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is informality contagious? An analysis of the effects of social conformism on the formalization of small business

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# **Abstract**

This study seeks to econometrically estimate the impact of social conformism on the will of managers to register their businesses. The data used is from the Second Employment and Informal Sector Survey (EESI 2) carried out in 2010 on 3560 micro and small Cameroonian businesses. Using an instrumental variable probit model, we find a positive and significant endogenous effect. However, we find that the social pressure which brings businesses to conformism acts only beyond a given threshold.

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#### 1. Introduction

The informal functioning of businesses, and hence the non-payment of taxes, raises serious problems for policymakers. First, it leads to poverty as the employees of an informal enterprise are excluded from the social security system. Then, the loss of revenue in terms of tax revenues that it causes can force the state to reduce social spending, and therefore reduce the well-being of populations. Finally, informal operation can promote "free rider" behavior among formal operators who believe that informal enterprises are favored in terms of competition.

While it is important for policymakers to assess the persistence of high levels of informality, it is also essential to understand the factors that determine the choice not to register a business with government agencies. Since the late 1980s, it has been common practice to present informality as a form of tax evasion. Indeed, according to H. de Soto (1989), the microentrepreneur is fully informed of the costs and advantages that informality gives him compared to formal functioning. The latter then calculates the expected net profit provided by the formal sector. If it is positive, it logically chooses to comply with state rules and vice versa. This presentation of the choice of informal functioning is similar to the traditional models of tax evasion that had been developed by Allingham and Sandmo (1972) and Yitzhaki (1974). Numerous works have shown that the decision to choose informal operations depended in particular on the lack of fiscal control and sanctions, the excessive cost of taxes, and the individual characteristics of entrepreneurs (de Soto, 1989; Djankov et al. 2004; Dabla-Norris et al. 2008; Webb et al. 2009; Welter et al. 2015; Webb et al. 2014; De Castro et al. 2014; Williams and Horodnic, 2014; Bakehe, 2016; Williams et al. 2016; Al-Mataani et al. 2017). The results of this work have led to the formulation of policies to encourage the registration of enterprises in the informal sector.

However, an important limit of these studies is that they do not take into account the effects of the social norms on the decision to operate in informality. The objective of this study is to fill this gap by estimating the impact of the social network<sup>1</sup> on the will of an entrepreneur to register his business in Cameroon<sup>2</sup>, a country where the majority of micro and small businesses operate in the informal sector<sup>3</sup>. The idea here is that the choice to operate in the informal sector by the peers of an entrepreneur can encourage him to do the same. This imitation behaviour is manifested by a reduction of the social stigma associated with a deviant behaviour. Moreover, the fact that certain entrepreneurs do not pay taxes can encourage their followers to adopt a similar behaviour in order to remain competitive. Recent studies show that social networks and peer effects are important determinants of individual behaviour in various contexts. Theoretical and empirical studies show that many individual decisions as varied as participation in the job market, school attendance, drug taking, the adoption of new technologies, choice of religion, tax evasion, etc. are positively correlated with the behaviour of the social group to which the

<sup>1</sup> The effects of social interactions manifest themselves when the actions or characteristics of a reference group influence the actions of an individual. This reference group depends on the context: family, neighbors, friends, co-authors, etc. Many social scientists argue that social interactions play an important role in determining behavioral and economic outcomes (see for example Coleman, 1990; Crane, 1991; Becker, 1996). A social multiplier that results from peer effects is therefore very important in assessing the effects of an economic policy. <sup>2</sup> Fambeu and Mbondo (2020) were the first to analyze this phenomenon in Cameroon. However, their study did not take into account the non-linearity of the relationship.

<sup>&</sup>lt;sup>3</sup> According to the National Institute of Statistics (INS) of Cameroon, close to 9 on 10 informal production units do not have a taxpayer number, are not registered in the trade register, do not possess professional cards and are not affiliated to the National Social Insurance Fund. This sector represents 37.3% of total production in Cameroon (INS, 2011). This is comparable to the African average where this sector is estimated at more than 40% of the continent's GDP (Schneider, 2007).

individual belongs (Glaeser et *al.* [1996]; Epple and Romano [1998]; Lazear [2001]; Fortin et *al.* [2007]; Patacchini and Zenou [2016]; Jackson et *al.* [2017]; Eguia [2017]). The size and the underlying mechanisms of these social interaction effects have important consequences for public policies. Indeed, in developing countries where governments have very limited resources, understanding endogenous effects helps tackle the informal economy by only initially affecting a small number of businesses.

To address questions on the peer effects on the decision to operate informally, we use data collected in 2010 by the National Institute of Statistics (INS) on a sample of 3560 Cameroonian micro and small businesses. To fully measure the effect of social conformism on our indicator of informality, it is necessary to consider the endogeneity of the indicator of the social network. For this, we resort to regressions with instrumental variables. Our results show that when surrounded by formal peers' increases the probability of going formal and paying taxes. However, we show that the social pressure which pushes businesses to conformism acts only beyond a certain threshold. This is important in terms of public policies aimed at increasing the rate of formality of small businesses in Cameroon. The existence of a social multiplier<sup>4</sup> (Glaeser et *al.* [2003]) supposes that any policy will be amplified thanks to social interaction.

The rest of this study is organized as follows: section 2 presents the data and descriptive statistics. Section 3 presents the methodology and the regression results. Lastly, section 4 concludes the study.

## 2. Data and descriptive statistics

#### 2.1. Data

The data used is from the Second Employment and Informal Sector Survey (EESI 2) carried out in 2010 by National Institutes of Statistics of Cameroon. Within the framework of the EESI survey, the informal sector is defined as "the set of production units without a taxpayer number and/or who do not keep formal written accounts within the framework of the OHADA accounting system". The criterion of written accounts is taken into account in order not to exclude from the field of investigation production units which any reasons have a taxpayer number without but cannot be considered as formal units (from the point of view of their mode of organisation and production). Also, it enables us to take into account the informal sector in national income accounting (INS [2011]).

A paramount question in the analysis of the effects of social interactions is the definition of reference groups (Bellemare et al. [2012]). Since there exists no rigorous method of defining them (unless we have subjective information on the "peers" of each business which is not the case here), we use two variables: the sector of activity and the geographical distance between the businesses. The sector of activity is defined in accordance with the nomenclature of activities of Cameroon. We thus have 10 branches of industry corresponding to the agro-food, restoration, wholesale, retail trade, transport, clothing, building and construction, repairs, other industries, and other services. As for the geographical proximity, we have 12 regions: the 10 regions of Cameroon and the two large metropolis (Douala and Yaoundé) which, within the framework of the EESI survey are each considered as a region.

Our dependant variable is the desire of the entrepreneurs to register their businesses with the government offices. This variable is obtained going from the answer to the question: "Are you

<sup>4</sup>The social multiplier is given by the ratio between the effect of a common shock affecting the behaviours of economic agents in the presence of peer effects and the effect of this shock in the absence of peer effects (Glaeser et *al.* [1996]).

ready to register your production unit in the administrative offices?". This question is addressed to all the heads of the production units of our sample, including those whose IPUs are already registered. This variable takes two values: 1 if the production unit is already registered and 0 if not. To control the robustness of our results related to the will of the entrepreneurs to conform to official rules, we also estimate the willingness to pay taxes. This variable is obtained going from the answer to the question: "Are you ready to pay taxes on your activity?". This variable also takes two values: 1 if the production unit already pays taxes and 0 if not.

# 2.2. Some descriptive statistics

Table 2 shows that a relative majority of the managers of IPUs (46.3%) are neither ready to pay taxes on their activity nor ready to register their production units with the government services. However, 18.5% and 24.6% of the managers of IPUs declare being ready to record their business with the administration and pay taxes respectively. Also, 12.9% are simultaneously ready to get their businesses registered and pay taxes on their activity.

Table 2: Position of the IPU on their integration in the government network (in %)

Is ready to register the production unit with the administration	Is ready to pay taxes on the activity			Whole sample
	Already pays	Yes	No	
Yes	3,8	12,9	1,8	18,5
No	4,1	8,3	46,3	58,7
Don't know	2,4	3,3	9,2	14,9
The IPU is already registered	7,7	0,1	0,2	8,0
Whole sample	17,9	24,6	57,5	100

Source: EESI 2, Phase 2, INS (2011)

Moreover, it should be noted that 42.5% of the managers of IPUs pay or are ready to pay taxes on their activity, as against 26.5% for the registration of the IPU with in government services (Table 2). This difference can be explained by the repressive behaviour in the event of a non-payment of taxes (INS [2011]).

## 3. Methodology and results

#### 3.1. Econometric model

The effects of peers on the integration of IPUs in the state network is analysed using two probit models. The dependent variable in the first model is a discrete variable with two values: 1 if the IPU is registered and 0 if not. The dependent variable in the second model also takes two values: 1 if the manager of the IPU pays taxes on its activity and 0 if not.

The dependant variables being binary, we adopt the following specification:

$$Y_{i} = \begin{cases} 0 & \text{if } Y_{i}^{*} \leq 0 \\ 1 & \text{if } Y_{i}^{*} > 0 \end{cases}$$
 (1)

According to Manski [1993], it is important to distinguish the *endogenous peer effects* from the *exogenous peer effects* or *contextual effects* and *correlated effects*. The endogenous peer effects describe the effect of the average informal behaviour businesses of a group on the decision not

to go formal of a manager of this group. As mentioned in the introduction, this effect can be caused by effects of imitation or social conformity, or by the transmission of information on less expensive methods of functioning informally. It can also be a result of a competition effect because the informality of competitors can give them a financial advantage. The endogenous effect is the only phenomenon that explains the presence of a social multiplier.

The contextual peer effects describe the effects of the average characteristics of the managers of a group on the decision by a manager of this group not to formalise his business. It can be a question, for example, of the effect of the average seniority of the businesses of a group, as well as the sex or average age of the managers. Unlike to the behaviour of the managers, their characteristics are exogenous and do not involve multiplier effects.

The correlated effects show that because of auto-selection in the groups, the managers having similar characteristics (e.g. who do not wish to formalise the business) tend to settle in the same areas. In addition, there can be effects of shocks common to the groups. For example, it can be easier to function in an informal manner in certain areas because of the interregional differences in the levels of control. Correlated effects are therefore not related to the peer effects and do not generate a social multiplier.

These three effects are presented in a structural model which we estimate:

$$Y_{ri} = \alpha_r + \gamma X_{ri} + \beta \bar{Y}_{r-i} + \delta \bar{X}_{r-i} + \epsilon_{ri}$$
 (2)

Where  $Y_{ri}$  is the latent variable of the formalisation of business i of group r,  $x_{ri}$  is the vector formed from the individual characteristics,  $\bar{Y}_{r-i}$  and  $\bar{X}_{r-i}$ <sup>5</sup> represent the averages of these variables in the group r, and  $\alpha_r$  captures the non observable characteristics common to the group r (fixed group effect or correlated effects). These effects are potentially correlated with the individual characteristics of the business  $(X_{ri})$  and the observable characteristics of the group  $(\bar{X}_{r-i})$ . Lastly,  $\epsilon_{ri}$  is a random term capturing all the other unobservable factors determining the decision of formalisation of business i of group r.

The problem of endogeneity of the main dependent variable arises. In fact, one can imagine that there exist unobservable characteristics which affect at the same time the behaviour of a business and those of the peers that surround it. To correct this problem, we adopt a probit model with restrictions of exclusion.

The approach by restrictions of exclusion consists in imposing restrictions of exclusion on the contextual effects to identify the endogenous effect. This approach described in the study by Graham and Hahn [2005] has been used on several occasions in the literature on peer effects (see for example Evans et *al.* [1992]; Bellemare et *al.* [2012]). The main advantage of this approach is that the contextual variables can be used as instruments. This makes it possible to circumvent the major difficulty of finding instruments which explain why a business has a neighbourhood with a given behaviour but does not explain the behaviour of the business itself. Let us rewrite the model in the following form:

$$Y_{ri} = \gamma X_{ri} + \beta \bar{Y}_{r-i} + \delta \bar{X}_{r-i} + \mu_{ri} \tag{3}$$

$$\mu_{ri} = \alpha_r + \epsilon_{ri} \tag{4}$$

Where  $\bar{Y}_{r-i}$  and  $\bar{X}_{r-i}$  correspond to the averages of the variables in the group r excluding individual i. Recall that  $\bar{Y}_{r-i}$  is an endogenous variable, i.e. which is correlated with  $\mu_{ri}$ . The

 $<sup>^{5}</sup>$  r-i shows that the business considered is excluded from its reference group r.

estimation consists in using  $\bar{X}_{r-i}$  as instrument for  $\bar{Y}_{r-i}$ . This instrument is supposed to be correlated with the endogenous variable but not the error term. The absence of correlation with the term of error supposes that  $\delta=0$ . This means that there are no contextual effects (exclusion restrictions in the structural model). Under this assumption,  $\bar{X}_{r-i}$  will be a valid instrument for  $\bar{Y}_{r-i}$ . The condition of correlation with the endogenous variable will be met in the case of  $\bar{X}_{r-i}$  if  $\gamma \neq 0$  (i.e., if there is a presence of individual effects).

Since the main aim of this study is to evaluate the effects of peers on the formalisation of businesses, we must seek an appropriate measure of the group of peers. It is interesting to distinguish between two different groups. Firstly, we analyse the behaviour of the set of entrepreneurs in the region considered. Thus, the sample is composed of 3560 businesses classified in 12 groups. In this case, for the businesses operating in region g, the group of peers integrated in the network of the state is defined by taking the average of the registered businesses of the region, excluding individual i. Thus, we have:

$$\bar{Y}_{ig} = \frac{1}{N_g - 1} \sum_{\substack{j=1 \ j \neq i}}^{N_g} Y_{jg}$$
 (5)

Where  $N_g$  represents the set of IPUs of the region g. Y represents the dependant variable (willingness to register the business or to pay taxes).

Secondly, we restrict the analysis by focusing on the behaviour of the entrepreneurs in the same branch of industry in a region. Thus, we obtain 10\*12 = 120 groups. However, we exclude 3 groups for which only one business is observed. The final sample is thus composed of 3557 businesses distributed in 117 groups. In this case, for business i of the branch of industry s and operating in region g, the group of peers integrated in the network of the state is defined by taking the average of the businesses of sector s of the region g registered in the state network, excluding individual i. We thus have:

$$\bar{Y}_{isg} = \frac{1}{N_{sg} - 1} \sum_{\substack{j=1 \ j \neq i}}^{N_{sg}} Y_{jsg}$$
 (6)

Where  $N_q$  represents the set of IPUs of sector s operating in region g.

This distinction between the two different groups enables us to measure the effect of the group of direct peers and more "distant" peers in terms of economic activity. In fact, we can reasonably suppose that the behaviour of entrepreneurs, even in different branches of industry, can affect individual decisions.

Besides these explanatory variables measuring the peer effects, we retain exogenous variables such as: the size of the production unit, its capital, its seniority; the age of the entrepreneur, his sex, his level of education and the type of training followed; a variable indicating if the production unit is subject to control, i.e. if the business functions in the street, the market or permanent buildings; a variable indicating access to the public goods like electricity, water, telephone; a variable indicating if the production unit is in one of the two metropolis (Yaoundé and Douala); a variable indicating if the line of business is related to the administrative organs (council, division, sub-division...) and a binary variable showing the perception of the

entrepreneur as regards the importance to get his business registered. The variables age and seniority are measured in years.

#### 3.2. Results

In order to highlight the effects of peers on the willingness to formalise businesses, two instrumental variable probit models are used. The first model has as dependent variable the willingness to register the business and second has as dependent variable the willingness to pay taxes. Table 5 presents the estimated marginal effects for the two models.

Note that after several informal tests, we chose not to impose a restriction of exclusion on two explanatory variables: the variable indicating if the production unit is subject to control and the variable indicating access to public goods. In fact, these tests suggest that the contextual effects of these variables are not-null<sup>6</sup>.

Table 5: Estimation of the effects of peers on the informality of businesses

	Registration of the IPU		Payment of taxes	
	Reference	Reference	Reference	Reference
	group :	group :	group :	group :
	region	region*sector	region	region*sector
Endogenous effect	0.0772**	0.4210***	0.2828**	0.4627***
	(0.028)	(0.033)	(0.110)	(0.031)
Own characteristics				
Male	0.0836***	0.0377***	0.1052***	0.0505***
	(0.010)	(0.010)	(0.012)	(0.011)
Age of the manager	0.0066**	0.0052**	0.0107***	0.0095***
	(0.002)	(0.002)	(0.003)	(0.003)
Age squared of the	-0.0001**	-0.0001**	-0.0001***	-0.0001**
manager	(0.000)	(0.000)	(0.000)	(0.000)
Level of education of	0.0051*	0.0092**	-0.0001	0.0054
the manager	(0.003)	(0.003)	(0.004)	(0.004)
Professional training	0.0142**	0.0029*	0.0080*	0.0062
	(0.010)	(0.009)	(0.012)	(0.011)
Age of the business	2.28e-06	0.0006	-0.0001	-0.0020
	(0.000)	(0.001)	(0.000)	(0.002)
Size (number of	0.0003*	0.0031	-0.0026	0.0017*
employees)	(0.003)	(0.002)	(0.004)	(0.003)
Capital	-6.69e-07	7.38e-08	-7.6e-06	-1.38e-06
	(0.000)	(0.000)	(0.000)	(0.000)
Site subject to	0.0315**	0.0179*	0.0052	0.0481***
control	(0.012)	(0.011)	(0.013)	(0.012)
Access to the basic	0.1408***	0.1302***	0.1759***	0.1732***
public services	(0.012)	(0.010)	(0.015)	(0.013)
Importance to get his	0.0515***	0.0442***	0.0470****	0.0441***
business registered	(0.010)	(0.009)	(0.011)	(0.010)
related to the	0.1352***	0.0855***	0.2427***	0.1767***
administrative organs	(0.010)	(0.010)	(0.010)	(0.010)

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<sup>&</sup>lt;sup>6</sup>The tests are carried out using the method of Bellemare et al. (2012). In fact, we impose an exclusion restriction on a single variable. If the hypothesis is not rejected, this variable can serve as an instrumental variable to estimate the model. We then examine the contextual effects obtained. If one of them is significantly different from zero, this suggests that the hypothesis of exclusion restriction is not appropriate for the variable. We repeat this test for many choices of instruments. It should however be noted that these tests are not rigorous since it is impossible to test the exact identification of the model.

Metropolis	0.0326	0.0016	0.0100	0.0146
	(0.010)	(0.009)	(0.011)	(0.011)
Observations	3560	3557	3560	3557
Log Likelihood	13025.25	2153.901	14469.771	2310.156

Source: ESSI 2. Calculations of the authors.

*Note*: Results of the estimation of the marginal effects of the probit model with instrumental variables. Standard error are in brackets. \*: significant at the 10% level; \*\*: significant at the 5% level; \*\*\*: significant at the 1% level.

The results show that the estimated parameters support the hypothesis of social conformism on the behaviour of entrepreneurs. The endogenous effect of the willingness to register the business is significant, whatever the group selected. It is the same for the willingness to pay taxes. These results show that by omitting to consider the peer effects, the real effect of the various public policies to facilitate the formalisation of production units is likely to be underestimated. These results confirm the role of social norms individual behaviour already highlighted by several authors (see for example Glaeser et *al.* [1996]; Patacchini and Zenou [2016]; Jackson et *al.* [2017]; Eguia [2017]; Patacchini et *al.* [2017], Fambeu and Mbondo, 2020).

Concerning the other explanatory variables, the results of the estimations confirm those of most empirical studies dealing with the determinants of informality. Whatever the model, we find that informal functioning is more observed among entrepreneurs of extreme ages. This result had already been found by Williams and Martinez [2014] using data from a developed country (United Kingdom) and Bakehe [2016] using data from a developing country (Cameroon). These authors explain this result by the low level of formal employment and alternative means of social support for the younger and older age groups respectively. All other things being equal, male entrepreneurs are more likely to formalize their businesses. This result, which is in line with those already demonstrated in several countries (see for example Mumtaz and Saleem [2010], Williams and Gurtoo [2012]; Ali [2014]; Bakehe [2016]), can be explained by the the fact that contact of women with the administration is less frequent because of the place in the home traditionally attributed to women. Unlike Burqi and Afaqi [1996] who find from Pakistani data that the most educated entrepreneurs are not more inclined to comply with state rules, our results show that education has a positive influence on choice. Formal functioning in favor of the most educated and those who have received vocational training. More educated leaders have the intellectual capacity to analyze economic information and infer the utility of formal functioning at the individual and collective level (McPherson and Liedholm [1996]). The dummy variable indicating whether the entrepreneur has taken vocational training also refers to the level of accumulated human capital, in addition to the initial training. This type of training would provide additional knowledge on the pros and cons of formal functioning, and improve the level of understanding of the legislation.

Access to public goods (water, electricity and telephone) and the fact that the production unit is in contact with the administrative bodies (prefecture, town hall, sub-prefecture, etc.) have a positive effect on the will to register the business and pay taxes. The same is true for business leaders who consider that there is an interest in registering the business and whose production units are subject to control, that is to say, operating in the street, at the market or in permanent premises. These results confirm those of Ratokomanana [2009] who indicated that these infrastructures are considered by these operators as consideration or particular advantage in their favor due to their registration with the public services.

The size of the business has a significantly positive effect on tax payment. As shown by Ratokomanana (2009), this variable highlights the influence of the degree of "visibility" of the company. On the other hand, the level of capital and the seniority of the production unit have no significant effect on the willingness to comply with the rules governing the functioning of companies.

There is no significant difference between the companies established in the two big cities (Douala and Yaoundé) and the others. This result is counter-intuitive because we would have expected that the companies of the two metropolises would be those where the desire to register is greater and where taxes are paid more often, due to the greater presence of regulatory bodies. State supervision. It could be that these cities are so large that administration coverage is ultimately poor; or that part of the taxes go into the non-regulatory (Backiny-Yetna [2009]).

Since most promoters who do not register their IPU cite as a reason the non-compulsory nature of registration (45%). Initiatives to increase the formality rate of IPUs also include information on the compulsory nature of formalization.

## Threshold and non-linearity effects

The preceding results have shown the effects of peers on the willingness to formalise the small business. We now ask ourselves if this relationship is linear or not. According to certain authors, there exists a nonlinear dimension of the effects of peers on the behaviour of individuals (see for example Issehnane and Sari [2013]; Galsteral [2015]; Solignac and To [2016]). The extent of the effect exerted by the behaviour of social groups is likely to become effective only if the frequency of this behaviour reaches a critical density in the reference area. To be actually adopted, this behaviour must be sufficiently common around the individual. It is thus possible that the effect of the neighbourhood is effective only if the level of formality is sufficiently high.

In order to test this hypothesis, we release the linear functional form of the effect of the neighbourhood to replace it by a spline function that is linear piecewise to define the thresholds which make it possible to create sub-groups. These proportions can thus have different marginal effects on the probability of entrepreneurs to register their businesses or pay taxes, according to whether the IPU is located in a neighbourhood with a high or low level of informality. We study what happens in the 20%, 30% and 40% informal groups the 20%, 30% and 40% of the formal groups. This enables us to check if we can observe a positive and/or negative effect. This also enables us to check if the entrepreneurs are more sensitive to a rather deviating behaviour or behaviour in conformity with the law. The synthesis of the various estimates is presented in tables 6 and  $7^7$ . The details of the marginal effects for the set of variables of the estimated instrumental variables probit model for one of the thresholds selected (20% of the groups of most formal peers) are available from the authors upon request.

Table 6. Effect of conformism on formalisation (test of different thresholds for the least formal groups)

	Registration of the IPU	Payment of taxes
20 per cent	0.3297	0.1962**
	(0.330)	(0.105)
30 per cent	0.1600**	0.3020***
	(0.054)	(0.108)
40 per cent	0.2716**	0.4217***

<sup>&</sup>lt;sup>7</sup> The calculations are done supposing that businesses of the same region belong to the same sector.

(0.109	9) (0.091)
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Source: ESSI 2. Calculations of the author.

*Note*: Results of the estimation of the marginal effects of the probit model with instrumental variables. Standard error are in brackets. \*: significant at the 10% level; \*\*: significant at the 5% level; \*\*\*: significant at the 1% level.

Concerning the payment of taxes, we find a positive and significant social multiplier which is lower when we are located in the 20% of the group of least formal peers than when we are located in the 30% of this group. In the same manner, this multiplier is lower for the 30% of the group of informal peers than for the 50% of this group. The fact of increasing the sample of the group of informal peers tends to improve the effect of the neighbourhood on the formalisation of businesses. Concerning the registration of businesses, our results show a significant effect of the neighbourhood only from the 30% of the groups of informal peers. This shows that the social multiplier does not have an effect in the areas where the rate of registration of businesses is sufficiently low.

Table 7. Effects of conformism on formalisation (tests of different thresholds for the most formal groups)

	Registration of the IPU	Payment of taxes
20 per cent	0.6090***	0.7479***
	(0.061)	(0.103)
30 per cent	0.4744***	0.7231***
	(0.046)	(0.071)
40 per cent	0.5392***	0.6526***
	(0.044)	(0.056)

Source: ESSI 2. Calculations of the author.

*Note*: Results of the estimation of the marginal effects of the probit model with instrumental variables. Standard error are in brackets. \*: significant at the 10% level; \*\*: significant at the 5% level; \*\*\*: significant at the 1% level.

The various thresholds tested for the groups of the most formal peers confirm the trend found in the groups of the least formal peers. In fact, the results show that whatever the indicator of formalisation retained, the social multiplier is larger as the group of peers grows more formal. These results show that the entrepreneurs are more sensitive to behaviour in conformity with the law rather than to deviating behaviour.

### 4. Conclusion

Informality is the most common status of small businesses in Cameroon. Its negative effect on the capacity of the government to raise income, and consequently to provide adequate public services has led to several studies on the determinants of informality. However, almost all these studies do not consider the effect of social norms on the decision of the entrepreneurs to register their businesses. The questioning of the *homo-economicus* hypothesis by various social sciences offers innovative prospects that make it possible to supplement analyses concerning the determinants of the informality of small businesses.

Using data from the second Employment and Informal Sector Survey (EESI 2), we estimate the effect of peers on the willingness to register informal production units. The endogenous effect of peers measures the effect of the decision of the peers of an entrepreneur to register their

businesses on the decision of this entrepreneur. This effect can come from behaviour of social conformity, transmission of information, or practical advice. The results of the instrument variable probit models with variables are in support of the hypothesis according to which a tendency to social conformism plays a considerable part in the dynamics which underlies the decision of entrepreneurs in the choice of the status of their businesses. However, if the social multiplier is significant for the various thresholds with regard to the payment of taxes, it is observed that it is not significant in areas where the level of informality is sufficiently high. Thus, while suggesting the importance of the targeting of public policies to increase the formalisation of IPUs, this result shows that the regions and sectors of activity with a high rate of informality would not benefit from this multiplier effect. The implementation of a policy to reduce informality, focused on the key players in the networks, would lead to a drastic reduction in costs by taking advantage of the multiplier effects. Liu et al., (2015) show that policies targeting key players could have significantly reduced the total cost of the Obama-Romney US presidential election, which recorded one of the largest campaign expenses of the United States.

The estimated effects of the individual characteristics of the entrepreneurs and production units on formalisation are generally in line with the predictions of traditional economic theory.

## References

ALLINGHAM G. & SANDMO A. (1972), "Income tax evasion: A theoretical analysis", *Journal of Public Economics*, n°1, 323-338.

BACKINY-YETNA P. (2009), « Secteur informel, fiscalité et équité : l'exemple du Cameroun », *The African Statistical Journal*, 9, 315- 376.

BAKEHE N.P. (2016), « Informalité et productivité des très petites et petites entreprises au Cameroun », *Innovations, Revue d'économie et de management de l'innovation*, n°51, 105-124. BECKER G. (1996), "Accounting for Tastes", Cambridge, MA: Harvard University Press.

BELLEMARE C., FORTIN B., JOUBERT N. & MARCHAND S. (2012), « Effets de pairs et fraude sociale : une analyse économétrique sur données françaises », *Cahier Scientifique CIRANO*, s-33.

BENHASSINE N., MCKENZIE D., POULIQUEN V. & SANTINI M. (2016), "Can Enhancing the Benefits of Formalization Induce Informal Firms to Become Formal? Experimental Evidence from Benin", *World Bank Policy Research Working Paper* 7900.

BIT. (2017), « Étude sur la migration de l'économie informelle vers l'économie formelle : proposition de stratégie pour le Groupement Inter-Patronal du Cameroun », Bureau international du travail, Genève.

COLEMAN J S. (1990) "Foundations of Social Theory", Cambridge, MA: Harvard University Press.

CRANE J. (1991). "The Epidemic Theory of Ghettos and Neighborhood Effects on Dropping Out and Teenage Childbearing," *American Journal of Sociology*, 96(5), 1226–1259.

DABLA-NORRIS E., GRADSTEIN M. & INCHAUSTE G. (2008), "What Causes Firms to Hide Output? The Determinant of Informality", *Journal of Development Economics*, n°(1-2), 1–27.

DE CASTRO J.O., KHAVUL S. & BRUTON G. D. (2014), « Shades of grey: How do informal firms navigate between macro and meso institutional environments?", *Strategic Entrepreneurship Journal*, n°8, 75–94.

DE SOTO H. (1989), "The Other Path: The Invisible Revolution in the Third World", New York: Harper and Row.

DJANKOV S., MIGUEL E., QIAN Y., ROLAND G. & ZHURAVSKAYA E. (2004), Who are Russia's entrepreneurs?, *Journal of the European Economic Association*, n°(2-3), 1-11.

- EGUIA J.X. (2017), "Discrimination and Assimilation at School", *Journal of Public Economics*, 156, 48–58.
- EPPLE D. & ROMANO R. (1998), « Competition Between Private and Public Schools, Vouchers and Peer Group Effects », *American Economics Review*, 88(1), 33-62.
- EVANS W.N., OATES W.E. & SCHWAB R.M. (1992), "Measuring Peer Group Effects: A Study of Teenage Behavior", *Journal of Political Economy*, 100(5), 966–91.
- FAMBEU A.H. & MBONDO G.D. (2020), Endogenous peer effects and level of informality: some evidence from micro and small firms in Cameroon, *Review of Social Economy*, doi.org/10.1080/00346764.2020.1769166
- FORTIN, B., LACROIX G. & VILLEVAL M.C. (2007), "Tax Evasion and Social Interactions", *Journal of Public Economics*, 91(11-12), 2089–2112.
- GALSTER G., ANDERSSON R. & MUSTERD S. (2015), « Are Males' Incomes Influenced by the Income Mix of their Male Neighbors? Explorations into Nonlinear and Threshold Effects in Stockholm », *Housing Studies*, 30 (2), 315-343.
- GLAESER E.L., SACERDOTE B. & SCHEINKMAN J.A. (1996), "Crime and Social Interactions," *The Quarterly Journal of Economics*, 111, 507–48.
- GLAESER E. L., SACERDOTE B. & SCHEINKMAN J.A (2003) "The Social Multiplier," *Journal of the European Economic Association*, 1, 345–353.
- GRAHAM B.S. & HAHN J. (2005) "Identification and Estimation of the Linear-in-means Model of Social Interactions", *Economics Letters*, 88(1), 1–6.
- INS. (2011). « Enquête sur l'Emploi et le Secteur Informel. Rapport de synthèse », Novembre 2011.
- ISSEHNANE S. & SARI F. (2013), « Effets contextuels et effets de pairs. Quelles conséquences sur la réussite scolaire ? », Revue économique, 64(5), 775-804.
- HART K. (1973), "Informal Income Opportunities and Urban Employment in Ghana", *The Journal of Modern African Studies*, 11 (1), 61-89.
- JACKSON M.O., ROGERS B. W. & ZENOU Y. (2017), "The economic consequences of social network structure", *Journal of Economic Literature*, 55(1), 49-95.
- LAZEAR E. (2001), « Education Production », Quarterly Journal of Economics, 116(3), 777-803.
- LIU X., PATACCHINI E., ZENOU Y. & LEEK L.F. (2015), "Who is the key player? A network analysis of juvenile delinquency". *Unpublished manuscript*, Stockholm University.
- MANSKI C (1993), "Identification and Endogenous Social Effects: The Reflection Problem", *Review of Economic Studies*, 60(3), 531-542.
- MCPHERSON M.A. & LIEDHOLM C. (1996), "Determinants of Small and Micro Enterprise Registration, Results from Surveys in Niger and Swaziland", *World development*, 24(10), 1611 1619
- PATACCHINI E. & ZENOU Y. (2016), "Social networks and parental behavior in the intergenerational transmission of religion", *Quantitative Economics*, 7, 969-995.
- PATACCHINI E., RAINONE E. & ZENOU Y. (2017), "Heterogeneous Peer Effects in Education", *Journal of Economic Behavior & Organization*, 134, 190–227.
- RAKOTOMANANA F.H. (2009), « Les déterminants de la volonté de faire enregistrer son entreprise imformelle à Madagarcar, quelles implications sur la stratégie des administrations publiques ? », *STATECO*, n°104, 75-89.
- SCHNEIDER F. & ENSTE D. (2002), « Shadow Economies: Size, Causes et Consequences », *Journal of Economic Literature*, 38(1), 77–114.
- SCHNEIDER, F. (2007), "Shadow Economies and Corruption All Over the World: New Estimates for 145 Countries" Economics: *The Open-Access, Open-Assessment E-Journal*, Volume 1.

SOLIGNAC M. & TO M. (2016), « Le niveau de chômage dans le voisinage affecte-t-il l'entrée sur le marché du travail ? », *Revue économique*, 67(3), 495-524.

STEEL, W.F. & SNODGRASS D. (2008), « World Bank Region Analysis on the Informal Economy », In *Raising Productivity and Reducing Risk of Household Enterprises*, Annex 1, « Diagnostic Methodology Framework », Washington, DC: Banque mondiale.

WILLIAMS C.C. & HORODNIC I.A. (2014), "An institutional theory of the informal economy: some lessons from the United Kingdom", *International Journal of Social Economics*, n°7, p. 722-738.

Williams C.C. & Martinez A. (2014), "Entrepreneurship in the informal economy: A product of too much or too little state intervention?". *The International Journal of Entrepreneurship and Innovation*, 15(4), p. 227–237.

WILLIAMS C.C., SHAHID M. & MARTINEZ-PEREZ A. (2016), "Determinants of the level of informality of informal micro-enterprises: Some evidence from the city of Lahore, Pakistan", *World Development*, n°84, 312–325.

YITZHAKI S. (1974), "A Note on Income Tax Evasion: A Theoretical Analysis," *Journal of Public Economics*, 3, 201–202.