

Business Environment Effect on Formalization Willingness and Registration Decision of SMEs in Ivory Coast

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This paper analyses the effects of the business environment on the formalisation provision and the decision to register small and medium enterprises (SMEs) in Ivory Coast, based on informal sector survey data collected in the cities of Abidjan, San-Pedro and Daloa. The study is based on descriptive analyses and estimation of a Probit model with selection. The analysis reveals that procedural complexity, information asymmetry and geographical location are the factors that significantly determine both the formalisation disposition and the decision to register businesses. It appears that, in addition to the business environment, subcontracting and the size of SMEs explain the decision to register them, while the possession of a business plan, access to infrastructures and markets are the determinants of formalisation. Thus, it appears that, in an integrated approach, the strengthening of tax incentives for SMEs operating in low-profit localities, the formalisation of subcontracting relationships, the dematerialization of procedures and the popularisation of reforms are proving to be a guarantee of the formalisation of informal activities.

Keyword: business environment, formalization, registration decision, SMEs, Ivory Coast

INTRODUCTION

According to the legalistic thesis, the weight of State rules and administrative constraints on micro and small enterprises discourages initiative and dissuades them from formalising their existence. In this sense, Loayza (1999) and De Soto (2000) argue that excessive regulation and high tax rates and social charges reduce the profitability margin of the formal sector and encourage entrepreneurs to move into the informal sector. As a result, the development of small business would be highly dependent on the business environment.

Côte d'Ivoire, aware of the possible negative effects of a deleterious business environment on enterprise growth, has rightly initiated reforms since 2012 to improve its business environment in order to foster the development of a dynamic and internationally competitive private sector. The results obtained over the 2012-2015 period show significant progress in improving the business environment. Thus, Ivory Coast was ranked among the ten (10) most competitive economies in Africa and was designated as the most attractive country in Sub-Saharan Africa for investment.

However, this country, which is regularly cited among the most reformist countries, fell four places in 2019 compared to 2018, occupying 118th place out of 141 countries (World Bank, 2019). This regression comes at a time when the effects of these reforms should be felt in terms of the dynamism of formal entrepreneurship. Thus, it becomes timely to examine the role of the business environment in the decision

of managers to formalise their production units in the context of an economy marked by the predominance of informal activity.

Already in 2012, the Studies and Job Promotion Agency (AGEPE) estimated that 96.5 % of informal activities were operating on the fringes of public administration services and therefore do not appear in the State's registers (AGEPE, 2012). In addition, almost all (93.8%) of jobs are informal according to the estimates of the Integrated Regional Survey on Employment and the Informal Sector (ERI-ESI, 2017). Although the need to migrate this part of the economy to the formal sector is no longer in evidence, it seems to be hampered by the constraints linked to the business environment.

Even if most studies indicate that a significant proportion (over 70%) of managers would be willing to formalise their enterprises, this propensity does not seem to translate in practice into the registration of production units, basically due to the inability of the state to create a business environment conducive to the registration of economic activities. While their registration is to some extent indispensable for their access to certain services offered by the public authorities and development partners, such as the supervision services of the certified Management centers (CGAs), training programmes, support funds for the development of their activities and more recently the COVID-19 support fund for SMEs, notably the support fund for the informal sector (FASI). Their limited access to these services could be seen as one less factor of production for these enterprises unknown to the public authorities. It therefore becomes reasonable to take an interest in their administrative affiliation. Faced with this situation, there is a pressing need to find a solution in order to encourage more informal enterprises to register with the administration, with a view to facilitating their access to the productive resources that guarantee their growth. Better still, it seeks to answer the following questions:

- How does the business environment influence the formalisation provision and the decision to register micro and small informal enterprises (MSEIs)?
- What factors related to the business environment determine both the formalisation disposition and the registration decision of SMEs?

This study is innovative in that it looks at the business environment factors that determine both the formalisation disposition and the decision to register SMEs. This is in contrast to most research in this field of investigation which analyses these two dimensions separately, whereas a joint analysis would allow the development of more refined policy implications for the benefit of policy makers.

The objective of this study is to determine both the factors of formalization and the decision to register informal enterprises, under the assumption that a business environment conducive to economic activity would ensure the coincidence of the formalization provision and the registration decision. To achieve this objective, the study estimates a Probit model with selection, inspired by Heckman (1979) from data from the survey carried out by the Economic policy analysis Unit of the Ivorian center for economic and social research (CAPEC), within the framework of the CAPEC/IDRC research project on the determinants of the performance of enterprises in French-speaking sub-Saharan Africa.

This article is composed of four parts. The first part is devoted to the analysis of the formalisation and registration of enterprises in the literature. The second part deals with the methodological approach. The third part presents the results of the study, followed by their interpretation and discussion in the fourth part.

THE ANALYSIS OF THE FORMALIZATION AND REGISTRATION OF SMES IN THE LITERATURE

Analysis of Thinking School

Many theoretical approaches dealing with the problem of formalization and registration of companies have been highlighted in the literature. The present analysis focuses on neo-liberal, legalistic and structuralist approaches. In the neo-liberal approach, the informal sector is seen as the result of government regulations that are costly to entrepreneurs, such as health care mandates, high minimum wages, lengthy filing procedures and collective agreements (De Soto, 1989). As a result, working in the informal sector is seen as a voluntary strategy where knowledgeable entrepreneurs could start their businesses at low cost.

According to neo-liberalism, this explains why a large proportion of operators refuse to collaborate with the state and are categorically reluctant to work with administrative registers.

In the same vein, the legalistic current maintains that keeping companies in the informal sector would reflect the deliberate will of economic operators to escape this yoke and regain their freedom. Indeed, they seek to escape the weight of legality in order to adopt new productive strategies to maximize their profit. But the structuralist approach, inspired by Marxism, nuances the assertions of the two previous ones. While admitting that laws and regulations on economic activities are unsuitable for the informal sector, this current of thought points out that the best solution is not to abolish them but rather to improve them. For the proponents of this approach, these legislations are considered useful to protect the common interests of the economy as a whole and to enable community projects to be carried out with collective resources.

Thus, aware of the importance of these roles of the State, a significant component of operators does not refuse to cooperate with it. Non-registration appears to be independent of the operators' will and is largely the result of administrative, economic, social and geographical constraints. As a result, advocates of the structuralist approach recommend structural reform of public registration services to make them more efficient and accessible. This includes making the processing of files shorter, less corrupt, more transparent, less costly in terms of low financial cost, simpler procedures and closer services (Rakotamanana, 2009).

Empirical Investigation of Explanatory Factors

The issue of formalization of companies has been the subject of numerous studies. Some of these studies have focused on the factors of formalization by analyzing the factors that keep firms in the informal sector, the factors influencing the decision to formalize or the determinants of the disposition to formalize. Others have focused on the effects of the business environment and formalization programs.

The Role of the Business Environment in Formalization and the Registration Decision

Many studies have shown that companies are forced to operate in the informal sector. For Benjamin and Mbaye (2012), in general, the administrative burdens and complexity of regulations, rigid labor laws, and high tax rates that weigh heavily on African firms force them to join the informal economy. This explanation is shared by Ishengoma and Kappel (2006), who show that external factors such as limited access to financial or business development services, small markets, insufficient economic infrastructure and public services, or complex and burdensome regulations discourage formalization.

Also, Benjamin and Mbaye (2012) identify the inability of the judiciary to enforce laws and contracts, weak administration, and corruption as widespread characteristics in Africa that combine to create strong incentives for entrepreneurs to join the informal economy. In the same vein, Ouédraogo et al. (2011) show that direct registration costs and asymmetric information are very constraining, especially for IPU in the main agglomerations of WAEMU countries.

The conclusions of many authors (De Soto, 1994; Djankov et al 2002; Lautier, 2004) reveal that the informal economy persists in developing countries because of the excessive weight of the State, not only in fiscal matters, but especially in terms of administrative regulations relating to the creation of formal enterprises, with often restrictive, useless and bureaucratic procedures.

Moreover, the United States Agency for International Development (USAID, 2005) justifies the informality of firms by regulatory constraints, administrative burdens, fees and financial obligations, corruption in public administration, socio-cultural attitudes, the absence of important services without firms and criminality that hamper the formalization of firms. Also for Dabla-Norris et al (2008), firms choose to integrate the informal economy to avoid the costs associated with regulation in the formal economy. Steel and Snodgrass (2008) and Verick (2006) also confirm that lack of access to public services is a determining factor in the expansion of the informal economy. Farrell (2004) attributes the informality of the firm to red tape. In fact, he notes that among the main factors that motivate firms to not comply with regulations are tax and social security contributions. In the same vein, Ouédraogo (2017) demonstrates that there is a close link between governance, corruption and the informal economy. Thus, a poor institutional framework would encourage the growth of the informal sector.

Furthermore, some authors have focused on the determinants of the decision to formalize. From the perspective of economic rationality, the choice between the formal and the informal economy would be based on a comparison of the costs and benefits of formalization. In this sense, La Porta and Schleifer (2008) point out that the decision to formalize results from a comparison of costs and benefits. In addition, Perry et al (2007) and Kanbur (2009). and Gelb et al (2009) argue that firms opt for formality when access to public services and credit is favourable and when regulations on tax payment and business registration are rigorously enforced.

Regarding public services, Gelb et al (2009) also find that firms opt for formality when access to public services is favourable. From this perspective, the analysis of Traoré (2018) shows that access to basic services such as water and electricity boosts the formalization of firms. These results are somewhat qualified by De Mel et al (2012) who showed, through an experimental study in Sri Lanka on the demand for formalization, that providing information and reimbursing registration costs does not encourage firms to register. However, Traoré (2019) shows that registration costs and ignorance of procedures constitute institutional barriers to the formalization of informal SMEs in Côte d'Ivoire.

Other studies have particularly highlighted the effects of regulations on the formalization decision. In general, when this environment is conducive to business, it boosts formalization. Conversely, managers are reluctant to declare their production units. Thus, in a study of a sample of 85 countries, Djankov et al (2002) find a strong positive correlation between the number of procedures required to set up a business and the size of the informal economy. Some authors, such as Ingram et al (2007), have rightly estimated a Probit model in which the perception of constraints in the business environment determines the choice of firms to evolve in the formal or informal sector.

As shown by Rakotomanana (2009), having difficulties in accessing credit increases the probability that operators will agree to register their establishment for the first time on an administrative register. In this sense, Traoré (2016) argues that financing and market problems lead SMEs to formalization. Analyzing regulation, Branstetter et al. (2010) show that lighter regulation on market penetration makes it possible to increase the number of company registrations, even if this phenomenon affects more employees who set up on their own account and very small marginal companies with a limited lifespan.

On the contrary, Friedman et al (2000) and Johnson et al, (2000) argue that exacerbated corruption can discourage the registration of informal activities. In this vein, Maldonado (2000) estimates that very high registration costs and delays, the complexity of administrative procedures, and the inadequacy of existing regulations to the needs of the informal sector are all factors that discourage micro-entrepreneurs from legalizing their business.

Also, an institutional framework unsuitable for economic activity is attributed by many authors to the weight of the State. Indeed, studies observe that, in most African countries, the capacity of governments to impose regulatory constraints on the activity of informal enterprises is limited (Trip, 1997; Heilman, 1998). In seeking to legislate in this area, the main effect induced by the government is to put the legal status out of reach of a large number of small firms. Thus, some analyses show that institutional constraints are sources of transaction costs (North, 1990; Acemoglu, 2007; Talbot, 2008).

In addition, government institutions represented by legislation, regulations, and administrative culture tend to increase transaction costs (De Soto, 1994, Afibefun and Daramola, 2003). Moreover, La Porta and Schleifer (2008) find a negative link between the cost of complying with labour legislation and the cost of red tape on formalization. Similarly, Ingram et al (2007), indicate a strong correlation between formality and certain attributes of the business climate such as access to electricity, finance and land.

Regarding formalization policies, Bruhn (2011) finds that the program of rapid opening of companies in Mexico has led to a 5% increase in the number of registered companies. Similar results have been obtained by other studies such as that of Bettcher et al (2009) which showed that the simplification of business licensing procedures in Peru led to an increase in the number of registered companies of 120% between 1993 and 1996. Similarly, Klapper et al (2007) find that the simplification of business registration through electronic procedures in Guatemala, Sri Lanka and Jordan increased registrations by more than 20%.

Managers' and Companies' Marks on the Formalization and Decision of Registration

Looking at the characteristics of the production unit and the manager, Rakotomanana (2009) indicates that the willingness to register is positively affected by the male gender and the degree of "visibility" of the production unit. Nevertheless, Fomba (2013) shows, in the case of Cameroon, that being a female entrepreneur increases by 2.8% the probability of a company being partially formal. This result is somewhat nuanced by the analysis of Traoré (2016) which shows, in the case of Côte d'Ivoire, that the fact that the SME is run by a woman decreases the probability of its formalization. Furthermore, Lapeyre and Lemaître (2014) show that the lack of support from the financial system and training programs that are not adapted to their specificities constitute barriers to formalization. Similarly, according to these authors, inter-firm factors such as the existence of limited or exploitative relationships and the weakness of professional associations contribute to keeping firms in the informal sector. In this sense, the results of Rakotomanana (2009) show, in the case of Madagascar, a positive effect of formal vocational training on the willingness of informal enterprises to register.

Moreover, Ouédraogo et al (2011) show that firms willing to formalize usually have a minimum critical size in terms of capital endowment, realized value added and labor force, as well as a mode of organization and production that obliges them to comply with this provision. Fajnzylber et al. (2006) find, in a study of Mexican microenterprises, that the decision to formalize increases with firm size. A similar result was found by Traoré (2019), who indicates that the decision to formalize is positively correlated with the size of SMEs in Ivory Coast. However, McKenzie and Woodruff (2006) argue that formality for microenterprises is not relevant. These authors, using a survey of informal microenterprises in Mexico, show that 75% of them explain their informality by their small size, and consider this choice optimal. These analyses of firm size are in line with legalistic thinking, which considers that the informal sector is made up of micro-entrepreneurs who prefer to operate informally to escape economic regulations (De Soto, 1994).

METHODOLOGICAL APPROACH

The study uses a quantitative approach, through descriptive analysis and econometric modeling. This section highlights the data used, presents the econometric model and estimation method, and the strategy for selecting instrumental variables.

Study Data

The data used in this analysis is based on a sample of 400 informal sector firms from the cities of Abidjan, San Pedro, and Daloa. These cities were selected on a reasoned basis. Indeed, these are the first three cities with the highest number of firms at the time of the survey. The sample for the survey was based on information provided by the municipal authorities and the INS (National Institute of Statistics).

On the subject of the concentration of economic activities, a list of municipalities/neighborhoods with a high concentration of IPU's has been drawn up. In the city of Abidjan, six districts were selected. In each neighborhood, two Enumeration Areas (EAs) were located using the mapping provided by the INS. For the cities of Daloa and San-Pedro, three districts were respectively selected with the help of the communal authorities.

The data was collected from companies in the informal sector in 2014. The econometric study is part of a binary model in which a specific part of the sample is observed. The model used is by Van De Ven and Van Praag (1981) inspired by Heckman (1979) in which the equation of interest is of a dichotomous nature.

The Econometric Model

The model is as follows:

Y_1 and Y_2 two dichotomous variables such as Y_2 is observable only if $Y_1 = 1$.

In our case,

Y_1 if the manager is willing to formalize his company and 0 otherwise
 Y_2 if the manager has started the registration process of his company and 0 otherwise

Assuming that $Y_1^* = Z'\gamma + \eta$ is an unobservable latent variable of utility in the face of dichotomous choices (willingness to formalize or not), then we suppose that

$$Y_1 = 1 \text{ (the choice is observed) only if } Y_1^* > 0 \text{ and } Y_1 = 0 \text{ otherwise}$$

In the event that

$Y_1 = 1$ the individual has to face a binary second choice
 Y_2 and $Y_2^* = X'\beta + \varepsilon$ can be seen as an unobservable latent utility variable in the face of the binary second choice (the decision to register or not).

In this case, $Y_2 = 1$ if $Y_2^* > 0$ and $Y_2 = 0$ if $Y_2^* < 0$. By introducing β and γ to explain the latent propensities of binary choices 1 and 2, one can define a system of two equations.

The first equation is the selection equation:

$$- \text{probit } (Y_1 = 1 | \gamma) = z_i \gamma$$

Y_1^* can be represented by a probit model in which the disposition to be formalized ($Y_1 = 1$) is explained by a set of factors such as the vectors M_i , E_i and C_i . These vectors represent respectively the characteristics of the manager, the company and the business environment.

$$\text{dispo}_{\text{formal}} = \gamma_0 + \gamma_1 M_i + \gamma_2 E_i + \gamma_3 C_i + \eta_i$$

The second equation is the main equation. It is defined only if $Y_1 = 1$:

$$- \text{probit } (Y_2 = 1 | \beta) = x_i \beta$$

Y_2^* can be represented by a probit model in which the decision to register ($Y_2 = 1$) is explained by a set of explanatory factors such as M_i , E_i and C_i which respectively represent the characteristics of the manager, the company and the business environment.

$$\begin{aligned} \text{decis}_{\text{enregis}} &= \beta_0 + \beta_1 M_i + \beta_2 E_i + \beta_3 C_i + \varepsilon_i \\ \eta_i &\sim N(0,1) \\ \varepsilon_i &\sim N(0,1) \\ \text{corr}(\mu_i \varepsilon_i) &= \rho \end{aligned}$$

The couple $(\eta_i; \varepsilon_i)$ follows a two-dimensional normal law $N\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix}; \begin{pmatrix} \rho & 0 \\ 0 & \rho \end{pmatrix}\right)$, ρ designates the coefficient of linear correlation between the two error terms.

Model Estimation Method

The estimation is done in two steps using the maximum likelihood estimator. In the second equation, the Mills ratio proposed by Heckman is introduced in order to correct for possible selection bias. However, the correction is made only after the *Chi2* on the correlation coefficient of the error terms of the two equations *Rho*. The results of this study were used to identify the proven existence of selection bias.

The test of the *Chi2* checks whether ρ is significantly different from 0 ($H_0: \rho = 0$). The rejection of the null hypothesis (P-value < 0.05 if critical threshold at 5%) means that the equation of interest is not

independent of the selection equation; the two decisions are not made independently of each other, so the correction of the selection bias is justified.

Selection Strategy for Instrumental Variables

The selection equation must include the same independent variables as those in the main equation, as well as some additional instrumental variables that are supposed to affect the dependent variable in the selection equation, but not the dependent variable in the main equation. In other words, the instrumental variables should be able to affect the willingness to formalize firms, not the decision to register a business.

The variables in our sample, which were presumed to be instrumental variables, are goodwill, the mode of creation, the age of the manager and access to the public market. The implicit hypothesis that justifies the choice of these instrumental variables is that they influence formalization, but without direct effect on the registration decision. The impact of the identification variables on the selection equations (willingness to formalize) and on the main equation (registration decision) is apprehended through the coefficients of the Probit models.

TABLE 1
TESTING THE IMPACT OF THE IDENTIFYING VARIABLES

	Disposition to be formalized	Decision to be registered
Business	2,18 10 ⁻⁸ *	9.70 10 ⁻⁸ NS
Business Plan	0,77***	-0.306 NS
Access to the public market	0,754***	0.249 NS
Age of the manager 2	-0,001**	-0,000 NS
Observation	392,	276
*** significant at 1% *** significant at 1% *** significant at 1% *** significant at 1% *** significant at 1		

Source: Author based on CAPEC_CRDI 2013 data

THE RESULTS OF THE STUDY

This section is devoted to the presentation of the results of the statistical analysis resulting from the crossing of variables and those of the econometric investigation inherent in the estimation of the Probit model with selection.

Descriptive Statistics

The results of the descriptive statistics are provided in Table 2.

TABLE 2
REGISTRATION DECISION CHARACTERIZATION

Variable name	Terms and Conditions	Min max	Percentage or average*	% of companies in the process of registration
Business Environment				
Corruption	1 Severe problem		27,25	12,44
	0 No problem		72,75	8,97
Public Market	1 Major problem		54,25	11,27
	0 No problem		45,75	11,54
Perception of procedures	1 Complexes		26,50	10,61
	0 Single		73,50	11,74
High level of taxes	1 Yes		12,75	12,82
	0 otherwise		87,25	11,25

The Manager				
Age of the manager	Quantitative	15 57	34,89	
Origin	1 Ivorian 0 Otherwise		33 67	13,30 7,69
Level of education	0 None 1 Primary 2 Secondary and higher		43,50 32,50 24,00	8,13 13,33 15,15
Technical training	1 Having received technical training 0 Without technical training		34,50 65,50	14,89 9,73
Sex	1 Woman 0 Male		28 72	10,14 11,9
Administrative formality	1 Ignore 0 Known		37,25 62,75	1,98 16,85
The company				
Size	0 Microenterprise 1 Small business		98,25 1,75	10,95 40
Number of employees	0 Without employee 1 1 to 3 employees 2 More than 4 employees		47,25 43,25 9,25	11,11 11,48 12,90
Location	0 Abidjan 1 San-Pedro 2 Daloa		50 25 25	4,92 12,66 20,51
Establishment of an account	0 Does not keep records 1 Keeps accounts		13,50 86,50	10,33 18,92
Subcontracting	0 No 1 Yes		72 18	12,28 7,84
Business	Quantitative		638496,3	
Creation mode	0 Created without a business plan 1 Created with business plan		66,50 33,50	11,18 12,26
Use of infrastructure (Water and Electricity)	0 No 1 Yes		53,13 46,87	9,27 14,06
Total				11,47

Source: Author based on CAPEC_CRDI 2013 data

Table 2 presents descriptive statistics for the variables in the econometric model, including characteristics of firms, managers and the business environment. They highlight the distinguishing characteristics of the firms that started the registration process. The analysis focuses first on the business environment, then on the characteristics of the manager and finally on those of the firm.

Characterization of the Registration Decision in Relation to the Business Environment

The results indicating the analysis of corruption show that 8.97% of managers who consider it as a severe problem in the conduct of their business, have started the process of registering their company against 12.44% of those who find no problem. Regarding access to markets, the results indicate that 11.54%

of the companies with a problem of access to public markets have started to register against 11.27% of those who do not have this problem.

Concerning the perception of the high level of taxes, the results show that 12.82% of managers who consider them high are in the registration phase against 11.25% who do not have this apprehension. Regarding the perception of procedures, 10.61% of managers who consider them complex have started to register their company against 11.74% of managers who do not have this perception.

Characterization of the Record According to the Profile of the Managers

The results show that only 7.69% of companies run by foreigners are in the process of registering against 13.30% of companies run by Ivorians. With regard to the educational level of the manager, the data indicate that 15.15% of managers with the higher level of education have started the registration of their business, compared to those at the primary level and illiterate people estimated at 13.33% and 8.13% respectively.

On the subject of technical training, 14.89% of managers who have received this training are determined to register, compared to managers who have not received any training in business skills. In addition, 11.9% of male managers decided to register their company compared to 10.14% of female managers. Regarding administrative formalities, only 1.98% of managers who were unaware of these formalities started to register their company compared to 16.85% of managers who were aware of the administrative formalities.

Registration Characterization by Business Profile

The statistics in Table 2 show that 11.47% of the companies in our sample are in the process of registration. It also shows that 40% of small enterprises are in the registration process compared to only 10.95% of microenterprises. Regarding the number of employees, 12.25% of the enterprises hiring at least four (4) employees are in the registration process, compared to 11.48% and 11.11% respectively for enterprises hiring between 1 and 3 employees and those with zero (0) employees.

On the subject of location, companies located in the cities of Daloa and San-Pedro recorded the highest proportions of companies in the process of registration with respective proportions of 20.51% and 12.66% against only 4.92% of those located in Abidjan. With regard to the mode of bookkeeping, more firms (18.92%) are starting to register while this rate is only 10.33% among those that do not keep any accounts.

As for companies that subcontract, 7.84% of those that do so are in the registration phase compared to 12.28% for those that do not subcontract. Moreover, 12.26% of companies whose managers had a business plan when they were created are in the process of registration, while this proportion represents 11.18% among companies created without a business plan. In addition, statistics show that less than a quarter (14.06%) of the businesses that have access to infrastructure (water and electricity) are in the process of registering, compared to a lower proportion (11.18%) of businesses that do not have access to its infrastructure.

Factors Explaining the Formalization Provision and the Registration Decision

This section highlights the presentation and discussion of the results.

TABLE 3
RESULTS OF THE ECONOMETRIC ANALYSIS

Variables	Coefficients	P- Value	Marginal Effects	P-Value
REGISTRATION DECISION				
Primary	0,258	0,458	0,029	0,466
Secondary and higher	0,256	0,337	0,038	0,355
Number of employees	0,060	0,128	0,009	0,120
Woman	-0,204	0,452	-0,029	0,430
San-Pedro	0,519	0,088	0,059	0,091
Daloa	1,25	0,000	0,210	0,000
Access to infrastructure (water and electricity)	0,446	0,043	0,068	0,054
Ignore procedures	-1,24	0,001	-0,140	0,000
Small business	2,030	0,005	0,490	0,006
Subcontractor	-0,65	0,043	-0,080	0,014
Problem of corruption	-0,108	0,703	-0,015	0,693
Does not keep any records	-0,197	0,408	-0,031	0,502,
Complexity of procedures	-0,491	0,088	-0,066	0,062
FORMALIZATION PROVISION				
Primary	0,094	0,638	0,018	0,635
Secondary and higher	0,324	0,150	0,062	0,208
Number of employees	0,023	0,607	0,004	0,606
Woman	-0,278	0,150	-0,057	0,158
Business	1,88 E-07	0,094	3,80 E -8	0,094
Business Plan	0,774	0,000	0,151	0,000
San-Pedro	0,419	0,076	0,085	0,068
Daloa	0,438	0,063	0,088	0,053
Age of the manager	0,093	0,098	0,018	0,089
Age of the manager squared	-0,001	0,053	-0,000	,0450
Access to infrastructure (water and electricity)	0,083	0,643	0,016	0,644
Ignore procedures	0,090	0,623	0,018	0,624
Small business	0,541	0,286	0,101	0,240
Subcontractor	-0,148	0,474	-0,030	0,479
Problem of corruption	0,198	0,302	0,039	0,292
Does not keep any records	0, 039	0,880	0,007	0,881
Complexity of procedures	0,754	0,000	0,139	0,000
Problem of access to public markets	2,13	0,000	0,514	0,000
Observations 383 Uncensored obs =273 Prob>chi 2 = 0.522				
Censored obs = 110 wald Chi2(6) = 45.25				

INTERPRETATION AND DISCUSSION OF RESULTS

The estimated model is globally significant at the 1% threshold with (Prob> chi2 = 0.000). The significance of the coefficients is given through their respective probabilities (P-value) at the threshold of 1%, 5% and 10%.

The study shows that location, access to infrastructure and company size are the factors that boost managers' propensity to register informal businesses. The location of the informal activity is crucial in the registration process. It appears that informal enterprises located in the Daloa and San-Pedro zones are more

determined to register than those in Abidjan. Indeed, the fact that the business is located in Daloa and San-Pedro increases the probability that it will start the registration process by 21% and 5.9% respectively.

This may be because Daloa's informal activities are more visible than those in Abidjan, where firms can easily hide during inspections. Thus, the regular control of visible activities obliges the operators to proceed with their declaration. The more visible the company is, the more it is subject to pressure from tax officials and the greater the propensity of the manager to register it. This argument is reinforced by Rakotomanana (2009), who shows that managers who are more "visible" are much more likely to want to regularize their entries in administrative registers. A similar result was found by Mouko (2015) who shows that the degree of formalization of Micro, Small and Medium Enterprises (MSMEs) is important in rural and semi-urban towns compared to large cities.

In addition, the State of Côte d'Ivoire has granted advantages to investments made on Ivorian territory. These advantages vary according to the location of the investment. For this purpose, the Ivorian territory is divided into three zones (A, B, C). These advantages, which are in line with the decentralization of economic activities, are more interesting in the less attractive zones (B and C). Given that Abidjan is in zone A and Daloa is in zone B, it is clear that firms in Daloa are more willing to formalize than those in Abidjan where the advantages provide less incentive to formalize.

The investment code requires, among other things, that the companies concerned keep regular accounts in accordance with the accounting laws and standards of the Organization for the Harmonization of Business Law in Africa (OHADA) and that they be subject to an effective tax regime. This incentive framework could explain why managers in Daloa (located in zone B) are more favorable to the formalization of their companies than those in Abidjan (located in zone A).

In addition, access to public infrastructure has a positive effect on managers' decisions to register their companies. The fact that a company has access to water and electricity increases the likelihood of registration by 6.8% compared to companies without access to these infrastructures. These infrastructures, especially electricity, are important factors of production for most informal production units. Access to water will not only boost activity, but could also be seen by operators as a counterpart to the possible costs of legality, anything that would encourage business registration. This result is corroborated by Rakotamanana's (2009) analysis, which indicates that access to basic public services increases the operator's propensity to want to establish contact with the administration. In this vein, Gelb et al. (2009) also find that firms opt for formality when access to public services is favorable.

The size of the production unit is decisive in the registration decision. The results indicate that small companies have a 49% higher chance of starting their recording compared to micro companies. This can be explained by the fact that larger companies tend to register with the state registers in order to take advantage of the opportunities related to their size. In addition, they tend to be more visible and therefore more subject to government control. The study by Levenson et al (1998) confirmed this result, showing that the decision to formalize the firm depends on its size, in the case of an analysis of Mexican microenterprises. Indeed, McKenzie et al (2006), argue that formality for microenterprises is irrelevant.

With regard to barriers to registration, the study identifies ignorance of procedures, the complexity of procedures and subcontracting as the main obstacles. Indeed, it appears that ignorance of procedures reduces the chance of registering a company by 14%. In fact, due to the asymmetry of information, informal entrepreneurs have little or no information on the advantages, conditions and opportunities that they could benefit from by working more closely with the State. This finding is supported by Ouédraogo et al (2011), who showed that, in the main WAEMU conurbations, information asymmetry is a barrier to the formalization of informal firms, especially for IPU's below a certain critical size.

The complexity of procedures is an obstacle to the decision to register informal SMEs. Compared to managers who consider the procedures to be simple, those with complex procedures have less than 6.6% chance of starting the registration process. This negative effect of the complexity of procedures on the registration decision is mainly due to the costs incurred by long delays in registration, the cost of waiting for the registration to become effective and the losses incurred by stopping the activity due to the procedures. This result is attested to by Maldonado (2000), who finds that high registration costs and delays,

the complexity of administrative procedures and the inadequacy of existing regulations to the needs of the informal sector are important factors that discourage microentrepreneurs from legalizing their businesses.

Informal firms that subcontract with formal firms are 8% less likely to register their businesses than those that do not subcontract with formal firms. Indeed, poor management of subcontracting can be an obstacle to small business development. First of all, it can lead to technical and commercial dependence on the activities subcontracted on both sides. Second, it can lead to low investments that generate little innovation for small firms. Finally, the company having subcontracted may have problems with delays in terms of deadlines but also risks of failure of the subcontractor preventing a fine response to customer requirements. All of the above can likely confine micro and small enterprises to informality. The negative effect of sub-contracting on the registration decision seems counter-intuitive because collaboration with large formal enterprises should enable informal entrepreneurs to be informed about the procedures and advantages of formalization and thus be more inclined to register their enterprises.

From a comparative perspective, it is important to note that the location and complexity of the procedures significantly influence both the registration decision and the formalization provision. However, it should be noted that variables such as goodwill, a business plan, and market access have a positive and significant effect on the willingness to formalize, but they have no significant effect on the registration decision. On the other hand, the level of education and corruption, which are variables likely to negatively influence our variables of interest, proved to be insignificant.

CONCLUSION AND IMPLICATIONS

The willingness of a manager to formalize his company would still not rhyme with its registration. In the same way, the factors of formalization differ from those of registration, as shown by the effect of identification variables. This paper tested the effect of identifying variables such as goodwill, business plan, market access and the age of the manager on the willingness to formalize and on the decision to register informal sector enterprises in Côte d'Ivoire. These variables have a significant effect on the willingness to formalize, but not a significant effect on the decision to register.

The econometric estimation of a Probit model with selection made it possible to determine the explanatory factors of MPEI registration. The data used are those of 400 enterprises in the informal sector surveyed as part of the CAPEC/IDRC project. All other things being equal, the location of the MPEI, ignorance and the complexity of the procedures explain both the formalization provision and the decision to register the enterprise. However, location, access to infrastructure, size of the MPEI and outsourcing practices boost MPEI registration. Conversely, information asymmetry and the complexity of procedures remain the main barriers to registration, thus confirming for these factors our hypothesis of a negative effect of the deleterious business environment on both the formalization provision and the MPEI registration decision.

Nevertheless, certain factors that are not significant in explaining the registration such as business assets, the possession of a business plan, the age of the manager and the narrowness of the market are determinants of the willingness to formalize. Thus, public authorities should focus strategies on registration levers. The analysis recommends, firstly, that strategies should be aimed primarily at larger informal firms, then the continuation of tax incentives in favor of regions where economic activities are less intense, in order to improve SME access to basic infrastructure considered as a factor of production, and the dematerialization of procedures. Ultimately, the dematerialization of procedures, the popularization of procedures and the advantages of formalization appear to be the levers that boost both the willingness to formalize and the decision to register.

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APPENDIX 1 : ECONOMETRIC RESULTS OF PROBIT WITH SELECTION

```

Probit model with sample selection Number of obs      = 383
Censored obs           = 110
Uncensored obs         = 273
Wald chi2(13) = 45.25
Log pseudolikelihood = -207.3308 Prob > chi2 = 0.    0000

```

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
-----+-----						
_decision_recording						
NivIns_Man						
Primary	.2054187	.2766724	0.74	0.458	-	.3368493 .7476867
Secondary and higher	.2586904	.2694648	337	-	.2694508	.7868316
Job Name	.0600191	.039385	1.52	0.128	-	.0171741 .1372123
1.sex_manager	-.2041125	.2712409	452	-.735735		.3275099
Local_ent						
San pedro	.5191006	.3039072	1.71	0.088	-	.0765466 1.114748
Daloa	1.252366	.299854	000		.6646627	1.840069
dispo_eauelec						
Disposes	.4467375	.2206158	043	.0143385		.8791365
Ignor_proced						
Ignorant	-1.247393	.3893208	001	-2.010447		-.484338
size_in-between						
size_in-between	2.030281	.7236195	005	.6120125		3.448549
under_contract						
Subcontracted	-.650009	.3208506	043	-1.278865		-.0211534
corruption						
problem	-.1086862	.2846964	-0.38	0.703		.6666808 .4493084
etab_count						
Does not keep records	-.1978844	.2802266	480	-.7471183		.3513496
Perc_proced						
complex	-.4914364	.2884409	-1.70	0.088		-1.05677 .0738974
1.589661	.3883663	-4.09	0.000		-2.350845	-.8284773
-----+-----						

disposi_formal							
NivIns_Man							
Primary	.1035757	.2046975	0.51	0.613	- .2976241	.5047754	
Secondary and higher	-.3241952	.2471849	190	-.8086687	.1602784		
Job_Name	.0230425	.038369	0.60	0.548	- .0521593	.0982443	
Gender_manager	-.2544838	.2024164	-1.26	0.209	-.6512126	.142245	
fond_comm	2.18e-07	1.22e-07	074	-2.14e-08	4.57e-07		
Mode_crea							
business plan	.8056694	.2242217	000	.366203	1.245136		
Local_ent							
San pedro	.5045287	.2395251	2.11	0.035	.0350683	.9739892	
Daloa	.5702863	.2424634	019	.0950667	1.045506		
Age_Manager	.0828733	.0576048	1.44	0.150	- .03003	.1957767	
age_man2	-.001268	.0007512	091	-.0027403	.0002043		
dispo_eauelec							
Available	.0234545	.187049	900	- .3431549	.3900638		
Ignor_proced							
Ignorant	.1234937	.1902559	516	-.2494011	.4963885		
size_in-between size_in-between size_in-between							
Small-entry	.6111382	.5092742	230	- .387021	1.609297		
under_contract							
Subcontracted	-.1888905	.211841	373	-.6040913	.2263102		
corruptioN							
problem	.2896596	.202816	153	- .1078524	.6871716		
etab_count							
.2104602	.2687737	434	- .3163266	.737247			
Perc_proced							
complex	.5736974	.209888	2.73	1	623244	.9850703	
Mar_public							
access problem	2.191889	.2199981	9.96	0.000	1.7607	2.623077	
2.53842	1.095929	-2.32	0.021	-4.686401	-.3904385		
-----+							
/athrho	-.2039595	.322965	-0.63	0.528	-.8369592	.4290402	
-----+							
rho	-.2011775	.3098938			-.6841951	.4045189	

APPENDIX 2: MARGINAL EFFECTS PROBIT WITH SELECTION

		Delta-method				95% Conf. Interval]	
	dy/dx	Std. Err.	z	P> z			
NivIns_Man							
Primary	.0298367	.0409605	0.73	0.466	-	.0504444	.1101177
Secondary and higher	.0384848	.0415862	355		-	.0430226	.1199923
Job_Name	.009032	.0058082	1.56	0.120	-	.0023519	.0204159
1.sex_manager	-.0293364	.0372054	-0.79	0.430	-	.1022578	.0435849
Local_ent							
San pedro	.0593319	.0350779	1.69	0.091	-	.0094194	.1280833
Dalao	.2102648	.0506176	000			.111056	.3094735
dispo_eauelec							
Disposes	.0680615	.0352543	054	-	.0010356	.1371586	
Ignor_proced							
Ignorant	-.1406284	.0324551	-4.33	0.000	-	.2042391	0770176
size_in-between	size_in-between	size_in-between	size_in-between				
Small-entry	.4909096	.1777529	.006		.1425203	.8392989	
under_contract							
Subcontracted	-.0800266	.0324535	.014		-.1436344	-.0164189	
corruptioN							
problem	-.0159817	.0404361	.693		-.095235	.0632716	
etab_count							
Does not keep records	-.0315386	.0469425	502		-.1235443	.0604671	
Perc_proced							
complex	-.0662954	.0355548	-1.86	0.062	-	.1359815	.0033906
fond_comm		0 (omitted)					
Mode_crea							
business plan		0 (omitted)					
Age_Manager		0 (omitted)					
age_man2		0 (omitted)					
Mar_public							
access problem		0 (omitted)					

Note: dy/dx for factor levels is the discrete change from the base level.

APPENDIX 3: THE RESULTS OF THE ECONOMETRIC REGRESSION SIMPLE PROBIT

Probit regression		Number of obs	=	392			
Log pseudolikelihood = -140.89515		Wald chi2(18)	=	119.95			
		Prob > chi2 = 0	=	.0000			
		Pseudo R2	=	0.3944			

	disposi_formal	Coef.	Robust Std. Er	r. z	P> z	[95% Conf. Interval]

	NivIns_Man						
Primary	.0948553	.2004719	0.47	0.636	-	.2980625	.4877731
Secondary and higher	-.3047095	.2402093	205			-.7755111	.1660921
Job_Name	.0198714	.038625	0.51			0.607	-.0558323
1.sex_manager	-.2786813	.1935706	-1.44			0.150	-.6580727
fond_comm	1.88e-07	1.12e-07	0.94			-3.18e-08	4.08e-07
Mode_crea							
business_plan	.7747769	.2158607	3.59			0.000	.3516976
Local_ent							
San pedro	.4193821	.2360707	1.78	0.076		-	.043308
Dalao	.4381404	.2354749	0.63			-	.023382
Age_Manager	.0933692	.0566225	1.65			0.099	-.0176088
age_man2	-.0014358	.0007428	0.53			-	.0028917
dispo_eauelec							
Disposes	.0839105	.1812327	643			-	.2712991
Ignor_proced							
Ignorant	.0902773	.1837228	623			-	.2698127
size_in-between	size_in-between	size_in-between					
Small-entry	.5413873	.507266	286			-	.4528357
under_contract							
Subcontracted	-.1480757	.2067947	474			-	.5533859
corruptioN							
problem	.1987042	.1923826	302			-	.1783587
etab_count							
.0394481	.2622125	0.15	-.4744789	.5533751			
Perc_proced							
complex	.7543649	.2106187	0.00				.3415599
Mar_public							
access problem	2.130078	.2120142	10.05			0.000	1.714537
	2.409263	1.064624	-2.26	0.024			-4.495889
							2.545618
							-.322638

APPENDIX 4: MARGINAL EFFECTS SINGLE PROBIT

		Delta-method						
	dy/dx	Std. Err.	z	P> z	[95% Conf. Interval]		
	NivIns_Man							
Primary	.0186996	.0393872	0.47	0.635	-	.058498	.0958972	
	Secondary and higher	-.0629233	.049983	208	-	.1608881	.0350415	
	Job_Name	.0040086	.0077688	0.52	0.606	-	.011218	.0192352
	Gender_manager	-.057464	.0406769	-1.41	0.158	-	.1371892	.0222613
	fond_comm	3.80e-08	2.27e-08	094	-6.48e-09	-	8.24e-08	
	Mode_crea							
	business plan	.1514552	.0383845	000	.0762229	-	.2266875	
	Local_ent							
San pedro	.0853641	.0466911	1.83	0.068	-	.0061487	.1768768	
	Daloo	.0889485	.0459762	053	-	.0011632	.1790603	
	Age_Manager	.0188351	.0110719	1.70	0.089	-	.0028655	.0405357
	age_man2	-.0002896	.0001443	045	-	.0005725	-6.81e-06	
	dispo_eauelec							
Disposes	.0168965	.0365601	644	-	.0547599	-	.088553	
	Ignor_proced							
	Ignoring	.0181501	.0369803	624	-	.0543301	.0906302	
	size_in-between							
	Small-entry	.1012065	.0860749	.240	-	.0674973	.2699102	
	under_contract							
	Subcontracted	-.030215	.0427147	479	-	.1139343	.0535042	
	corruptioN							
	problem	.0395876	.0375333	292	-	.0339763	.1131514	
	etab_count							
.0079877	.0532186	881	-	.0963189	.1122943			
	Perc_proced							
	complex	.1393337	.0341845	000	.0723334	-	.206334	
	Mar_public							
	access problem	.5149907	.0375406	13.72	0.000	.4414125	.588569	

Note: dy/dx for factor levels is the discrete change from the base level.