

**Studying the effect of obtaining licenses or operation on enterprises: Methodological notes from a study in Lima, Peru**

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# Methodological challenges to study the impact of registration on firm's performance

- Lack of clearly defined outcome and treatment variables
- Lack of baseline and follow-up data
- Lack of comparable treatment and control groups

# Lack of clearly defined outcome and treatment variables

- **Main outcome variables:**

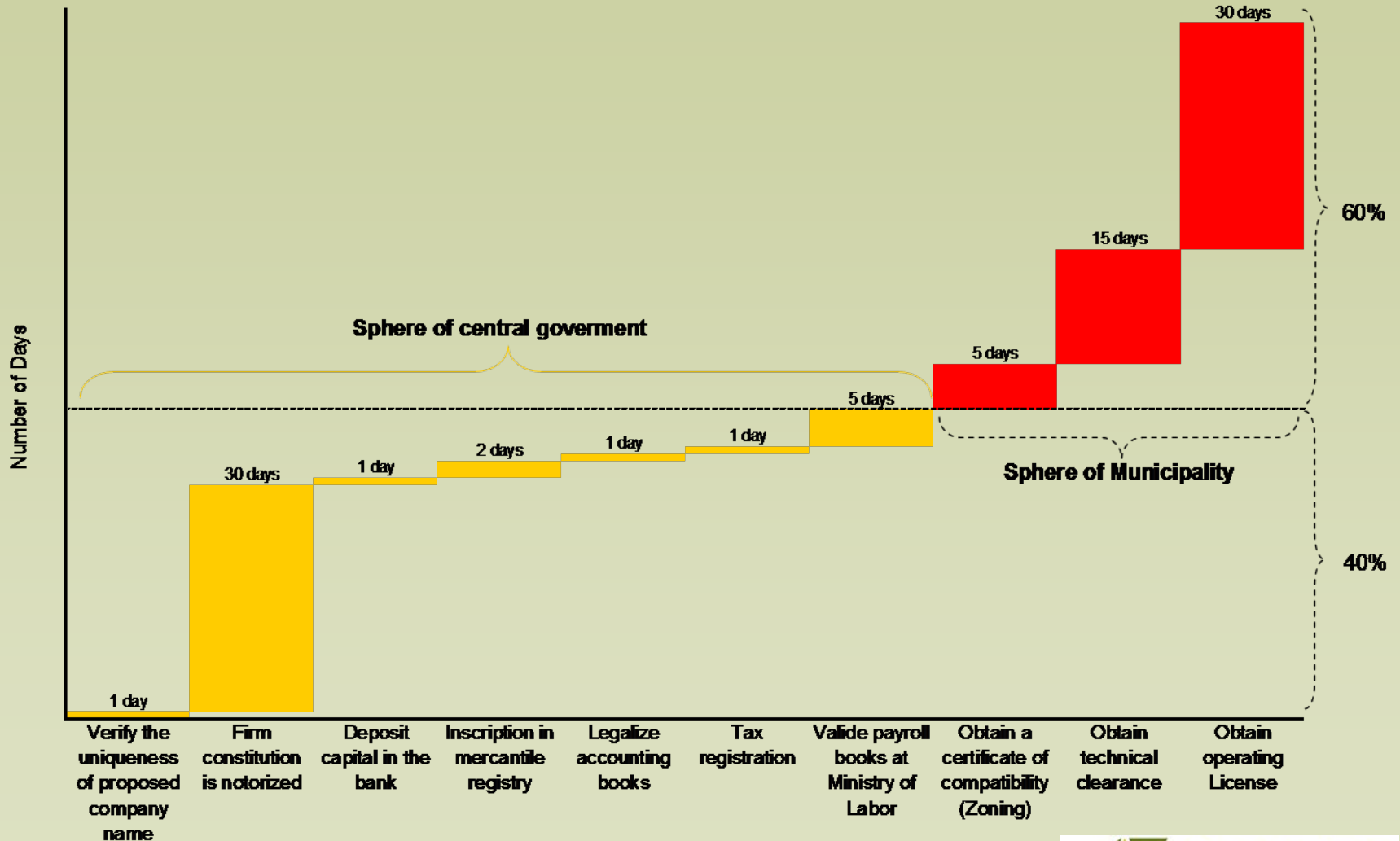
- Revenues
- Profits
- Costs
- Access to new clients
- Access to credit
- Investment in fixed assets
- Employment

- **Treatment variable:** Getting an operating license

- **Cost of obtaining a license of operation decreased:**

- From 260 days to 1.5 day
- Monetary cost in 59%

# Numbers of days to start a business in Peru



# Lack of baseline and follow-up data

- Panel/tracer study:
  - One baseline and 5 follow up surveys during three years
  - Starting sample size of 600 informal firms
    - \* Attrition
    - \* Dropout due to death

# Lack of comparable treatment and control groups

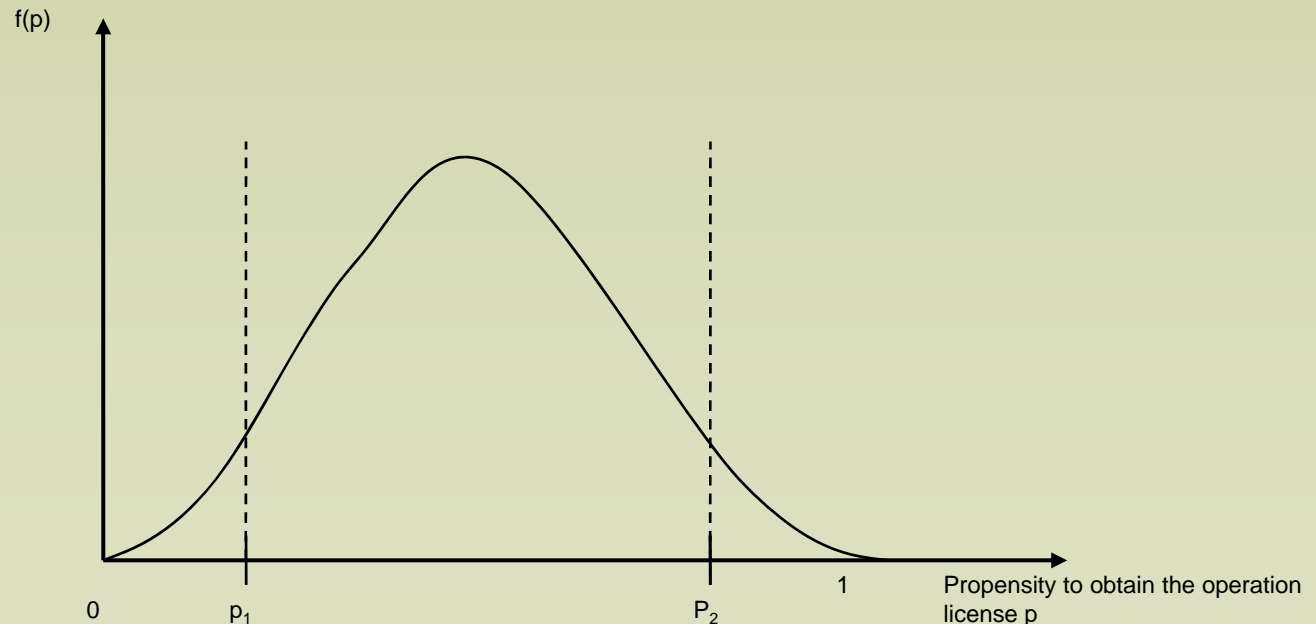
Comparing firms who got the operating license of operation with firms who did not get the license is not a valid procedure

Variables unobserved by the researcher (*for example entrepreneurship, growth perspectives, etc*) affect whether firms get a license or not and also affect outcome variables

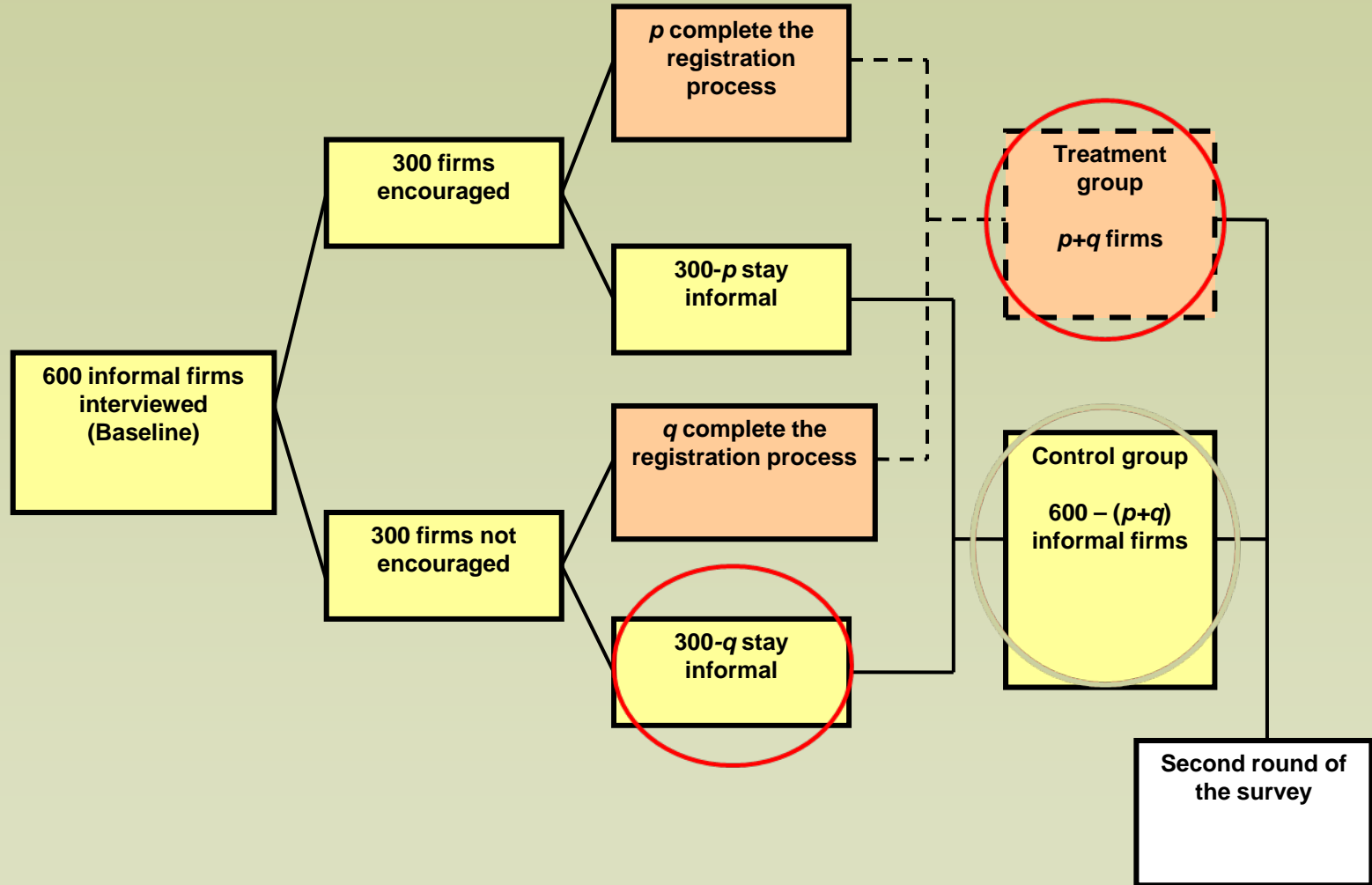
The encouragement approach is one methodological strategy to deal with this problem

# Selection bias & the encouragement

- The encouragement takes the form of an incentive to get a license
- If the encouragement is successful the treatment and control groups will be on average more comparable



# The encouragement approach in practice

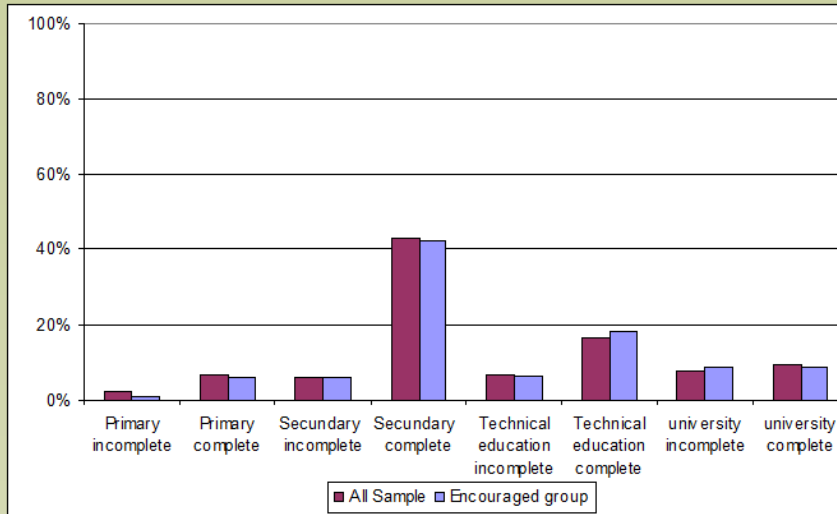


# The encouragement approach in practice

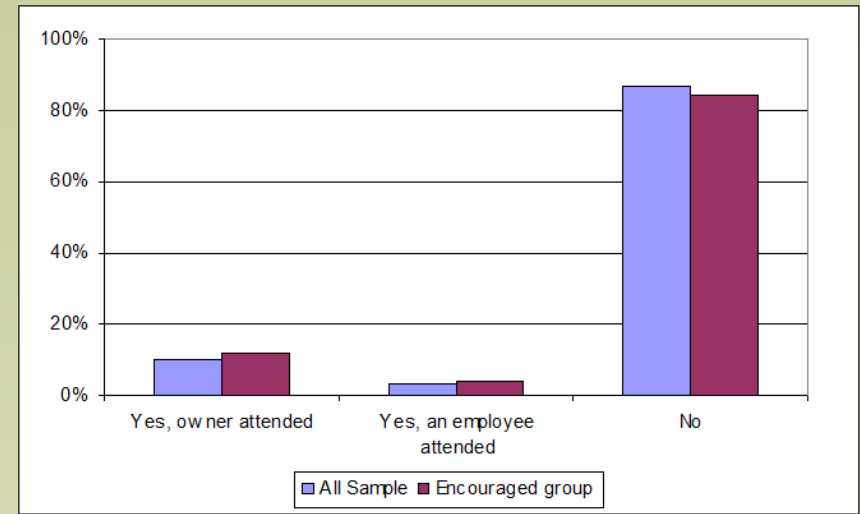
- The encouragement will take the form of a voucher equivalent to S/40 (between 11-14% of the cost of the license) to be used for registration
- This voucher will be valid for three weeks from the time it is received by the entrepreneur
- If the entrepreneur has not used the voucher after three weeks, he will receive a new voucher with a high discount of S/60 (between 16-21%)
- Both, encouraged and non-encouraged firms will be monitored to make sure that they don't receive additional incentives. Also to increase the likelihood that they will stay in the sample

# Total sample & encouraged group are similar

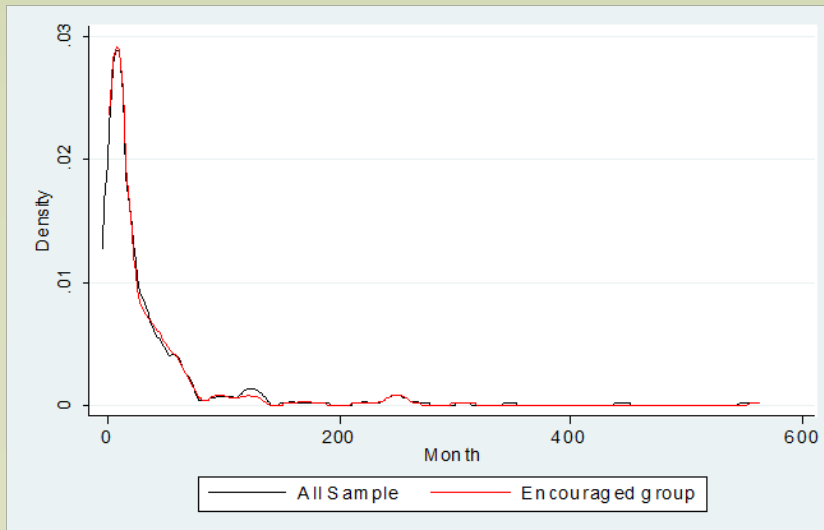
*Respondent's education*



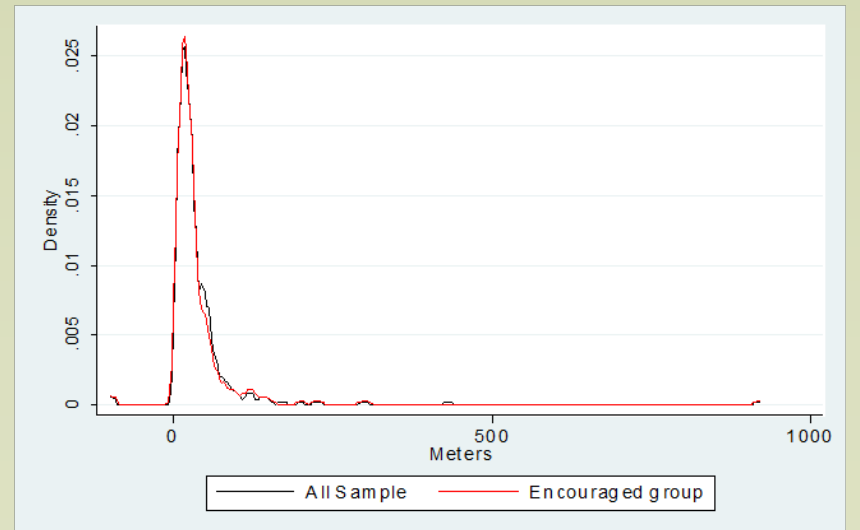
*Access to training*



*Age of the firm in months*

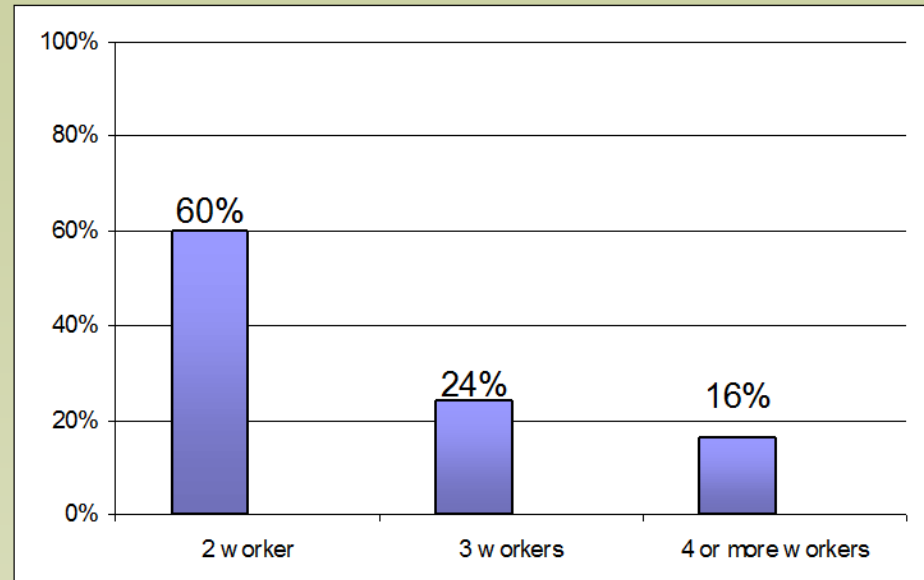


*Area size*



# Baseline information: First results

*Number of workers*



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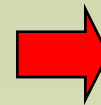
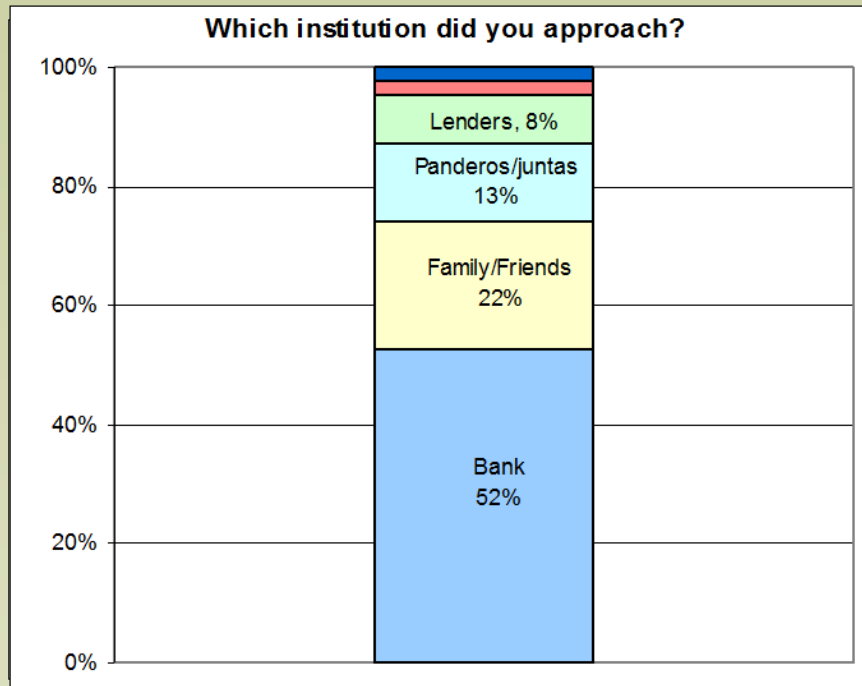
## Hiring of temporary workers

Yes	6.5
No	93.5

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On average 2 months

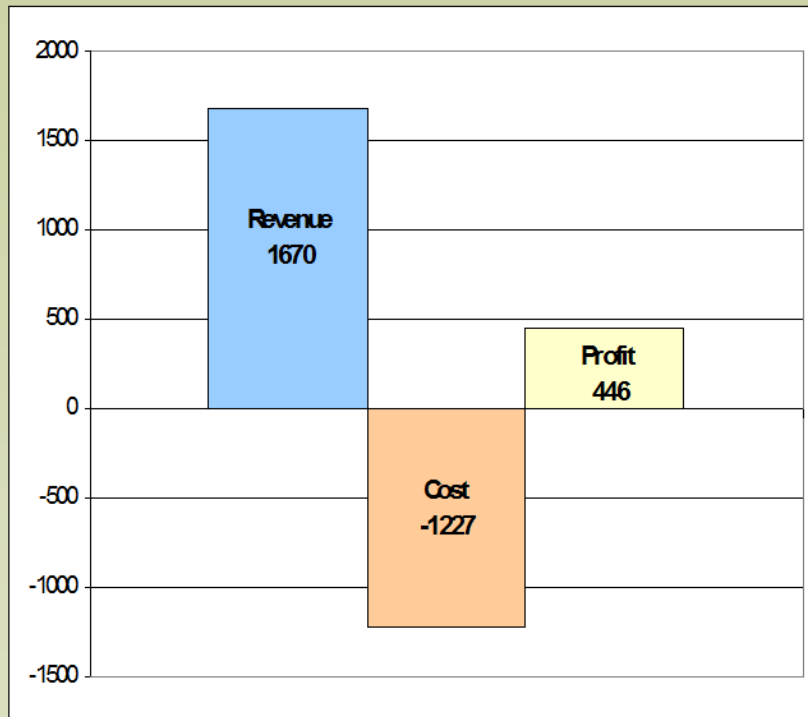
# Baseline information: First results



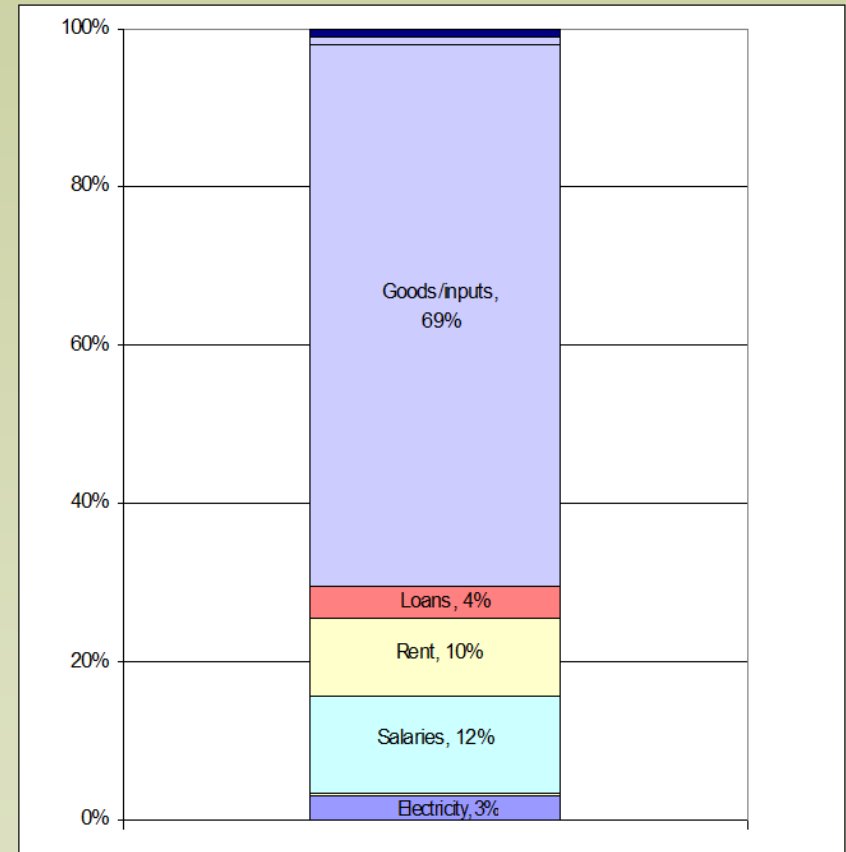
<b>The credit was approved?</b>	
	<b>% Yes/total</b>
Bank	87%
Caja Municipal	67%

# Baseline information: First results

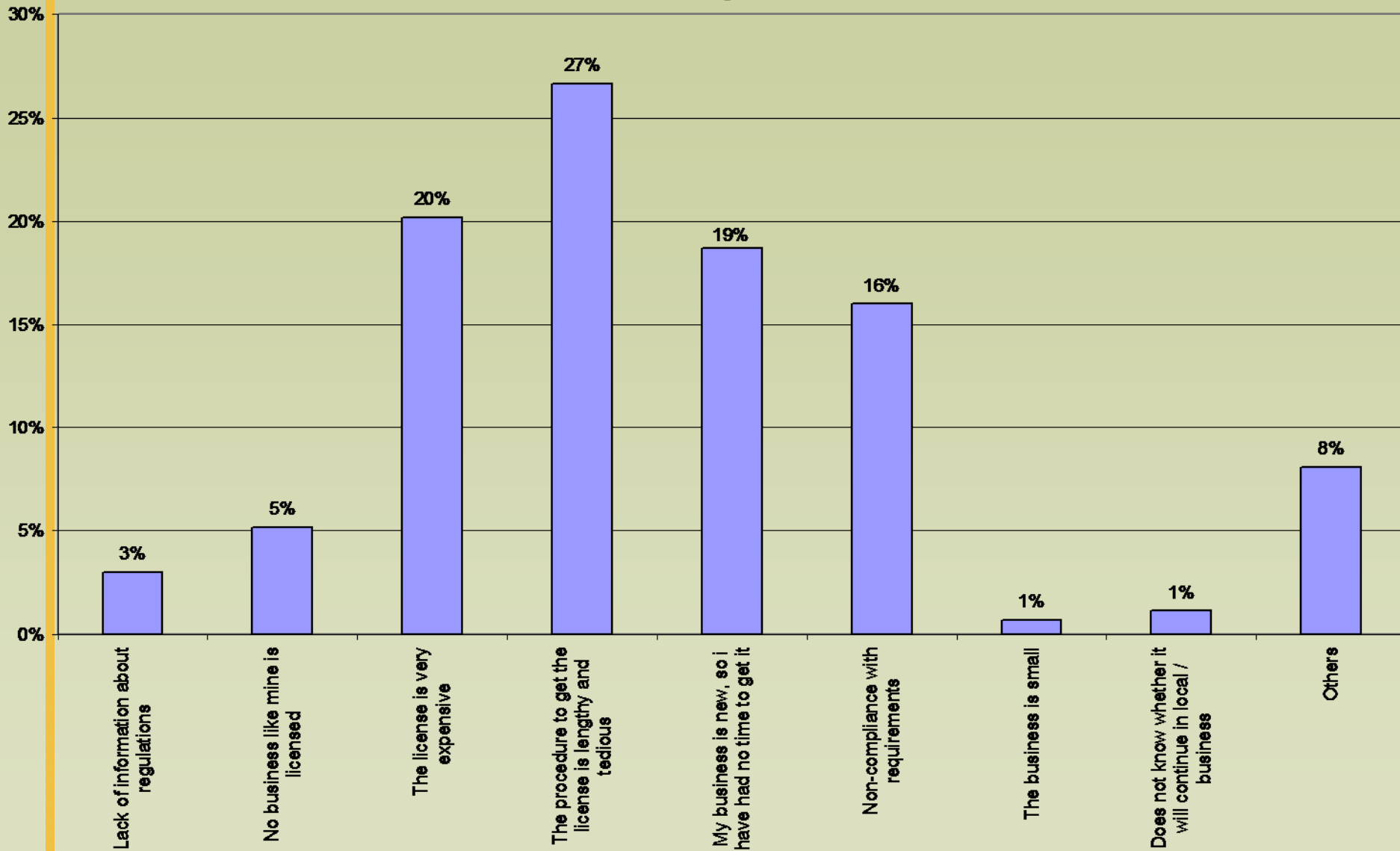
Average of Revenue, Cost & Profit (\$)



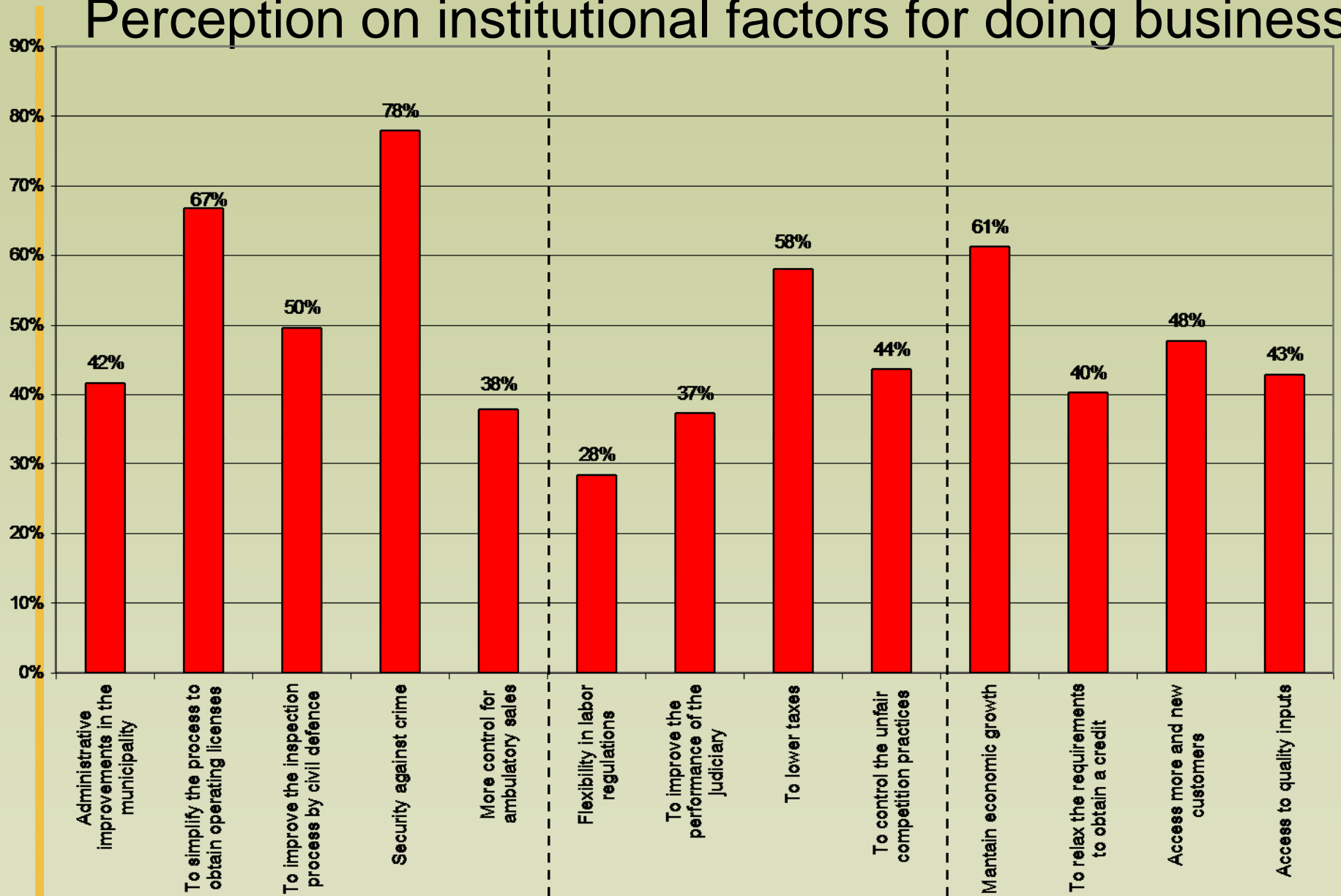
Description of expenditure of business



# Reasons for not having a license of operation



# Perception on institutional factors for doing business



# Lessons from fieldwork

- 36 days to complete 620 surveys. From every 100 firms visited, 10 reports not to have the operating license, and from these, 4 firms answered the survey completely.
- Get information from authorities about spatial clusters of informality is critical. It also helped to the organization of the fieldwork
- The use of information materials or gifts enabled better contact with interviewees
- The presence of a supervisor gives a good impression of the work done, which helps the completion of survey
- It works better to try to complete the whole survey in the same visit, even if there has to be a break in the application

# Distribution of the total sample & the encouraged group

## Details of Business

	<b>All Sample</b>	<b>Encouraged group</b>
<b>Type of Business</b>	<b>Percent</b>	<b>Percent</b>
Groceries, bakery	35.1%	34.7%
Restaurant, Coffee shop, Ice cream parlor	23.0%	22.3%
Bazaar	4.4%	5.0%
Clothing store	1.1%	1.3%
Shoes store	0.9%	0.3%
Jewellery shop, clock and watch shop	0.4%	0.3%
Office supply, photocopy store	5.6%	6.0%
Printer	2.3%	3.0%
Software store	0.4%	0.7%
Internet box	4.7%	5.0%
Drugstore	1.2%	1.3%
Other	8.3%	8.7%
Telephone box	4.2%	4.3%
Hairdresser's	2.8%	2.3%
Repairs store	1.6%	1.0%
Service in specific occupation	4.0%	3.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

# Notes regarding the sample size

- Sample size need to identify statistically a 10% increase in key outcome variables

**Table 1**  
**Minimum sample sizes to find a 10% effect on different outcome variables**

	Outcome for Treatment Group	Outcome for Control Group	S.D	Sample needed (per group)	Prob. of type-I error	Power
Sales (US\$)	4881	4437	1000	80	5%	80%
Access to loan	55%	50%	0.07	63	5%	80%
Access to loans from formal institutions	44%	40%	0.07	49	5%	80%
Amount of credit (US\$)	1650	1500	200	63	5%	80%
Investment in machinery (US\$)	206	187	40	70	5%	80%

Values for the control group come from pilot results. Values for treatment group assumes a 10% difference with respect to the control group.

# Notes regarding the sample size

- Even in a worst scenario where the success rate is of 10%, the sample size of 60 per group will allow finding statistically the 10% effect in most of the variables

**Table 2**  
**Sample sizes according to different transitions to license-situations**

Effectiveness	Resulting treatment	Resulting control	If both groups equal
50%	300	300	300
20%	120	480	120
10%	60	540	60
60%	360	240	240
80%	480	120	120
90%	540	60	60