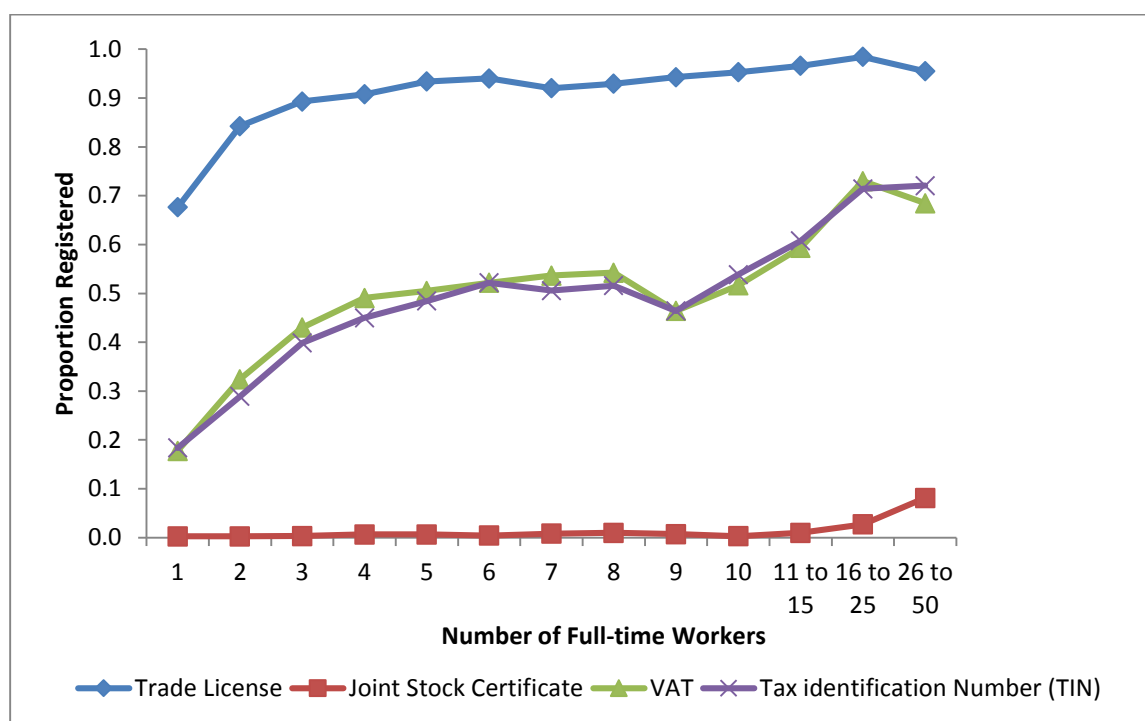


# DIMENSIONS OF INFORMALITY IN BANGLADESH

## 1. Levels of Informality:

The main forms of legal registration for firms in Bangladesh are registering for a trade license with the municipality, registering for a tax identification number (TIN) with the Government, and registering for the Value-added Tax (VAT) system. Few small and medium firms register as companies by obtaining a Joint Stock Certificate. Figure 1 shows how the rate of registration varies by the number of workers, using data from a Census of 55,817 firms conducted in randomly selected sampling areas in urban locations of 19 districts by EGI in 2009-2010. The Census covered all establishments in these selected sampling areas that were located outside the household, with 99.5 percent of the firm owners being male. Municipal licenses are seen to be the most common form of business registration, with TIN and VAT rates lower and similar to one another.

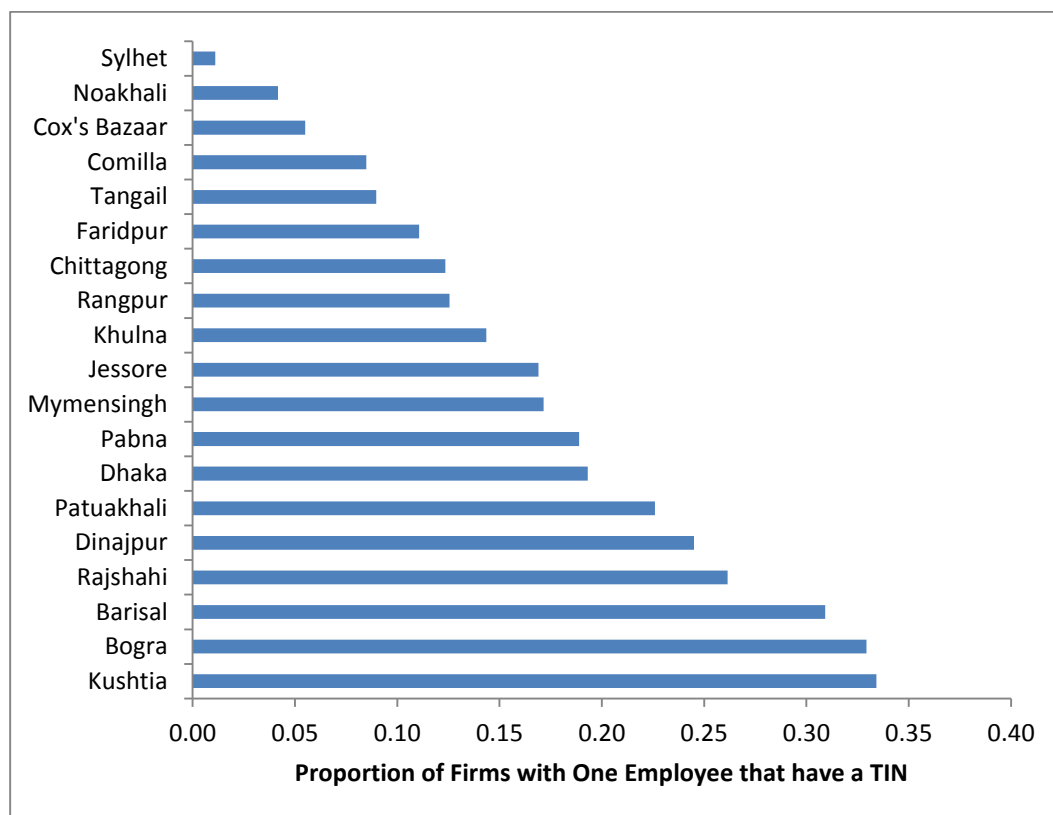
**Figure 1: Registration Rates by Firm Size and Type of Legal Registration**



**Source:** Firm Census of 55,817 firms

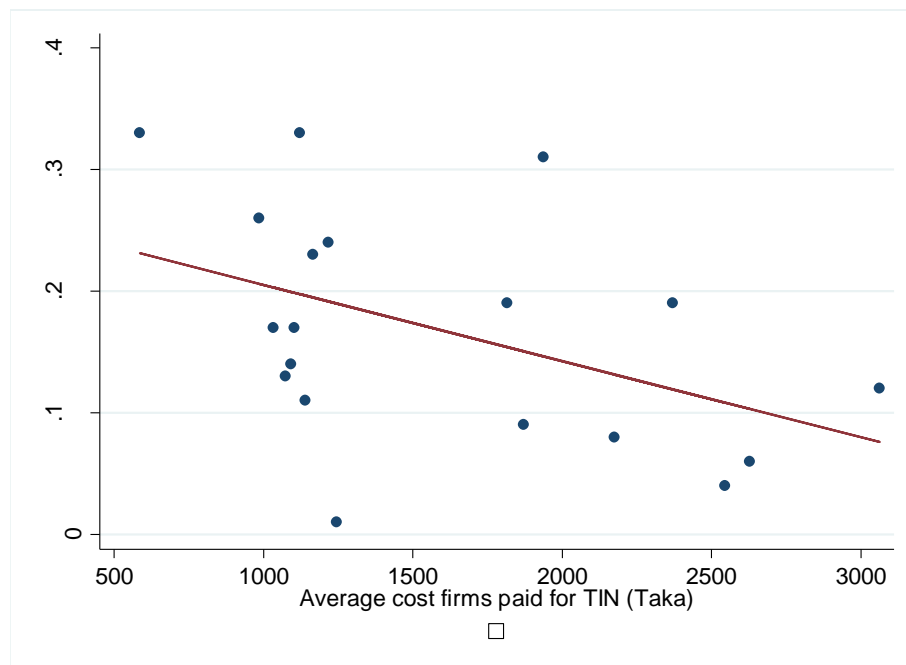
**Registration rates vary considerably across Districts.** Figure 2 shows the proportion of firms with one full-time employee that have a TIN. Only 1 percent of firms with one worker in Sylhet have TIN registration, compared to 33 percent in Kushtia. 19 percent of such firms in Dhaka have a TIN registration. These geographic differences are statistically significant, and persist when we consider other firm sizes, and when we condition on the industry composition.

**Figure 2: Registration rates vary a lot across districts**



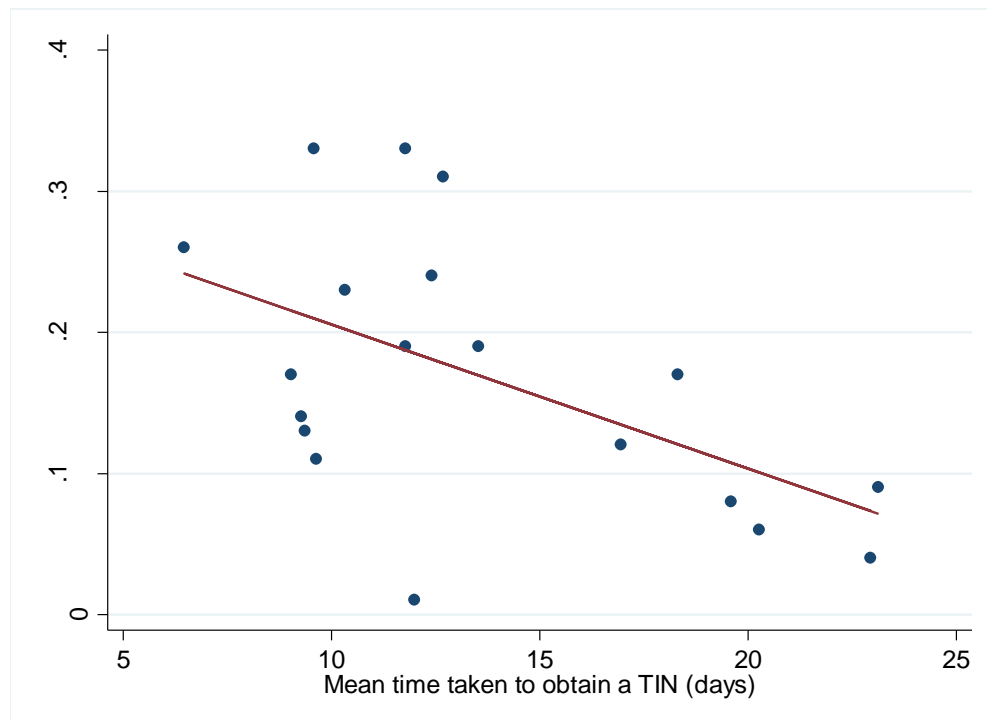
**Districts with lower regulatory burden have higher registration rates.** Figure 3 uses the Census data on the rates of registration by district along with data from our survey (see Box 1) on what firms actually paid for their license. Each additional 1000 Taka in the cost paid by firms of registering (which includes both the official cost and any bribes or other unofficial payments made) is associated with a 6 percentage point lower registration rate for one-employee firms. Figure 4 shows similarly a strong association between the length of time taken to obtain a tax identification number in the district according to firms in our survey with tax identification numbers and the rate of registration. An additional 10 days in registration time is associated with a 10 percentage point difference in tax registration rates for one-employee firms.

**Figure 3: Districts with Higher Costs of Registration have Lower Registration Rates**



Note: The red line shows Least Squares Fitted Relationship (p-value on the slope is 0.052).

**Figure 4: Districts where it takes longer to register have lower registration rates**



Note: the red line shows the Least Squares Fitted Relationship (p-value on the slope is 0.018)

**Manufacturing and Retail firms are more likely to be formal than Hotels and Restaurants and Service firms.** Figure 5 uses the Census data to show rates of TIN registration of 24 percent in Trade and 19 percent in Retail for firms with one worker, compared to 10 percent in personal services and 6 percent in hotels and restaurants. These differences across industries remain statistically significant and of similar magnitudes when we consider the full range of firm sizes and control for differences in location across firms. This is a common pattern in other parts of the world, and can reflect both the greater capital needs of manufacturing and retail (and thus demand to register to gain access to formal credit), as well as the greater visibility of retail and manufacturing firms compared to services, which makes firms in these industries more likely to get caught if they don't register.

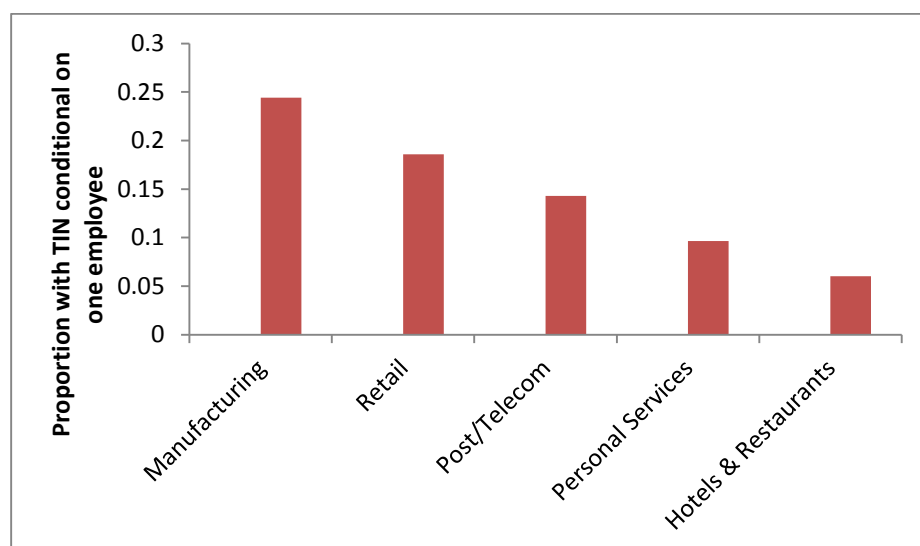
**The claim that few formal firms have ever operated informally does not appear true in Bangladesh.** Work using enterprise surveys from Latin America found that on average only 7.5 percent of firms registered after having started operations <sup>1</sup>, and a reform in Mexico to simplify the process of legally registering a business did not result in many existing informal firms formalizing.<sup>2</sup> In contrast, Table 1 shows that according to our survey data, only 67 percent of firms with a trade license in Bangladesh had obtained it at the time of opening, only 38 percent of those with a TIN had the license at the time of opening, and 45 percent with VAT registration had it at the time of opening. Moreover, almost one-third of firms with a TIN or with VAT registration had obtained it more than 2 years after opening. This suggests that firms which start informal do not always remain informal, and so there is potential scope for policy efforts to encourage formalization amongst existing firms.

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<sup>1</sup> Rafael La Porta and Andrei Schleifer (2008) "The Unofficial Economy and Economic Development", *Brookings Papers on Economic Activity* 2: 275-363.

<sup>2</sup> Bruhn, Miriam (2010) "License to Sell: The effect of business registration reform on entrepreneurial activity in Mexico" *Review of Economics and Statistics*, forthcoming.

**Figure 5: Registration rates vary by Industry**



**Table 1: Length of Time in Business before Registering for Registered Firms**

Time in Business before Registering	Firms currently have:		
	Trade License	TIN	VAT
0 years	67.2	37.8	44.9
1 year	16	14.7	12.4
2 years	6.4	13.6	10.7
3 to 5 years	5.9	17.2	13.4
6 years or more	4.6	16.7	18.5
Number of Firms	1504	802	579

[START BOX]

### **Box 1: The Bangladesh Formal and Informal Enterprise Survey**

A specialized survey was designed to collect the data needed for this report. The survey was conducted between March and May 2010 by Data International Ltd., and covered 1724 enterprises. The sample frame for these enterprises was the EGI Census of 55,817 firms in the randomly selected areas in urban parts of the 19 old districts. The sample was stratified by firm size (in terms of full-time employment) and broad industry (manufacturing, trade or services), and was chosen to be representative of firms with 3 to 99 full-time workers in these areas. Oversampling of firms with 10-99 full-time workers was done to ensure sufficient sample sizes of these firms, which are less prevalent than firms with fewer workers. In practice 20 percent of the final sample were actually of size 1 or 2 workers, and 2 percent had more than 100 workers – this likely reflects changes in firm size from the time of listing to the time of surveying, as well as seasonality in employment. The refusal rate for the survey was 20 percent, with

firms which refused or provided incomplete surveys being replaced by randomly drawn substitutes in the same strata.

The survey contained detailed information on the characteristics of the firm and the owner. On the firm side, in addition to the standard balance sheet and income and expenditure data, a rich set of questions were used to obtain details on the process of formalization, the use of different business practices, and the types of information technology used by the firm. The GPS coordinates of the business were collected, and used to obtain the straight-line distance of the firm to the offices where registration for a trade license, TIN, and for VAT take place. On the owner side, in addition to standard demographic and educational information, the survey attempted to collect detail on owner characteristics which might affect the size of the business being run and the extent to which the owner formalizes. The survey asked about the wealth of the owner's family when the owner was aged 12, since it is likely that individuals from poorer backgrounds will have less liquidity to invest in their business.<sup>3</sup> It also measured the digitspan recall of the firm owner, by showing them for 10 seconds a card with X numbers written on it, taking the card away and waiting 10 seconds, and then asking them to repeat back those numbers. This began at X=3 numbers, and continued until the first attempt at which the owner failed, or until 11 digits were reached. This digitspan recall is a short term measure of cognitive processing power, and in work on enterprises in Sri Lanka, higher scores on this measure are associated with higher returns to capital and with larger firms.<sup>4</sup> Finally, the survey also measured the risk aversion of the firm owner, since risk preferences may also determine whether firm owners undertake risky investments, and whether or not they formalize.<sup>5</sup>

[END BOX]

**Firms that have registered generally found the process reasonably fast, although significant numbers had to pay bribes.** The mean (median) time taken to obtain a municipal license was 6 days (4 days). However, 25 percent of those registering said they had paid a bribe to get this license. Those without a municipal license think it would take 10-13 days on average to obtain one. The mean (median) time to get a tax identification number was 13 days (10 days), with 41 percent of those registering saying they had to pay a bribe.

## **2. What Firm and Owner Characteristics are Associated with Being Formal?**

**The new survey data were used to examine which types of firms and types of owners are more likely to be formal.** Formality is a multi-faceted concept, and can include various forms of legal registration

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<sup>3</sup> Specifically the question asked whether or not at age 12, the owner's family sometimes did not have enough to eat, or got by with difficulty.

<sup>4</sup> See de Mel, Suresh, David McKenzie and Chris Woodruff (2008) "Returns to capital: Results from a randomized experiment", *Quarterly Journal of Economics*, 123(4): 1329-72 and de Mel, Suresh, David McKenzie and Chris Woodruff (2010) "Who are the Microenterprise Owners?: Evidence from Sri Lanka on Tokman v. de Soto ", in Josh Lerner and Antoinette Schoar edited *International Differences in Entrepreneurship*, NBER, Boston, forthcoming.

<sup>5</sup> The question used was taken from the German Socioeconomic Survey (and was also used in de Mel et al. 2008, 2010). It asks "Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?", with individuals answering on an 11-point scale, where higher scores indicate greater tendency to take risks.

(trade license, TIN, VAT), membership in business associations and the chamber of commerce, the use of formal finance, the degree of information technology used by the firm, and the business practices and record-keeping that a firm does. Probit regressions were used to see which owner and firm characteristics were correlated with these different dimensions of formality (Appendix Table 1 shows the full results).

**The same firm characteristics predict formality across a range of dimensions.** Firms which have more employees, which have been in business for longer, and which are in manufacturing and trade are more likely to be registered for a municipal license, a TIN, and a VAT, belong to business associations, and have a bank account in the business name. Firms located in wards which have higher inspection rates are more likely to be registered – which could reflect firms deciding to formalize when enforcement is higher. Distance to the municipal license office and to the tax office where TIN registration occurs is not significantly associated with the rate of registration for these permits, whereas firms which are closer to the VAT registration office are more likely to register for VAT. Distance to the office can proxy for information and time costs involved in registration, as well as potentially for other aspects of the localized business environment. The fact that distance doesn't matter for the municipal license and TIN is consistent with few informal firms seeing these as constraints to registration. For example, only 7-8 percent of firms without a TIN say that the initial cost of registration is high or that the process of registering is time consuming.<sup>6</sup>

**Owners of formal firms tend to be older, more educated, have higher digitspan recalls, be more risk-seeking, and be less likely to have been poor when young.** Moreover the magnitudes of these effects can be quite large. For example, being poor when aged 12 is associated with a 18 percentage point lower likelihood of having a TIN and a 13 percentage point lower likelihood of being registered for VAT. Each additional digit an owner can recall is associated with 6 percentage points higher likelihood of TIN registration and 3 percentage points higher likelihood of VAT registration, while each additional year of education is associated with 2-3 percentage points higher likelihoods of TIN and VAT registration. These owner characteristics also predict which firms have municipal licenses, although magnitudes are smaller given the higher proportion of firms with these licenses. Additionally, these same owner characteristics are associated with higher degrees of computer usage, more record-keeping, a higher likelihood of having a business bank account, and greater levels of membership in business associations.

### 3. The formalization spectrum

**A Business Sophistication Model (BSM) was used to group firms into groups according to their degree of formalization along a number of different dimensions** – legal, financial usage, technological, marketing, record-keeping, and whether or not the firm exports (see Box 2). These groups enable us to segment the population of enterprises in our survey into a continuum, ranging from Group 1, the least sophisticated and most informal segment, in which no firms have tax identification numbers or VAT, to

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<sup>6</sup> Compare McKenzie, David and Yaye Seynabou Sakho (2010) “Does it pay firms to register for taxes? The impact of formality on firm profitability”, *Journal of Development Economics*, 91(1): 15-24 who find in Bolivia, where knowledge of the tax registration procedures is low among informal firms, that distance to the tax office significantly predicts tax registration, even conditional on the distance to the municipal office.

Group 7, the most sophisticated and formalized segment, in which almost all firms have tax identification numbers and 85 percent are registered for VAT. Note that this spectrum only covers firms in the survey universe – that is firms in urban areas with a physical location outside a household. There is thus a large group of home-based microenterprises which are likely even less formalized than the firms in this study.

[START BOX]

### **Box 2: The BSM methodology:**

The BSM methodology was used by the FinMark trust to describe the continuum of small businesses in Gauteng Province, South Africa, through market segmentation.<sup>7</sup> This approach was applied to the firms in our survey as follows:

- First, 51 questions were selected from the survey to cover a range of different aspects of formality of the firm. This included measures of different forms of legal registration, membership in business associations and chambers of commerce, use of different financial instruments, use of various technologies such as computers, the internet, faxes and cellphones, use of different marketing techniques, the types of record-keeping done by the firm, and a measure of whether the firm exports.
- Principal components analysis was then used to form an index of these different measures. The first principal component accounted for 14.5 percent of the overall variation in the data, and had positive weight on all but two components – the two components with negative weight are being a sole proprietorship (versus a partnership or company), and running out of stock frequently.
- Then 20 equal-sized groups were formed used cutoffs based on every 5<sup>th</sup> percentile of the distribution of this index. The characteristics of adjacent groups were then compared, and groups were combined if profiles were similar. This led to the seven groups used in this analysis.

[END BOX]

The seven segments identified can be summarized as follows:

### **Segment 1 (9% of firms in the population):**

- Only 24% have a trade license, 0% have a TIN and 0% are registered for VAT.
- Don't use any formal financing, don't advertise, and don't keep written records.
- Average 1.4 paid workers, and 10,000 Taka (US\$148) in monthly profits
- Owners average 5.8 years of schooling, and can recall 4.6 digits on average
- Most common sectors are restaurants, bars and canteens; retail sale of food beverages and tobacco; and hair dressing and other beauty treatment.

### **Segment 2 (15% of firms in the population):**

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<sup>7</sup> See Galpin, Jacky (undated) "The BSM- Business Sophistication Model", Mimeo. FinMark, and FinScope Small Business (2006) *Pilot Study Survey Highlights including BSM Model, FinScope Small Business Gauteng 2006*.



- 61% have a trade license, only 2% have a TIN, 0% are registered for VAT
- Only 2% have a business bank account, 5% have ever had a private bank loan, only one quarter keep written records, and none of them advertise.
- Average 2.8 paid workers, and 14,000 Taka (US\$206) in monthly profits
- Owners average 6.8 years of schooling, and can recall 4.9 digits on average
- Most common sectors are restaurants, bars and canteens; other retail sale in non-specialized stores; and manufacture of structural metal products.

### **Segment 3 (17.5% of firms in the population)**

- 81% have a trade license, 15% have a TIN, and 8% are registered for VAT
- 14% have a business bank account, 12% have had a loan from a private bank, half keep written records, and only 1 percent advertises.
- Average 3.9 paid workers, and 19,500 Taka (US\$288) in monthly profits
- Owners average 8.0 years of schooling, and can recall 5.0 digits on average
- Most common sectors are restaurants, bars and canteens; retail sale of textiles, clothing & footwear; and manufacture of structural metal products.

### **Segment 4 (18% of firms in the population)**

- 90% have a trade license, 24% have a TIN, and 12% are registered for VAT
- 20% have a business bank account, 21% have had a loan from a private bank, 80% keep written records, and only none of them advertises.
- Average 4.7 paid workers, and 27,300 Taka (US\$402) in monthly profits
- Owners average 9.3 years of schooling, and can recall 5.2 digits on average
- Most common sectors are retail sale of textiles, clothing & footwear; other retail sale in non-specialized stores; and restaurants, bars and canteens.

### **Segment 5 (23% of firms in the population)**

- 97% have a trade license, 54% have a TIN, and 35% are registered for VAT
- 40% have a business bank account, 39% have had a loan from a private bank, 94% keep written records, and only 2 percent advertise.
- Average 7.5 workers, and 36,600 Taka (US\$540) in monthly profits
- Owners average 10.2 years of schooling, and can recall 5.6 digits on average
- Most common sectors are retail sale of textiles, clothing & footwear; restaurants, bars and canteens; and retail sale of household appliances.

### **Segment 6 (13% of firms in the population)**

- 100% have a trade license, 87% have a TIN, and 67% are registered for VAT.
- 78% have a business bank account, 79% have had a loan from a private bank, 99% keep written records, and only 5 percent advertise.
- Average 10.9 workers, and 68,300 Taka (US\$1007) in monthly profits

- Owners average 11.6 years of schooling, and can recall 5.9 digits on average
- Most common sectors are retail sale of textiles, clothing & footwear; other retail sale in specialized stores; and retail sale of household appliances.

#### **Segment 7 (4% of firms in the population)**

- 100% have a trade license, 97% have a TIN, and 85% are registered for VAT.
- 98% have a business bank account, 98% have had a loan from a private bank, 99% keep written records, and 23 percent advertise.
- Average 68.8 workers (segment median 12), and 677,500 Taka (US\$10000) in monthly profits (segment median 95,000 Taka).
- Owners average 13.3 years of schooling, and can recall 6.2 digits on average
- Most common sectors are retail sale of textiles, clothing & footwear; retail sale of household appliances; and wholesale of construction materials.

**Membership in business associations and especially in the Chamber of Commerce is dominated by the upper three segments.** 52% of BSM 7, 31% of BSM 6 and 26% of BSM 5 are members of business associations, compared to 15% in BSMs 3 and 4, and less than 5% in BSMs 1 and 2. For the chamber of commerce, 41% of BSM 7 and 16% of BSM 6 are members, compared to 5 percent or less for all the other segments.

**Only the upper segments display any degree of formal use of financial services.** Figure 6 shows that segments 1 and 2 do not use banking services for their business. A minority of firms in BSMs 3, 4 and 5 use bank accounts and have received loans, but don't use credit cards nor accept them for payments. Overdraft facilities and the use of credit cards are not that common even for the most sophisticated segment, with only 9 percent of firms in BSM 7 accepting credit card payments from customers.

**Cellphone penetration is high, even among the least formal segments, but use of other information technologies is restricted to only a minority of the most formal segment.** Figure 7 shows that even in BSM 1, 52 percent of firms use a cellphone for their business. This increases to 86 percent for BSM 2, and is 99 percent or higher for BSMs 5, 6 and 7. In contrast, while 43 percent of BSM 7 use computers in their business, only 6 percent of BSM 6 does, and 3 percent or fewer of the other segments do. Use of the internet and email is even more limited. It is also rare for firms to be using an older technology – fax machines – with 12 percent of BSM 7 and 1 percent or fewer of the other segments using this.

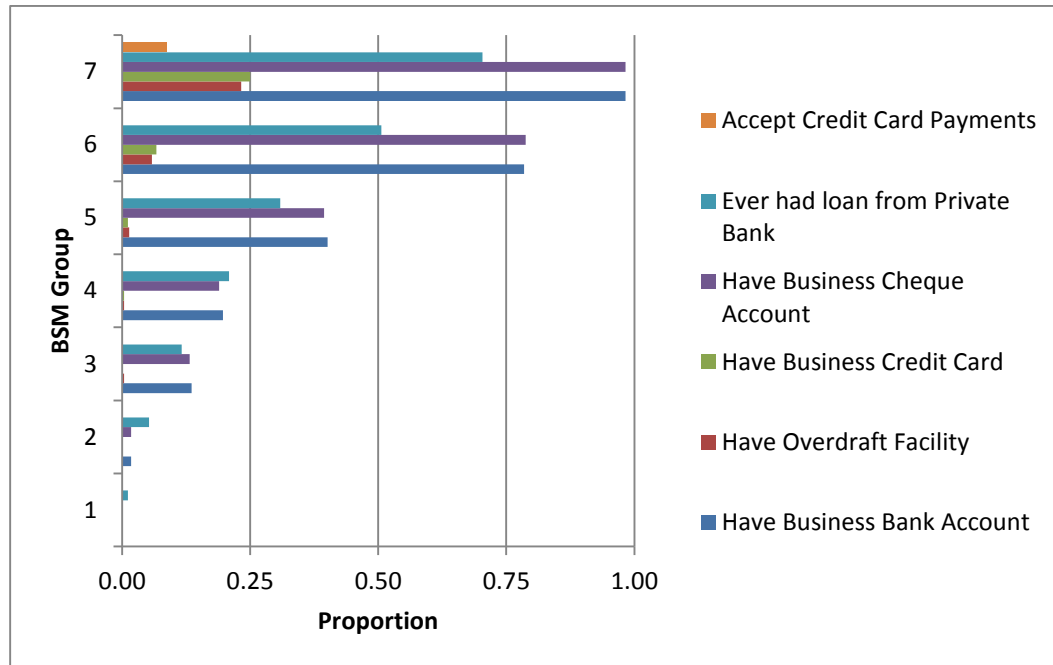
**Only a minority of firms are engaged in good buying practices, but marketing and advertising levels are surprising low.** As one moves along the BSM continuum, firms are more likely to be checking competitors' prices and products, asking customers which products they would like to see, and asking suppliers which products have been selling well (Figure 8).<sup>8</sup> However, only 23 percent of firms in BSM 7 and 5 percent or fewer of firms in the other segments have done any form of advertising in the past six

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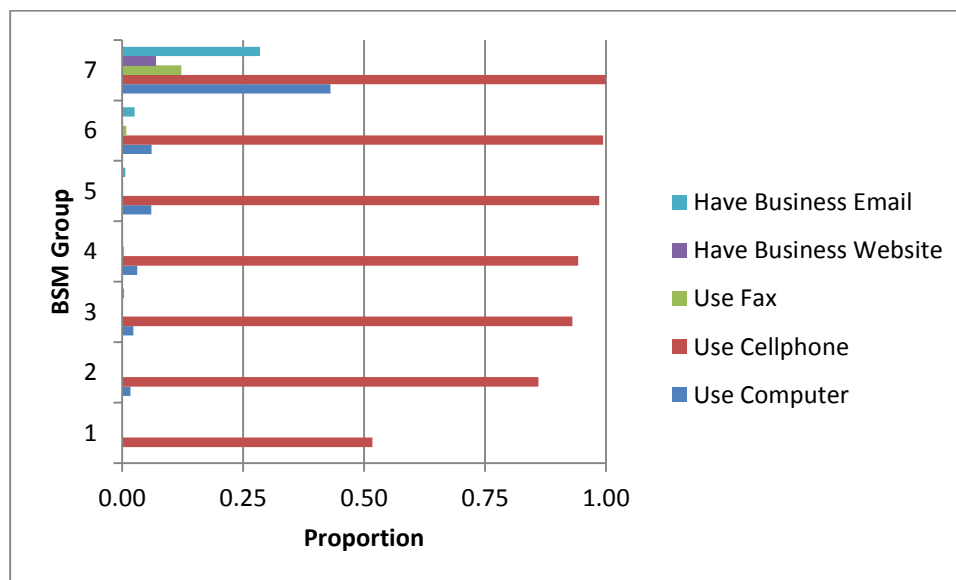
<sup>8</sup> These measures of marketing and buying actions are based on the outcomes of what the ILO's Improve Your Business training courses aim to get small-scale entrepreneurs doing. This provides some justification for calling them good practices that firms should be doing.

months. Most firms are not using flyers, newspaper advertisements, advertising in the yellow pages or at community events, or advertising through business meetings.

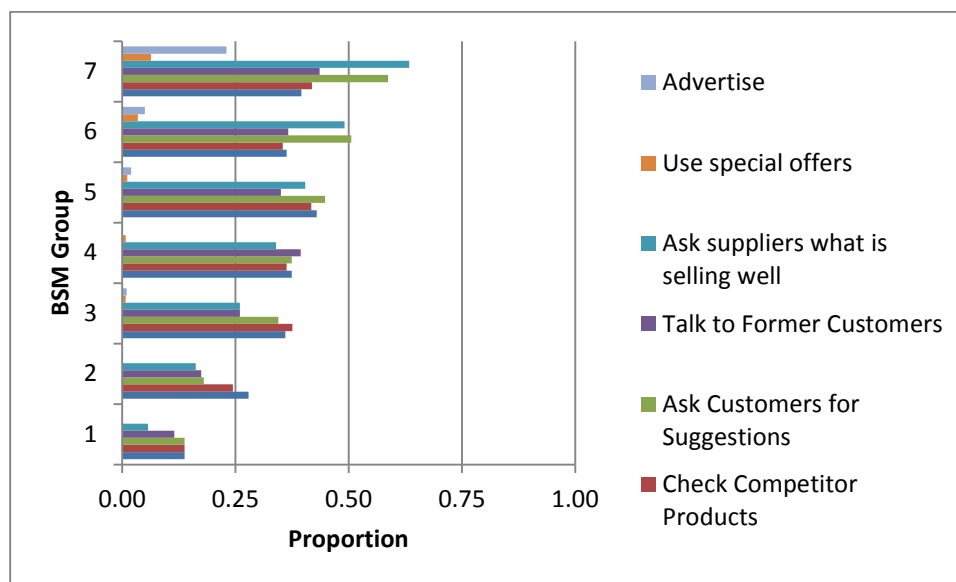
**Figure 6: Formalization in terms of Financial Usage by Business Segment**



**Figure 7: Formalization in Terms of Information Technology Usage by Business Segment**

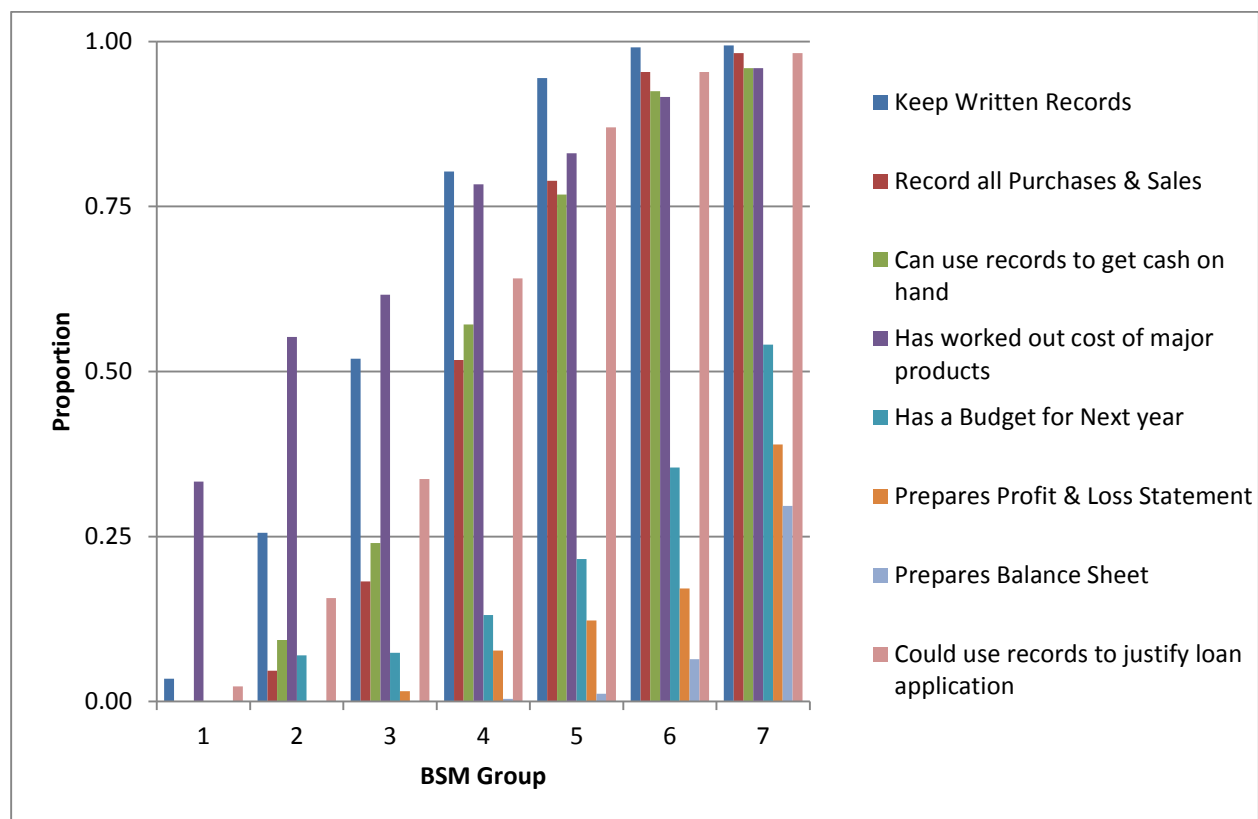


**Figure 8: Buying and Marketing Behavior by Business Segment**



**Record-keeping and Financial Planning is also strongly associated with the other dimensions of formalization.** Figure 9 shows that in BSM 1, only one-third of firms even know the cost of each main product they sell, and only 3 percent keep written records. At the other end, almost all firms in BSM 7 keep written records, record all purchases and sales, can use their records to see how much cash on hand their business has at any point in time, has worked out the cost of their major products, and have sufficient records that they could document to a bank in a loan application how much money their business would have left each month after paying other expenses. Even amongst this segment, only half the firms forward-plan financially in the sense of having a written budget for the coming year, and only one-third prepare (or have prepared for them) a profit and loss statement and balance sheet at least annually. Basic record-keeping, recording purchases and sales, and being able to know cash on hand appear to be the financial measures that firms first undertaken by firms in the middle segments.

**Figure 9: Record-keeping and Financial Planning by Business Segment**



This segmentation reveals that the perceived benefits of obtaining a tax identification number vary with business sophistication, while there are fewer differences across segments in terms of perceived costs. Table 2 shows that firms in the most sophisticated/formal segments are more likely to identify links to bank financing, better reputation for the business, a lower chance of being fined, and the ability to operate visibly at a large scale without fear of being caught as advantages of registering for taxes than firms in the less sophisticated business segments. One third of firms in BSMs 1 and 2 see no benefits from registration, compared to only 5-10 percent in BSMs 6 and 7. It is also noticeable that few firms in any segment identify any benefit to formality in terms of ability to enforce contracts, or to sell to the Government, both of which often touted as reasons firms formalize. Table 3 shows that the main cost or disadvantage of TIN registration is having to pay taxes, which similar proportions of all segments list as a disadvantage. A fraction of firms in BSMs 1 and 2 also list miscellaneous other disadvantages or costs of registering, which is why only one-third say there are no particular disadvantages, compared to one-half of firms in the most sophisticated segments.

**Table 2: Perceived Benefits of TIN registration by Business Segment**

	Proportion of Firms in Segment listing this as Benefit/Advantage						
	BSM 1	BSM 2	BSM 3	BSM 4	BSM 5	BSM 6	BSM 7
Being able to get a bank account in business name	0.11	0.13	0.21	0.24	0.36	0.53	0.55
Being able to sell to the Government	0.02	0.03	0.05	0.06	0.07	0.08	0.06
Being able to sell to other firms which require registration	0.00	0.05	0.05	0.05	0.08	0.10	0.05
Less risk of being fined	0.26	0.26	0.39	0.31	0.40	0.38	0.46
Less chance of being asked for a bribe	0.10	0.19	0.20	0.19	0.26	0.22	0.22
Better reputation for the business	0.06	0.09	0.09	0.09	0.13	0.16	0.20
Qualification for participation in Government programs for firms	0.01	0.01	0.00	0.02	0.03	0.07	0.03
Easier to get a bank loan	0.09	0.17	0.26	0.24	0.30	0.42	0.47
Greater societal acceptance for the firm	0.05	0.01	0.02	0.05	0.10	0.07	0.11
Being able to export	0.00	0.01	0.02	0.02	0.01	0.03	0.10
Being able to operate more visibly, or at larger scale	0.18	0.18	0.26	0.28	0.35	0.40	0.47
Being able to use the courts to enforce business contracts	0.01	0.01	0.00	0.00	0.01	0.02	0.09
Having a legal record of my business in case of disputes	0.00	0.02	0.01	0.04	0.07	0.06	0.06
Being able to advertise more widely without worrying	0.00	0.01	0.00	0.01	0.04	0.03	0.03
Other	0.21	0.13	0.05	0.03	0.01	0.01	0.03
I don't think there are any advantages or benefits	0.32	0.35	0.28	0.23	0.13	0.10	0.05

**Table 3: Perceived Costs of TIN registration by Business Segment**

	Proportion of Firms in Segment listing this as Cost/Disadvantage						
	BSM 1	BSM 2	BSM 3	BSM 4	BSM 5	BSM 6	BSM 7
The initial cost of registration is high	0.07	0.05	0.06	0.08	0.09	0.06	0.06
The process of registering is time consuming	0.08	0.09	0.06	0.07	0.09	0.06	0.03
The process of registering is burdensome	0.18	0.16	0.14	0.16	0.13	0.12	0.15
Greater risk of being subject to visits by tax authorities	0.03	0.06	0.09	0.06	0.07	0.05	0.09
Having to pay taxes	0.25	0.31	0.33	0.29	0.23	0.28	0.34
Greater risk of being visited by labor inspectors	0.00	0.01	0.02	0.00	0.01	0.03	0.02
More paperwork and recordkeeping needed	0.02	0.05	0.03	0.02	0.03	0.06	0.03
Other	0.17	0.13	0.04	0.02	0.01	0.00	0.00
Don't think there are any disadvantages or costs	0.38	0.38	0.41	0.48	0.53	0.54	0.53

#### 4. Are formal firms more profitable and more productive?

**Formal firms earn much higher profits and have much higher levels of labor productivity than informal firms. However, we cannot claim this is a causal effect.** As we have seen, formal firms differ in both firm and owner characteristics from informal firms. Regression analysis is used to explore differences in profitability and labor productivity (defined as sales per worker) between formal and informal firms. Table 4 summarizes the results. We begin by regressing log profits or log sales per worker just on an indicator for a particular measure of formality along with district dummies and industry dummies. We then convert the point estimates back to percentage differences for easy comparison of magnitudes. The first row of the table shows these results for profitability, and the fourth row for productivity. We then condition on firm size (using a set of dummies for different numbers of workers, as well as a control for log assets). This enables us to say whether formal firms are more profitable or more productive than informal firms of the same size located in the same cities and working in the same

industries. Finally we control for observable characteristics of the firm owners, enabling comparison of how firms of the same size run by similar owners compare.

**Firms with legal registration earn between 153 and 212 percent higher profits than unregistered firms, and are 70 to 137 percent more productive. Much of this difference can be explained by the larger size of formal firms.** For example, firms with VAT registration earn 153 percent higher profits than firms without VAT registration. Controlling for firm size reduces this gap to only 8 percent, and controlling further for observable owner characteristics reduces the gap to an insignificant 4 percent. Even after controlling for firm size and owner characteristics, we find firms with a TIN and firms with a trade license to earn significantly larger profits and to be significantly more productive. However, the causation may just run from higher productivity to formality, rather than vice versa. We do not have a credible mechanism for explaining why one firm is formal and another, otherwise identical firm, is not, which prevents us from estimating the causal impact of formality on profits and productivity.<sup>9</sup>

**Table 4: Percentage Difference in Productivity and Labor Productivity between Formal and Informal Firms**

	Trade License	TIN	VAT	BSM 2	Business Segments (compared to BSM 1)				
					BSM 3	BSM 4	BSM 5	BSM 6	BSM 7
<i>Profitability Differences</i>									
Conditional on industry & location only	195%***	212%***	153%***	36%***	93%***	142%***	216%***	461%***	1410%***
+ Firm Size	13%**	21%***	8%	12%	21%***	27%***	30%***	64%***	185%***
+ Owner Characteristics	9%*	17%***	4%	10%	20%***	26%***	28%***	62%***	182%***
<i>Labor Productivity Differences</i>									
Conditional on industry & location only	137%***	106%***	70%***	36%***	58%***	133%***	180%***	325%***	412%***
+ Firm Size	53%***	40%***	9%*	30%***	43%***	89%***	110%***	177%***	169%***
+ Owner Characteristics	47%***	36%***	4%	27%**	39%***	79%***	95%***	159%***	146%***

Notes:

Percentage differences are from regression estimation. \*, \*\* and \*\*\* indicate significance at the 10, 5 and 1 percent levels respectively. Labor productivity is sales per worker.

**The most formal business segments earn substantially more and are substantially more productive than the least formal business segment.** Firms in BSM 7 have 1410 percent higher profits and 412 percent higher productivity than firms in BSM 1. We have seen there are large differences between the

<sup>9</sup> For example, we cannot use distance to the tax office as an instrument as was done in McKenzie and Sakho (2010), since we have seen that distance to the offices where the municipal license and the TIN are issued do not significantly predict registration in Bangladesh. While distance to the VAT office does significantly predict VAT registration, this variable becomes insignificant once we control for distance to the municipal and tax offices. Distance to the VAT office may therefore just reflect distance to Government amenities in general, rather than something specific about VAT registration, and therefore may not be a valid instrument.

firms in these segments in terms of firm size and owner characteristics. Controlling for the observable differences between these firms reduces the profitability and productivity gap a lot, but still leaves large differences between the more formal and least formal business segments. Given the large differences in many dimensions between the different segments, it seems plausible that a large share (if not all) of these differences reflect differences in the underlying productivity of the firms, rather than direct consequences of formalizing.

## 5. Implications for Policy

The new data and analysis in this report suggests several implications for policymakers interesting in increasing levels of formality and improving the productivity of firms in Bangladesh:

### **Formality is not a binary event – most firms are formal in some dimensions and informal in others.**

The business segmentation analysis carried out here outlines a continuum of formalization, with the appropriate policies likely to vary by segment.

- **Segment 1:** these firms are too small to see any benefits from formalizing, and are unlikely to be worth the cost of trying to enforce even trade licenses. Such firms are mostly subsistence enterprises, earning low incomes and run by the least educated individuals. Efforts to help this sector should focus on relieving potential constraints to their growth (such as credit), and not directly focus on formalization.
- **Segment 2:** Approximately two-thirds of these firms have municipal licenses but almost none have a TIN. These firms are ready for the first step towards formalizing, which is obtaining a municipal license. 55 percent of firms without a municipal license don't think there are any particular disadvantages or costs of obtaining one, while 24 percent think the process of registering is burdensome. Avoiding fines seems the main perceived benefit of registering. Some combination of information campaigns, enforcement of municipal licenses, and continued simplification of the process of municipal registration for small firms seems appropriate for these firms.
- **Segments 3 and 4:** there are still a minority of firms in these segments that don't have trade licenses, while a minority also have a TIN. Priorities should be bringing these firms into the municipal license system, and making it easier for these firms to get a TIN when they want one. The link to financing starts to appear important for firms of this size, so making it easy for firms seeking credit or seeking a bank account to register for a TIN will let firms incorporate themselves in the tax system when they start to want the benefits of doing so.
- **Segments 5 and 6:** These firms are starting to be of the size where a significant number have a TIN and are registering for VAT. They typically don't see the process of registration as very costly or burdensome, and see some potential benefits in terms of access to finance and scale. The rate of inspections matters a lot for firms registering for taxes, so more enforcement on firms of this size, along with links to financial institutions so that firms seeking loans can easily register would be the key to getting firms of this



size registered. It is still not clear from a public finances point of view whether the costs of more enforcement would outweigh any benefits of greater tax collection.

- **Business Segment 7:** these firms are mostly formal in terms of legal registrations, and the few firms that are not registered for taxes in this segment should certainly be audited or inspected. The key policies for these firms are policies to increase their growth and productivity prospects. Policies to improve the management and business skills of the owners of these firms seem one area for further policy efforts.

**Many firms pay bribes as part of the process of getting municipal licenses and registering for a tax identification number.** Our data do not provide detail on the amount of these bribes or of who is asking for them. It seems important to investigate further the extent to which corruption acts as a barrier or additional cost to firms registering.

**Business practices seem weak in several areas, suggesting scope for better business education or for training programs.** Firms are not implementing many of the basic business practices that would be taught in a simple training program like the ILO's Improve Your Business program. In particular, few firms, even in the top business segment, do much in the way of advertising. Nor do they do much forward financial planning, or produce financial statements. Among the lower business segments, firms could potentially benefit a lot from learning simple methods of seeking better prices when procuring inputs, and from marketing their products to existing and new customers.

**Given the tremendous geographic variation in registration rates, there seems to be considerable scope for inter-regional learning as to what works in getting firms to formalize.** Districts like Sylhet, Noakhali and Cox's Bazaar should look to see what Barisal, Bogra and Kushtia are doing to get so much higher rates of firm registration.

**The strong association between regulatory burden and the proportion of firms registering suggests scope for further simplification of registration procedures to bring more firms into the formal sector.** The large differences across districts in Bangladesh suggest scope for learning what is working in speeding up registration processes and making them less expensive in some districts and copying this elsewhere.

**Despite the much higher levels of profitability and productivity among formal firms, it is difficult to know whether formalizing makes sense for currently informal firms.** Few firms seem to think the costs or time taken for registration are that burdensome, in which case one might expect most firms that think it worth formalizing would have done so – or will do so at such future point in time as it becomes worthwhile. It does seem a non-trivial proportion of registered firms obtained their TIN or VAT registration several years after start-up, so it is possible that some of the currently informal firms will register in the future. However, in the present, the firms that are currently informal may largely be those who are inherently of lower productivity, and those which see few benefits in formalizing. Firms may be incorrect in these beliefs, but it would only be through experimentation that the Government could rigorously show whether formalizing is worth it to informal firms.

**Appendix Table 1: Correlates of Formality according to Legal Definitions**

Marginal effects from probit regressions

	OTHER DIMENSIONS OF FORMALITY AND BUSINESS SOPHISTICATION									
	LEGAL DIMENSIONS OF FORMALITY			Belong to	Belong to	Has Business	Uses		Keeps	Has
	Trade	TIN	VAT	Business	Chamber	Bank	a Computer		Business	Accounting
	License			Association	of Commerce	Account	in Work	Advertises	Records	Statement
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Owner Characteristics</i>										
Owner is Male	0.112 (0.0776)	0.0194 (0.127)	0.159** (0.0712)	0.0776 (0.0700)	0.0168 (0.0130)	-0.126 (0.108)	0.00730 (0.0236)	-0.125** (0.0617)	-0.0748 (0.0660)	-0.108 (0.106)
Age of Owner	0.00160*** (0.000569)	0.00563*** (0.00157)	0.00458*** (0.00124)	0.00194* (0.00102)	0.000252 (0.000356)	0.000397 (0.00139)	0.000238 (0.000366)	-0.000158 (0.000249)	0.00169 (0.00106)	0.00249* (0.00134)
Owner is Married	-0.0222* (0.0120)	0.00624 (0.0586)	-0.0546 (0.0483)	0.0465 (0.0359)	0.00946 (0.0129)	-0.0151 (0.0513)	-0.00357 (0.0140)	0.00379 (0.00936)	-0.0546* (0.0330)	-0.0631 (0.0493)
Owner's Years of Education	0.00711*** (0.00149)	0.0301*** (0.00410)	0.0216*** (0.00324)	0.00683** (0.00269)	0.00495*** (0.00107)	0.0184*** (0.00350)	0.00932*** (0.00127)	0.00268*** (0.000699)	0.0139*** (0.00282)	0.00550 (0.00337)
Owner was poor when young	-0.0322*** (0.0123)	-0.166*** (0.0319)	-0.121*** (0.0255)	-0.0285 (0.0225)	-0.0183** (0.00758)	-0.0877*** (0.0286)	-0.0140* (0.00819)	-0.00874 (0.00658)	-0.0487** (0.0230)	-0.00535 (0.0283)
Owner's risk seeking score	0.00362** (0.00174)	0.00325 (0.00542)	0.0106** (0.00448)	0.00830** (0.00359)	9.74e-05 (0.00126)	0.0125*** (0.00478)	0.00188 (0.00141)	0.00164 (0.00104)	0.00405 (0.00363)	0.00777* (0.00455)
Owner's Digitspan recall	0.00520 (0.00473)	0.0566*** (0.0139)	0.0296*** (0.0110)	0.00255 (0.00914)	0.00981*** (0.00325)	0.0491*** (0.0119)	0.0104*** (0.00329)	0.00508** (0.00227)	0.0344*** (0.00972)	-0.0147 (0.0118)

Table Continues on Next Page with Firm Characteristics

Appendix Table 1 Continued:

	OTHER DIMENSIONS OF FORMALITY AND BUSINESS SOPHISTICATION									
	LEGAL DIMENSIONS OF FORMALITY			Belong to	Belong to	Has Business	Uses		Keeps	Has
	Trade	TIN	VAT	Business	Chamber	Bank	a Computer	Advertises	Business	Accounting
	License			Association	of Commerce	Account	in Work		Records	Statement
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Firm Characteristics</i>										
Age of Firm	0.00245*** (0.000676)	0.00746*** (0.00153)	0.00253** (0.00103)	0.00184** (0.000816)	0.000641*** (0.000245)	0.00333*** (0.00112)	-0.000327 (0.000307)	0.000183 (0.000215)	-0.00141 (0.000886)	5.31e-05 (0.00111)
Manufacturing	0.0224* (0.0118)	0.128*** (0.0450)	0.00922 (0.0359)	0.0847** (0.0330)	0.0374** (0.0167)	0.276*** (0.0392)	-0.00983 (0.00881)	0.00964 (0.00907)	0.0950*** (0.0240)	0.0562 (0.0377)
Trade	0.0500*** (0.0130)	0.367*** (0.0408)	0.180*** (0.0330)	0.121*** (0.0286)	0.0467*** (0.0130)	0.389*** (0.0353)	-0.0609*** (0.0135)	0.00404 (0.00711)	0.249*** (0.0269)	0.0974*** (0.0346)
Located in Dhaka	0.00991 (0.0120)	0.0808** (0.0398)	0.147*** (0.0353)	0.0507* (0.0260)	-0.0437*** (0.00748)	-0.0389 (0.0323)	0.0513*** (0.0157)	-0.000746 (0.00715)	0.0128 (0.0255)	0.429*** (0.0275)
Located in Chittagong	0.0264** (0.0125)	0.0839* (0.0486)	0.0924** (0.0445)	-0.144*** (0.0232)	-0.0293*** (0.00590)	-0.179*** (0.0368)	0.00421 (0.0137)	0.0231 (0.0150)	-0.0340 (0.0374)	0.0835* (0.0433)
Located in Zila with low TIN registration	-0.0201 (0.0156)	-0.0401 (0.0417)	5.89e-05 (0.0341)	0.0158 (0.0282)	-0.0197*** (0.00675)	-0.0804** (0.0347)	0.00556 (0.0127)	0.0314** (0.0141)	0.0434* (0.0263)	0.0696* (0.0359)
Firm has one paid worker	0.0476*** (0.00821)	0.178** (0.0700)	0.156** (0.0702)	0.118** (0.0544)	0.0360 (0.0411)	0.243*** (0.0598)	0.0381 (0.0262)	0.0229 (0.0322)	0.122*** (0.0242)	0.107** (0.0534)
Firm has two paid workers	0.0565*** (0.00879)	0.397*** (0.0507)	0.309*** (0.0637)	0.159*** (0.0542)	0.0592 (0.0457)	0.340*** (0.0542)	0.0125 (0.0207)	0.0375 (0.0396)	0.126*** (0.0248)	0.110** (0.0504)
Firm has 3 to 5 paid workers	0.0752*** (0.0113)	0.524*** (0.0454)	0.389*** (0.0548)	0.216*** (0.0452)	0.119*** (0.0460)	0.385*** (0.0484)	-0.00604 (0.0139)	0.0317 (0.0278)	0.176*** (0.0231)	0.158*** (0.0444)
Firm has 6 to 10 paid workers	0.0799*** (0.0108)	0.545*** (0.0399)	0.490*** (0.0553)	0.251*** (0.0536)	0.234*** (0.0750)	0.511*** (0.0442)	0.0106 (0.0198)	0.0941* (0.0562)	0.193*** (0.0195)	0.138*** (0.0509)
Firm has more than 10 paid workers	0.110*** (0.0119)	0.711*** (0.0271)	0.618*** (0.0475)	0.274*** (0.0524)	0.261*** (0.0701)	0.606*** (0.0398)	0.0180 (0.0193)	0.0609 (0.0412)	0.249*** (0.0194)	0.180*** (0.0505)
Proportion of firms in ward getting inspe	0.103** (0.0460)	0.572*** (0.107)	0.452*** (0.102)							
Within 2.5 km of registration office	0.0171 (0.0107)	0.0447 (0.0311)	0.0915*** (0.0257)							
Observations	1714	1714	1714	1714	1714	1714	1714	1714	1714	1714
Mean of Dependent Variable:	0.87	0.46	0.34	0.23	0.09	0.41	0.08	0.04	0.76	0.41

## Notes:

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

Proportion of firms in ward getting inspected refers to municipal inspections for trade license,

to tax inspections for TIN, and to VAT inspections for VAT registration. Similarly, within 2.5km of registration office refers to the corresponding office.