

Local Regulation between Formal and Informal Institutions: Analysis by Application to the case of the Town of Ksar-Hellal (Tunisia)

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Abstract

The purpose of this paper is to detect the degrees of relevance of formal and informal institutions at the level of local regulation, as well as their effects on the local companies' productivities. Indeed, by an analysis of the territory of the town of Ksar-Hellal, we noted that informal institutions, apprehended by the trust and the collective punishment, contribute beside the formal penal institutions to channel the behaviours of the hilalian companies but with a less effectiveness. Similarly, the strong contribution of exogenous institutions in boosting productivity, compared to the endogenous institutions, states that the decision makers should improve the quality of formal regulation, and this at the expense of any form of regulation built by values commonly shared by the local community.

Keywords: Local regulation, formal institutions, informal institutions, productivity, Tunisia

JEL Classification: O12, K2, L51

1. Introduction

Apprehended as formal and informal constraints, North (1991) affirms that institutions are established by men, to structure their interactions. Formal constraints (e.g. rules, laws, constitutions) and informal (such as norms of behaviour, conventions, codes of conduct imposed) are often equated respectively to exogenous and endogenous institutions, by reducing transaction costs and by solving problems of coordination of actors, institutions of quality enable cooperation between agents and reducing opportunistic behaviour (Boyer, 1990). Neo-institutional works insist in fact on the role of institutions in economic dynamics, growth and development (Rodrik and Subramanian, 2003; Edison, 2003). In this context, Solari (2003) argues that much of the regulation of economic processes is closely linked in a network of social relations, firmly rooted in the local culture. For him, the local regulation is largely the result of institutions that belong to civil society, mostly informal, while it is mostly formal institutions that affect national regulation. Becattini (1989) affirms that a set of values commonly shared by the local community can reduce conflicts of interest. Similarly, according to Assens (2003), the regulatory mechanisms are essentially economic or sociopolitical. Regulatory sociopolitical mechanisms are based on cultural foundations and principles of sociopolitical identity type. For Putnam (1993), the relationship between formal and informal institutions is fundamental to local regulation, and affect the effectiveness of formal institutions. But it is the adaptation of local government to the local political culture which is decisive. This process has been observed in some Italian regions by Messina (2001), and in European countries by Lorrain (2002).

Some researchers (Ellickson, 1991; Granovetter, 1985), estimate that social control often supersedes or supplements the formal controls. Similarly, to assess the effect of institutions on economic performance, the authors conceive an econometric model, that connects the macroeconomic performance of each country with a measure of institutions. Generally, the authors use a global index that takes into account formal institutions, while ignoring those informal (Rodrik and Subramanian, 2003; Edison, 2003). Indeed, it turned out that the local capacity to establish regularities informal, different from the formal regularities, justifies the difficulty of the detailed analysis of the institutions. For this reason, the temptation is great, where we try by an application on the Local Productive System (LPS) of the town of Ksar-Hellal, to overcome such a statistical problem, and to also check the relevance of such advanced assumptions. Certainly, regarded as the historical capital of textile clothing in Tunisia, we try starting from the Ksar-Hellal city, to detect the formal and informal local institutions that supposed to ensure the regulation of the companies of the territory in question, and to identify in a second phase, their effect on the productivity.

2. Local Regulation: An Attempt at Detection

Our goal consist to detect the different institutions on the hilalian territory, and to highlight their degrees of effectiveness, in terms of regulating of the behaviour of the productive system. For this reason, we construct a synthetic indicator of regulation, called the local regulation indicator. This indicator will be composed by the aggregation of two sub-indicators i.e.; the formal regulation that applied by public and legal administrations, the formal regulation, generated by social mechanisms. For the formal regulation, the effectiveness of local governments to coordinate the interactions of actors will be measured by: the transparency and clarity of policy, the effectiveness of justice and, the control of corruption. These indicators, according to our readings, are commonly used by the World Bank (WB) and the Ministry of Economy, Finance and Industry of France (MINEFI) to analyze the effectiveness of government institutions. Certainly, the indicator of transparency and legibility of the public action reflects the ability of firms in obtaining and understanding the various laws and regulations that affect their activities, whether at the level of taxes, social contributions, etc. For the justice efficiency indicator, it apprehends business confidence in government, during the conflict resolution by the court system. Within this framework, qualities of equitable, impartial, fast, honest and incorruptible etc. will be the characteristics adopted on the level of our investigation. Finally, the control corruption indicator will highlight the abuse of power by some officials in the performance of certain services, whether by officials of the Office of Tax Control (OTC), the Fund National Social Security Fund (NSSF), customs etc. These concepts will be adopted as such in the composition of our synthetic indicator precisely, the indicator of formal regulation

For the informal regulation indicator, it will be built by the aggregation of two sub-indicators, according to the theory, can control the relational behaviours of the firms by social mechanisms namely, trust (Shapiro, 1987; Dyer and Singh, 1998) and collective punishment (Dyer and Singh, 1998; Larson, 1992; Weigelt and Camerer, 1988). In fact, we use the same aggregation technique adopted by MINEFI that is to say, the arithmetic mean of questions that make up each indicator, weighted by their standard deviations.

Each survey question is accompanied by a rating scale to measure the importance, frequency or intensity of the corresponding quality. This scale is a Likert scale (1932), limited by the terminal (1) to describe the low level and the terminal (5), characterizing the very high level. By such a scale, we can specify the category to which belongs the indicator that is to say, according to his level, he belongs to the class or low level, belonging to the interval [0,2 [, or to the class of mean level, belonging to the range [2.3 [, and then at the important level, in the interval [3,5]. Thus, by applying the survey on a sample of 74.5% of companies of textile_clothing in Ksar-Hellal, we obtained the following results:

Table 1. Main results of the regression of the indicator of the local regulation according to its under indicators

<i>Variable</i>		<i>Coefficient</i>	<i>Variable</i>		<i>Coefficient</i>
<i>Local Regulation</i>	<i>Minimum</i>	1.17	<i>Formal regulation</i>	<i>Transparency and clarity of policy</i>	23%
	<i>Maximum</i>	1.77		<i>Effectiveness of justice</i>	30%
	<i>Std. Error</i>	0.16		<i>Control of corruption</i>	23%
<i>Formal regulation</i>		76%	<i>Informal regulation</i>	<i>Trust</i>	12%
<i>Informal regulation</i>		24%		<i>Collective punishment</i>	12%
<i>DW.stat</i>		1.84	<i>DW.stat</i>		1.78

Source: Own investigations from the Eviews software

All the estimated coefficients are significant with the threshold of risk =5%.

According to Table 1, we find that the local regulation recorded in the town of Ksar-Hellal did not exceed the level of 1.77 nor to fall to the lower level of 1.17. Such a margin evolution, accompanied by a low standard deviation of 0.16, emphasizes the low level of quality control. In addition, the analysis in Table states that 76% of the control of conflict level in the LPS of Ksar-Hellal, is provided by public institutions, against 24% due to social rules relating to hilalian territory. More specifically, it is especially penal institutions, which controls the behaviour of companies of Textile-Clothing in Ksar-Hellal, because they ensure 30% of the quality of the local regulation. Then, it is the quality control of corruption, as well as transparency and clarity of public action, which jointly occupy the second place in the coordination of hilalian corporate behaviour. These last two each represent 23% of the level of local regulation. In other words, despite the prominence of legal institutions in the regulation of conflicts in Ksar-Hellal, the LPS ‘s companies in question suffer from the presence of corrupt officials who demand bribes, as well as a low transparency in laws and regulations apply. In third position, one finds that the regulation of hilalian companies is guaranteed by social control, namely, via the collective punishment and the value of trust between companies. These two mechanisms help to coordinate the interactions between hilalian companies, but in very small proportions and this with a weight each of 12% of the total local regulation.

Thus, despite the supremacy of the formal institutions to those informal, the latter two contribute to the regulation in the LPS of Ksar-Hilal. Indeed, it turned out that the social mechanisms, apprehended by the trust and collective punishment, contribute beside the penal institutions, at the control and the normal functioning of the productive system hilalian but, with a less effectiveness. Certainly, after such identification of the various

institutions in the hilalian territory, it will be possible in the next step, to clarify the width of their effects on the productive dynamics of the concerned enterprises.

3. Local regulation and productivity: Econometric estimation of the relationship

We tried to detect from the production function of the endogenous growth model of Romer (1986), the sensitivity of productivity's LPS of Ksar_Hellal to different types of regulation. We will using a function of Cobb-Douglas, where Y represents the total production of the economy A, the level of technical progress made by the knowledge derived from the investment of the firms K, capital factor and L, the labour factor, thus :

$$\begin{aligned} Y_t &= K_t^\alpha (A_t L_t)^{1-\alpha} \\ A_t &= A_0 e^{\theta_j W_j t} \end{aligned} \quad (1)$$

Where:

W_j : vector of variables included that expected to affect technical progress.

j : **vector of the coefficients which connect the variables of the vector**

Introduced in this way, the technological variable (A) increases the efficiency of work. It is also said that it is "neutral within the meaning of Harrod" In this case, while dividing by the labour factor to express output per capita (y), we obtain the following form:

$$\begin{aligned} y_t &= k_t^\alpha A_t^{1-\alpha} \\ A_t &= A_0 e^{\theta_j W_j t} \end{aligned} \quad (2)$$

In our empirical study, we follow the same methodology used by economists of the endogenous growth to explain the technical progress, and this by adding variables in the equation of the production function. Widening consists in introducing a set of institutional factors likely to influence the productive dynamics of hilalian companies. Indeed, by applying the logarithm to the equation (2), we obtain the equation (3) below, which will provide the basis of the equation of Labour Productivity, such as:

$$\log(y_i) = \beta_0 + \beta_1 \log(k_i) + \beta_2 (Forml_Reg_i) + \beta_3 (Informl_Reg_i) + \varepsilon_i \quad (3)$$

$i : 1 \dots n$, number of observations

where:

y : Represents the labour productivity of the company. It will be measured by dividing the Gross Value Added (GVA) by the amount of labour (L) engaged in a business. We measured the quantity of labour of each company by the number of the employees.

k : Represents the capital intensity of each company. It is measured by dividing the capital factor (K) by labour factor (L). Generally, we use the Stock of Fixed Capital (SFC) to represent the capital factor. But given the absence of data on capital stock per firm, we are forced to use the commonly adopted proxy, which is the variable Gross Fixed Capital Formation (GFCF).

$forml_Reg$: This is the formal regulation conducted by institutions represented by a legal authority or bureaucratic rules.

informl_Reg: This is the informal institutions apprehended by social mechanisms, which include the use of the trust and the impose of collective sanctions to discourage opportunistic behaviour.

Table 2. Main results of the regression of the model

<i>Variable</i>	<i>Coefficient</i>	<i>Prob.</i>
<i>Capital intensity</i>	0.45	0.021
<i>Formal regulation</i>	0.23	0.035
<i>Informal regulation</i>	0.03	0.016
R^2	0.77	
<i>Prob (F-statistic)</i>	0.045	
<i>DW stat.</i>	1.87	

Source: Our own investigations from the Eviews software

From Table 2 we note that our model admits an important explanatory power, and it is broadly significant, and this by having a respectable coefficient of determination R^2 of 0.77 and a probability of the significance of 0.045. Similarly, for variables, which have lower probabilities than the risk = 5%, justifying their individual significances in the model. Certainly, a DW statistic of 1.87, close to 2, confirms the absence of autocorrelation errors in our model. In this context, the analysis shows that the sign of the estimated coefficient of the relationship between capital intensity (k) and productivity of labour (y) was positive (0.45), in accordance with the theory. Indeed, the estimation shows that any 1% increase in the quality of informal regulation in the hilalian territory, leads to a very low growth of the productivity of about 0.03%. On the other hand, the largest contribution is associated with penal institutions, where every 1% improvement in their quality of regulation causes an increase of 0.23% in productivity. Indeed, trust and collective punishment, endogenous modalities to control the opportunistic behaviour within the LPS of Ksar_Hellal, contribute to improve the productive performance of the textile_clothing companies, but by a small proportion. In other words, the productivity of the city of Ksar_Hellal is more sensitive to exogenous institutions localized than the different values shared by the population. Thus, the emphasis on social and cultural phenomena in the determination of the local economic processes must be relativised. Policymakers should improve the quality of regulation relating to the exogenic institutions, and don't attribute much importance on the endogenous institutions to reduce the opportunist behaviour in a specific way, and improve the economic efficiency of the territory in general.

5. Conclusions

By analysing of the territory of Ksar_Hellal city, it turned out that formal and informal institutions are involved in the regulation of conflicts within the LPS of the territory in question, but in a non-uniform manner. More precisely, the social mechanisms, apprehended by trust and collective sanction, contribute to control the behaviour of the companies of the hilalian productive system, but according to a degree of effectiveness lower than the formal institutions. Moreover, effects of the social phenomena on the

productive dynamics of the hilalian companies, remains far from exceeding that of the exogenic institutions. In light of this finding, in a strategy to improve the effectiveness of local regulation, government should direct its policy towards to the development of a formal system without attributing much interest to the extra-economic sphere. By such conduct, the government can effectively reduce opportunistic behaviour, while providing a significant improvement in the productivity of its enterprises.

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