.38***	2.59***	-1.212**	-1.12**
	Female_20	-0.01	0.18	0.49*	0.33
	Size		-0.54***	-0.039	-0.051
	Lnsale			0.23***	0.22***
	GiftOL				0.80

Source: Authors' calculation.

Table 5: Estimation results of CP (for different regions)

Region	Variable	Reg 1	Reg 2	Reg 3	Reg 4
Africa	Constant	2.69***	2.88***	1.86***	1.79***
	Female_20	0.42***	0.43***	0.43***	0.44***
	Size		-0.46***	-0.26***	-0.27***
	Lnsale			0.06***	0.06***
	GiftCP				0.14
East Asia and Pacific	Constant	2.91***	2.96***	2.155***	1.98***
	Female_20	-0.12	-0.102	-0.08	-0.106
	Size		-0.208**	-0.104	-0.0094
	Lnsale			0.04***	0.04***
	GiftCP				0.53***
Eastern and Central Asia	Constant	3.46***	3.49***	2.64***	2.64***
	Female_20	-0.38***	-0.37***	-0.42***	-0.41***
	Size		-0.11	0.015	-0.032
	Lnsale			0.049**	0.046***
	GiftCP				0.29***
Latin America and Caribbean	Constant	3.58***	3.64***	3.28***	3.2***
	Female_20	-0.47	-0.388	-0.43	-0.40
	Size		-0.36***	-0.303**	-0.29**
	Lnsale			0.020*	0.02*
	GiftCP				0.70***
MENA	Constant	3.39***	3.39***	2.09***	2.15***
	Female_20	0.54**	0.54**	0.63***	0.63***
	Size		-0.011	0.14	0.057
	Lnsale			0.071***	0.068***
	GiftCP				0.13
South Asian region	Constant	3.09***	3.09***	2.32***	2.18***
	Female_20	-0.069	-0.069	-0.082	-0.103
	Size		-0.0077	0.81	0.87
	Lnsale			0.043*	0.044*
	GiftCP				0.31***
High-income OECD	Constant	3.92***	3.93***	3.74***	3.66***
	Female_20	0.33**	0.34**	0.37**	0.36**
	Size		-0.063	-0.043	-0.027
	Lnsale			0.010	0.0131
	GiftCP				0.33
High-income non-OECD	Constant	3.72***	3.81***	2.02***	1.59***
	Female_20	0.45	0.505	0.53*	0.65**
	Size		-0.42**	0.023	0.087
	Lnsale			0.104**	0.13***
	GiftCP				0.47

Source: Authors' calculation.

VI. Conclusions

Both empirical literature as well as anecdotal evidence have found that women in developing countries are less likely to be entrepreneurs than men. In contrast to the previous literature on the determinants of female entrepreneurship, which looks at the role of imperfections in factor and product markets, this paper investigates whether women owner-managers of firms face additional constraints in establishing businesses. Using the insights of the deals and development framework, we suggest that 'de facto' deals between the state and businesses, rather than 'de jure' rules, characterise the relationship that firm owners and managers have with the state. In this connection, the gender of the owner can play an important role in the case of establishing a business. In particular, the time required for obtaining essential business-related documents, e.g. relevant permits/licences for setting up the business, can differ between male and female owners.

Our econometric analysis clearly indicates gender bias in such deals but the direction of bias, as a whole, is in favour of females – firms with a significant percentage of

female ownership tend to require fewer days to obtain both operating licences and construction permits. Though we cannot infer conclusively from this result, a number of explanations can be considered in this context. The relatively shorter time for obtaining business deals for female-owned firms can be related to the fact that a rich and established business family may have ownership distributed among brothers and sisters and might get better deals, due to its reputation. Alternatively, female owners might possess better organisational and management capacity and that might help them to acquire business-related documents in relatively less time than their male counterparts. Besides, they might also have better networking skills and bargaining power to negotiate with the existing bureaucracy in obtaining their business documents or, in other words, in making better 'deals'.

The analyses, however, reflect strong regional differences of the impact of gender in obtaining business contracts. For example, in the case of MENA countries, there is a gender bias against women in deals making, where the similar pattern for obtaining CPs has been found for African countries as well. Interestingly, women of both OECD as well as non- OECD high-income countries are found to face additional obstacles in obtaining CP. The exactly opposite scenario, with a relatively favourable position for female owners, is found in Eastern and Central Asian countries and that holds true for both CPs as well as OLs. Based on such analyses, it can be concluded that there can be gender biases in deal making where the direction of such bias depends on the region/country under consideration. Though our analyses do not offer any conclusive evidence, they indicate that, in comparison to OLs, females face additional constraints in obtaining CPs.

Given the low level of participation of women in entrepreneurial activities, particularly in developing countries, it is crucial to understand the barriers against women's entrepreneurship. Based on our analysis, to increase women's participation in the labour market, we can consider country-specific supportive policies to deal with the constraints in obtaining business-related documents for women.

While interpreting our findings, we should, however, be careful in two aspects. Firstly, the analysis only captures the quantitative dimensions of deals – in other words, the time required to obtain business-related documents. Countries/regions may differ in terms of the process of deals, requiring additional documents/fulfilling different requirements, and that can make such processes different from each other. Secondly, for a number of countries, although we have data for two rounds, due to a smaller number of observations, we were not able to utilise panel structure of the data base. Our results therefore can suffer from unobserved heterogeneity across countries.

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Annex

Table A1: Days to obtain OL

Country	Aggregate		Male		Female		Differe	t-test
	Mean	SD	Mean	SD	Mean	SD		
Afghanistan2008	15.27	25.21	14.98	25.11				
Afghanistan2014	14.26	20.74	14.23	20.69	15.4	25.03	-1.17	-0.12
Angola2006	17.95	34.55	13.59	23.89				
Antigua and	2.73	2.71	2.55	2.56				
Argentina2010	92.97	94.22	107.96	104.35				
Armenia2009	20.69	36.63	18.45	35.02				
Azerbaijan2009	16.95	24.03	16.78	25.19				
Bahamas2010	13.33	17.42	10.89	9.72				
Bangladesh2007	6.56	6.7	6.77	6.74				
Belarus2008	31.58	21.35	36.71	21.74				
Belarus2013	19.9	13.35	20.87	13.58	16.59	13.28	4.28	1.11
Bhutan2015	3.11	15.09	2.66	7.6	3.99	23.38	-1.33	-0.62
Bolivia2006	42.61	98.08	30.02	54.13				
Bolivia2010	35.76	50.7	36.63	50.55				
Bosnia and	24.88	30.64	27.25	33.22				
Botswana2006	18.89	37.21	28.69	50.85				
Botswana2010	29.46	41.84						
Brazil2009	80.37	91.57	79.73	80.67				
Bulgaria2007	56.7	95.6	66.41	115.28				
Chile2006	116.74	289.54	131.46	326.79				
Chile2010	70.78	121.38	74.34	130.83				
China2012	19.68	22.01	19.96	25.74				
Colombia2006	48.4	73.48	46.87	68.25				
Colombia2010	58.53	97.7	73.35	128.37				
Costarica2010	59.05	97.45	58.57	108.67				
Croatia2007	31.42	53.22	29.18	40.86				
Croatia2013	58.66	94.36	48.4	84.48	63.5	102.21	-15.1	-0.61
Ecuador2006	19.21	27.64	19.52	27.19				
Ecuador2010	27.66	47.1	27.77	48.24				
Egypt2013	61.68	98.34	68.49	107.98	37.17	41.75	31.32	0.98
ElSalvador2006	65.16	182.79	42.48	49.69				
ElSalvador2010	42.87	99.24	41.65	94.15				
ElSalvador2016	41.26	81.96	43.1	86.97	42.93	79.96	0.17	0.01
Estonia2009	13.72	18.11	14.03	16.86				
Estonia2013	14.24	30.57	10.3	17.69	22.38	49.24	-12.08	-1.32
Fiji 2009	7.21	12.72	5.18	8.19				
Fyr Macedonia 2013	17.81	17	16.59	15.47	21.4	21.06	-4.81	-0.95
Ghana2013	24.27	31.82	22.33	26.13	25.31	32.32	-2.98	-0.39
Guatemala2006	65.9	119.11	67.88	138.11				
Guatemala2010	68.99	125.34	64.7	139.98				
Guyana2010	31.91	85.93	21.5	38.47				
Honduras2006	47.03	101.78	40.74	70.94				
Honduras2010	32.29	68.51	32.59	53.44				
India2014	26.3	27.31	26.16	27.54	25.72	24.94	0.44	0.25
Indonesia2009	20.18	28.82	19.8	26.05				
Indonesia2015	7.78	9.44	7.08	7.08	11.64	18.21	-4.56	-1.48
Iraq2011	30.08	21.75	29.72	21.43				
Jamaica2010	12.82	11.8	11.66	12.66				
Jordan2013	2	4.5	1.91	4.64	3.17	4.51	-1.25	-1.26
Kazakhstan2009	34.61	42.64	34.43	34.33				
Kazakhstan2013	42.42	50.3	41.04	48.03	43.97	52.88	-2.93	-0.28
Kenya2007	15.74	22.74	13.26	19.19				
Kenya2013	13.88	20.17	13.62	21.21	14.9	19.08	-1.28	-0.68
Kyrgyz	18	22.96	17.43	17.01				
Kyrgyz	37.5	68.46	41.29	75.97	24.57	24.52	16.72	0.81
LaoPDR2009	19.94	24.85	23.69	28.11				
LaoPDR2012	15.18	16.59	15.77	16.84				
LaoPDR2016	15.58	12.96	15.39	13.88	15.86	11.71	-0.47	-0.15
Lithuania2009	52.74	118.54	53.32	105.9				

Malawi2009	11.85	17.35						
Malawi2014	19.99	38.75	20.7	42.22	15.85	28.38	4.85	0.63
Malaysia2015	6.14	7.33	6.08	7.54	6.74	7.87	-0.66	-0.49
Mali2007	47.96	108.32	53.02	114.61				
Mexico2010	44.11	91.43	49.43	100.34				
Micronesia2009	6.95	7.24	4	3				
Moldova2009	16.71	18.77	16.14	12.55				
Moldova2013	16.13	13.22	16.93	14.52	15.69	12.35	1.24	0.42
Mongolia2009	44.78	62.68	43.3	60.63				
Mongolia2013	50.53	66.55	58.36	80.32	39.22	33.66	19.14	1.37
Mozambique2007	42.13	55.06	44.58	59.16				
Myanmar2014	28.67	38.32	30.09	40.72	24.9	29.4	5.18	1.09
Namibia2014	22.01	26.37	22.54	29	20.93	22.6	1.62	0.36
Nepal2013	18.11	30.42	14.95	21.91	26.52	46.62	-11.58	-1.48
Nicaragua2006	24.15	39.56	27.25	43.96				
Nicaragua2010	18.99	27.84	25.74	34.31				
Nigeria2007	14.26	21.37	12.9	12.99				
Nigeria2014	11.34	14.69	11.67	15.07	9.11	11.9	2.56	1.27
Paraguay2010	77.49	131.78	52.75	69.26				
Peru2006	88.6	138.59	80.56	116.61				
Peru2010	74.81	104.61	74.47	109.56				
Philippines2009	11.95	15.69	11.09	14.1				
Philippines2015	20.6	43.11	20.2	48.45	21.12	39.16	-0.91	-0.25
Romania2009	24.85	21.33	23.63	19.96				
Romania2013	25.44	30.79	24.53	28.59	26.63	35.27	-2.1	-0.35
Russia2009	60.98	75	60.3	80.64				
Russia2012	53.24	65.28	52.84	60.98				
Solomon Islands	11.91	10.39	13.38	11.53	11.29	9.27	2.1	0.83
Southsudan2014	12.32	32.25	12.97	34.61	8.19	9.26	4.79	1.15
SriLanka2011	24.77	40.68	28.35	48.32				
St Kitts and Nevis	5.08	14.66	5.39	18.48				
Sudan2014	5.48	6.48	5.5	6.65	5.2	2.53	-1.76	-0.3
Tajikistan2008	28.92	66.23	31.14	74.46				
Tajikistan2013	15.3	18.14	15	15.21	16.74	29.17	-19.9	-1.19
Tanzania2006	15.39	18.78	16.23	19.58				
Tanzania2013	20.61	26.06	20.47	26.98	21.21	22.62	-21.12	-1.01
Thailand2016	3.09	6.72	2.03	4.65	6.69	11.03	-19.04	-0.64
Timor-Leste2009	16.96	23.02	17.93	23.65				
Timor-Leste2015	16.16	23.78	10.95	9.68	19.38	28.99	0.64	0.07
Tonga2009	3.06	2.07	2.6	1.62				
Turkey2008	68.36	200.59	70.49	235.02				
Turkey2013	35.21	86.76	31.66	85.1	46.07	93.3	-12.17	-0.82
Uganda2006	13.76	30.76	12.54	18.65				
Uganda2013	11.28	24.29	9.47	12.07	13.03	22.68	-8.68	-0.48
Ukraine2008	29.15	42.47	26.55	23.48				
Ukraine2013	23.6	32.91	23.63	32.09	25.19	37.97	0.29	0.09
Uruguay2010	105.58	120.64	102.82	115.92				
Uzbekistan2008	8.69	10.16	8.7	11.01				
Uzbekistan2013	25.78	49.17	25.69	55.84	23.71	22.49	0.05	-2.04
Vanuatu2009	21.22	46.73	20.74	40.7				
Venezuela2010	59.77	127.85	63.15	122.46				
Vietnam2009	19.06	37.46	16.16	17.38				
Vietnam2015	12.44	14.2	14.5	16.56	9.25	7.66	0.05	0.05
West Bank And Gaza	17.87	44.46	13.8	26.46	65.29	133.93	-0.04	0
Yemen2010	12.84	36.44	9.42	9.27				
Yemen2013	12.5	33.11	12.97	33.87	3.67	1.15		
Zambia2007	40.55	77.4	37.65	43.25				
Zambia2013	24.71	32.27	24.95	34.29	24.75	28.43	-8.99	-0.39
Zimbabwe2011	8.14	18.5	7.15	12.14				
Zimbabwe2016	9	17.14	9.61	17.04	8.96	20.28	0.65	0.24

Source: Authors' calculation. Significance code: *** p<0.01, ** p<0.05, * p<0.1.

Table A2: Days to obtain CP

	Aggregate days to obtain CP		Days to obtain CP (male)		Days to obtain CP (female)			
Country	mean	SD	mean	SD	mean	SD	Difference	t-test
Angola2010	24.60	81.64						
Argentina2006	68.11	107.55	69.68	105.31				
Argentina2010	68.66	81.47	66.11	79.24				
Bangladesh2007	45.25	93.67	29.87	39.36				
Belarus2013	38.04	47.30	39.88	32.00	34.82	71.37	5.055	0.347
Bhutan2015	45.33	78.01	50.90	84.38	39.27	72.41	11.634	0.553
Bolivia2006	84.95	102.31	72.15	87.18				
Bolivia2010	93.73	120.85	106.53	147.29				
Bosnia and Herzegovina 2009	102.85	145.21	76.45	109.73				
Bosnia and Herzegovina 2013	137.74	163.37	144.62	151.88	121.33	234.34	23.284	0.384
Brazil2009	84.91	111.39	71.96	76.50				
Bulgaria2007	99.61	120.23	95.56	131.89				
Chile2006	126.71	239.52	104.30	142.77				
Chile2010	113.47	161.40	113.94	154.53				
China2012	32.88	33.47	33.73	33.65				
Colombia2010	80.33	82.87	69.32	64.97				
Costarica2010	95.98	117.81	90.38	112.82				
Croatia2007	179.23	224.71	179.48	197.46				
Czech Republic2009	53.02	52.21	58.42	58.17				
Czech Republic2013	88.88	111.70	96.52	127.78	70.63	55.15		
Ecuador2006	56.89	62.99	64.46	67.81				
Ecuador2010	70.10	85.07	67.43	83.63				
Egypt2013	78.18	107.63	68.88	103.18	110.92	120.56	-42.044	-1.306
ElSalvador2006	72.12	125.22	68.74	115.24				
ElSalvador2010	98.10	108.42	84.20	97.25				
ElSalvador2016	111.86	168.06	122.95	169.10	98.27	194.71	24.679	0.485
Estonia2009	45.51	96.53	25.09	32.14				
Ethiopia2015	77.91	101.22	74.08	101.04	89.84	98.14	-15.762	-0.742
Fyr Macedonia200	72.42	91.15	74.38	90.64				
Ghana2013	74.49	81.90	70.78	85.81	92.80	65.38	-22.024	-0.772
Guatemala2006	55.56	82.76	54.76	73.61				
Guatemala2010	56.18	93.42	53.15	74.76				
Honduras2006	46.47	98.13	54.79	126.23				
Honduras2010	62.43	111.89	55.75	65.15				

India2014	32.92	41.33	32.91	42.18	34.89	33.92	-1.986	-0.312
Indonesia2009	49.91	96.53	56.74	121.68				
Indonesia2015	11.24	16.36	10.96	17.31	11.36	12.33	-0.404	-0.073
Iraq2011	36.09	20.10	37.11	20.04				
Kazakhstan2009	88.61	131.35	97.96	148.62				
Kazakhstan2013	72.06	94.34	61.16	81.48	98.72	118.67	-37.563	-1.435
Kenya2013	41.28	60.44	44.64	70.94	35.69	41.93	8.946	0.739
Kyrgyz Republic2013	65.55	115.04	72.81	135.30	47.14	39.80	25.668	0.695
LaoPDR2012	66.89	102.56	62.95	95.07				
Latvia2009	59.49	105.02	85.58	150.71				
Lebanon2013	133.77	141.72	121.04	130.61	180.00	225.07	-58.958	-1.055
Malawi2014	40.96	53.04	33.46	45.31	57.65	66.20	-24.191	-1.707
Malaysia2015	12.28	15.87	12.43	17.00	11.83	13.78	0.609	0.149
Mexico2010	55.22	74.11	51.68	63.25				
Moldova2009	60.97	87.64	55.61	85.04				
Moldova2013	34.40	50.32	32.33	31.52	23.45	23.68	8.876	1.127
Mongolia2009	67.96	104.45	63.66	125.06				
Mongolia2013	63.71	89.85	60.08	79.44	73.06	115.07	-12.984	-0.491
Morocco2013	136.85	202.93	141.84	201.12	206.25	330.94	-64.408	-0.574
Namibia2014	105.91	136.28	121.10	160.65	95.22	113.57	25.875	0.769
Nicaragua2006	55.44	95.99	51.37	84.86				
Nicaragua2010	32.67	43.41	36.17	49.86				
Nigeria2007	12.83	26.84	14.13	29.80				
Nigeria2014	15.16	20.15	15.21	20.95	10.56	13.65	4.650	0.911
Paraguay2006	60.24	120.19	60.91	106.54				
Paraguay2010	120.82	158.82	109.68	141.52				
Peru2006	142.10	219.14	148.00	245.09				
Peru2010	87.16	88.54	87.02	87.39				
Philippines2009	24.57	26.21	22.68	29.30				
Philippines2015	28.46	43.54	21.62	22.37	39.71	62.56	-18.085	-2.308
Poland2009	117.85	159.64	109.45	154.46				
Romania2009	76.25	121.36	71.90	116.32				
Romania2013	93.96	146.33	98.85	156.12	84.56	120.59	14.291	0.414
Russia2009	125.51	125.67	121.23	112.44				
Russia2012	167.29	208.96	169.55	211.29				
Serbia2009	152.92	175.95	163.13	188.40				
Slovak Republic2	66.02	63.75	72.03	76.44				
Slovenia2009	132.06	163.27	146.97	192.93				
Southsudan2014	16.40	18.13	16.54	18.73	17.31	14.73	-0.767	-0.141
Sudan2014	8.44	15.45	8.36	16.13	10.13	8.58	-1.764	-0.305
Sweden2014	75.16	116.86	79.46	128.30	63.58	49.00	15.884	0.530
Tajikistan2013	38.50	45.72	35.66	43.35	55.56	57.25	-19.896	-1.187
Tunisia2013	47.04	62.60	45.55	64.16	66.67	62.13	-21.117	-1.007
Turkey2008	44.26	73.48	40.49	52.33				
Turkey2013	37.24	64.62	35.19	60.07	47.36	81.95	-12.167	-0.821

Uganda2013	37.89	53.92	37.70	58.79	46.38	49.34	-8.682	-0.476
Ukraine2008	105.42	149.64	78.43	98.31				
Ukraine2013	2.98	10.49	3.08	11.61	2.79	3.56	0.291	0.093
Uruguay2010	101.20	160.78	87.99	144.36				
Uzbekistan2013	33.17	52.71	24.98	26.46	57.93	94.65	-32.953	-2.039
Vietnam2009	65.46	112.43	57.41	113.25				
Vietnam2015	31.68	29.77	31.87	31.09	31.81	27.87	0.054	0.009
Zambia2013	57.31	86.90	56.66	90.67	65.65	83.85	-8.994	-0.392

Source: Authors' calculation. Significance code: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3: Estimation results of OL (all countries)

VARIABLES	Reg. A1.1	Reg. A1.2	Reg. A1.3
Female less 20			-0.283*** (0.0510)
Female 20 to 50			-0.0982** (0.0419)
Female more 50			-0.302*** (0.0471)
Small dummy	-0.128*** (0.0341)	-0.0713 (0.0792)	-0.129*** (0.0295)
Medium dummy	0.0593* (0.0319)	0.00710 (0.0716)	0.0655** (0.0272)
Manufacturing	0.0269 (0.0232)	0.0746 (0.0517)	-0.0253 (0.0204)
Ln sales	0.0613*** (0.00414)	0.0774*** (0.00888)	0.0524*** (0.00358)
Gift OL	0.332*** (0.0294)	0.508*** (0.0693)	0.303*** (0.0264)
Female 20	-0.138*** (0.0341)		
Percent female		-0.000673 (0.000715)	
Constant	1.267*** (0.0841)	0.807*** (0.187)	1.498*** (0.0728)
Observations	15,026	2,943	20,067
R-squared	0.038	0.057	0.032

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Authors' calculation.

Table A4: Estimation results of CP (all countries)

VARIABLES	Reg. A2.1	Reg. A2.2	Reg. A2.3
Female less 20			-0.298*** (0.0626)
Female 20 to 50			-0.150** (0.0661)
Female more 50			-0.319*** (0.0790)
Small Dummy	-0.309*** (0.0502)	-0.215* (0.125)	-0.284*** (0.0421)
Small Dummy	-0.0960** (0.0415)	-0.0842 (0.0998)	-0.0988*** (0.0343)
Manufacturing	-0.189*** (0.0347)	-0.299*** (0.0825)	-0.175*** (0.0291)
Ln sales	0.0244*** (0.00568)	0.0351*** (0.0128)	0.0205*** (0.00472)
Gift CP	0.134*** (0.0413)	0.307*** (0.0971)	0.206*** (0.0348)
Female 20	-0.147*** (0.0531)		
Percent female		-0.000149 (0.00120)	
Constant	3.108*** (0.118)	2.707*** (0.273)	3.217*** (0.0977)
Observations	6,983	1,402	9,770
R-squared	0.019	0.027	0.021

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Source: Authors' calculation.

Table A5: Estimation results of OL (different regions)

VARIABLES	Africa	East Asia and Pacific	Eastern and Central Asia	Latin America and Caribbean	MENA	South Asian Region	High-income OECD	High-income non-OECD
Female 20	-0.100* (0.0566)	0.127** (0.0619)	-0.179** (0.0817)	0.00509 (0.259)	0.402** (0.190)	0.0412 (0.0697)	-0.0541 (0.275)	-0.277 (0.263)
Small dummy	0.114 (0.0702)	0.237*** (0.0776)	-0.0132 (0.0773)	-0.461*** (0.110)	0.847*** (0.159)	0.395*** (0.0738)	-0.217 (0.243)	0.751** (0.316)
Medium dummy	-0.0103 (0.0699)	0.142** (0.0722)	0.0677 (0.0701)	0.0412 (0.0899)	0.648*** (0.166)	0.422*** (0.0612)	0.188 (0.186)	0.815*** (0.263)
Manufacturing	-0.0314 (0.0434)	-0.146*** (0.0557)	0.0978* (0.0535)	0.178** (0.0756)	0.174* (0.105)	0.625*** (0.0480)	0.313** (0.150)	0.0821 (0.180)
Ln sales	0.0606*** (0.00703)	0.0728*** (0.00856)	0.0705*** (0.00949)	0.00723 (0.0142)	0.218*** (0.0174)	0.109*** (0.0133)	0.109*** (0.0297)	0.219*** (0.0517)
Gift OL	0.298*** (0.0514)	0.580*** (0.0654)	0.588*** (0.0765)	0.975*** (0.128)	0.740*** (0.135)	0.338*** (0.0480)	0.755 (0.507)	0.567 (0.461)
Constant	0.844*** (0.146)	0.687*** (0.195)	1.566*** (0.188)	2.729*** (0.276)	-2.736*** (0.345)	-0.502* (0.256)	0.582 (0.646)	-1.232 (0.967)
Observations	3,889	2,150	2,234	1,858	694	3,455	480	266
R-squared	0.027	0.075	0.060	0.057	0.259	0.095	0.104	0.103

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' calculation.

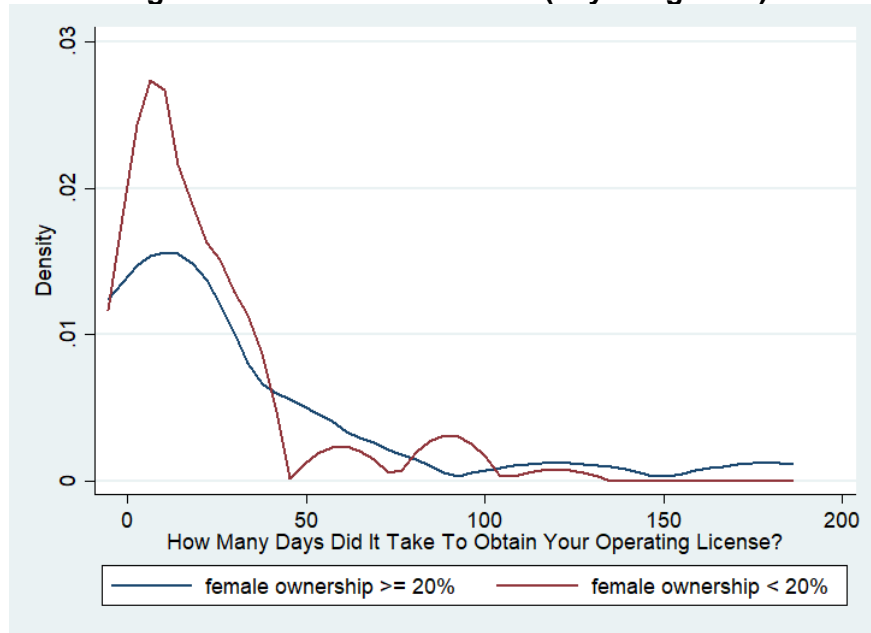
Table A6: Estimation results of CP (different regions)

VARIABLES	Africa	East Asia and Pacific	Eastern and Central Asia	Latin America and Caribbean	MENA	South Asian Region	High-income OECD	High-income non-OECD
Female 20	0.424*** (0.111)	-0.0431 (0.0995)	-0.397*** (0.120)	-0.413 (0.351)	0.642*** (0.231)	-0.102 (0.136)	0.372** (0.167)	0.557* (0.325)
Small dummy	-0.497*** (0.132)	-0.0677 (0.122)	-0.0668 (0.117)	-0.356*** (0.111)	0.0945 (0.185)	0.282* (0.157)	-0.00172 (0.156)	0.509 (0.320)
Medium dummy	-0.304** (0.119)	0.0175 (0.0988)	-0.0617 (0.0972)	-0.0387 (0.0821)	0.0661 (0.178)	0.193 (0.118)	0.0130 (0.117)	0.361 (0.229)
Manufacturing	-0.149* (0.0884)	-0.0997 (0.0881)	-0.346*** (0.0809)	-0.177** (0.0732)	-0.00299 (0.144)	0.137 (0.0961)	0.107 (0.102)	-0.0382 (0.179)
Ln sales	0.0486*** (0.0148)	0.0433*** (0.0109)	0.0389*** (0.0142)	0.0197 (0.0122)	0.0687*** (0.0242)	0.0680** (0.0276)	0.0107 (0.0186)	0.155*** (0.0506)
Gift CP	0.140 (0.0914)	0.568*** (0.0902)	0.299*** (0.0964)	0.711*** (0.103)	0.123 (0.170)	0.269*** (0.0885)	0.368 (0.269)	0.804** (0.381)
Constant	2.236*** (0.318)	1.902*** (0.259)	2.945*** (0.281)	3.338*** (0.246)	2.104*** (0.477)	1.569*** (0.550)	3.630*** (0.394)	0.900 (0.959)
Observations	1,188	830	1,472	1,424	362	692	730	285
R-squared	0.055	0.075	0.034	0.054	0.045	0.025	0.010	0.054

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

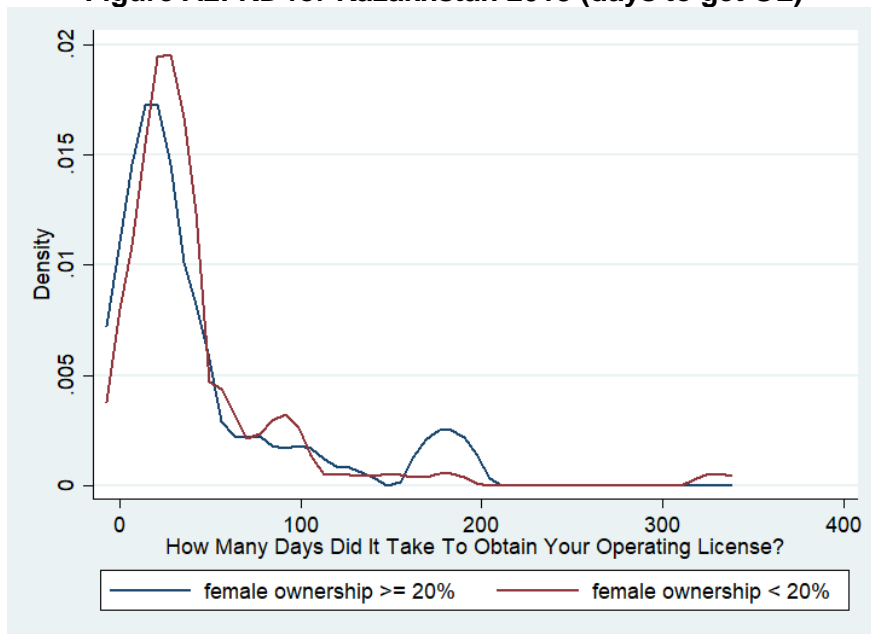
Source: Authors' calculation.

Figure A1: KD for Ghana 2013 (days to get OL)



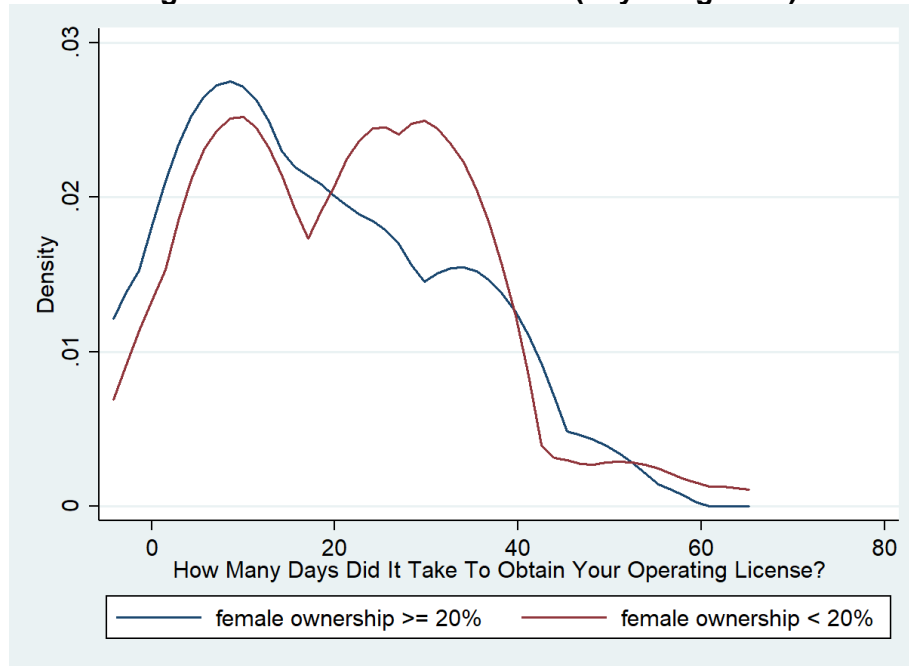
Source: Authors' calculation.

Figure A2: KD for Kazakhstan 2013 (days to get OL)



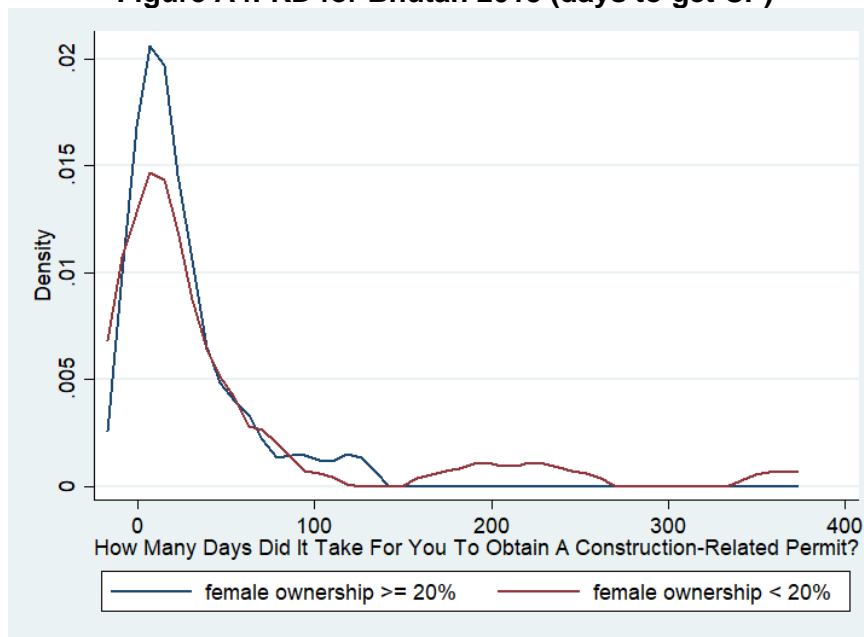
Source: Authors' calculation.

Figure A3: KD for Belarus 2013 (days to get OL)



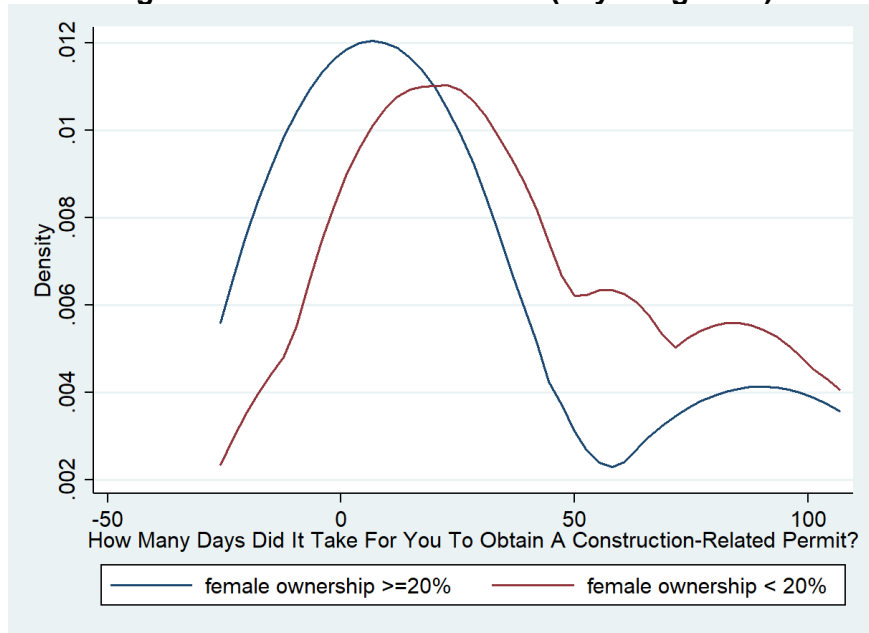
Source: Authors' calculation.

Figure A4: KD for Bhutan 2015 (days to get CP)



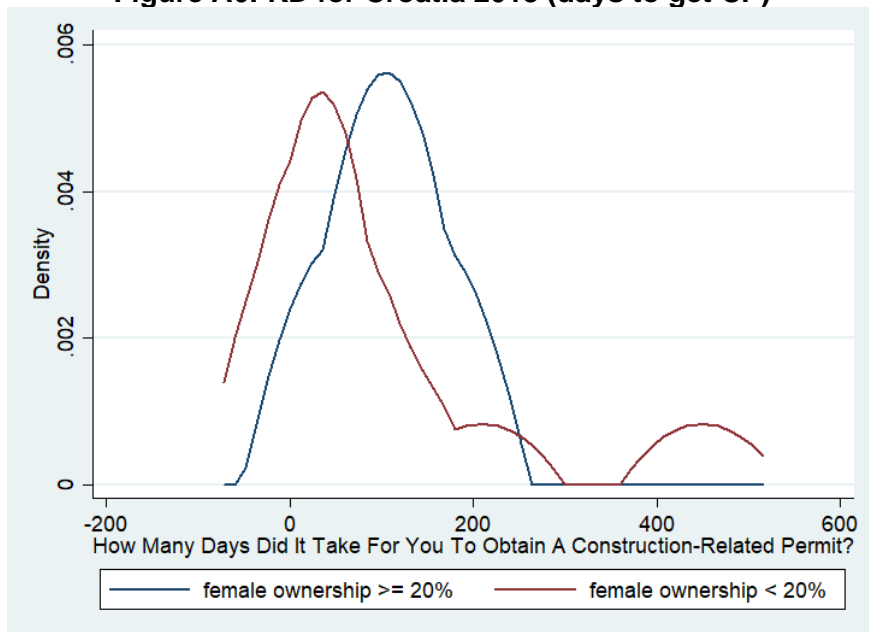
Source: Authors' calculation.

Figure A5: KD for Belarus 2013 (days to get CP)



Source: Authors' calculation.

Figure A6: KD for Croatia 2013 (days to get CP)



Source: Authors' calculation.

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Effective States and Inclusive Development Research Centre (ESID)

Global Development Institute, School of Environment, Education and Development,
The University of Manchester, Oxford Road,
Manchester M13 9PL, UK

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