

Caste, Courts and Business*

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Abstract

The growth of business, especially small and medium scale enterprises (SME) are critical for employment generation in less developed countries. This study seeks to identify the role of the institutions of contract writing in business formation. Specifically, this paper focuses on the impact of judiciary in facilitating new small and medium entrepreneurs, especially those from disadvantaged sections of the society, to enter the market and start a business. The main findings suggest that improvement in the functioning of judiciary helps to flourish businesses. Moreover, the effect is found to be stronger for socially disadvantaged groups. Not only this, we find that improvement in court quality leads to concentration of firms to limited industries.

Keywords: Court, Formal institutions, Entrepreneurship, Caste, Gender

JEL Codes: K12,L26,O17

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1 Introduction

A business, seen from a theoretical perspective, is nothing but a set of contracts. Efficient institutions of contract enforcement therefore are critical for proliferation of business. In this paper we aim to see how court efficiency affects business performance in India. More specifically, we are empirically estimating this relationship between efficiency of formal institutions and various indicators of business performance by utilizing a district-wise panel data set for eleven states in India. Even though, we would expect court efficiency to affect business outcomes positively, in a country like India, which is characterized by slow and costly court procedure, this question is far from trivial. Conventional wisdom, that is supported by our interviews with entrepreneurs, suggest that in the event of breach of contract, they usually do not approach court and try to resolve the issue using informal mechanisms such as business or social networks.

A cursory look at the condition of the Indian judiciary points to a host of inefficiencies including court congestion, legal costs and delays and, in general, a lack of reforms. In January 2013 there were around 30 million cases pending in different courts in India. At present on an average it takes around 15 years for a civil case to get resolved. If the situation does not improve there will be an estimated 150 million pending cases by 2040 (Times of India, January 17, 2013). Such an inefficient court system cast a negative spell on the business environment. India, ranking 132 out of 185 countries in terms of ease of business, puts up a very strong barrier to entry for the new firms (Doing Business Report, 2013, p 3). The barrier is even more binding for small and medium enterprises that play a very important role in employment generation. Hence the need of the day is perhaps the presence of high quality formal contracting institutions which will resolve disputes, enforce contracts and hence aid the growth of entrepreneurship.

In the literature however, different views come up. According to the 2005 World Bank Enterprise Surveys, about 12.5 per cent of firms in the survey have reported to be going to courts for resolving various issues over the period 2001-2004. Furthermore, about “ 22.5 per cent of firms cite poor contract enforcement as a constraint to doing business”. Ahsan [2013] . Most of the papers that uses cross country data also have found positive relationship between institutional quality and economic development and growth [Acemoglu et al., 2001, 2002, Rajan and Zingales, 1998]. However, these papers mostly look at the effect of property right institutions.

One exception is Acemoglu and Johnson [2003] who distinguish between the effects of property rights institutions and contracting institutions on growth. Using a cross country data set they find that while good property right institutions have positive effect on growth, the effect of contracting institutions is not robust. This could be because in several less developed countries, in absence of any effective formal institution, network and reputation based contract enforcement may help running business. This result is consistent with our general expectation and several anecdotal evidence.

There has been much less research though on this more specific question regarding relevance of institutions in affecting business decisions. Chemin [2012] finds that reforms in civil court procedure leads to lower breach of contract, higher access to capital and building of new capacity in India. Another closely related paper is Klapper et al. [2006]. Their study, based on 34 Eastern and Western European countries, find that higher requirements to comply with formal bureaucratic regulation, prevents new businesses from entering the industry by increasing entry cost.

In this paper we attempt to study how quality of contract enforcement institutions affects decision-making of entrepreneurs. Specifically, we exploit the variation in court efficiency across districts in India as well as over time to estimate our relationship. One of the highlights of the paper is to create an objective measure of district level court efficiency by utilising a novel dataset on functioning of district courts across 13 states in India. The data set, collected from different high courts across India, provides access to statistics such as number of cases pending at the beginning of the year, number of cases instituted and solved as well as number of cases pending at the end of any year for all the districts of these states for a varying time span. We also have information on the age break-up of pending cases for some states. This data set has been merged with All India Census of Micro Small and Medium Enterprises MSME, to get the information on entrepreneurship. Our empirical methodology is to regress various indicators of entrepreneurial decision-making as well as firm-level performance on efficiency of the judiciary. For robustness, we use alternative measures of court efficiency.

The indicators that we employ include both entrepreneurial decision making and firm performance. Our main variable in the context of entrepreneurial decision making is owners' decision to formalize her enterprise. To elaborate, we look at whether the owner registers her firm within one year of starting its operations. Our analysis further looked at the nature of scale of operations of the firm using two variables -

firms' decision to operate as a micro as opposed to non-micro unit and the size of the firm measured by the number of employees. We also looked at other aspects of firm behavior that indicate the working of a contract enforcement mechanism. For instance, a firm would have better access to loans when the contract underlying this procedure of lending and borrowing is expected to be enforced well. Similarly the characteristics of the employees of a firm may also indicate the degree of efficacy of the contract enforcement mechanism. In presence of a strong contract enforcement mechanism, a firm may be more inclined to hire more women or children or people belonging to backward castes as they are socially more vulnerable. In the event of a breach of contract, these employees are less likely to move to court to resolve the disputes. Hence we expect the firms to employ a high proportion of these vulnerable people when the courts are efficient. The firm is also less likely to follow minimum wage norms in districts where courts are inefficient. The judicial quality is also expected to be related to the firm's likelihood of operating in sunk cost intensive industry. Furthermore, in order to analyse the degree of the prevalence of informal network, we also look at the extent to which firms are hiring employees belonging to same network. Firm level performance variables like growth in net-worth and value of exports as well as the firm's decision to operate as an exporting unit are the other outcome variables analysed in this paper.

The main findings of the paper suggest that firms are less likely to be registered within one year when they begin operating in districts where court efficiency is weaker. Furthermore, the registered firms are more likely to operate at a smaller scale and are less likely to avail loan when judicial quality is low. Firms are found to offer lower wages to the employees when court inefficiency is high. As expected, firms' are less likely to operate in industries which involve higher sunk costs when they operate in poor institutional environment. The owner is more likely to hire manager and workers belonging to same gender group when court inefficiency is high thereby indicating the presence of strong informal networks. Finally, we also notice that firms observe negative growth in their networth when court quality deteriorates.

In this paper, using a novel data set from the Indian courts, we examine how court efficiency affects entrepreneurs from different social backgrounds. We find that entrepreneurs from lower caste gain more from better formal courts than their counterparts. This could be because of differential access to informal dispute resolution mechanism for socially disadvantaged groups. Based on this fact, we further found that lower caste entrepreneurs benefit more from improvement in the efficiency of judicial system if they set up their enterprise in areas where there are lower ad-

vantages under the informal network mechanism. We conjecture that in absence of formal courts, people approach different community level bodies for dispute resolution which are dominated by upper caste members of the society. Hence, if formal court improves, everyone gains, but lower caste entrepreneurs gain more. This result has some serious policy implications as improving court efficiency can help the disadvantaged section more than the privileged section.

The rest of the paper is organized as follows. Section 2 summarizes the data used to test the implications of our model. Section 3 outlines the empirical framework, followed by section 4 which reports the empirical findings. Finally section 5 concludes.

2 Qualitative survey in Bangladesh and India

One may think it is trivial that improvement in court will lead to proliferation of business. Even though this point is theoretically true (and also empirically true for developed countries), this is far from trivial for the less developed countries such as India and Bangladesh. Before starting the quantitative work, we interviewed a few entrepreneurs in Kanpur and Kolkata in India and in Dhaka, Bangladesh and asked them about the forums for business dispute resolution that they use. The general view that came up in the surveys is that they usually do not go to the court and try to resolve the issue through business network or semi-formal arbitration through their business association. Specifically we asked, (1) Whether the entrepreneurs have ever been cheated? (2) If yes, how did they resolve the incident? (3) Did they go to the court, approached community leaders or simply let it go? (4) In view of possible cheating incidents, do they restrict their business within the circle of known people? (5) In terms of cheating, how does the experience of big and small business differ? There was a general aversion of courts but the responses varied across the type of firms – big firms and small firms reacted differently to the breach of contracts.

In Bangladesh, one of the entrepreneurs we met was F. P. Ltd. This is a fairly large organization with 700 workers.¹ It was cheated by an Indian company over payment. It entered into payment contracts through Letter of Credit Agreement. The cheque was passed initially, but the company failed to receive the payments. The main complaint was against the Bank who issued the cheque. Then we went

¹The incidents reported here were obtained from the details given by the person who represented the company. We could not verify the veracity of their claims regarding a particular incident of cheating

to another company named Rochdale Business where the worker strength is 26 to 30 workers. They cater to local supply of forwarding any order. They take advance payments for an order of higher than 1200 to 3500 Taka per month. However, no advance payments were needed from known parties or big corporates. In one case, a party did not pay Taka 3 to 4lakhs. But, they did not approach a court to settle the dispute. Instead , they invested more capital for the sake of having a better information regarding the reputation of the party in the future.

Four instances of cheating were reported in an interaction with the representative of Turjo Apparels Ltd. They entered into payment contracts through Letter of Credit Agreements (LC) where 70% is paid initially, 10% is paid after shipping and 20% is paid after receipt. In a first instance of cheating, a supplier provided with goods, 20% of which was defective. Supplier claimed that they can supply defective samples to this extent. In another case, it was cheated by a company in India. It did not make payment and claimed that it was owing to their American partners getting bankrupt. In a third, a buying agent in France showed causes in LC and stopped payment. In another case goods were to be shipped from Italy. They asked for air transport and extra payment had to be made for that. But, bank refused to bear the extra payment even if it was there in the LC. Another company called J.K. Fashion , with a worker strength of 278, was cheated by foreign buyers. They initially canceled the order and then sent other people to buy back at a lower price. In case of SRP Sweaters Ltd. there was a case where there was mismatch between the date of shipment mentioned in the Letter of Credit Agreements (LC) and actual date and the loss was worth USD 17000. There were 400 workers at that time in the organisation and a huge loss led to quality dispute in the organisation. Moreover, there was pressure from Bangladesh bank as US dollars stopped coming.

Another organisation named Asian Textile told us that once they were not paid by a businessman in India for the garments they supplied. The business associate from India was a long time business partner of Asian Textile. But, even after the incident of cheating, the connection still exists in the expectation of future gain.

To summarize, we find that cheating was ubiquitous in Bangladesh garment industry although, with time, as the export market developed the number of such cases went down. More importantly, small players in the market are more likely to be cheated than the big players. The banks also have institutional measures such as letter of credits to deal with the issue of non-payment. But entrepreneurs never go to court for resolving disputes. At most they approach the Bangladesh Garments

Manufacturers and Exporters Association (BGMEA) for arbitration. However, small businessmen complained that BGMEA is biased in favor of the large entrepreneurs.

While interviewing the Indian counterpart, we find that the situation is not different in India either. The representative of the Superhouse group in Kanpur reiterated the same issue of cumbersome legal process. Representative of a business house in manufacturing sector had the same opinion and told us that except for a few big business houses such as TATA and Larsen Tubro, most of the contracts are verbal. Even though there is a draft of contracts, no party is actually willing to go to court if there is a breach of contract. Representative of Sucheta Enterprise which is also in manufacturing sector had the same view. The main issues that came up in our survey with Indian entrepreneurs can be summarized in the following points:

1. Existing Methods of Entering into a Contract: Large Firms often enter into payment contracts through Letter of Credit agreements (LC). However, contractors can still get away with defaults by forging cases of missing documents etc. Therefore, firms have gradually shifted to the method of advance payments. They only ship products after receiving a 50% advance for the order.

2. Preferred Method of Dealing with Defaults: Though firms have a contract draft, it is just for formality sake and most contracts are verbal. The best way to deal with this problem is to start sidelining the buyers that are delaying payments. Firms quickly switch to other buyers in case of defaults. This, in a way, threatens the buyers and gets them to work efficiently in future.

3. Working of the Informal Credit System: It is difficult to blacklist a bad borrower because he can quickly shift his base to another region like Chennai, Mumbai, etc. Alternatively, people resort to means like picking up cars, etc. to extract the money that the creditor has lent.

4. Criteria for Choosing Business Partners: Because firms do not have any formal contracts with dealers as such, the main criteria for choosing these dealers is the reputation of the dealer. Apart from dealers, raw material suppliers are chosen through references from friends after which a team visits these suppliers and sees the suppliers setup. They then assess these suppliers through a smaller trial order before entering into an agreement for any big order.

5. Occurrences of Default and Ways of Dealing with it: Because cases of post-dated checks can only be registered in the city where the check was issued, it is

not an efficient way to deal with payment delays. Sometimes, chosen dealers fail to provide the promised amount of business.

6. Payment Delays a Bigger Problem than Problem of Bad Quality Product: Delay in payments is the biggest problem that firms manufacturing products of industrial use face. Payments can be delayed from 90 days up to a year. This delay is not only from small buyers but also from large players.

7. Perception Regarding the Legal System of India: There is a general feeling that the legal system in India does not support business environment. Indias legal System is a very lengthy process and even when one wins the case, one cannot reap any benefit of the victory unless and until it is a criminal case, which is not so in case of transaction-related cases.

8. Role of Women: Women are not involved in the collection of raw material. But at the subcontracting level, women do exist. Generally, these women take help and support from their immediate family and husband. Payments are usually taken care of by male members, because although there is a certain degree of respect for women, people in this industry do not usually take women very seriously.

However, from the above mentioned experiences a new question may arise which was opposite to the one we started this section with. One may ask, if no entrepreneur goes to the court, why should the court matter at all? In response, we argue that even if no one goes to court in equilibrium, court quality will affect the incentives to cheat and the bargaining position of the contracting parties. For elaborate this issue further, consider two extreme cases – one district with a very good court and one district with very bad court. In both the cases, nobody goes to the court but with different outcomes. In the first one there is no cheating as everyone knows that the cheater will be punished and in the second one, people will cheat if there is contract and therefore, no one does any business. So in both the cases there will be no cheating, albeit for different reasons. This implies, that for different levels of court quality between these two extreme values there will be different levels of business activity. Therefore, a rigorous quantitative work is needed to evaluate the importance of the court system on a country's business environment.

3 Data

3.1 Court Performance Data

Our study is based on a novel data set that represents year-wise administrative data for over 200 districts, collected from the High Courts of the respective states. We represent our data coverage in Figure 1.

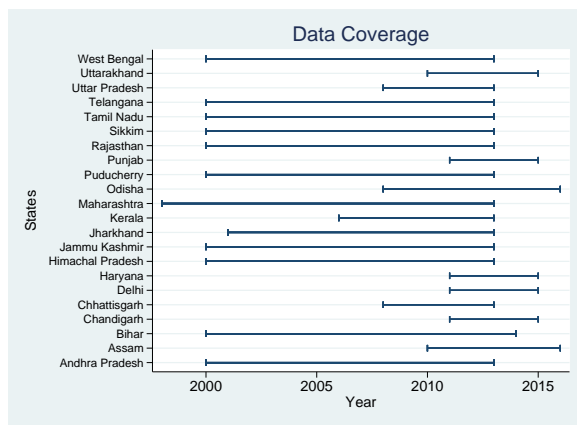


Figure 1: Data Coverage

However, we use data from thirteen states for which our data coverage coincides with the data coverage of enterprise data from Fourth All India Census 2006-07. To the best of our knowledge, this is the only database which gives district level data on pendency, number of cases disposed and instituted for several number of years. The data on district courts that can be obtained from public domain such as National Crime Record Bureau represents district court data aggregated at the state level.

The database has information on year wise information regarding the number of civil cases pending at the beginning of the year, number of civil cases instituted during a year, and the number of civil cases disposed during a year for several year and districts. However, we do not know the nature of the cases. The data also provides information on the age breakup of pending cases, such as cases pending for 0-1, 1-5(or 1-3), 5-10(or 3-10) and more than 10(or 5) years. However, coverage is much smaller for the age-breakup. Table 1 gives a summary of these variables. Using this information, we construct measure of court inefficiency.

Table 1: Court Summary

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Pending in Start of the Year	4,076	10,920	14,520	0	171,505
Filed During Year	4,050	5,182	7,405	2	133,253
Solved During Year	4,049	4,996	7,553	2	140,943
Pending in End of the Year	4,094	11,058	14,513	2	157,607
Pending for < 1 Year	3,007	4,141	5,254	0	56,349
Pending for 1-5 Years	2,025	5,181	8,152	0	68,982
Pending for 5-10 Years	1,997	1,975	3,991	0	40,498
Pending for > 10 Years	2,909	1,040	2,027	0	22,954

Our main measure of court quality- duration index - that has been used in Chemin [2009]. This index measures the number of years that judiciary would take to address the backlog of cases. It is defined as the the ratio of number of cases pending (plus the number of cases filed within the year) to the number of cases solved during a year. The measure is defined as λ_t

$$\lambda_t = \frac{p_t + f_t}{d_t}$$

where p_t is the number of cases pending at the beginning of the year t , f_t is the number of cases filed in year t and d_t is the number of cases disposed within year t .

For robustness check, we use disposition-time [Ingo et al, 2016] and expected delay [Gordon, 1978] as alternative measures of judicial inefficiency. Besides these traditional measures of court efficiency we also use a new index – the number of old cases solved as a proportion of total number of cases – proposed and developed in Chakraborty et al. [2018]. In that paper, Chakraborty et al. [2018] show that there is considerable variation across districts with respect to this new index – some courts solve older cases more than others. Even though it is only logical to solve old backlogs first, the authors argue that courts that solve newer cases encourage entrepreneurs who have started their business. Because they know, their contractual issues which are brought to the court in the recent past, will not have to wait to get resolved.

In the following figure 2, we present a comparison for three indices plotted on district level maps of India. In particular, we plot duration, filing per capita and the

new index – proportionate old cases solved. These different indices however, have different units and value range. Hence, to make them comparable, we normalize them by using the following formula, where x denotes the particular index and $NI(x)$ is the normalized index:

$$NI(x) = \frac{x - Min(x)}{Max(x) - Min(x)}$$

Figure 2 plots the normalized indices for duration and the new index of fraction of old cases solved for the year 2013. The darker zone represents regions with higher court inefficiency. There are two things to be noted from the figure. First, the coverage of duration was much broader than the new index. The reason is that for the construction of the new index we need age distribution of cases and all high courts did not give us the data. Therefore, the coverage of the new index is considerably less. The second important point is that even though there is high correlation between these two indices, they are not the same. There are districts with high duration rate but low level of the new index.

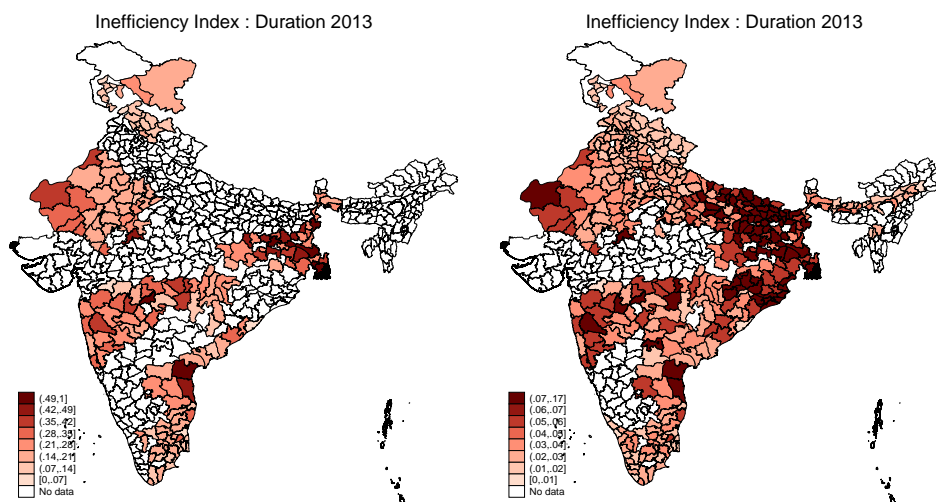


Figure 2: Duration and New Index

Table 2 summarizes all the inefficiency indices that we are going to use in this paper as measures of court inefficiency. Even here, one can see that the number of data points are much less for the new index for the reason we detailed above. The average values of duration, expected delay and disposition time are similar but the ranges are quite different.

Table 2: Court Inefficiency Index Summary

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Duration	4,047	3.992	2.530	0.257	74
Expected Delay	4,047	2.930	2.414	0.00983	68
Disposition Time	4,048	2.986	2.531	0.0197	73
Proportionate Old Cases Solved in Last five years	1,076	0.183	0.133	0.00163	0.954

3.2 Enterprise Data

We use Fourth All India Census for Medium, Small scale and Micro Enterprises, 2006-07 for our study (hereafter referred to as MSME data). There are around 158525 enterprises whose year of establishment ranges from 2000- 2007.

The survey round of firms is 2007. This implies that in 2007 we observe firms that came into operation in various preceding years including 2007. However, for those who started operations in 2007, they did not even have the full year to complete registration. Hence, we drop those firms from the sample which started operations in 2007. We also drop those where either year of registration or year of operation is missing. Thus, we cover around 172035 enterprises whose year of establishment ranges from 2001-2006 from the districts for which we have information on court inefficiency.

For outcome variables we chose many firm-level variables which may get affected by the level of court quality. To begin with, we looked at direct measures of formalization such as delay in registration or an indicator variable telling whether the firm has registered within 1 year since the start of operations. We also looked at various other firm-level variables measuring scale of operations, indicating the degree of prevalence of the informal network and the strength of the contract enforcement mechanism in place as well as some firm performance variables. The details of each of the variables are given below.

Delay in registration- It is the time gap between year of registration and year of initial production of an enterprise. It is measured in years. It is any number greater than or equal to zero. The registration works as a proxy for working in a formal set up which includes formal contracting. Therefore, with more efficient courts, we expect the firms register sooner.

Same Year Registration- We consider delay of over one year as the real delay. Thus, we construct a binary variable which takes value 1 when the firm experiences delay of upto one year and zero otherwise.

Micro- The sample was divided into - Micro, Small and Medium based on the original value of P&M into three quantiles. Following this, we construct an indicator variable Micro. This variable takes value 1 when it is a micro firm and 0 when it is small or medium.

Total Employees- It is a variable for the financial year 2006-07. It is any number greater than or equal to zero.

Loan Status- It is a binary variable which takes value 1 when the firm has taken any loan and 0 otherwise. We do not have information on the year when the loan was taken.

Fraction of female/child employee- There is information on the number of employees who are female or children. We create a variable fraction of female or child employee by dividing the sum of the number of employees who are female and children by total number of employees. The variable is for the financial year 2006-07.

Fraction of SC/ST employee- There is information on the number of employees who are SC or ST. We create a variable fraction of SC/ST employee by dividing the sum of the number of employees who are SC/ST by total number of employees. The variable is also available for the financial year 2006-07.

Minimum wage status- We calculate average wage of the firm by dividing total wage bill in the year 2006-07 by total number of employees in 2006-07. Following this, we calculate mean wage offered in a state. We then construct a binary variable indicating whether the average wage of a firm in a state is less than the mean wage of that state. The variable is available for the financial year 2006-07.

Sector of Operations- Firms were involved majorly in three activities

- Manufacturing/Assembling/processing/Job Work
- Repairing/Maintenance

- Services

We construct a binary variable indicating whether the firm is involved in manufacturing or non-manufacturing unit. The variable takes value 1 when it is involved in a non-manufacturing unit.

Same Year Production- The indicator variable will take value 1 when the firm starts operating within one year of installation of their plant and machinery (P&M) and 0 otherwise.

Exporting Status- We simply construct a binary variable Exporting Unit which takes value 1 when the firm is exporting and 0 when it is not exporting.

Value of Exports- The database has information on the value of exports of an exporting firm for two financial years- 2005-06 and 2006-07.

Growth in Value of Exports- The database has information on net-worth for the years 2005-06 and 2006-07. Therefore, we compute growth in log of net-worth between 2005-06 & 2006-07.

Fraction of employees of same gender as that of the owner- The variable calculates proportion of employees belonging to same gender as that of the owner of the firm.

Fraction of employees of same gender as that of the manager- The variable calculates proportion of female and male employee when manager is female and male respectively.

Owner-Manager Same Gender- The variable takes value 1 when both manager and owner are of same gender and 0 other-wise.

Gross Value Added- The databse has information on GVA for three financial years- 2004-05, 2005-06 and 2006-07.

Growth in Net-worth- The database has information on net-worth for the years 2005-06 and 2006-07. Therefore, we compute growth in log of net-worth between 2005-06 & 2006-07.

Table 3 summarises all firm-performance variables for the whole sample. We then summarize the information for rural and urban sample separately in Tables 4 and 5.

Table 3: Summary of Firm Performance

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Delay in Registration	172,035	0.675	1.298	0	7
Same Year Registration	172,035	0.834	0.372	0	1
Micro	146,619	0.356	0.479	0	1
Firm Size	172,035	5.038	23.95	0	5,475
Loan	172,035	0.146	0.353	0	1
Fraction of female and child employees	157,570	0.261	0.392	0	1
Fraction of SC/ST employees	172,031	0.129	0.280	0	1
Whether wage is below the mean wage	151,561	0.745	0.436	0	1
Owner Manger of Same Gender	172,035	0.929	0.257	0	1
Fraction Employees of same gender as that of owner	172,031	0.843	0.304	0	1
Fraction Employees of same gender as that of owner	172,031	0.869	0.271	0	1
Non Manufacturing Enterprise	172,035	0.439	0.496	0	1
Operational Lag in Years	138,031	0.0296	0.212	0	6
Same Year Production	138,031	0.997	0.0511	0	1
Exporting	172,035	0.0146	0.120	0	1
Average Growth in Networth between 2005 and 2007	159,805	0.0125	0.186	-1	24.06
GVA	483,511	11.40	1.634	0	23.03
Average Growth in Exports between 2005 and 2007	1,069	0.0884	0.929	-1	21.25
VOE	4,177	10.39	6.385	0	22.52

There were approximately 84 per cent firms which got registered within one year of commencing its operations. Around 35 percent were micro in nature. The average firm size in terms of the number of employees was 5 and only 19 per cent firms were willing to expand. The proportion of firms offering wages below the mean wage at the state level was as high as 75%. Most of the firm-owners preferred to hire employees(including manager) of the same gender. There were 44% non-manufacturing and 1.5% exporting units in the sample. Lastly, firms were noted to grow by 1.2% in terms of networth and 8.8% in terms of value of exports between 2005 and 2007.

We expect entrepreneurial decisions to be affected by owner-specific characteristics such as technical knowledge and social identity of the owner. The social identity of the owner of the enterprise includes caste, gender, religion. Also, location of the

Table 4: Summary of Firm Performance- Rural

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Delay in Registration	73,625	0.659	1.265	0	7
Same Year Registration	73,625	0.841	0.366	0	1
Micro	63,568	0.388	0.487	0	1
Firm Size	73,625	5.367	33.01	0	5,475
Loan	73,625	0.189	0.391	0	1
Fraction of female and child employees	66,143	0.265	0.398	0	1
Fraction of SC/ST employees	73,621	0.162	0.314	0	1
Whether wage is below the mean wage	63,975	0.797	0.402	0	1
Owner Manger of Same Gender	73,625	0.934	0.248	0	1
Fraction Employees of same gender as that of owner	73,621	0.846	0.303	0	1
Fraction Employees of same gender as that of owner	73,621	0.869	0.275	0	1
Non Manufacturing Enterprise	73,625	0.419	0.493	0	1
Operational Lag in Years	60,194	0.0276	0.208	0	6
Same Year Production	60,194	0.997	0.0528	0	1
Exporting	73,625	0.0143	0.119	0	1
Average Growth in Networth between 2005 and 2007	67,661	0.0147	0.258	-1	21.04
GVA	205,553	11.29	1.583	0	22.90
Average Growth in Exports between 2005 and 2007	390	0.155	1.354	-1	21.25
VOE	1,655	9.445	6.245	0	22.52

Table 5: Summary of Firm Performance- Urban

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Delay in Registration	98,410	0.686	1.322	0	7
Same Year Registration	98,410	0.829	0.377	0	1
Micro	83,051	0.332	0.471	0	1
Firm Size	98,410	4.791	13.68	1	900
Loan	98,410	0.114	0.318	0	1
Fraction of female and child employees	91,427	0.259	0.388	0	1
Fraction of SC/ST employees	98,410	0.105	0.249	0	1
Whether wage is below the mean wage	87,586	0.706	0.455	0	1
Owner Manger of Same Gender	98,410	0.925	0.264	0	1
Fraction Employees of same gender as that of owner	98,410	0.840	0.305	0	1
Fraction Employees of same gender as that of owner	98,410	0.870	0.269	0	1
Non Manufacturing Enterprise	98,410	0.455	0.498	0	1
Operational Lag in Years	77,837	0.0311	0.216	0	6
Same Year Production	77,837	0.998	0.0499	0	1
Exporting	98,410	0.0148	0.121	0	1
Average Growth in Networth between 2005 and 2007	92,144	0.0110	0.105	-1	24.06
GVA	277,958	11.49	1.666	0	23.03
Average Growth in Exports between 2005 and 2007	679	0.0502	0.551	-1	8.229
VOE	2,522	11.01	6.401	0	22.52

enterprise- rural or urban is likely to influence the firm performance. Hence, we include those as controls in our specification.

Table 6 presents the summary statistics on owner-specific characteristics. It is seen that there are only 17 per cent firms with some technical knowledge. Other Backward Class formed the dominating group in terms of caste. Most of the owners belonged to Hindu religion and were males. However, the firms were almost equally distributed in rural and urban sector.

Table 6: Owner Characteristics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Technical Know How	172,035	0.151	0.358	0	1
SC	172,035	0.0857	0.280	0	1
ST	172,035	0.0155	0.123	0	1
OBC	172,035	0.540	0.498	0	1
Hindu	172,035	0.862	0.345	0	1
Male	172,035	0.741	0.438	0	1
Male Manager	172,035	0.774	0.418	0	1
Rural	172,035	0.428	0.495	0	1

Table 7 and 8 summarises this information based on the location of the enterprise- rural or urban.

Table 7: Owner Characteristics- Rural

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Technical Know How	73,625	0.141	0.348	0	1
SC	73,625	0.106	0.308	0	1
ST	73,625	0.0198	0.139	0	1
OBC	73,625	0.503	0.500	0	1
Hindu	73,625	0.856	0.351	0	1
Male	73,625	0.741	0.438	0	1
Male Manager	73,625	0.770	0.421	0	1

We find that in rural India as well as urban, almost three-fourths of the owners are male. We also see that most of the business are dominated by Hindus. In rural India, 86% of the firm owners are Hindu while in urban India 87% are Hindu. However, when we look at the caste categories, the business ownership is dominated by Other

Table 8: Owner Characteristics- Urban

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Technical Know How	98,410	0.158	0.365	0	1
SC	98,410	0.0705	0.256	0	1
ST	98,410	0.0122	0.110	0	1
OBC	98,410	0.567	0.496	0	1
Hindu	98,410	0.867	0.340	0	1
Male	98,410	0.741	0.438	0	1
Male Manager	98,410	0.778	0.416	0	1

Backward Castes (OBC). In both rural and urban areas, around 50% are owned by members of OBC. Members of general caste groups own around 41% of business in rural areas and 37% of that in urban areas. Members of scheduled caste and tribe own around 12% of business in rural areas and around 8% in urban areas.

4 Empirical Method

For our study, we merge the information on district level measure of court quality for any year t with the year of operations t of any firm i located in district d from MSME data yielding district-year as our panel unit. The unit of analysis is any firm i clustered in district d and year t . To start with, we looked at how delay in registration captured by the difference between the year of establishment and the year of registration varies in response to change in court quality. For different firms, these two years may be different even if the delay may be the same. For example, compare two firms from the same district. One is established in 2000 and registered in 2002. while the other is established in 2002 and registered in 2004. In both cases the delay is of 2 years. But in the first case delay is regressed on court inefficiency in year 2000 and in the second case it is regressed on the court inefficiency in the year 2002.

However, the variable delay suffers from the problem of over-sampling. To elaborate, a firm commencing its operations in 2001 has full six years to register. However given the 2007 MSME round of data, a firm which began its operations in 2006 has only two years to register. In other words, over the years, we will be over-sampling firms with smaller delay. Thus, our main firm level outcome variable is same year registration which addresses the problem of over sampling to a large extent. This variable indicates that whether the firm gets registered within one year of establishment of

the firm.

For same year registration measure our model takes the following form:

$$\delta_{idt} = \alpha + \beta_1 X_{dt} + \beta_2 Z_{idt} + \beta_3 D_d + \beta_4 D_t + u_i \quad (1)$$

where, δ_{idt} is the probability of same year registration. X_{dt} is the court quality index for district d at time t which will be same for all firms located in the same district and established in the same year. Z_{idt} are firm specific controls that account for gender of the owner and manager of the firm, religion and caste identities of the owner in explaining delay and are time invariant. a firm may experience a higher probability of getting registered within one year in districts where institutional quality is good. However, institutional quality simultaneously depends on the economic prosperity of an area. Hence, we include district fixed effects to control for any unobserved heterogeneity.

Thus, our identification strategy considers the variability in court inefficiency within a district. We also include time fixed effects to control for common shocks across all districts. Likewise, it may happen that firms located in the same district and established in the same year experience peer effects due to common shocks. Thus, the firm level error terms are not i.i.d. Consequently, any firm level unexplained variation within a district in that year might be understated, resulting in inflated t-statistics. We therefore cluster the error terms creating district-year groups to account for this fact.

For the other outcome variables for which we can utilize the panel data, we will follow the same specification. Hence we make use of the panel data methodology in the context of variables related to sunk cost and exporting status of a firm.

On the other hand, variables like firm size, indicator of loan status and variables related to contract enforcement as well as average performance of a firm involve cross-section specification. The analysis takes the following form

$$n_{id} = \alpha + \beta_1 X_d + Z_i \beta_2 + u_{id} \quad (2)$$

More specifically, the decision to take a loan is regressed on average judicial inefficiency that a firm experienced since it commenced its operations. The contract

enforcement related variables were regressed on previous years court inefficiency. Lastly, growth in net-worth of the firm was also regressed on average court quality. Since firms located in the same district might experience similar patterns in deciding their firm-size, we cluster the standard errors at the district level. For cross-section specification-

5 Results

5.1 Baseline

The main part of the empirical analysis focuses on the relationship between legal efficiency and same year registration in a business. The variable same year registration of a firm indicates that whether the firm gets registered within one year from the year it started production. Our baseline regression presented in Table 9 where same year registration is regressed on duration rate and other control variables.

In column 1, we only use duration as the independent variable without any controls and find that court inefficiency has a negative impact on the probability of same year registration meaning that if the enterprises are from the districts with high duration rate, they are less likely to register within one year of commencing its operations. We interpret the probability of not registering within one year as an indicator of their low perceived pay-offs from registering with the formal authorities which we argue that comes from low trust on the formal institutions. Such low trust on formal institutions comes from weak performance of courts in that district.

Following this, we introduce a set of owner characteristics. In column 2, we include an indicator variable which represents technical know-how of the owner. Column 3 includes controls on social identity of the owner namely the caste of the owner. Specifically, in column 3, we compare SC, ST and OBC castes in relation to our reference category of general. It is possible that districts that have more efficient judiciary encourage higher participation of socially dis-advantaged groups in entrepreneurship. However, if socially disadvantaged groups are less efficient than the other entrepreneurs then they might take a longer time to get their firms registered. For instance, registration might be a costly procedure both in terms of information acquisition as well as pure monetary costs. Entrepreneurs who are at a disadvantage might take more time to afford high costs as well as gather the right information.

For a similar argument, we control for religion. However, the inclusion of the religion indicator does not affect the correlation between legal inefficiency and business inefficiency beyond the ones captured by caste.

Since, labour-force participation rate of men in general is much higher than that of women in India, it is possible that gender of firm-owner affects the decision-making to a large extent. For instance, formal institutions, courts in this case, might facilitate business operations more for women entrepreneurs, who are less likely to get the benefits from informal networks dominated by men. For a similar reason, we control for the gender of the manager of a firm in column 6. Our base category is female. We find that magnitude of the coefficient of interest increases further with a control for the gender of the manager and owner.

Finally, we add rural dummy in column 7 (which equals one when the enterprise is rural) and find that chances of urban enterprises registering within one year are lower when compared to rural counterparts. This could be due to less complicated framework of firms and stronger informal networking advantages in rural areas than urban areas where firms could have highly complex structure in addition to diffused community ties which deepens with development.

Table 9: Baseline Regression

Dependent Variable: Same Year Registration							
VARIABLES	(1) None	(2) +Operations	(3) +Caste	(4) +Religion	(5) +Owner Gender	(6) +Manager Gender	(7) +Region
Duration in the Year of Operations	-0.007558* (0.004070)	-0.007562* (0.004075)	-0.007464* (0.004057)	-0.007467* (0.004057)	-0.007483* (0.004044)	-0.007522* (0.004041)	-0.007487* (0.004043)
Owner Characteristics							
Technical Know How		-0.008585 (0.01146)	-0.008268 (0.01152)	-0.008224 (0.01150)	-0.007881 (0.01158)	-0.007994 (0.01155)	-0.007536 (0.01151)
SC			-0.02384*** (0.008783)	-0.02342*** (0.008812)	-0.02236** (0.008769)	-0.02170** (0.008772)	-0.02344*** (0.008803)
ST			-0.01425 (0.01455)	-0.01406 (0.01457)	-0.01382 (0.01461)	-0.01341 (0.01456)	-0.01521 (0.01448)
OBC			-0.02126*** (0.007832)	-0.02094*** (0.007905)	-0.02153*** (0.007940)	-0.02163*** (0.007920)	-0.02210*** (0.007996)
Hindu				-0.004130 (0.004502)	-0.003488 (0.004522)	-0.003509 (0.004519)	-0.003958 (0.004519)
Male					0.02661*** (0.007644)	0.006647 (0.007598)	0.006370 (0.007582)
Male Manager						0.02750*** (0.007999)	0.02790*** (0.007978)
Rural							0.01583*** (0.005900)
Year = 2001	0.1340*** (0.02075)	0.1340*** (0.02074)	0.1342*** (0.02068)	0.1342*** (0.02068)	0.1348*** (0.02054)	0.1350*** (0.02050)	0.1348*** (0.02046)
Year = 2002	0.1328*** (0.02001)	0.1329*** (0.02001)	0.1332*** (0.01997)	0.1332*** (0.01997)	0.1346*** (0.01988)	0.1351*** (0.01985)	0.1350*** (0.01983)
Year = 2003	0.1276*** (0.02042)	0.1277*** (0.02042)	0.1277*** (0.02035)	0.1277*** (0.02035)	0.1300*** (0.02017)	0.1308*** (0.02014)	0.1304*** (0.02007)
Year = 2004	0.1437*** (0.02132)	0.1439*** (0.02138)	0.1441*** (0.02134)	0.1440*** (0.02133)	0.1466*** (0.02115)	0.1473*** (0.02115)	0.1470*** (0.02111)
Year = 2005	0.2729*** (0.02207)	0.2730*** (0.02208)	0.2729*** (0.02203)	0.2729*** (0.02202)	0.2764*** (0.02197)	0.2774*** (0.02197)	0.2766*** (0.02193)
Year = 2006	0.3331*** (0.02297)	0.3332*** (0.02298)	0.3328*** (0.02294)	0.3328*** (0.02293)	0.3362*** (0.02289)	0.3372*** (0.02286)	0.3366*** (0.02281)
Constant	0.6962*** (0.02382)	0.6974*** (0.02362)	0.7105*** (0.02450)	0.7139*** (0.02384)	0.6920*** (0.02427)	0.6850*** (0.02467)	0.6789*** (0.02494)
Observations	156,190	156,190	156,190	156,190	156,190	156,190	156,190
R-squared	0.182	0.182	0.182	0.182	0.183	0.183	0.183
District FE	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses

*** p_i0.01, ** p_i0.05, * p_i0.1

5.2 Heterogeneity

We next want to identify for whom court efficiency matters more. Specifically, we conduct the test based on- owner level characteristics which is based on caste of the entrepreneur and network density where the entrepreneur is located.

5.2.1 Caste

Given the historical occupational bindings of the caste system in India, it is well established that occupational mobility across different caste groups is typically very low in India. In such a setup, formal judicial system has an important role to play in economics mobility of marginalized castes. Traditionally, individuals rely on own caste network to start a new enterprise. A network can not only provide important information needed to start a new enterprise but also provide loan and ensure enforceability of contracts that are required for a business. However, if an individual defects from the traditional occupation then he/she cannot depend on his informal caste network for any future help in terms of loans or contractors to work with. Hence, most individuals tend to stick to the industry that is in the traditional occupational category of his/her caste. However, in the presence of a strong judicial system it is easy for someone to write contracts without the help of his caste network. The anecdotes regarding experiences of successful Dalit entrepreneurs like Devanand Londhe and Ratibhai Makwana hint at such favourable role of formalization. Their transition from "job seekers" to "job givers" would not have been possible had there not been a strong judicial system to ease out the process of writing formal business contract. For this reason we argue that a formal judicial system is likely to be more helpful for disadvantaged sections of the society who traditionally do not have a very strong informal network to bank on. Accordingly, in Table 12, we test whether delay in registration systematically vary with court inefficiency and caste identity of the owner. Hence, we include an interaction term involving both caste identity and duration rate in the regression term. We test the significance of court inefficiency for SC/STs for rural and urban separately. We find that the coefficient of the interaction term is negative and significant for the urban sample. This implies that court inefficiency is worse for entrepreneurs if they hail from disadvantaged groups.

Table 10: Heterogeneity Analysis Based on Caste

Dependent Variable: Same Year Registration		
VARIABLES	(1) Rural	(2) Urban
Duration in the Year of Operations	-0.008595* (0.005029)	-0.008542 (0.005782)
SC or ST	0.001927 (0.01179)	0.01110 (0.01580)
SC or ST x Court Inefficiency	-0.001619 (0.002933)	-0.007384** (0.003620)
Owner Characteristics		
Technical Know How	-0.004554 (0.01133)	-0.01081 (0.01839)
Male	4.971e-04 (0.007350)	0.01734 (0.01122)
Male Manager	0.01583* (0.008623)	0.03557*** (0.01166)
Year = 2001	0.1111*** (0.01941)	0.1569*** (0.02709)
Year = 2002	0.1149*** (0.01985)	0.1449*** (0.02666)
Year = 2003	0.1136*** (0.02134)	0.1431*** (0.02730)
Year = 2004	0.1242*** (0.01943)	0.1566*** (0.03067)
Year = 2005	0.2429*** (0.01969)	0.3020*** (0.03085)
Year = 2006	0.3171*** (0.02059)	0.3555*** (0.03177)
Constant	0.7121*** (0.02609)	0.6424*** (0.03513)
Observations	58,907	75,554
R-squared	0.183	0.199
District FE	YES	YES
Time FE	YES	YES

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

5.2.2 Network strength and formal courts

In the last section we argue that the reason that improvements in courts help SC/ST more because they lack business network which could help them enforcing contracts as it happens with traditional business castes. If our conjecture is correct then court efficiency will help SC/ST entrepreneurs more where the network size is smaller. It is difficult to measure the extent of SC/ST network in a district. Therefore, we proxy it with the SC/ST population in the district. The year of survey is 2007 which falls somewhat midway between two census years 2001 and 2011. Therefore, we measure the district SC/ST population by taking the average of SC/ST population in that district in census years 2001 and 2011. Then we categorize a district to be high SC/ST district if the SC/ST population of that district is greater than the average and low SC/ST district otherwise. The results reported in table (11) supports our conjecture.

Table 11: SC/ST Heterogeneity Based on Caste Proportion

Dependent Variable: Same Year Registration		
VARIABLES	(1) High SC/ST Populated Region	(2) Low SC/ST Populated Region
Duration in the Year of Operations	-0.001386 (0.007135)	-0.01100 (0.008940)
SC or ST	-0.03494 (0.02954)	0.03016* (0.01724)
SC or ST x Court Inefficiency	3.974e-05 (0.006911)	-0.009514** (0.004035)
Owner Characteristics		
Technical Know How	0.01307 (0.01164)	-0.02161 (0.02379)
Hindu	-0.005783 (0.009346)	-0.009443 (0.006257)
Male	0.03093** (0.01414)	0.008782 (0.01282)
Male Manager	0.004600 (0.01418)	0.04436*** (0.01294)
Year = 2001	0.1154*** (0.03854)	0.1625*** (0.03239)
Year = 2002	0.1231*** (0.03774)	0.1488*** (0.03187)
Year = 2003	0.1353*** (0.03910)	0.1420*** (0.03225)
Year = 2004	0.1254*** (0.03458)	0.1663*** (0.03766)
Year = 2005	0.2493*** (0.03564)	0.3157*** (0.03791)
Year = 2006	0.3745*** (0.03651)	0.3438*** (0.03859)
Constant	0.6167*** (0.03523)	0.6737*** (0.04686)
Observations	23,935	63,173
R-squared	0.202	0.194
District FE	YES	YES
Time FE	YES	YES

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

6 Robustness check

6.1 Different indicators of court efficiency

6.1.1 Disposition time and expected delay

For robustness check, we utilise our extensive data to construct alternate measures of judicial inefficiency. We test the sensitivity of our results in Table 9 to these alternate measures of inefficiency. Table.. report the results from using two other indices i.e. disposition time and expected delay with same year registration as the dependent variable. The results are in consent with the main measure of court inefficiency.²

Table 12: Robustness Check

VARIABLES	(1) Expected Delay	(2) Disposition Time
Expected Delay in the Year of Operations	-0.008060* (0.004432)	
Disposition Time in the Year of Operations		-0.007166* (0.004111)
Owner Characteristics		
Technical Know How	-0.007542 (0.01151)	-0.007548 (0.01151)
SC	-0.02345*** (0.008804)	-0.02343*** (0.008802)
ST	-0.01519 (0.01448)	-0.01524 (0.01447)
OBC	-0.02210*** (0.008002)	-0.02209*** (0.007993)
Hindu	-0.003956 (0.004520)	-0.003944 (0.004519)
Male	0.006393 (0.007583)	0.006395 (0.007582)
Male Manager	0.02792*** (0.007978)	0.02791*** (0.007977)
Rural	0.01582*** (0.005900)	0.01582*** (0.005901)
Year = 2001	0.1348*** (0.02045)	0.1350*** (0.02045)
Year = 2002	0.1350*** (0.01983)	0.1353*** (0.01981)
Year = 2003	0.1306*** (0.02006)	0.1308*** (0.02004)
Year = 2004	0.1469*** (0.02110)	0.1474*** (0.02106)
Year = 2005	0.2766*** (0.02191)	0.2772*** (0.02196)
Year = 2006	0.3366*** (0.02277)	0.3370*** (0.02278)
Constant	0.6728*** (0.02290)	0.6701*** (0.02239)
Observations	156,190	156,196
R-squared	0.183	0.183
District FE	YES	YES
Time FE	YES	YES

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

²We have included results with the remaining firm-related variables in the appendix

6.1.2 New Index: Proportion of old cases solved

In Table 10 we regress same year registration on the newly constructed index. This index covers districts having information on age breakup of pending cases in 1-5 years format for the period 2005-2007. However, we conduct regression analysis only for the years 2005 and 2006. Column 2 includes the results from duration for the smaller sample consisting of same number of observations for which the new index is used. Following this, Column 3 includes results with the new index as the main variable of interest.

The motivation to construct the new index is based on the argument that two districts with same duration might differ in the composition of the old cases that they dispose. Hence, we control for this possibility by including duration as one of the controls in the final column.

We argue that proportionate old cases solved will discourage business growth and therefore, we expect that it will have a negative impact on different measures of business performance. Our empirical result reported in table (13) confirms our conjecture. Furthermore, we note that unlike other measures which bear almost equal coefficients, the new index has a much higher coefficient. The difference can be explained in terms of wealth of information on court performance that the new index reveals to the prospective entrepreneur. In other words, we argue that entrepreneur would be encouraged to take a decision to formalise his establishment faster in districts where he expects his case to be solved first.³ It is worthwhile to mention that the results revealed interesting patterns which were in contrast to the existing indices for some variables, thus, offering us an opportunity to study the relationship between court inefficiency and entrepreneurial decision-making in a greater detail.

³We have included results with the remaining firm-related variables in the appendix.

Table 13: New Index and Duration

New Index and Duration				
Dependent Variable: Same Year Registration				
VARIABLES	(1)	(2)	(3)	(4)
	Duration*	Duration**	Proportionate Old Cases Solved***	Proportionate Old Cases Solved****
Proportion of old cases solved in last five years			-0.3138*** (0.1173)	-0.2149** (0.08610)
Duration in the Year of Operations	-0.007487* (0.004043)	-0.03108** (0.01474)		-0.02714* (0.01468)
Owner Characteristics				
Techincal Know How	-0.007536 (0.01151)	-0.008917 (0.008748)	-0.008801 (0.008767)	-0.009140 (0.008753)
SC	-0.02344*** (0.008803)	0.001402 (0.007387)	0.001310 (0.007388)	0.001176 (0.007389)
ST	-0.01521 (0.01448)	0.01802* (0.01043)	0.01718 (0.01049)	0.01758* (0.01042)
OBC	-0.02210*** (0.007996)	0.003982 (0.005149)	0.004137 (0.005125)	0.003965 (0.005138)
Hindu	-0.003958 (0.004519)	-0.006326 (0.006592)	-0.006029 (0.006609)	-0.006235 (0.006604)
Male	0.006370 (0.007582)	4.342e-04 (0.006191)	9.929e-04 (0.006170)	5.986e-04 (0.006196)
Male Manager	0.02790*** (0.007978)	-0.01089 (0.007353)	-0.01139 (0.007325)	-0.01113 (0.007364)
Rural	0.01583*** (0.005900)	0.01114*** (0.003799)	0.01087*** (0.003794)	0.01095*** (0.003791)
Year = 2001	0.1348*** (0.02046)			
Year = 2002	0.1350*** (0.01983)			
Year = 2003	0.1304*** (0.02007)			
Year = 2004	0.1470*** (0.02111)			
Year = 2005	0.2766*** (0.02193)			
Year = 2006	0.3366*** (0.02281)	0.06485*** (0.008035)	0.06322*** (0.008149)	0.06330*** (0.008010)
Constant	0.6789*** (0.02494)	1.0346*** (0.04663)	0.9892*** (0.02186)	1.0572*** (0.04656)
Observations	156,190	25,679	25,679	25,679
R-squared	0.183	0.166	0.164	0.167
District FE	YES	YES	YES	YES
Time FE	YES	YES	YES	YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

*:Full Sample

**:.Coinciding Sample

***:No Control for duration

****: Duration is controlled

6.2 Different indicators of firm performance

Overall, the results reported in the section above suggest that a more efficient judiciary helps businesses to operate in the formal sector, possibly by reducing the cost of formalization. We now look at other firm level variables that may also be linked to the court quality.

6.2.1 Scale of Operations

Table (14) looks at two measures of the scale of the enterprise. The first variable is the decision of firm to operate as a micro unit and the second one measures the size of a firm proxied by the number of employees hired. Since larger organizations are expected to face contract enforcement problems, a more efficient legal system is likely to help in the establishment of a larger set-up. Results in the table confirm the same. In column 1, we find that firms are more likely to operate as a micro enterprise when court inefficiency is high. While in column 2, we find that as court inefficiency increases, number of employees hired declines. Both the results are consistent with our hypothesis.

Table 14: Scale of Operations

VARIABLES	(1) Micro	(2) Firm Size
Court inefficiency (duration) in the Year of Installation	0.006108** (0.002635)	
Court inefficiency (duration) in 2005		-0.3086** (0.1440)
Owner Characteristics		
Technical Know How	-0.01091 (0.009139)	2.2707*** (0.5978)
SC	0.1888*** (0.01038)	-4.1619*** (0.7263)
ST	0.09938*** (0.01251)	-3.8355*** (0.5475)
OBC	0.07606*** (0.006058)	-3.9315*** (0.5311)
Hindu	-0.01593*** (0.005465)	0.9254** (0.3818)
Male	-0.06176*** (0.008378)	0.6151 (0.3779)
Male Manager	-0.2219*** (0.01249)	2.1586*** (0.3802)
Rural	0.03604*** (0.005668)	0.6912 (0.4292)
Year = 2001	-0.02057* (0.01189)	
Year = 2002	-0.01411 (0.01157)	
Year = 2003	-0.04321*** (0.01069)	
Year = 2004	-0.04817*** (0.01119)	
Year = 2005	-0.05560*** (0.01168)	
Year = 2006	-0.1155*** (0.01814)	
Constant	0.5311*** (0.01602)	5.1163*** (0.4691)
Observations	132,828	160,275
R-squared	0.369	0.011
District FE	YES	NO
Time FE	YES	NO

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

6.2.2 Availability of loans

We next look at how court inefficiency impacts loan availability. We expect that as courts get better enforcing loan contracts will be easier and the lenders will be more willing to lend money. As a result, in equilibrium, efficient courts will have a positive impact on loan status (and inefficient courts will have a negative impact). The relevant variable is a binary variable that takes value 1 when firm takes a loan and 0 otherwise. However, there is no information on the year when the loan was taken, hence, we regress the loan status of the firm on the average court inefficiency that it experiences since it started its production. Results are presented in Table 15. As expected, we find that a firm is less likely to take a loan when average court inefficiency is low.

Table 15: Financial Access

VARIABLES	(1) Loan Status
Average court inefficiency since operations	-0.01130*** (0.003341)
Owner Characteristics	
Technical Know How	0.07081*** (0.02547)
SC	-0.1219*** (0.02104)
ST	-0.06673** (0.03375)
OBC	-0.1528*** (0.02599)
Male	-0.04613*** (0.01385)
Male Manager	0.1015*** (0.01687)
Hindu	0.01186 (0.01611)
Rural	0.07259*** (0.01808)
Constant	0.1922*** (0.02859)
Observations	156,176
R-squared	0.072
District FE	NO
Time FE	NO

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

6.2.3 Hiring practice

Next, Table 16 looks at how the firm's hiring decision gets affected by court quality. We observe the effect of court quality on three relevant variables: the proportion of female and child employee, the proportion of SC/ST employees and whether the employer is paying less than the optimal wage. Our premise is that in a country

like India which does not have a strong legal institutions, employers tend to exploit their workers by denying them fair wage, leaves and other facilities. In districts with stronger courts, employers are less likely to get away with these illegal activities. Hence, in those places they are going to employ workers from the vulnerable section of the society who do not have access to justice in case of any unfair treatment. Also, in those districts, the chance of paying higher wage is high. The results in table 16 supports our hypothesis – as court system improves (inefficiency falls), there is a tendency to employ more labour from women/children and SC/ST. Also, as court improves the employers tend to pay higher than mean wage prevailing in the state.

Table 16: Hiring Practice

VARIABLES	(1)	(2)	(3)
	Female and Child Employee	SC/ST Employee	Less than average wage
Court inefficiency (Duration) in 2005	-0.01761** (0.008625)	-0.003016* (0.001612)	0.01468* (0.007702)
Owner Characteristics			
Technical Know How	-0.06811** (0.03322)	-0.005700 (0.007386)	0.009660 (0.02747)
SC	-0.04893 (0.05080)	0.5324*** (0.02926)	0.06103*** (0.02140)
ST	-0.07182 (0.05859)	0.3957*** (0.05212)	0.04900** (0.02313)
OBC	-0.03683 (0.04826)	-0.05107*** (0.007864)	-0.01129 (0.03109)
Hindu	-0.04523 (0.09802)	0.03781*** (0.007158)	-0.03587* (0.01823)
Male	-0.1629*** (0.03208)	0.003622 (0.006606)	-0.05650** (0.02684)
Male Manager	-0.5127*** (0.03583)	0.01279 (0.007793)	-0.07312*** (0.02279)
Rural	0.03787 (0.02305)	0.03251*** (0.005322)	0.08434*** (0.02287)
Constant	0.9297*** (0.1353)	0.06056*** (0.009856)	0.7915*** (0.03669)
Observations	147,294	160,271	140,989
R-squared	0.003	0.354	0.032
District FE	NO	NO	NO
Time FE	NO	NO	NO

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

6.2.4 Long term investment

We argue that court quality has effect on long term investment decisions of the firms. Long term investments often involve sunk costs which cannot be retrieved in the long run. We conjecture that in presence of efficient court system, firms are encouraged to take such decisions as they expect to survive in the long run. There is no straight forward way to measure such sunk costs. We propose two candidate measurements

for this – entrepreneurs decision to start a manufacturing unit and no delay in production.

Setting up a manufacturing firm involves investment in plant and machinery which is difficult to sell-off if an entrepreneur decides to exit. We argue that this high exit cost makes entrepreneurs invest in manufacturing only if the courts are efficient i.e. contracts can be enforced easily. The second measure we take is same year production – i.e the year of set up is the same as the year of first production. We argue that beginning production requires some set up cost. If court system is inefficient, the entrepreneurs will face more uncertainty and they would like to wait before starting production in order to get a hold of the contractual environment.

The results in table 17 are in accordance with our expectations. Column 1 in table 17 indicates that as court inefficiency increases, probability of the firm to operate as a manufacturing-unit declined. While in Column 2 we find that as court inefficiency increases, probability of firm to initiate its production in the same year as that of installation (i.e. not experiencing sunk costs) increases, although the result is insignificant.

Table 17: Sunk Costs

VARIABLES	(1)	(2)
	Non- Manufacturing Unit	Same Year Pro- duction
Court inefficiency (duration) in the year of operation	0.004062** (0.001916)	2.758e-04 (2.011e-04)
Owner Characteristics		
Technical Know-How	0.02504*** (0.005993)	-1.674e-04 (5.507e-04)
SC	0.08130*** (0.008180)	2.839e-04 (6.647e-04)
ST	0.02757** (0.01132)	-2.562e-04 (0.001559)
OBC	0.01782*** (0.006111)	7.630e-04* (4.633e-04)
Hindu	-0.01353** (0.005818)	2.975e-05 (5.350e-04)
Male	-0.002857 (0.008106)	-5.790e-04 (5.901e-04)
Male Manager	-0.1940*** (0.009531)	4.638e-04 (6.758e-04)
Rural	-0.02515*** (0.004864)	-3.649e-04 (3.611e-04)
Year = 2001	0.01226 (0.01168)	-8.693e-04 (6.786e-04)
Year = 2002	0.005740 (0.009177)	-7.153e-04 (6.900e-04)
Year = 2003	0.007493 (0.01012)	9.025e-04 (7.369e-04)
Year = 2004	-0.02974*** (0.009984)	0.003923*** (6.353e-04)
Year = 2005	-0.03986*** (0.01237)	0.004435*** (6.770e-04)
Year = 2006	-0.05553*** (0.01331)	0.005460*** (9.316e-04)
Constant	0.5860*** (0.01490)	0.9948*** (0.001264)
Observations	156,190	124,589
R-squared	0.367	0.005
District FE	YES	NO
Time FE	YES	NO

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

6.2.5 Same Network Employees

Next we explore the association between court efficiency and the degree of the prevalence of informal networks. When the formal court system is weak, the firms would rely more on the alternate informal network and connections to recruit employees from their own network. Caste, religion and gender are the most common basis for formation of such informal networks. In the absence of the information on caste and religion of the owner we concentrate only on gender here. We expect the firm-owner or manager to employ a higher fraction of employees from the same gender group when court inefficiency increases. Similarly, we expect probability of manager and gender to be same when court inefficiency is high. This is because when

court inefficiency increases the owner/manager would expect a lower probability of breach of contract when they hire same gender employees. Table 19 reveals the same. The results indicate that a formal institution is replaced by strong informal networks when formal courts do not work well.

Table 18: Same Network Proportion

VARIABLES	(1)		(2)		(3)	
	Prop. Employee Same Gender Owner	Em- ployee as Gender	Prop. Employee Same Gender Manager	Em- ployee as Gender	Owner Manger Same Gender	
Court inefficiency (Duration) in 2005	0.01002*** (0.003337)		0.01016*** (0.003439)		0.003088** (0.001390)	
Owner Characteristics						
Technical Know How	-0.008750 (0.009280)		-0.003317 (0.008738)		-0.01298** (0.006387)	
SC	0.07102*** (0.01172)		0.05806*** (0.01302)		0.03304*** (0.005299)	
ST	0.05077*** (0.01136)		0.03672*** (0.01264)		0.008609 (0.006635)	
OBC	0.05301*** (0.01246)		0.03747*** (0.01342)		0.02578*** (0.005928)	
Hindu	-0.009057 (0.01275)		-0.02212*** (0.007686)		0.01364 (0.01212)	
Male	0.4401*** (0.04410)		-0.008877 (0.01576)		0.4744*** (0.05544)	
Male Manager	-0.2953*** (0.03679)		0.1304*** (0.03059)		-0.3823*** (0.05409)	
Rural	-0.001578 (0.009462)		-0.005301 (0.009266)		0.006193 (0.004640)	
Constant	0.6881*** (0.03741)		0.7398*** (0.03298)		0.8331*** (0.02588)	
Observations	160,271		160,271		160,275	
R-squared	0.166		0.046		0.232	
District FE	NO		NO		NO	
Time FE	NO		NO		NO	

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

6.2.6 Firm Performance

Finally we analyse the effect of court efficiency on various measures of firm level performance. The database has information on the GVA and net-worth of firms for three and two years respectively. We first regressed GVA of each firm on court inefficiency. The results turned out to be insignificant. Following this, we calculated the growth in net-worth between these two years and regressed the same on the average court inefficiency experienced in the lag years. We expect net-worth to decline from the previous year when court inefficiency in the district is high. Results presented in Table 20 confirm our expectations.

Table 19: Firm Performance

VARIABLES	(1)	(2)
	GVA	Growth in NW
L.dur	2.380e-04 (0.004277)	
Average Duration b/w 2004 and 2005		-6.239e-04* (3.728e-04)
Owner Characteristics		
Technical Know How	0.1774*** (0.03485)	0.008070 (0.007673)
SC	-0.5973*** (0.02973)	-0.003655 (0.002958)
ST	-0.3872*** (0.05387)	0.003549 (0.005271)
OBC	-0.3563*** (0.02710)	-0.003312 (0.002664)
Hindu	0.07840*** (0.01844)	9.723e-04 (0.002113)
Male	0.1554*** (0.02513)	0.001632 (0.003082)
Male Manager	0.5151*** (0.03221)	-0.001953 (0.003239)
Rural	-0.1748*** (0.01879)	0.003717 (0.002836)
NIC1 = 1		0.005568 (0.005393)
NIC1 = 2		0.007610 (0.005927)
NIC1 = 3		0.01004 (0.007767)
NIC1 = 4		0.2250 (0.2298)
NIC1 = 5		0.006373 (0.005185)
NIC1 = 6		0.01493 (0.01745)
NIC1 = 7		0.003068 (0.004957)
NIC1 = 8		0.003790 (0.004820)
NIC1 = 9		0.005399 (0.004893)
Year = 2005	0.1104*** (0.005427)	
Year = 2006	0.2282*** (0.008474)	
Constant	11.024*** (0.03420)	0.006880 (0.006464)
Observations	480,616	144,785
R-squared	0.415	0.001
District FE	YES	NO
Time FE	YES	NO

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

7 Court efficiency and industrial heterogeneity

We conjecture that if court is inefficient, there will be a general uncertainty regarding contract enforcement. In this situation, entrepreneurs will diversify in different business to hedge against the risk. Moreover, in absence of an effective court system, firms depend on their local network to enforce contract. This encourages them to source their input locally leading to higher diversification in business. In order to capture industrial heterogeneity we compute an industry analogue of the fractionalization index developed by Alesina et al. [2003] using the following formula. The index essentially indicated the probability that two randomly selected individuals from a population belonged to different groups.

Thus, formula used to compute measures of fractionalization was-

$$FRACT_j = 1 - \sum_{i=1}^N s_{ij}^2$$

Where s_{ij} is the share of industry i ($i= 1.. N$) in district j . We conduct the analysis by calculating the share of firms in each industry in district 'd' and time 't'. We then calculate the fractionalization Index from the same which then yields district-year level information on fractionalization.

Since the database has classified firms using five digit industry classification, we can do the analysis for NIC 1,2.. 5 digit codes.

To begin with NIC 1-digit code, there are 9 industries as per NIC-1-digit codes. Hence, we need to calculate share of each of the 9 industries in each district-year group. Following this we compute Herfindahl Index which is then deducted from 1 to yield fractionalization variable which is at district-time level. We follow similar steps to compute heterogeneity index for all five levels of classification. The fractionalization index at each level is then regressed on court inefficiency with the aim to study the relationship between institutional quality and distribution of firms across various industries.

The dependent variable is district-year level fractionalisation index for different districts and years. The variable of interest is district level court inefficiency which varies within district over the years. Controls include share of SCs, STs, OBCs, Males as the owner of the firms at district-time level. Similarly, we include controls for share of firms with male manager and located in rural sector in that district-year group. Since all the variables are distributed across space and time, we include dis-

trict fixed-effects. Thus, our specification is as follows:

$$H_{dt} = \alpha + \beta_1 X_{dt} + \beta_2 Z_{dt} + \beta_3 D_d + u_i$$

Table 21 includes results for the same.

Table 20: Industrial Heterogeneity and Court efficiency

VARIABLES	(1) One Digit	(2) Two Digit	(3) Three Digit	(4) Four Digit	(5) Five Digit
Court inefficiency (duration) in the Year of Operations	0.002754* (0.001417)	0.003086** (0.001531)	0.003008* (0.001548)	0.002899* (0.001533)	0.002607* (0.001543)
Share of SC Owners	0.1059** (0.04851)	0.06491 (0.05244)	0.04506 (0.05300)	0.04261 (0.05252)	0.05563 (0.05284)
Share of ST Owners	0.09641* (0.05257)	0.1118** (0.05683)	0.08658 (0.05743)	0.09355 (0.05691)	0.08706 (0.05725)
Share of OBC Owners	0.09368*** (0.02609)	0.06755** (0.02820)	0.06969** (0.02850)	0.06136** (0.02824)	0.05492* (0.02841)
Share of Male Owners	0.2997*** (0.04721)	0.2686*** (0.05103)	0.2325*** (0.05158)	0.2392*** (0.05111)	0.2459*** (0.05141)
Share of Male Managers	0.05952 (0.05182)	0.09940* (0.05601)	0.1462*** (0.05661)	0.1437** (0.05610)	0.1474*** (0.05643)
Share of Hindu Owners	0.06151** (0.02960)	0.1126*** (0.03200)	0.1083*** (0.03234)	0.1081*** (0.03205)	0.1107*** (0.03224)
Share of firms located in Rural Sector	0.009867 (0.02086)	0.04807** (0.02255)	0.06107*** (0.02279)	0.06779*** (0.02258)	0.06833*** (0.02272)
Constant	0.1963*** (0.02612)	0.3076*** (0.02824)	0.3268*** (0.02854)	0.3379*** (0.02828)	0.3461*** (0.02845)
Observations	1,641	1,641	1,641	1,641	1,641
R-squared	0.581	0.589	0.594	0.596	0.595
District FE	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We observe a positive relationship between court inefficiency and fractionalisation. Since, fractionalization increases when there are many small groups. We can say that when court inefficiency is high, firms decide to alleviate any risk of breach of contract by operating in a different industry than operating in an industry where the firms are already existing and may have experienced breach of contract.

8 Conclusion

Enforcing contract is critical for business proliferation. However, in less developed countries with inefficient courts, the informal networks are ubiquitous for enforcing contracts. The prohibitively high court costs in India – mostly because of the time it takes to settle a case in court – make moving to court for resolving disputes the last option for an entrepreneur. But theoretically, people choose not to move to court under two types of circumstances – when courts are very good and nobody breaches a contract, and when the courts are so bad that going to court cannot provide a

remedy. Therefore, the direct effects of these two different qualities of the court system are the same on the number of litigation (low in both cases) However, the *shadow effects* of differing court quality will be different for the number of contracts. There will be more contracts signed under a good court regime than a bad court one. In this paper we try to estimate this shadow effect by exploiting the district level court quality variation over time. We find that the *shadow* indeed works – districts with better court efficiency have bigger firm sizes than the districts with inefficient courts. Moreover, firm registrations are larger in districts with higher court efficiency. More importantly, we find that socially disadvantaged groups such as scheduled caste/tribes (SC/ST) benefit more than their general caste counterpart. We find that SC/STs in urban areas have a higher chance to formalize their enterprise when court quality improves. We also find as court quality deteriorates chances of two randomly chosen firms to belong to two different industry-groups increases.

To summarize, we find significant impact of formal court system on entrepreneurship. Our findings suggest that improving formal court helps entrepreneurs in general – but the effect is stronger for socially disadvantaged groups. Also, there are higher chances of diversification in terms of industry groups when court inefficiency is high.

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9 Appendix

Table 21: Robustness Check:Expected Delay

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Micro	Same Year Production	Firm Size	Female and Child Em-ployee	SC/ST Em-ployee	Less than Optimal Wage	Prop. Em-ployee as der	Prop. Em-ployee as der	Owner Manager	Loan Sta-tus	Non-Manufacturing Unit	Exporting Unit	Value of Exports	GVA	Growth in VOE	Growth in NW
Expected Delay in the Year of Installation	0.007073** (0.002894)	3.089e-04 (2.212e-04)	-0.303** (0.1452)	-0.01779** (0.008862)	-0.00228* (0.001089)	0.0126* (0.007964)	0.009822** (0.003266)	0.006948*** (0.003351)	0.002935** (0.001403)	-0.0131*** (0.003340)	0.001818** (0.002069)	8.749e-04* (4.843e-04)	0.222** (0.1081)	-0.01548* (0.008188)	-0.00271 (0.00628)	4.95e-04* (3.80e-04)
Expected Delay in 2005																
Average expected delay since operations																
Expected Delay in the Year of Operations																
Lspald																
Average Expected Delay by 2001 and 2005																
Owner Characteristics																
Technical Know How																
SC	-0.01000 (0.000339)	-1.669e-04 (5.507e-04)	2.2780*** (0.5387)	-0.06770** (0.03307)	-0.005590 (0.007394)	0.000228 (0.02745)	-0.08563 (0.00281)	-0.003522 (0.008725)	-0.01303** (0.006391)	0.07086*** (0.02549)	0.02504*** (0.005993)	0.00039*** (0.002065)	1.1304*** (0.3324)	0.1764*** (0.03448)	0.07388 (0.00737)	0.008685 (0.007677)
ST	0.003881 (0.01681)	5.616e-04 (2.212e-04)	-1.170*** (0.215)	-0.04958 (0.02415)	0.5323** (0.02227)	0.06133*** (0.02123)	0.07123*** (0.01177)	0.05299*** (0.01366)	0.03309*** (0.003407)	-4.1220*** (0.02101)	0.68129*** (0.008179)	-0.005131** (0.002301)	-0.1278 (0.0480)	-0.3018*** (0.02971)	-0.02736 (0.00781)	-0.005676 (0.002963)
OBC	0.01251 (0.01501)	7.610e-04 (0.01150)	-3.5873*** (0.5475)	-0.05881 (0.05881)	0.02121 (0.02121)	0.00203 (0.0203)	0.01155 (0.01155)	0.01262 (0.00633)	0.02759** (0.00633)	-0.1528*** (0.03880)	0.01781*** (0.01132)	-0.07712*** (0.00255)	0.8413 (0.1070)	-0.3481*** (0.05411)	0.01676 (0.00569)	0.005384 (0.00268)
Hindu	0.006677 (0.005465)	7.610e-04 (3.088e-05)	0.5300 (0.3857)	0.04854 (0.09795)	0.03783** (0.01770)	-0.03611** (0.01820)	0.01246 (0.01279)	0.01343 (0.00771)	0.005917 (0.01212)	0.006111 (0.01611)	0.006111 (0.005818)	-0.003052** (0.001483)	0.3532 (0.2713)	0.09095*** (0.01835)	0.02054 (0.01470)	9.77e-04 (0.002113)
Male	0.00877 (0.00877)	4.638e-04 (3.088e-05)	2.1640*** (0.3764)	-0.0124*** (0.03109)	0.00520 (0.00520)	0.02573 (0.02573)	-0.2055** (0.04112)	0.1302** (0.01586)	-0.3823** (0.04547)	0.01016** (0.01355)	-0.1940** (0.00807)	0.002586 (0.00763)	1.3408 (0.3408)	0.2308*** (0.02582)	0.03534 (0.00381)	0.001937 (0.001937)
Rural	0.03065** (0.005669)	3.616e-04 (5.610e-04)	0.6887 (0.4292)	0.03775 (0.02311)	0.03255** (0.005324)	0.08437** (0.02289)	-0.00184 (0.009472)	0.002416 (0.000264)	0.006240 (0.000657)	0.07259*** (0.01813)	-4.0214*** (0.004864)	-0.002124** (9.803e-04)	-0.8982** (0.2788)	-0.1807*** (0.01869)	0.08365 (0.00668)	0.003276 (0.00285)
NIC1 = 1																
NIC1 = 2																
NIC1 = 3																
NIC1 = 4																
NIC1 = 5																
NIC1 = 6																
NIC1 = 7																
NIC1 = 8																
NIC1 = 9																
Year = 2001	-0.02854* (0.01188)	-8.680e-04 (7.765e-04)														
Year = 2002	0.01156 (0.01156)	0.915e-04 (6.915e-04)														
Year = 2003	-0.0430*** (0.01068)	9.939e-04 (7.376e-04)														
Year = 2004	-0.04781*** (0.01181)	0.003933*** (3.966e-04)														
Year = 2005	-0.1132*** (0.01166)	0.005463*** (6.767e-04)														
Year = 2006	-0.0346*** (0.01500)	0.005000*** (9.950e-04)														
Constant	4.8074*** (0.4259)	0.05816*** (0.003309)	0.9124*** (0.1295)	0.05816*** (0.003309)	0.05816*** (0.003309)	0.05816*** (0.003309)	0.05816*** (0.003309)	0.05816*** (0.003309)	0.05816*** (0.003309)	0.1806*** (0.00636)	0.3790e-04 (0.001807)	0.03437*** (0.000878)	1.205*** (0.1051)	11.065*** (0.04061)	0.2276*** (0.00675)	0.006295 (0.000526)
Observations	132828	124159	160275	147294	160271	140989	160271	160275	160275	156170	155400	155400	4.417	479.623	1.163	144.755
Resquared	0.369	0.005	0.011	0.003	0.354	0.032	0.065	0.016	0.232	0.071	0.367	0.413	0.413	0.033	0.001	0.001
District FE	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO
Time FE	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO

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

Table 22: Robustness Check: Disposition Time

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Micro	Same Year Production	Firm Size	Female and Child employees	SC/ST employees	Less than Optimal Wage	Employee Same as Owner	Employee Same as Manager	Owner Manager Same as det	Leans Manufacturing Unit	Non-Manufacturing Unit	Exporting Unit	Value of Exports	GVA	Growth in VOE	Growth in NW
Disposition Time in the Year of Installation	0.00637*** (0.00266)	2.126e-04 (1.91e-04)	-0.290** (0.1106)	-0.070** (0.008470)	-0.02327** (0.001616)	0.01433* (0.007955)	0.00040*** (0.000145)	0.000525*** (0.000230)	0.002576** (0.001353)	-0.01133*** (0.003345)	0.004201** (0.001934)	7.954e-04* (4.306e-04)	0.196** (0.1007)	-0.01857** (0.007337)	-0.02127 (0.01540)	-6.350e-04* (3.736e-04)
Disposition Time in 2005	-0.00189 (0.00188)**	1.628e-04 (2.816e-04)	2.2711*** (1.7202***)	-0.08111** (0.0405)	-0.05660 (0.0322**)	0.000593 (0.06151**)	-0.085743 (0.07122**)	-0.003035 (0.08525**)	-0.01297** (0.033090)	0.07060** (0.1220**)	0.02922** (0.08130**)	0.004940** (0.00531**)	1.1304*** (0.1288)	0.1783*** (0.15018**)	0.07554 (0.09850)	0.00873 (0.03070)
Average disposition time since operations	0.06933*** (0.01251)	-2.546e-04 (7.616e-04)	-3.8322*** (0.5172)	-0.07217 (0.05860)	0.3055*** (0.02290)	0.04922** (0.02290)	0.05074*** (0.01132)	0.03666** (0.01258)	0.008578 (0.006640)	-0.06877** (0.03554)	0.02785** (0.01132)	-0.07698** (0.02581)	-1.2406 (0.8412)	-0.3843*** (0.05412)	0.03770 (0.073)	0.003533 (0.00508)
Disposition Time in the Year of Operations	0.01054*** (0.00245)**	1.682e-04 (5.396e-04)	-3.9954*** (0.827**)	-0.05729 (0.04653)	-0.05124*** (0.03818)	-0.00097 (0.03011)	0.05306** (0.02169)	0.03739** (0.01258)	0.02578** (0.01258)	-0.1528*** (0.0300)	0.01781*** (0.00192)	-0.07171** (0.01132)	-1.4654*** (0.352)	-0.3489*** (0.06838)	0.09328 (0.0327)	-0.03327 (0.0266)
L-disposition time	0.0051655 (0.008378)	5.396e-04 (5.396e-04)	0.8838 (0.3761)	0.07283 (0.0391)	0.007165 (0.00592)	0.01821 (0.02671)	0.047855 (0.01414)	0.047855 (0.01414)	0.01212 (0.05458)	0.01614 (0.01389)	0.005819 (0.008106)	0.001183 (0.001763)	0.2712 (0.3409)	0.01835 (0.02332)	0.03166 (0.03530)	0.02113 (0.03081)
Male Manager	-0.2220*** (0.01249)	4.690e-04 (8.792e-04)	2.1668*** (0.3834)	-0.5122*** (0.03855)	0.01200 (0.02282)	-0.07536*** (0.00678)	-0.2905*** (0.00961)	-0.3823*** (0.03410)	0.1015** (0.01691)	-0.1510*** (0.00933)	-0.1510*** (0.00933)	0.002588 (0.002588)	1.5309*** (0.1024)	0.5309*** (0.03215)	-0.3448 (0.2646)	-0.00194 (0.03237)
Rural	0.005669 (0.005669)	3.611e-04 (3.611e-04)	0.4287 (0.4287)	0.02905 (0.02905)	0.003320 (0.003320)	0.002290 (0.002290)	0.004753 (0.004753)	0.002628 (0.002628)	0.004667 (0.004667)	0.01809 (0.01809)	0.004883 (0.004883)	0.8010-04 (0.8010-04)	0.2788 (0.2788)	0.01869 (0.01869)	0.00956 (0.00956)	0.02826 (0.02826)
NC1 = 1																
NC1 = 2																
NC1 = 3																
NC1 = 4																
NC1 = 5																
NC1 = 6																
NC1 = 7																
NC1 = 8																
NC1 = 9																
Year = 2001	-0.02081* (0.01189)	-8.696e-04 (6.802e-04)	1.7022*** (0.4265)	0.01131** (0.1294)	0.05318*** (0.00252)	0.8067** (0.0332)	0.6904*** (0.0361)	0.7515*** (0.0314)	0.8266*** (0.02552)	0.1809*** (0.02662)	0.01219 (0.01166)	-0.002288 (0.01790)	-0.8010 (2.3275)	0.1075*** (0.005677)	0.07171 (0.06812)	0.00650 (0.00650)
Year = 2002	-0.04117 (0.01155)	-7.521e-04 (6.901e-04)	169.275 (5.083e-04)	0.003 (0.00155)	0.351 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)	0.002 (0.00155)
Year = 2003	-0.04539*** (0.014827**)	8.083e-04 (4.0827e-04)	3.827 (0.40827**)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)	0.002 (0.00117)
Year = 2004	-0.05579*** (0.01165)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)	0.04386*** (6.796e-04)
Year = 2005	-0.1119*** (0.03712)	0.005415*** (0.005415)	4.7022*** (0.4265)	0.01131** (0.1294)	0.05318*** (0.00252)	0.8067** (0.0332)	0.6904*** (0.0361)	0.7515*** (0.0314)	0.8266*** (0.02552)	0.1809*** (0.02662)	0.01219 (0.01166)	-0.002288 (0.01790)	-0.8010 (2.3275)	0.1075*** (0.005677)	0.07171 (0.06812)	0.00650 (0.00650)
Year = 2006	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)	0.005415*** (0.005415)
Constant																
Observations	132,834	124,595	169,275	147,294	160,271	140,989	160,271	160,271	160,275	156,196	156,196	156,196	156,196	156,196	156,196	144,785
Required	0.369	0.005	0.011	0.003	0.032	0.165	0.046	0.046	0.232	0.072	0.367	0.043	0.411	0.413	0.030	0.001
District FE	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO
Time FE	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO

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

Table 23: Robustness Check:New Index

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Micro	Firm Size	Female and Child Em-ployee	SC-ST Em-ployee	Less than Optimal Wage	Prop. Em-ployee Owner	Prop. Em-ployee Same Gen-der as Manager	Em-ployee Same Gen-der as Manager	Loan Sta-tus	Non-Manufacturing Unit	Exporting Unit	Value of Exports	of GVA	Growth in VOE	Growth in NW
Proportionate Old Cases Solved as of Year of Installation	-0.2467** (0.1250)														
Proportion of old cases solved in last five years as of 2005															
Average Proportionate Old Cases Solved		0.2614 (3.2468)	0.1646 (0.1696)	0.0710** (0.01260)	-0.1871 (0.1497)	0.02666 (0.06304)	-0.01548 (0.05588)	0.00288 (0.03363)	-0.1127 (0.1160)	-0.0523 (0.1327)	-0.004730 (0.02116)	8.4522** (3.1832)	0.6437 (0.4569)	0.7614 (0.6858)	0.0388* (0.02223)
Proportion of old cases solved in last five years															
Ladd:dyr_new:plow:old115															
Duration in the year of Installation	0.001873 (0.007545)	-0.3114 (0.1789)	-0.03065 (0.02465)	-0.008812* (0.004852)	0.03579 (0.02488)	0.008326 (0.008357)	0.01360* (0.007955)	0.003976 (0.041736)	0.0113 (0.01259)	-0.002084 (0.01015)	0.005779** (0.002528)			-0.01245 (0.04006)	-0.001806** (0.002000)
Duration in 2005															
Average duration since operations															
Duration in the Year of Operations															
Labour															
Owner Characteristics															
Technical Know How															
SC	-0.0128 (0.02305)	2.1433** (0.8117)	-0.0827* (0.01872)	0.006444 (0.009380)	0.00937 (0.0228)	-0.01026 (0.01187)	-0.00832 (0.01154)	-0.01050 (0.00763)	0.0516** (0.0263)	0.0225 (0.01692)	0.0190** (0.007017)	2.6455** (1.0191)	0.2516** (0.0829)	0.206 (0.1320)	0.01752 (0.01531)
ST	0.02753 (0.02587)	-3.9988** (0.9153)	-0.1176 (0.08887)	0.2816 (0.02816)	0.02251 (0.0221)	0.01107 (0.01091)	0.0117** (0.01091)	0.05733** (0.007082)	-0.1164** (0.02724)	0.0687** (0.01002)	-0.01132** (0.003338)	-2.1051** (1.0336)	-0.4064** (0.06394)	0.6777 (0.04973)	-0.009282 (0.005587)
OBC	0.0298571 (0.01678)	-0.7221** (0.292)	-0.1057 (0.08725)	0.04107 (0.0114)	0.02641 (0.0325)	0.01331 (0.01231)	0.01360 (0.01215)	0.009361 (0.008157)	0.01629 (0.02317)	0.03188 (0.01661)	0.006320 (0.004053)	2.0592 (0.6611)	-0.1399** (0.0569)	-0.1944 (0.06201)	8.371e-04 (0.005413)
Hindu	-0.065900 (0.01638)	0.5926* (0.4962)	-0.07457 (0.1435)	0.0156** (0.009676)	-0.0247** (0.02379)	-0.985e-04 (0.00786)	-0.02139** (0.007665)	0.2022 (0.01730)	-0.0166 (0.0294)	0.02017 (0.01954)	0.003634 (0.003689)	0.8465 (0.6895)	0.005388 (0.06368)	-0.01093 (0.04007)	0.042198 (0.03159)
Male	-0.02244 (0.02244)	0.1714 (2.4403)	-0.1553** (0.05115)	0.08110 (0.03436)	-0.07069** (0.05231)	0.3839** (0.02061)	-6.496e-05 (0.00921)	0.4237** (0.00921)	-0.01388 (0.02053)	-0.02044 (0.02346)	0.00766** (0.004250)	-0.1176 (0.0526)	0.2228** (0.0822)	0.02275 (0.0615)	0.002191 (0.004667)
Male Manager	-0.04557 (0.04557)	0.1810 (0.4587)	-0.0923 (0.08275)	0.0829** (0.04190)	0.02573 (0.04092)	0.04190 (0.03384)	0.00354 (0.00902)	0.00354 (0.00902)	0.1515** (0.02153)	-0.02639** (0.01279)	-0.004707* (0.002545)	-1.6191* (0.8314)	-0.1450** (0.04259)	0.1638 (0.1141)	0.004670 (0.003384)
Rural	0.02010 (0.01774)	0.1810 (0.4820)	0.03992 (0.03688)	0.03049** (0.005788)	0.0829** (0.02867)	0.04190 (0.01227)	0.00354 (0.01144)	0.00354 (0.00972)	0.1515** (0.02573)	-0.02639** (0.01279)	-0.004707* (0.002545)	-1.6191* (0.8314)	-0.1450** (0.04259)	0.1638 (0.1141)	0.004670 (0.003384)
NIC1 = 1															
NIC1 = 2															
NIC1 = 3															
NIC1 = 4															
NIC1 = 5															
NIC1 = 6															
NIC1 = 7															
NIC1 = 8															
NIC1 = 9															
Year = 2005															
Year = 2006															
Constant	-0.00217** (0.00111) (0.03805)	5.0523** (0.9428)	1.0015** (0.2144)	0.05605** (0.01388)	0.7492** (0.06096)	0.7209** (0.04364)	0.7589** (0.03722)	0.8138** (0.03028)	0.1400** (0.04124)	-0.01464 (0.01181) (0.03133)	-0.001362 (0.001730) (0.01957)	1.6035** (0.3963) (1.7086)	0.3187** (0.05289) (0.1263)	0.2857 (0.4708)	0.0140** (0.006557)
Observations	14,855	169,506	109,979	109,503	95,512	109,503	109,503	109,506	25,615	25,679	25,615	770	67,035	747	101,934
Required	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO	NO
District FE	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO	NO
Time FE	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO	NO

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