EFFECTS OF CORPORATE GOVERNANCE ON CORPORATE ENTREPRENEURSHIP AND FIRM PERFORMANCE: EVIDENCE FROM THE RWANDESE MANUFACTURING INDUSTRY

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Abstract

This study aims (i) to determine effects of corporate governance on corporate entrepreneurship of Rwandese manufacturing firms, and (ii) to evaluate effects of corporate governance on Rwandese manufacturing firms. We used two complementary methodological approaches: one linking corporate governance to corporate entrepreneurship; another, using an augmented Cobb-Douglass production function, associates the corporate governance with the firm performance. This study resulted in four main outcomes: (i) background and motivation of top managers contribute significantly to both corporate entrepreneurship and corporate performance, (ii) the sole proprietorship organizational form harms significantly the firms' entrepreneurial activities and impacts negatively their financial performance, (iii) electricity and raw materials costs are positively and significantly related to financial performance of manufacturing firms and (iv) even if informal competition has no effect on entrepreneurial activities of manufacturing firms, it harms their financial performance.

Keywords: Corporate governance – corporate entrepreneurship – firm performance

JEL Classification: L22 – L25 – L26

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1. Introduction

Corporate governance refers to alternative means of governing relations between owners and managers of the firm, while the corporate entrepreneurship can be defined as "entrepreneurial behavior and the pursuit of entrepreneurial opportunities by existing firms" (Rigolini, 2007). Thus, corporate governance and corporate entrepreneurship aren't conflicting; they are complement and their conjunction contributes to the firms' financial solidity, survival and growth.

In recent period, in developing countries, studies have been undertaken about the relationship between corporate governance and corporate entrepreneurship on one hands, and between corporate governance and firm performance in other hands (Albu and Mateescu, 2015; Mokokwu et al., 2013; Atmaja et al, 2009). However, on our knowledge, no similar study has been conducted in Rwanda. This paper has the merit of fulfill this gap.

This study is conducted under two research objectives, namely (i) to determine effects of corporate governance on corporate entrepreneurship of Rwandese manufacturing firms, and (ii) to evaluate effects of corporate governance on Rwandese manufacturing firms. To address these two objectives, we used two complementary methodological approaches. The first used variables of business environment and corporate governance and evaluates their effects on corporate entrepreneurship (represented here by the company growth in size). The second considered the evaluation of the effects of business environment and corporate governance on firm performance through an augmented Cobb-Douglass production function.

We used data from the enterprise survey conducted in Rwanda between June 2011 and February 2012. During this period, data from 241 establishments was collected using a stratified random sampling.

Our analysis resulted in four main findings: (i) background and motivation of top managers contribute significantly to both corporate entrepreneurship and corporate performance, (ii) the sole proprietorship is the organizational form which harms more firms' entrepreneurial activities and financial performance, (iii) electricity and raw materials costs are significantly related to the financial performance of Rwandese manufacturing firms, (iv) informal competition has no effect on entrepreneurial activities of manufacturing firms, but it harm their financial performance.

The remaining of the paper is organized as follows: the next section deals with the literature review; the methodological section follows; after are presented empirical findings, while the paper finishes by a conclusion.

2. Literature review

The corporate entrepreneurship can be defined as "entrepreneurial behavior and the pursuit of entrepreneurial opportunities by existing firms" (Rigolini, 2007). The corporate entrepreneurship explains the survival and the growth of firms. All corporate employees are actors of the corporate entrepreneurship, but its main source is from the supreme power of the firm, i.e. from the governance and the management of the firm.

When analyzing the relationship between corporate governance and entrepreneurial innovation, Hung and Mondejar (2005), identified three primary attributes of entrepreneurial innovation: preference for risk-taking, acceptance of changes, and development of new initiatives. According to Rigolini (2007), the strategy literature identifies these three types of corporate entrepreneurship (i.e. creation of new business, strategic renewal of organizations and change in "rules of competition") and links them to four factors: good business environment, strategic leaders, good organization form and firm performance.

Some of These four factors are variables of the corporate governance (strategic leaders and organization form). Magdi and Nadereh (2002) stress that corporate governance is about ensuring that the business is run well and investors receive a fair return. Theoretical foundations of the corporate governance are the agency theory and the transaction cost theory. Both theories explain the relationship between shareholders and the management of the firm. They suggest that different systems of ownership are represented by different dominant 'principal-agent" problems (Atmaja et al, 2009). Dispersed ownership raises the problem 'owner-manager' while concentrated ownership leads to the problem between larger holder and minor investors.

Consequently, the corporate governance is the key element of the firm entrepreneurial activities and thus of its performance. Honoré et al. (2010) noticed four components of the corporate governance, which are the board of directors, the audit and internal controls, the shareholders rights and the executive remuneration. Together, these elements of corporate governance aim at lowering information asymmetries between shareholders and managers, and let corporate

executive likely to feel constrained to pursue initiatives in the interest of shareholders. Definitively, firm performance depends on its entrepreneurial activities and on its governance enforcement.

The empirical literature on the relationship between corporate governance and corporate entrepreneurship, and between corporate governance and firm performance is not conclusive (Pintea and Fulop, 2015; Kumar, 2004).

About the linkage between corporate governance enforcement and corporate entrepreneurial activities, Hung and Mondejar (2005) studied the association between corporate governance and entrepreneurial innovation in a major Asian metropolitan city. Their analysis resulted in mixed outcomes. Duality CEO/board chairman and shareholders board directors influence positively the risk-taking preference and the development of new initiatives. However, their effect on changes acceptance is negative. Also, they found that the origin of board directors (from the executive management or not) has no significant effects on innovative activities of the firm. This conclusion is comparable to empirical results of Tan and Tan (2004) study about the impact of corporate governance on value creation in entrepreneurial firms in Singapore. The authors concluded that effects of corporate governance on entrepreneurial activities of SMEs depend on governance practices of the firm as a whole, which go beyond the board level.

The impact of corporate governance on SMEs entrepreneurship was also analyzed by Hanazaki and Liu (2007) using data from Indonesia, Korea, Malaysia, Philippines, and Thailand. They concluded that corporate investment in these five East Asian countries is determined by profitability, cash-flow and credit risk. However, these family-controlled firms face more severe internal financing constraints than nonfamily-controlled firms and are limited on the financial market by their low financial sustainability. In contrast with listed firms, family-controlled firms conditions restraint their investment and risk-taking preferences. The problem they face is different from their low interest to strategic actions, but it is from their financial constraints.

While some corporate governance mechanisms (board independence and institutional ownership) are associated with corporate entrepreneurship for companies listed on stock markets (Albu and Mateescu, 2015; Mokokwu et al., 2013), SMEs entrepreneurship in developing countries face

other many constraints (Hanazaki and Liu, 2007), even if they are the basis of entrepreneurship development in these countries.

About the relationship between corporate governance and firm performance, a lot of studies were conducted in developing countries and, unfortunately, are not conclusive also (Pintea and Fulop, 2015a). Here, we can refer to the study of Kumar (2004) in India. He studied the effect of ownership structure on the firm performance from a corporate governance perspective. He concluded that the foreign shareholding pattern does not influence the firm performance significantly. According to the author, this result contrasts with other studies which found that foreign ownership lead to higher performance of firms in India and other developing countries. Another important result of this study relates to the positive role of financial institutions and board members on firm performance when they are shareholders above some threshold level.

Brown and Caylor (2004) studied the relationship between corporate governance variables and firm performance using a composite measure (corporate governance index), and found that better-governed firms are relatively more profitable, more valuable, and pay out more cash to their shareholders. They showed that good governance, as measured using executive and director compensation, is most highly associated with good performance. However, they found that good governance as measured using charter/bylaws is most highly associated with bad performance.

In Vietnam, Vo and Phan (2014) analyzed the effects of corporate governance on listed firms performance. Their findings indicate that elements of corporate governance such as the presence of female board members, the duality of the CEO, the working experience of board members, and the compensation of board members have positive effects on the performance of firms. However, board size has a negative effect on the performance of firms. In Pakistan, Cheema and Dim (2013) studied the effects of board size, family controlled firms, and CEO duality on financial performance in the cement industry. They observed a positive relationship between corporate governance and firm performance. Badriyah et al. (2015) conducted a similar study on non-financial companies listed in Indonesian stock exchange. Their results show that corporate governance and firm characteristics affect firm performance. Akdogan and Boyacioglu (2014) conducted a semblable study in Turkish companies listed on the Istanbul Stock Exchange. As a result of the study, it has been revealed that a significant and positive relationship exists between the companies' level of corporate governance principles and return on asset and return on equity.

The similar results were found by Kyereboah-Coleman (2007) in African countries. He analyzed the impact of corporate governance on performance of listed companies from Ghana, South Africa, Nigeria and Kenya. Results indicate that large and independent boards enhance firm value and that combining the positions of CEO and board chair has a negative impact on corporate performance. Also, the size of audit committees and the frequency of their meetings have positive influence on market based performance measures, and institutional shareholding enhances market valuation of firms. However, this differs slightly from results of Lekaram (2014) on Kenyan listed manufacturing firms. The author found that the board size is negatively related to firm's financial performance measured in accounting ratios.

The common characteristic of previous studies is a research population which is restricted to listed companies. However, majority of African manufacturing firms are non listed. Our study tries to fill this gap by analyzing the relationship of corporate governance enforcement on financial performance variables of SMEs not listed on the stock market.

3. Methodology

3.1. Models

In this study we refer to two complementary approaches. The first framework concerns the relationship between corporate governance and corporate entrepreneurship, while the second is about the relationship between the corporate governance and the firm performance.

3.1.1. Relationship between corporate governance and corporate entrepreneurship

We refer to Albu and Mateescu (2015) and Hanazaki and Liu (2007) framework. Thus, the basic model to estimate is as follows:

(1) $$CE_i = f(CG_i)$$

Where CE_i represents the corporate entrepreneurship indicators and CG_i the corporate governance measures. Corporate entrepreneurship measures consider three types of corporate entrepreneurial activities as announced earlier (Hung and Mondejar, 2005). However, in this study, we consider entrepreneurial activities globally and try to measure their final result, i.e. the company growth in size. In the literature, company growth is captured through change in fixed

assets (investments), in sales revenue or in full-time employees (Audretsch and Lehmann, 2014). In this study and conforming to our database, we limit our indicators to change in sales revenue and in full-time employees. About corporate governance mechanisms, we consider four elements mainly available in the literature: the business environment, strategic leaders, organization form and financial firm performance (Rigolini, 2007).

Thus, empirical models to estimate is as follows:

(2) $$EmplGr_i = \alpha_0 + \alpha_1 orgform_i + \alpha_2 Busenvir_i + \alpha_3 Leaderbackgr_i + \alpha_4 perform_i + \varepsilon_i$$

(3) $$SalesrevGr_i = \beta_0 + \beta_1 orgform_i + \beta_2 Busenvir_i + \beta_3 Leaderbackgr_i + \beta_4 perform_i + \mu_i$$

Where $EmplGr_i$, $SalesrevGr_i$, $orgform_i$, $Busenvir_i$, $CEOLeaderbackgr_i$, $perform_i$ ε_i and μ_i are respectively change in full-time employees and in sales revenue, organization form, CEO backgraound, financial performance and the term errors. Parameters β_i and α_i to be estimated measure the effects of each corporate component on corporate entrepreneurship. In order to conform our model to the database, variables have been adapted as follows:

- $orgform_i$ is the legal status of firms and contains: shareholding without shares traded on the stock market, sole proprietorship, partnership and limited partnership. These different legal forms represent different form of corporate governance (see law no. 07/2009 of 27/04/2009 relating to companies). They are in dummy form with the value 1 if the organization form of the company is as indicated and 0 if not. These different organizational forms represent different ownership concentration. We expect that more is the ownership; more is its positive influence on the entrepreneurship of the firm.
- $Busenvir_i$, the business environment is represented by the "informal competition", with value 1 if this competition exists and 0 if not. We expect that "informal competition" influences positively entrepreneurship activities of firms.
- $CEOLeaderbackgr_i$, the executive top management background is represented buy the CEO working experience and education level. We considered this variable because they influence skills and remunerations of firms' top managers. Consequently, manager's motivation helps them to be strategic leaders. Thus, we expect that

as the background of the top manager is high, the entrepreneurship of the company is improved.

- $perform_i$, the performance of firms is represented by the economic value added. The economic Value Added is calculated by deducting operating expenses from sales revenue and adding depreciations. We preferred this indicator to other financial performance measurements[2], because it evaluates the whole performance of all inputs. Usually, the performance improve entrepreneurship activities of the firm.

Other variables' indicators (i.e. sales revenue and full-time employees) are captured as usual.

Equation (2) and (3) are estimated separately using the OLS method. However, in each equation, variables are introduced hierarchically in order to evaluate the robustness of models.

3.1.2. Relationship between corporate governance and firm performance

To estimate the relationship between corporate governance and firm performance, we used the augmented Cobb-Douglass production function. This econometric modeling is barely different from that used by Vo and Nguyen (2014) and Kalezić (2012); it is preferable because it conforms to the production theory.

$$(4) \qquad \ln AV_i = \varphi_{0i} + \varphi_{1i}\ln K_i + \varphi_{2i}\ln L_i + \varphi_{3i}\sum \ln CG_i + \varphi_{4i}\sum D_i + \nu_i$$

Where AV represents the economic added value, K is the capital input, L is the labor input, CG represents different elements of the corporate governance, D elements of corporate governance in dummy form and ν the term error. Parameters φ represent coefficients to be estimated. Subscript i represents the firm. All variables are in log form, except those in dummy form.

To conform to the availability of data, variables of equation (4) were adapted as follows:

- AV_i is the economic added value as announced earlier.
- K_i, the capital, is represented by annual electricity cost and raw materials cost. These two elements are proxies of capital variable because they are proportional to the fixed

[2] In the literature, four indicators are used to measure the financial performance: Tobin's q, Return on Assets (ROA), Return on Equity (ROE) and economic Added Value (Pintea and Fulop, 2015).

equipments of company. They are considered separately in order to investigate separate role of each type of capital.

- L_i , the labor, is represented by the number of full-time employees in 2010.
- CG_i , corporate governance variable, is represented by the background of the top manager as proxy of CEO strategic leadership.
- D_i , corporate governance variable in binary form, is represented by the legal status of the firm, which is the proxy of the ownership (see above) and by the informal competition, variable of the business environment as defined earlier.

Equation (4) was estimated by OLS method, and augmented variables were introduced hierarchically in order to evaluate the robustness of the model.

3.2. Data used

Data used in this paper are from the enterprise survey conducted in Rwanda by the World Bank between June 2011 and February 2012. Data from 241 establishments was collected using a stratified random sampling. Topics of the survey include particularly firm characteristics, gender participation, access to finance, annual sales, costs of inputs and labor, workforce composition, bribery, licensing, infrastructure, trade, crime, competition, capacity utilization, land and permits, taxation, informality, business-government relations, innovation and technology, and performance measures. This survey focused on service and manufacturing firms operating in Kigali and Huye. However, we considered only manufacturing firms which count 81 establishments in the sample.

4. Empirical findings

Before we discuss empirical results from estimation of equations (2), (3) and (4), we start by some descriptive statistics. They concern some characteristics of manufacturing firms analysed: number of full-time employees and firm age.

4.1. Some descriptive statistics

The sample contains five legal forms of firms: shareholding with shares traded on the stock market, shareholding without shares traded on the stock market, sole proprietorship, partnership and limited partnership.

According to results presented in table 1, the sample we studied contained a total of 6,038 employees in 2010, of which 239 were added from 2008. Limited partnership firms contributed mainly in employees' number variation. However, individually, the largest company is the shareholding listed on the stock market even if the sample contains only one company. This form of firm is not analyzed in this study. The second organization form in terms of employees is the limited partnership, with an average of 130 employees in 2010. The last company in terms of employees is composed by firms in sole proprietorship. They are mainly family-controlled companies, even if some are of the government ownership. However, with 28 firms, sole proprietorship firms represent the highest number in the sample.

Table 1: Full-time employees in 2010 and variation from 2008 according to the legal status

	Employees in 2010					**Variation from 2008 to 2010**				
Legal status	*Observ.*	*Aver.*	*Min*	*Max*	*Total*	*Observ.*	*Aver.*	*Min*	*Max*	*Total*
Shareholding with stock market	**1**	1,000	1,000	1,000	1,000	**1**	0	0	0	0
Shareholding without stock market	**24**	79	7	550	1,891	**21**	-2	-100	13	-44
Sole proprietorship	**28**	32	2	381	904	**28**	4	-14	51	99
Partnership	**19**	57	2	700	1,077	**18**	4	-17	50	67
Limited partnership	**9**	130	6	540	1,166	**8**	15	-2	63	117
Total	**81**				**6,038**	**76**				**239**

Source: Author's calculations from RWA_2011_ES_v01_M_WB

In terms of corporate governance, sole proprietorship companies operate mainly in duality CEO/Board chairman. According to the agency theory, this can mitigate or exacerbate agency problems. Agency problems arise when the relationship board/CEO is not facilitated and information asymmetries are high in the management of the company. However, we observe that this organizational form contributed enough in the variation of the workforce because it was the second contributor. This could suggest that it served to lower agency problems.

Considering the reduction in number of employees, only shareholding firms not listed on the stock market are concerned. However, they are second in terms of number of employees in the

sample. In contrast with sole proprietorship firms, we can assume that this legal organizational form complicates and exacerbates agency problems.

About age of companies, we can observe that in average Rwandese manufacturing companies are relatively young (between 10 and 17 old). Only the only one shareholding listed is above 50 years old (see figure 1). Partnership and shareholdings not listed have above 15 years, while the limited partnership is the last with 10 years[3]. This attests that in Rwanda, survival of firms is lower, and that the legal organizational form plays here an important role. Also, this predicts that in the Rwandese manufacturing industry, probably the corporate entrepreneurship is still weak.

Table 2: Age of firms according to the legal status

Legal status	Observations	Average	Min	Max
Shareholding with stock market	**1**	52	52	52
Shareholding without stock market	**24**	16	2	40
Sole proprietorship	**27**	12	3	41
Partnership	**19**	17	2	49
Limited partnership	**9**	10	3	28
Total	**80**			

Source: **Author's calculations from RWA_2011_ES_v01_M_WB**

Considering extreme values, we observe heterogeneity among the highest age of firms. The smallest age lies between 2 and 3 years while the highest age lies between 28 and 52 years. As seen earlier, limited partnership form counts the lower highest age, whereas partnership form has the highest aged firm after the unique shareholding listed firm. However, ages in the sole proprietorship form seem to be more dispersed.

After this description of firms' characteristics, in next paragraphs, we present results about the relationship between corporate governance and corporate entrepreneurship and between corporate governance and performance.

4.2. Effects of corporate governance on corporate entrepreneurship

[3] According to ownership structure, limited partnership companies are mainly owned by private foreigners (see appendix 1).

In order to evaluate impacts of corporate governance on corporate entrepreneurship, we have estimated equations (2) and (3) as described in the methodological section. Empirical results are presented in table 3.

The corporate governance is represented here by the legal form of companies and the background of top manager. We can observe that for all elements of corporate size growth considered (change in employees and in sales revenue), the legal status which contributes significantly to the corporate entrepreneurship is the shareholding not listed. The sole proprietorship lowers entrepreneurial activities when we consider the sales revenue. The negative contribution to corporate entrepreneurship by these two legal organizational form shows that they facilitate exacerbation of agency problems. Particularly, the negative contribution of sole proprietorship firms conforms to the literature which states that in developing countries, family-controlled firms face important financial constraints (Hanaraki and Liu, 2007) and aren't able to invest in strategic activities.

Table 3: Effects of corporate governance mechanisms on corporate entrepreneurship

	Change in workforce		**Change in sales revenue (log form[4])**			
Dependent variables	*Coeff.*	*P-values*	*Coeff.*	*P-values*	*Coeff.*	*P-values*
Shareholding not listed	-8.964742	0.022	-1.192655	0.034	-0.9542571	0.070
Sole proprietorship	-2.979111	0.200	-1.312172	0.001	-1.226147	0.001
Partnership	-2.579747	0.185	-0.5817762	0.113	-0.4560335	0.170
Added value	5.40E-09	0.074	-	-	-	-
Informal competition	1.716437	0.730	-	-	0.8079209	0.248
Manager experience	1.179775	0.001	-	-	0.0733465	0.073
Manager education	2.005909	0.295	-	-	0.4864208	0.135
Constant	-14.55082	0.208	21.14576	0.000	17.05185	0.000
Observations	**33**		**30**		**29**	
R^2	**0.6743**		**0.3635**		**0.6152**	
Prob > F	**0.0001**		**0.0075**		**0.0009**	

Source: Author's computations from RWA_2011_ES_v01_M_WB

Another element of corporate governance considered is the background of the top manager. This variable is the proxy of remuneration and motivation of the top executive management, which increases their strategic leadership. We can observe that the predicted positive sign of coefficients is correct. Also, for one element (experience) of this background, coefficients are statistically significant. This attests that when top managers are experienced, they are also well

[4] In order to overcome the problem of very big coefficients, the variable "change in sales revenue" is in log form.

motivated, and this helps them to participate effectively in entrepreneurial activities of the company.

Other factors of corporate entrepreneurship considered are the business environment and the firm financial performance. About the business environment, we considered if the firm faces the informal competition or not, while the financial performance is represented by the economic added value. Coefficients of these two variables are positive as predicted. However, only the Added value has a significant coefficient even if the coefficient itself is too low. These two results can be interpreted as that the competition is not enough to boost entrepreneurial innovations in the manufacturing industry, and that the financial performance is still low and doesn't help enough to boost innovations and risk-taking behaviors. This complements the negative contribution of companies in sole proprietorship, which are mainly family-controlled firms and face big financial constraints.

4.3. Effects of corporate governance on financial performance

We refer to table 4 which summarizes results from estimates of equation (4). We recall that it is an augmented Cobb-Douglass production function, where added variables represent the corporate governance and the business environment.

Table 4: Effects of corporate governance on firm performance

Dependent variable: Log Added Value		
	Coefficient	*P-values*
Log number of full-time employees	0.0054716	0.633
Log electricity cost	0.0148564	0.022
Log raw materials cost	0.0164065	0.011
Shareholding without shares on stock market	-0.0027146	0.842
Sole proprietorship	-0.0222667	0.014
Partnership	-0.0044129	0.548
Informal competition	-0.0441074	0.039
Log manager experience	0.0193101	0.135
Log manager education	0.0442033	0.051
Constant	2.371966	0.000
Observations	**35**	
R^2	**0.8510**	
Prob > F	**0.0000**	

Source: Author's computations from RWA_2011_ES_v01_M_WB

About impacts of variables representing the traditional Cobb-Douglass production function, we can observe that only variables representing capital are statistically significant. They are electricity cost and raw materials. This attests that investments in public infrastructures, mainly in energy and road infrastructures, are essential for the entrepreneurship development in Rwanda. Electricity permits to use effectively plant's equipments; the availability of raw materials is important for the entrepreneurship development, and road infrastructures help to dispatch them among manufacturing firms, of which majority are agro processing (NISR, 2016).

When considering effects of variables representing the corporate governance, only the background of top managers contributes positively to financial performance of manufacturing firms. When linking this section to the previous, we can suggest that top managers who are well educated and experienced, are also well motivated and have a good leadership. They contribute positively to corporate entrepreneurship and firm financial performance.

About the organization form of the company, the sole proprietorship is related significantly but negatively to the firm financial performance. As seen earlier, this negative relationship confirms the negative contribution of firms in sole proprietorship on entrepreneurial initiatives because they have important financial constraints.

We can also observe that the expected coefficient's sign of business environment variable and its significance are as predicted. Firms which face informal competition have a low financial performance. Thus, if the fierce competition has not effects on corporate entrepreneurship of manufacturing firms, it reduces significantly their financial performance.

Further, change in size of Rwandese manufacturing firms has no effect on their financial performance. Otherwise, positive variation of employees observed earlier, and considered as consequence of entrepreneurship development, doesn't influence the financial performance. However, in contrast, the financial performance influences positively the corporate entrepreneurship. There isn't a two ways relationship between financial performance and corporate entrepreneurship: entrepreneurial activities are not enough to impact financial performance even if the reverse is true. This surprising result shows that manufacturing firms don't take enough initiatives in strategic activities; they are interested in short term orientations of their business.

5. Summary and conclusion

The double aims of this paper were of determining effects of corporate governance on corporate entrepreneurship and of determining effects of corporate governance on firm performance. To address these objectives, we had recourse to two complementary methodological approaches. The first dealing with estimate of variables representing the business environment and of the corporate governance on governance entrepreneurship, represented here by the change in the size of firms. The second approach used the augmented Cobb-Douglass production function in order to estimate effects of the business environment and of the corporate governance on the corporate performance.

This study resulted in four main outcomes: (i) the background of top managers contributes significantly to both corporate entrepreneurship and corporate performance, (ii) the sole proprietorship organizational form harms entrepreneurial activities and is negatively related to financial performance of manufacturing firms because of considerable financial constraints, (iii) electricity and raw materials expenses contribute significantly and positively to financial performance of Rwandese manufacturing firms, (iv) informal competition has no effect on entrepreneurial activities of manufacturing firms, however it harms their financial performance because firms are more interested in the short term business development rather than in the long term strategic innovative actions.

According to empirical findings above and in order to boost internal entrepreneurial activities of manufacturing firms, we recommend focusing more on the background and motivation of top managers. We also suggest helping manufacturing firms to accede finance, the key element for their internal entrepreneurship development. Further, we advise availing electricity and raw materials in order to improve manufacturing firms' financial performance, because the last is important for the corporate entrepreneurship.

However, these results and recommendations must be considered with reserve because the database used was not enough adapted to our problematic. We suggest undertaking further,

detailed and deeper researches in the future, particularly using more appropriate database. This necessitates a new specific research project.

6. References

Abdelkarim, N. and Alawneh, S. (2009). The relationship between corporate governance and the performance of Palestinian firms: an empirical study. *The International Journal of Business and Finance Research*, 3 (2): 105-120.

Akdogan, Y. M. and Boyacioglu, M. A. (2014). The effect of corporate governance on firm performance: a case of Turkey, International Journal of Critical Accounting, 6 (2): 187-210.

Albu, N. and Mateescu, R. A. (2015). The relationship between entrepreneurship and corporate governance: the case of Romanian listed companies. *Amfiteatru Economic*,17(38): 44-59.

Atmaja, S. L., Tanewski, G. A. and Skully, M. (2009). The role of dividends, debt and board structure in the governance of family controlled firms. *Journal of Business, Finance and Accounting*, 39 (7-8): 863-898.

Audretsch, D. B. and Lehmann, E. E. (2014). Corporate Governance and Entrepreneurial Firms. *Foundations and Trends in Entrepreneurship*, 10 (1-2): 1-157.

Badriyah, N., Sari, R. N. and Basri, Y. M. (2015).The effect of corporate governance and firm characteristics on firm performance and risk management as an intervening variable. International accounting and business conference, *Procedia Economics and Finance*, 31: 868-875.

Brown, L. D. and Caylor, M. L. (2004). Corporate Governance and Firm Performance. Paper presented at 15th Conference on Financial Economics and Accounting, Boston Accounting Research Colloquium, University of Missouri and Penn State University.

Cheema, K. U. R. and Din, N. S. (2013). Impact of corporate governance on performance of firms: a case study of cement industry in Pakistan. *Journal of Business and Management Sciences*, 1 (4): 44-46

Hanazaki, M. and Liu, Q. (2007). Corporate governance and investment in East Asian firms: empirical analysis of family-controlled firms. *Journal of Asian Economics*, 18 (1): 76-97.

Honoré, F. and Munari, F. and van Pottelsberghe de la Potterie, B. (2010). Corporate governance practices and companies' R&D orientation: evidence from European countries. Working Paper, ECARES, CEPR, Université libre de Bruxelles

Hung, h. and Mondejar *, R. (2015).* Corporate Directors and Entrepreneurial Innovation: An Empirical Study, *The Journal of Entrepreneurship*, 14 (2): 117-129.

Kalezić, Z. (2012). Corporate governance and firm performance with special reference to the banking system: empirical evidence from Monetengro. *Journal of Central Banking Theory and Practice,* 2: 19-54

Kumar, J. (2004). Does corporate governance influence firm value? Evidence from Indian firms. *Journal of Entrepreneurial Finance,*9 (2): 61-91.

Kyereboah-Coleman (2007). Corporate governance and firm performance in africa: a dynamic panel data analysis. Paper presented in the "International conference on corporate governance in emerging markets", Global Corporate Governance Forum (GCGF) and Asian Institute of Corporate Governance (AICG), Sabanci University, Istanbul, Turkey.

Lekaram, V. (2014). The relationship of corporate governance and financial performance of manufacturing firms listed in the Nairobi securities exchange. *International Journal of Business and Commerce,* 3 (12): 30-67.

Magdi, R. and Nadereh, K. (2002). Corporate Governance: a framework for implementation. *Britain World Group Journal*, 29: 123-132.

Mokokwu, V. B., Barreria, J. and Urban, B. (2013). Entrepreneurial orientation and corporate governance structures at the firm level in the South African oil and gas industry. *Journal of Human Resource Management, 11*(1): 1-15

NISR (2016). Integrated Business Enterprise Survey report 2014. Kigali

Pintea, M. O. and Fulop, M. T. (2015). Literature review on corporate governance-firm performance relationship. *Annals of Faculty of Economics*, 1 (1): 846-854.

Rigolini, A. (2007). Corporate Entrepreneurship: insights on board of directors and major shareholder contributions. PhD thesis, Università di Pisa, Italy.

Tan, W. L. and Tan, T. M. (2004). The Impact of Corporate Governance on Value Creation in Entrepreneurial Firms. Rencontres de St-Gall 2004, Appenzell, Research Collection Lee Kong Chian School Of Business.

Vo, D. H. and Nguyem, T. M. (2014). The impact of corporate governance on firm performance: empirical study in Vietnam. *International Journal of Economics and Finance,* 6 (6): 1-13.

Appendix 1. Ownership structure of Rwandese manufacturing firms

Table 5: Ownership structure in the manufacturing industry

	% of private domestic owners				% of Private Foreigners			
Legal status	*Observ.*	*Aver.*	*Min*	*Max*	*Observ.*	*Aver.*	*Min*	*Max*
Shareholding with stock market	**1**	100	100	100	**1**	0	0	0
Shareholding without stock market	**24**	82	0	100	**24**	18	0	100
Sole proprietorship	**28**	85	0	100	**28**	11	0	100
Partnership	**19**	76	0	100	**19**	24	0	100
Limited partnership	**9**	49	0	100	**9**	51	0	100
Total	**81**				**81**			

Source: Author' calculations from RWA_2011_ES_v01_M_WB