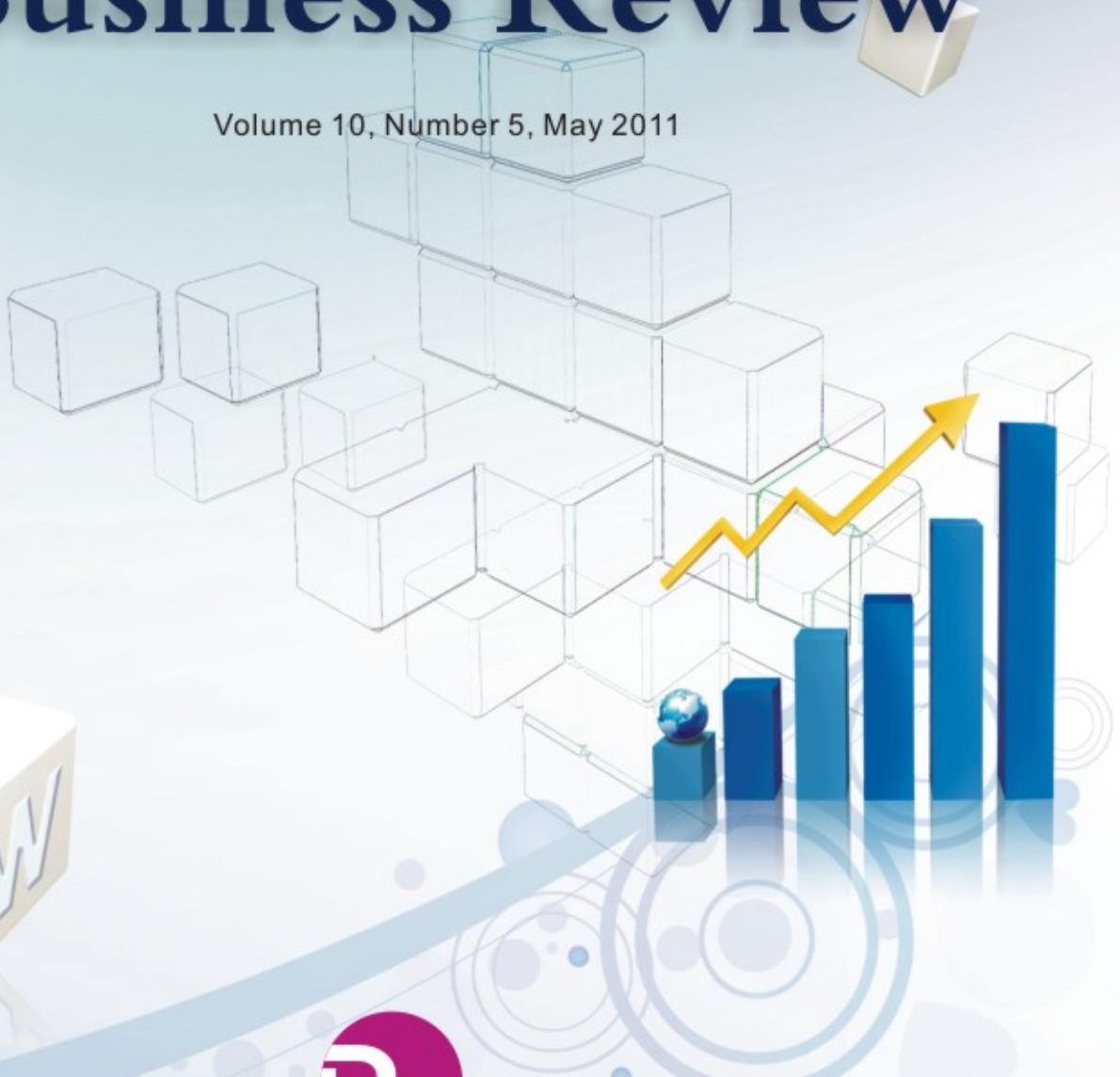


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## Contents

### Financial Forum

- The Chaotic Saving Growth Model: G7** 317  
*Vesna D. Jablanovic*

### Enterprise Management

- Strategic and Organizational Evolutions of High-Tech SME on Global Market** 327  
*Oualid Abidi, Zhan Su, Muhammad Mohiuddin*
- The Challenges of Human Resource Management Practices in the Informal Sector in Nigeria** 340  
*Gbajumo-Sheriff Mariam, Elegbede Tunde, Owoyemi Oluwakemi*

### Public Management

- Social Responsibility and Environmental Sustainability: The Case of Caixa Geral de Depósitos (Portugal) and Vale (Brazil)** 352  
*José António Candeias Bonito Filipe, Manuel Francisco Pacheco Coelho, Manuel Alberto M. Ferreira, Ivo Cunha Figueredo*
- Political Skill of Narcissistic Leaders** 376  
*Salim Atay, M. Emin Okur*

### Organizational Management

- Improving Organisational Performance Through Understanding Human Motivation** 384  
*Ali M. Al-Khouri*



# The Chaotic Saving Growth Model: G7

Vesna D. Jablanovic

University of Belgrade, Belgrade, Serbia

Chaos theory is used to prove that erratic and chaotic fluctuations can indeed arise in completely deterministic models. Chaos theory reveals structure in aperiodic, dynamic systems. The number of nonlinear business cycle models use chaos theory to explain complex motion of the economy. Chaotic systems exhibit a sensitive dependence on initial conditions: Seemingly insignificant changes in the initial conditions produce large differences in outcomes. This is very different from stable dynamic systems in which a small change in one variable produces a small and easily quantifiable systematic change. Chaos theory started with Lorenz's (1963) discovery of complex dynamics arising from three nonlinear differential equations leading to turbulence in the weather system. Li and Yorke (1975) discovered that the simple logistic curve can exhibit very complex behaviour. Further, May (1976) described chaos in population biology. Chaos theory has been applied in economics by Benhabib and Day (1981, 1982), Day (1982, 1983, 1997), Gandolfo (2009), Grandmont (1985), Goodwin (1990), Medio (1993, 1996), Lorenz (1993), Jablanovic (2010), among many others. A key hypothesis of this work is based on the idea that the coefficient  $\pi = \left[ 1 + \left( \frac{\lambda(\alpha - \beta - \gamma)}{k} \right) \right]$  plays a crucial role in explaining local stability of the saving, where,  $\alpha$ : percent of national saving which belongs to private saving,  $\beta$ : percent of national saving which belongs to budget deficit,  $\gamma$ : percent of national saving which belongs to net capital outflow,  $\lambda$ : saving rate,  $k$ : marginal capital coefficient.

*Keywords:* stability, budget deficit, capital coefficient, chaos

## Introduction

For four years through the summer of 2007, the global economy boomed. Global GDP rose at an average of about 5 percent a year. However, the global economy has been buffeted by the deepening crisis in financial markets. The global economy has slowed markedly.

Economic systems are inherently acyclical. In this context, it is important to analyze the role of the saving rates in amplifying the effects of financial system on the real economy. In this view, relatively decreasing saving and/or relatively increasing budget deficits in the G7 countries have important impact on economic stability. When savings is eroded, banks become more reluctant to lend leading to sharper economic downturns. The tendency toward increasing savings may have left economies better able to absorb financial stress.

Chaos theory attempts to reveal structure in aperiodic, unpredictable dynamic systems. The type of linear analysis used in the theory of economic growth presumes an orderly periodicity that rarely occurs in economy. In

this sense, it is important to construct deterministic, nonlinear economic dynamic models that elucidate irregular, unpredictable economic behavior.

Deterministic chaos refers to irregular or chaotic motion that is generated by nonlinear systems evolving according to dynamical laws that uniquely determine the state of the system at all times from a knowledge of the system's previous history. Chaos embodies three important principles: (1) extreme sensitivity to initial conditions; (2) cause and effect are not proportional; and (3) nonlinearity.

Chaos theory started with Lorenz's (1963) discovery of complex dynamics arising from three nonlinear differential equations leading to turbulence in the weather system. Li and Yorke (1975) discovered that the simple logistic curve can exhibit very complex behaviour. Further, May (1976) described chaos in population biology. Chaos theory has been applied in economics by Benhabib and Day (1981, 1982), Day (1982, 1983, 1997), Gandolfo (2009), Grandmont (1985), Goodwin (1990), Medio (1993, 1996), Lorenz (1993), Jablanovic (2010), among many others.

The basic aim of this paper is to provide a relatively simple chaotic saving growth model that is capable of generating stable equilibria, cycles, or chaos. This paper looks in more detail at saving growth stability issues in each of the G7 countries in the period 1980-2010 ([www.imf.org](http://www.imf.org)).

### Saving as a Source of Investment and Net Capital Outflow: G7

It is important to decrease the budget deficit and increase incentive for people and firms to save. There is a tendency toward relatively decreasing saving in the G7 countries in the period 1980-2010 (see Figure 1-Figure 7).

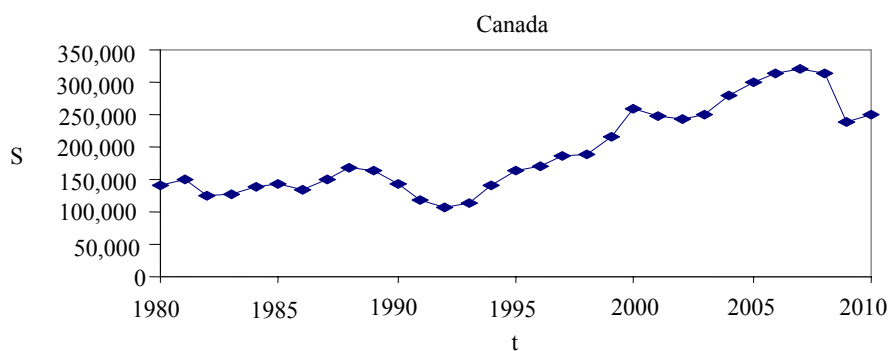


Figure 1. Gross national savings: Canada (1980-2010).

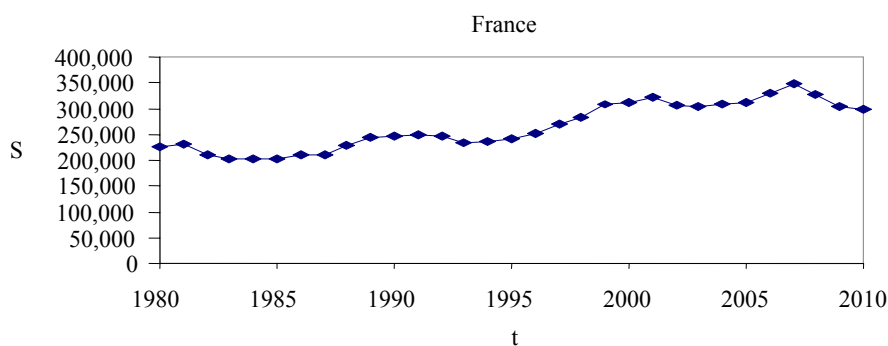


Figure 2. Gross national savings: France (1980-2010).

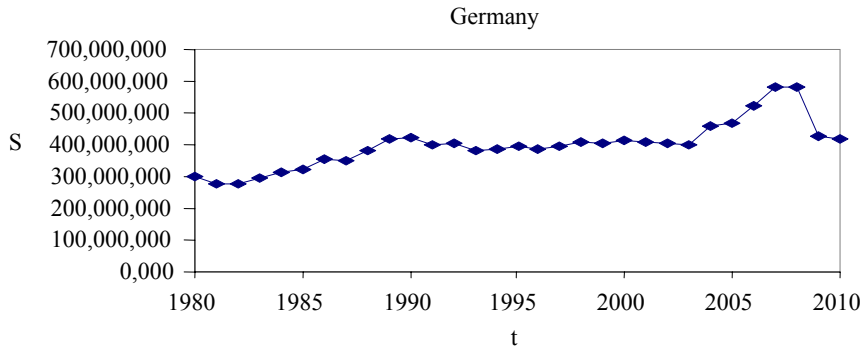


Figure 3. Gross national savings: Germany (1980-2010).

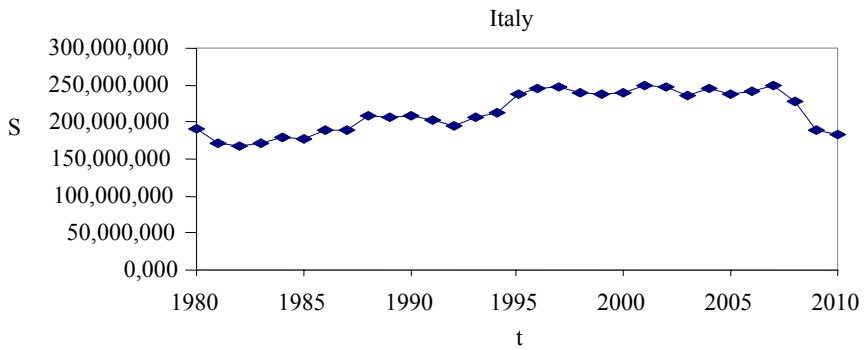


Figure 4. Gross national savings: Italy (1980-2010).

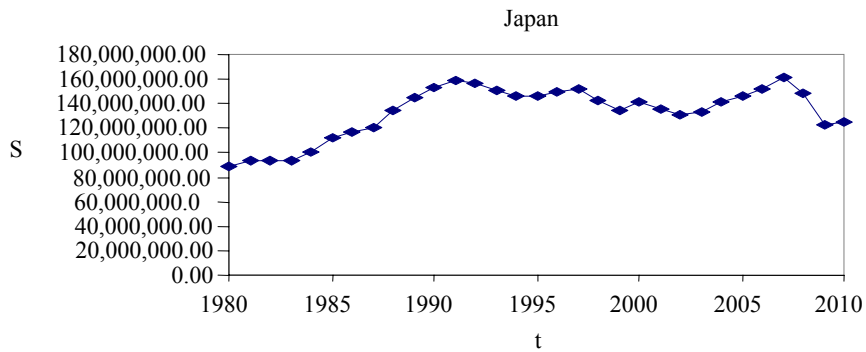


Figure 5. Gross national savings: Japan (1980-2010).

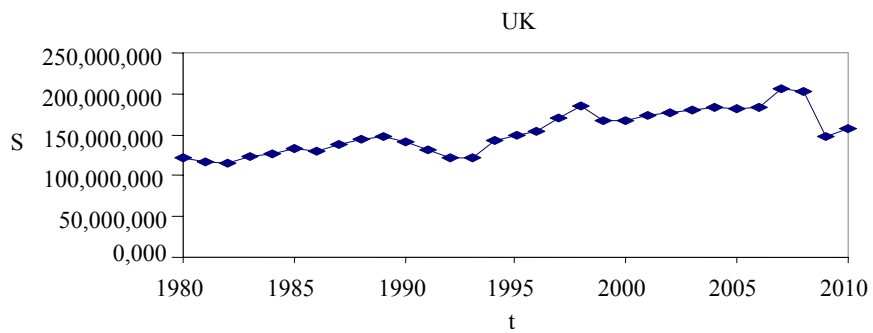


Figure 6. Gross national savings: UK (1980-2010).

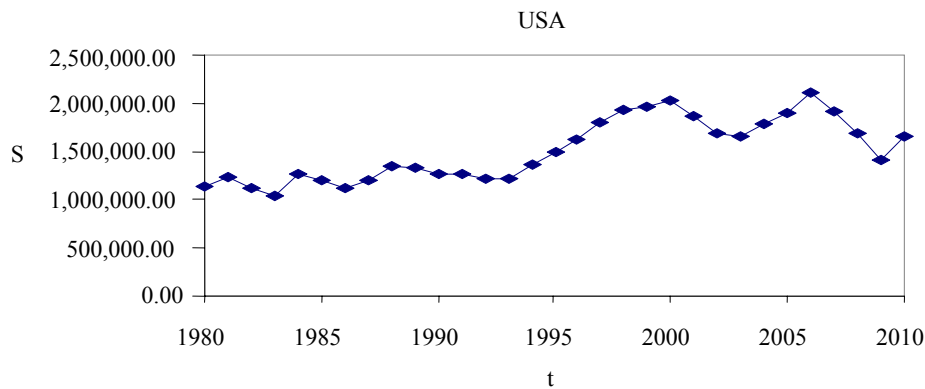


Figure 7. Gross national savings: USA (1980-2010).

On the other hand, there is the imbalances between saving rate and investment rate in the G7 countries in the period 1980-2010 (see Figure 8-Figure 15) (Source: IMF, World Economic Outlook Database, October 2009 [www.imf.org](http://www.imf.org)).

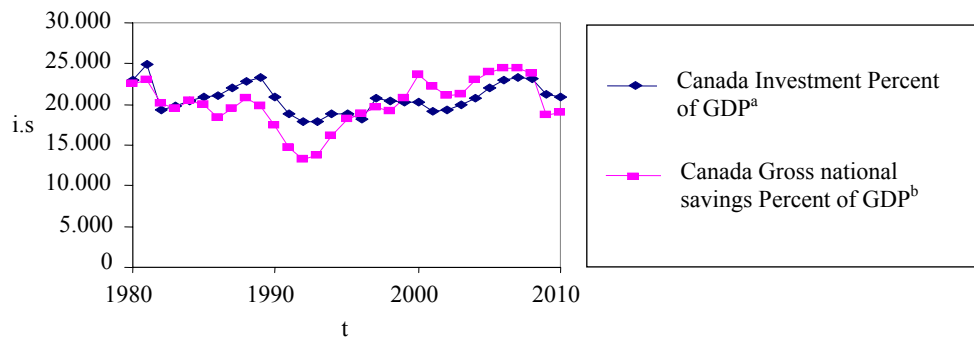


Figure 8. Savings and investment as % of GDP: Canada (1980-2010). <sup>a</sup> Canada Investment Percent of GDP Definition: Gross capital formation at market prices; Source: National Statistical Office Latest actual data: 2008 Primary domestic currency: Canadian dollars. <sup>b</sup> Canada Gross national savings Percent of GDP Definition: Sum of saving and capital consumption allowance minus net external saving. Source: National Statistical Office Latest actual data: 2008 Primary domestic currency: Canadian dollars.

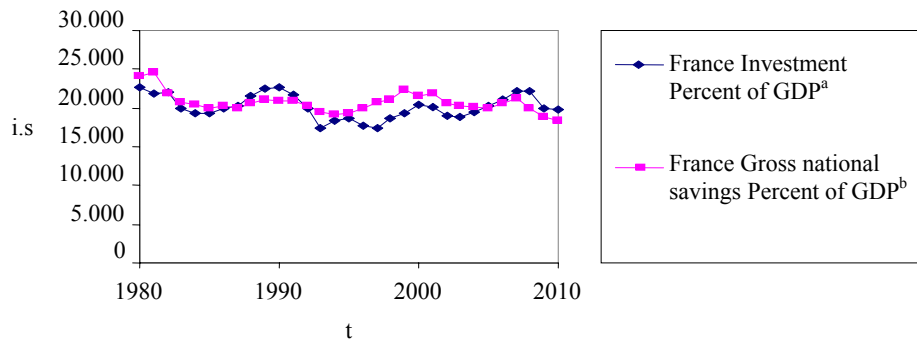


Figure 9. Savings and investment as % of GDP: France (1980-2010). France Investment Percent of GDP Definition: Gross capital formation at market prices; Source: National Statistical Office Latest actual data 2008 Primary domestic currency: Euros Data. France Gross national savings Percent of GDP Definition: Gross national saving; Source: National Statistical Office Latest actual data 2008 Primary domestic currency: Euros Data.

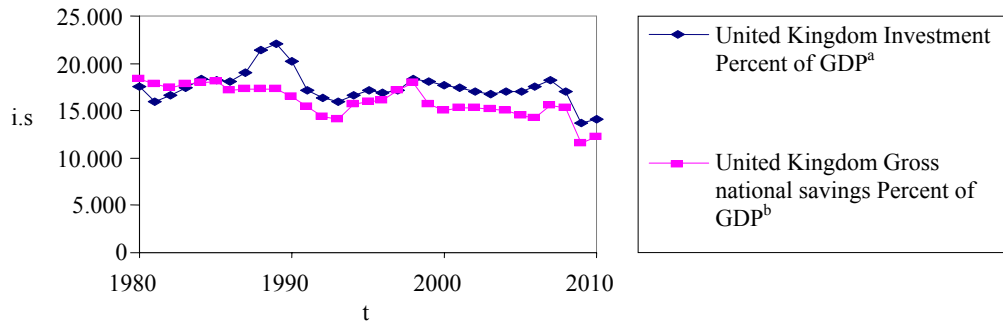


Figure 10. Savings and investment as % of GDP: UK (1980-2010). <sup>a</sup> United Kingdom Investment Percent of GDP Definition: Gross capital formation at market prices; Source: National Statistical Office Latest actual data: 2008 Primary domestic currency: Sterling pounds. <sup>b</sup> United Kingdom Gross national savings Percent of GDP Definition: Gross national saving; Source: National Statistical Office Latest actual data: 2008 Notes: It is calculated as gross capital formation plus current account. Primary domestic currency: Sterling pounds.

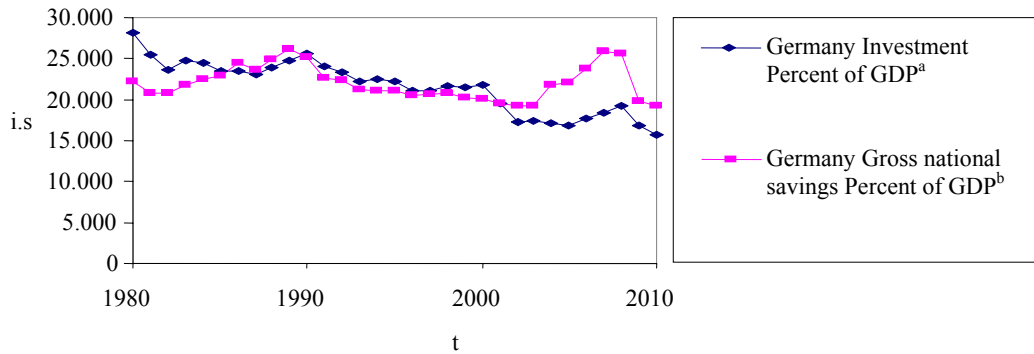


Figure 11. Savings and investment as % of GDP: Germany (1980-2010). <sup>a</sup> Germany Investment Percent of GDP Definition: Gross capital formation at market prices; Source: National Statistical Office Latest actual data: 2008; Data until 1990 refers to West Germany. Data from 1991 refers to United Germany. <sup>b</sup> Germany Gross national savings Percent of GDP Definition: Gross national saving; Source: National Statistical Office Latest actual data: 2008. Data until 1990 refers to West Germany. Data from 1991 refers to United Germany.

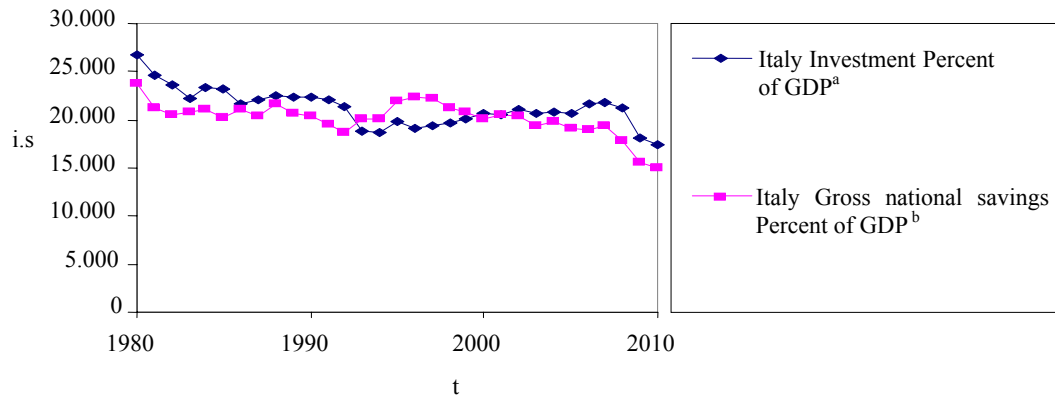


Figure 12. Savings and investment as % of GDP: Italy (1980-2010). <sup>a</sup> Italy Investment Percent of GDP Definition: Gross capital formation at market prices; Source: National Statistical Office Latest actual data: 2008 Primary domestic currency: Euros. <sup>b</sup> Italy Gross national savings Percent of GDP Definition: Gross national saving; Source: National Statistical Office Latest actual data: 2008 Primary domestic currency: Euros.

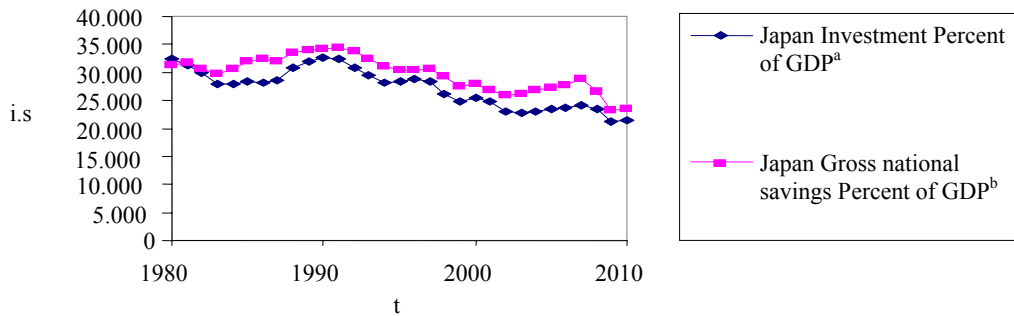


Figure 13. Savings and investment as % of GDP: Japan (1980-2010). <sup>a</sup> Japan Investment Percent of GDP Definition: Gross capital formation at market prices; Source: Nomura via Global insight. Latest actual data: 2008; Primary domestic currency: Japanese yen. <sup>b</sup> Japan Gross national savings Percent of GDP Definition: Gross national saving; Source: IMF Staff Latest actual data: 2007 Primary domestic currency: Japanese yen.

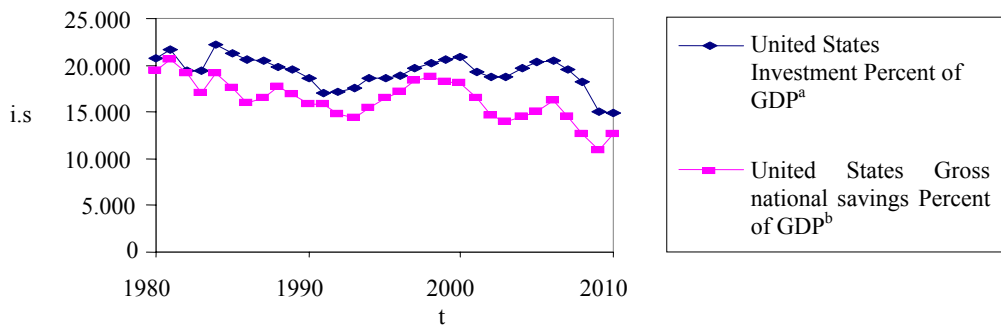


Figure 14. Savings and investment as % of GDP: USA (1980-2010). <sup>a</sup> United States Investment Percent of GDP Definition: Gross capital formation at market prices; Source: Haver analytics Latest actual data: 2008; Primary domestic currency: U.S. dollars. <sup>b</sup> United States Gross national savings Percent of GDP Definition: Gross national saving; Source: Haver analytics Latest actual data: 2008; Primary domestic currency: U.S. dollars.

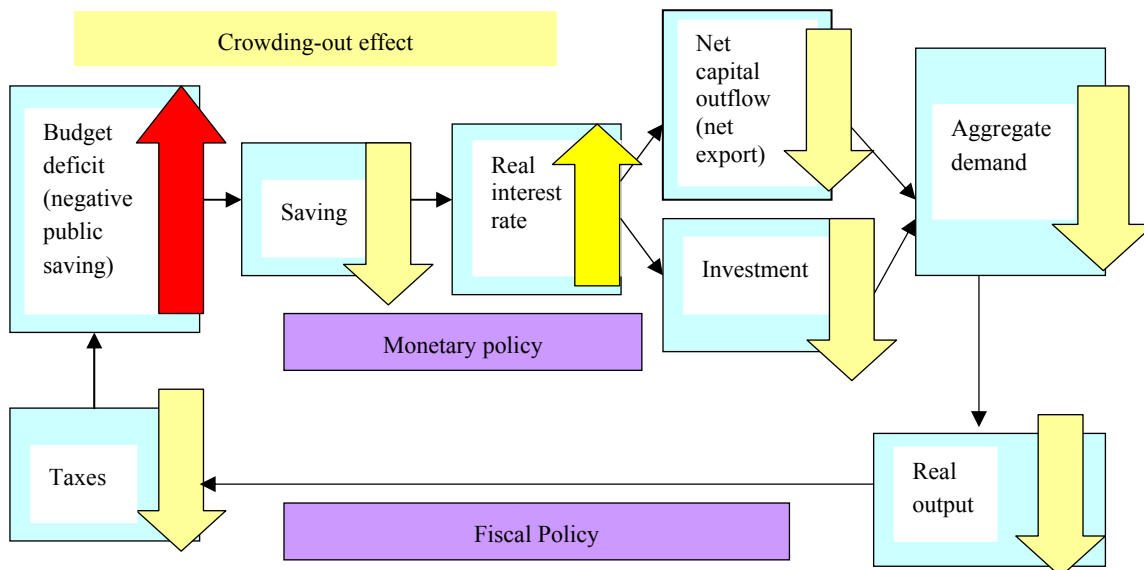


Figure 15. The effects of a government budget deficit: When the government runs a budget deficit, it reduces the national saving. The interest rate rises. Further, the higher interest rate reduces net foreign investment (net capital outflow). Reduced net foreign investment (net capital outflow), in turn, reduces the supply of domestic currency in the market for foreign-currency exchange, which causes the real exchange rate of domestic currency to appreciate.

### The Model

Irregular movement of the saving can be analyzed in the formal framework of the chaotic saving growth model :

$$S_t = I_t + NCO_t \quad (1)$$

$$S_t = \lambda Y_t \quad (2)$$

$$NCO_t = \gamma S_t \quad (3)$$

$$S_t = S_{pt} - Bd_t \quad (4)$$

$$S_{pt} = \alpha S_t \quad (5)$$

$$Bd_t = \beta S_t \quad (6)$$

$$k = \frac{\Delta K}{\Delta Y} \quad (7)$$

$$Y_t = K_t^{1/2} \quad (8)$$

where,  $S_t$ : national saving;  $Y_t$ : the real gross domestic product;  $NCO_t$ : net capital outflow (net foreign investment);  $Bd_t$ : budget deficit;  $S_{pt}$ : private saving;  $K_t$ : capital;  $k$ : marginal capital coefficient;  $I_t$ : investment;  $\alpha$ : private saving as a percent of national saving;  $\beta$ : budget deficit as a percent of national saving;  $\gamma$ : net capital outflow as a percent of national saving; and  $\lambda$ : saving rate.

By substitution one derives:

$$S_{t+1} = \left[ 1 + \left( \frac{\lambda (\alpha - \beta - \gamma)}{k} \right) \right] S_t - \left( \frac{1}{k \lambda} \right) S_t^2 \quad (9)$$

Further, it is assumed that the current value of the saving is restricted by its maximal value in its time series. This premise requires a modification of the growth law. Now, the saving growth rate depends on the current size of the saving,  $S$ , relative to its maximal size in its time series  $S^m$ . We introduce  $s$  as  $s = S / S^m$ . Thus  $s$  ranges between 0 and 1. Again we index  $s$  by  $t$ , i.e., write  $s_t$  to refer to the size at time steps  $t = 0, 1, 2, 3, \dots$ . Now growth rate of the saving is measured as:

$$s_{t+1} = \left[ 1 + \left( \frac{\lambda (\alpha - \beta - \gamma)}{k} \right) \right] s_t - \left( \frac{1}{k \lambda} \right) s_t^2 \quad (10)$$

This model given by equation (10) is called the logistic model. For most choices of  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\lambda$ , and  $k$  there is no explicit solution for equation (10). This is at the heart of the presence of chaos in deterministic feedback processes. Lorenz (1963) discovered this effect—the lack of predictability in deterministic systems. Sensitive dependence on initial conditions is one of the central ingredients of what is called deterministic chaos.

It is possible to show that iteration process for the logistic equation:

$$z_{t+1} = \pi z_t (1 - z_t), \quad \pi \in [0, 4], \quad z_t \in [0, 1] \quad (11)$$

which is equivalent to the iteration of growth model (9) when we use the identification:

$$Z_t = \frac{1}{\lambda [k + \lambda (\alpha - \beta - \gamma)]} S_t \quad (12)$$

$$\pi = \left[ 1 + \left( \frac{\lambda (\alpha - \beta - \gamma)}{k} \right) \right]$$

Using equation (12) and equation (10) we obtain:

$$\begin{aligned} Z_{t+1} &= \frac{1}{\lambda[k + \lambda(\alpha - \beta - \gamma)]} S_{t+1} \\ &= \frac{1}{\lambda[k + \lambda(\alpha - \beta - \gamma)]} \left\{ \left[ 1 + \left( \frac{\lambda(\alpha - \beta - \gamma)}{k} \right) \right] s_t - \left( \frac{1}{k\lambda} \right) s_t^2 \right\} \\ &= \left( \frac{1}{\lambda k} \right) s_t - \left( \frac{1}{\lambda^2 k [k + \lambda(\alpha - \beta - \gamma)]} \right) s_t^2 \end{aligned}$$

On the other hand, using equation (11) and equation (12) we obtain:

$$\begin{aligned} Z_{t+1} &= \pi Z_t(1 - Z_t) = \left( \frac{1}{\lambda[k + \lambda(\alpha - \beta - \gamma)]} \right) \left[ 1 - \left( \frac{1}{\lambda[k + \lambda(\alpha - \beta - \gamma)]} \right) s_t \right] \\ &= \left[ 1 + \left( \frac{\lambda(\alpha - \beta - \gamma)}{k} \right) \right] s_t \\ &= \left( \frac{1}{\lambda k} \right) s_t - \left( \frac{1}{\lambda^2 k [k + \lambda(\alpha - \beta - \gamma)]} \right) s_t^2 \end{aligned}$$

Thus, we have that iterating:

$$s_{t+1} = \left[ 1 + \left( \frac{\lambda(\alpha - \beta - \gamma)}{k} \right) \right] s_t - \left( \frac{1}{k\lambda} \right) s_t^2$$

which is really the same as iterating  $Z_{t+1} = \pi Z_t(1 - Z_t)$  using  $z_t = \frac{1}{\lambda[k + \lambda(\alpha - \beta - \gamma)]} S_t$  and  $z_t = \frac{1}{\lambda[k + \lambda(\alpha - \beta - \gamma)]} S_t$ .

It is important because the dynamic properties of the logistic equation (11) have been widely analyzed (Li & Yorke, 1975; May, 1976).

It is obtained that for parameter values:

- (1) For  $0 < \pi < 1$ , all solutions will converge to  $z = 0$ ;
- (2) For  $1 < \pi < 3.57$ , there exist fixed points the number of which depends on  $\pi$ ,
- (3) For  $1 < \pi < 2$ , all solutions monotonically increase to  $z = (\pi - 1)/\pi$ ,
- (4) For  $2 < \pi < 3$ , fluctuations will converge to  $z = (\pi - 1)/\pi$ ,
- (5) For  $3 < \pi < 4$ , all solutions will continuously fluctuate;
- (6) For  $3.57 < \pi < 4$ , the solution become “chaotic” which means that there exist totally aperiodic solution or periodic solutions with a very large, complicated period. This means that the path of  $z_t$  fluctuates in an apparently random fashion over time, not settling down into any regular pattern whatsoever.

Table 1

*The Estimated Model (13)*

Canada			
R = 0.94969 Variance explained: 90.191%			
	$\omega$	$\nu$	
Estimate	1.11203	0.135885	
Std.Err.	0.07089	0.092335	
t(28)	15.68722	1.471643	
p-level	0.00000	0.152268	
France			
R = 0.96198 Variance explained: 92.540%			
	$\omega$	$\nu$	
Estimate	1.07245	0.080627	

(to be continued)

	Std.Err.	0.05477	0.067406
	<i>t</i> (28)	19.57927	1.196137
	<i>p</i> -level	0.00000	0.241674
Germany	<i>R</i> = 0.88068 Variance explained: 77.560%		
	$\omega$		$\nu$
	Estimate	1.19442	0.259601
	Std.Err.	0.08495	0.114118
	<i>t</i> (28)	14.06065	2.274859
	<i>p</i> -level	0.00000	0.030770
Italy	<i>R</i> = 0.90013 Variance explained: 81.024%		
	$\omega$		$\nu$
	Estimate	1.09607	0.111404
	Std.Err.	0.09075	0.101601
	<i>t</i> (28)	12.07771	1.096488
	<i>p</i> -level	0.00000	0.282207
Japan	<i>R</i> = 0.92577 Variance explained: 85.706%		
	$\omega$		$\nu$
	Estimate	1.21883	0.247318
	Std.Err.	0.08235	0.094599
	<i>t</i> (28)	14.80025	2.614390
	<i>p</i> -level	0.00000	0.014229
UK	<i>R</i> = 0.87269 Variance explained: 76.158%		
	$\omega$		$\nu$
	Estimate	1.19993	0.250541
	Std.Err.	0.09432	0.118459
	<i>t</i> (28)	12.72147	2.115006
	<i>p</i> -level	0.00000	0.043460
USA	<i>R</i> = 0.90748 Variance explained: 82.353%		
	$\omega$		$\nu$
	Estimate	1.14812	0.181850
	Std.Err.	0.08489	0.106831
	<i>t</i> (28)	13.52534	1.702214
	<i>p</i> -level	0.00000	0.099794

### Empirical Evidence

The main aim of this paper is to analyze the saving growth stability in the period 1980-2010, in the G7 countries, by using the presented non-linear, logistic saving growth model (10) or:

$$s_{t+1} = \omega s_t - \mathcal{G} s_t^2 \quad (13)$$

where  $s$ : saving;  $\omega = \pi = \left[ 1 + \left( \frac{\lambda (\alpha - \beta - \gamma)}{k} \right) \right]$  and  $\mathcal{G} = \left( \frac{1}{k \lambda} \right)$ .

Firstly, we transform data on the savings (www.imf.org) from 0 to 1, according to our supposition that actual value of the savings,  $S$ , is restricted by its highest value in the time-series,  $S^m$ . Further, we obtain time-series of  $s = S/S^m$ . Now, we estimate the model (13). The results are obtained in the next section.

### Conclusion

This paper suggests conclusion for the use of the chaotic saving growth model in predicting the movement of the saving in the G7 countries. The model (10) has to rely on specified parameters  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\lambda$ ,  $k$ , and initial value of saving,  $s_0$ .

A key hypothesis of this work is based on the idea that the coefficient  $\pi = \left[ 1 + \left( \frac{\lambda (\alpha - \beta - \gamma)}{k} \right) \right]$  plays a crucial role in explaining local saving stability, where,  $\alpha$ : percent of national saving which belongs to private saving,  $\beta$ : percent of national saving which belongs to budget deficit,  $\gamma$ : percent of national saving which belongs to net capital outflow,  $\lambda$ : saving rate,  $k$ : marginal capital coefficient.

An estimated value of the coefficient  $\pi$  was around 1 in the G7 countries in the period 1980-2010. This result confirms stable economic growth in the G7 countries in the observed period. However, if  $\pi < 1$ , then saving will be decreased. However, national saving in the G7 countries has been relatively decreased (the decreasing slope of the saving function). The tendency of decreasing saving rates and relatively decreased savings in the G7 countries represent challenges for economic policies. In this sense, it is important to increase national saving, private saving, net outflow capital; and to decrease budget deficit through fiscal and monetary reforms.

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# Strategic and Organizational Evolutions of High-Tech SME on Global Market

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The “OLI paradigm” of Dunning (1977) claims that firm internationalization is addressed toward the exploitation of home-based specific advantages. However, evidence shows that SMEs are increasingly internationalizing their activities in order to enrich their resource pool. In this regard, a reinterpretation of the OLI paradigm came out with a new perspective suggesting that “foreign direct investment” (FDI) is increasingly oriented toward asset augmentation. Correspondingly, the purpose of this theoretical paper is to suggest a set of principles that could inform on how global small and medium-sized enterprises grow in the international marketplace when investing abroad.

*Keywords:* SME, OLI, knowledge, exploitation, exploration

## Introduction

From a business viewpoint, globalization refers to “the tendency to configure their activities on a worldwide basis and to co-ordinate and integrate their strategies and their operations across national boundaries” (Stonehouse, Campbell, Hamill, & Purdie, 2007, p. 5). Today, global firms do not fear the engagement in foreign markets. They address the world as a unique integrated platform. This strategy of linking global markets is a convenient alternative for firms who lack resources such as small and medium-sized firms (SMEs).

Because of the increasing complexity of the international marketplace and the growing sophistication of consumer preferences, global firms realized the need for a more flexible and responsive strategy with respect to the host country environment. Thus, they start applying the transnational strategy, which consists of bonding global coordination and local responsiveness, within an overarching learning perspective, in order to achieve higher competitiveness. In transnational strategy, worldwide knowledge is therefore emphasized as an asset (Stonehouse et al., 2007).

The previous statement is in line with the “ownership-localization-internalization paradigm” (OLI paradigm), which stresses that firms could invest abroad in order to develop new capabilities (Dunning, 2000). In addition to sales concerns, an internationalizing SME can target internal growth when investing in a host country. In regards to this statement, we argue for a potential strategic and organizational evolution that can occur within the FDI stage. Mathews (2006) argues that to upgrade their pool of resources, global firms experiment strategic and organizational innovations on the global market. This statement is likely to enlarge the Uppsala stage framework,

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which does not discuss how global SMEs grow, as they foster their commitment to the international marketplace. This model copes only with the sales growth imperative. From this concept, we propose to introduce a knowledge creation perspective in the last stage of the Uppsala model, which corresponds to FDI.

In fact, knowledge is created through two learning approaches, i.e., exploitation and exploration (Bierly III, Damanpour, & Santoro, 2009). Organizations are making ongoing trade-offs between exploitation and exploration (Kane & Alavi, 2007). These approaches differ regarding the strategic goals and the related organizational practices (He & Wong, 2004). Our purpose is to explore how global SMEs are balancing exploitation and exploration on strategic and organizational levels in order to enhance knowledge-creation when investing abroad. Actually, there is a need to probe into SME globalization regarding the dynamics of knowledge creation (Chen & Martin, 2001). As a matter of fact, a literature gap remains regarding SME globalization, despite the increase of their relative share in FDI during the last two decades (Gassmann & Keupp, 2007).

This paper is organized as follows: In the first section, we discuss the new configuration of the OLI paradigm. In doing so, we underline the interest of global SMEs in multi-domestic knowledge creation and present the ambidexterity assumption (presence of two underlying processes in knowledge-creation). The second section will shed light on our propositions regarding the strategic as well as the organizational trends in knowledge creation among global SMEs. The final section will highlight our theoretical contributions.

### **Related Work**

The conventional argument advanced by the OLI framework regarding the impulse of internationalization is based on the capacity of the firm to exploit its home-based advantages on other markets. Afterwards, scholars started considering that internationalization can be instigated by the search for new resources by using JVs and partnerships. The adherents to the OLI eclectic framework have attempted to steer it in different directions in order to accommodate some developments such as the proliferation of mergers, acquisitions, alliances and JVs. Indeed, the classic perspective of the OLI paradigm overlooks the cases of firms expanding abroad to gain access to strategic resources and assets. It was addressed to large multinationals with a strong resource base developed at the home country prior to international expansion. Large and well-established multinationals do not represent the majority of firms investing abroad, rather it is the smaller multinationals that are a part of this global landscape. These firms are using effective strategies of global integration (Mathews, 2006).

Correspondingly, the new OLI paradigm, proposed by Dunning (2000), admits that the growing importance of globalization and alliances highlighted knowledge creation as an incentive for global firms.

FDI can be approached, thereby, as a knowledge channel (Branstetter, 2006; Makino & Inkpen, 2003). In fact, geographical localization facilitates new knowledge acquisition (Alcaer & Chung, 2007). For this purpose, global firms oriented toward cross-border knowledge creation must leverage global coordination and local responsiveness (Stonehouse et al., 2007). Regarding the latter implication, valuable knowledge is generally tacit, and location-bound (Feinberg & Gupta, 2004). This implies that subsidiaries incorporate local clusters and cooperate with performing organizations (Almeida & Phene, 2004). Such an empowerment of subsidiary members denotes more sensitiveness and responsiveness regarding local stimuli (Bartlett & Ghoshal, 2000). On that subject, Porter's diamond model summarizes the location stimuli that could support knowledge creation in a foreign location (Porter, 1990):

(1) Demand sophistication: Hard-to-achieve local demand requirements spur domestic firms to raise their skill level;

(2) Local competition intensity: Firms operating in high-rivalry industries, commit more efforts in order to outperform the rest of competitors;

(3) Local firms commitment toward adopting relevant market strategies and organizational structures: Local firms would strive to apply these “best practices”, in order to neutralize any competitor superiority;

(4) Presence of complex and developed inputs: The absence of natural and non-developed resources would encourage local firms to create their own inputs. If this tendency is sustained in time, local firms will be likely to build a specific pool of complex and developed inputs. The engagement in input creation efforts (which lies in frequently applying more efficient and effective inputs), will enable local firms to raise their knowledge base.

Hence, firms operating within a globalization setting are using FDI to take advantage of human capital differentials alongside production cost gaps (Buckley & Ghauri, 2004). This entry mode is increasingly undertaken by SMEs (Kuo & Li, 2003), especially those positioned in high-tech sectors (Fujita, 1995; Keeble, Lawson, Smith, Moore, & Wilkinson, 1998). However, there are some difficulties that SMEs are faced with, i.e., bridging the cultural and the institutional distances between home and host countries (Knight, 2001; Lu & Beamish, 2001) and overcoming the market entry barriers, related mostly to the need for specific information on customer preferences and key investments in technological assets (Beamish & Lee, 2003). However, knowledge accumulation in foreign markets has been suggested as a supportive factor for global SMEs facing these difficulties (Anderson & Boocock, 2002; Majocchi & Zucchella, 2003). Global SMEs are continuously striving to enrich their stock of knowledge within market niches to distance themselves from competing with larger firms (Anderson et al., 2004; Audretsch, Prince, & Thurik, 1999).

Knowledge is a set of principles, facts, skills, and rules. It underlies the organization's core competences (Stonehouse et al., 2007). Knowledge is stored in organizational procedures and norms (March, 1991). The process of knowledge creation consists of internally diffusing knowledge created by individuals and coordinating it with existing knowledge. More specifically, knowledge creation rests upon knowledge conversion, which lies in transforming tacit individual knowledge into explicit knowledge. Thus, tacit knowledge will become represented and explained (Nonaka & von Krogh, 2009). On the one hand, “tacit knowledge covers knowledge that is unarticulated and tied to the senses, movement skills, physical experiences, intuition, or implicit rules of thumb” (Nonaka & von Krogh, 2009, p. 635). On the other hand, explicit (or codified) knowledge is “uttered and captured in drawings and writing” (Nonaka & von Krogh, 2009, p. 635).

Codifying tacit knowledge, i.e., making it more explicit, helps to articulate and to justify an individual's beliefs. Tacit knowledge and explicit knowledge are complementary. Advancing a firm's capacities consists of making appropriate combinations between new and existing tacit knowledge with new and existing explicit knowledge (Nonaka & von Krogh, 2009). Moreover, knowledge creation is an interactive social practice, where members with different tacit knowledge backgrounds rally their efforts in order to upgrade their collective stock of knowledge. This could help individuals to overcome their bounded rationality and to extend their own knowledge. The outcome of knowledge conversion leads members of an organization to “reach an agreement on and provide a collective understanding of problems, solutions, tasks, and actions within the organization” (Nonaka & von Krogh, 2009, p. 646). Given that it is based on information sharing and tight communication

between actors, knowledge creation occurs within a learning environment inside the organization (Melton, Chen, & Lin, 2006). In other words, knowledge is created by organizational learning (Lee, Chen, Kim, & Johnson, 2008; March, 1991).

Organizational learning represents the dynamic mechanisms through which knowledge is created and shared in organizations (Kane & Alavi, 2007). It is defined as “the dynamic process of creating new knowledge and transferring it to where it is needed and used, resulting in the creation of new knowledge for later transfer and use” (Kane & Alavi, 2007, p. 796). “Learning is not random or blind, but directed. It consequently makes conceptual sense to say that human beings can act on behalf of organizations and also to argue that, on behalf of organizations, individuals can undertake experiential learning processes that yield behavioral outcomes that are reflected in organizational rules encoding the experiences concerned” (Holmqvist, 2004, p. 71). A learning process starts from an incident (e.g., crisis, a major client order) that is converted later into a new capability, based on information sharing that occurs between individuals, groups or organizations (Zhang, Macpherson, & Jones, 2006). Therefore, organizational learning can help to rationalize organization actions, simplify experience, and delimit the temporal and spatial frame of action consequences (Levinthal & March, 1993). New routines and methods are institutionalized as firm units reassess their existing practices in light of new insights gained from their global presence (Miesing, Kriger, & Slough, 2007).

It has been acknowledged that two processes characterize organizational learning, i.e., exploitation and exploration (Bierly III et al., 2009; Holmqvist, 2004; Kane & Alavi, 2007). More specifically, external knowledge is transferred to the organization first, and then applied in exploration and exploitation. This two-step process is referred to as the “absorptive capacity”. Whereas exploration deals with generating new products and technologies, exploitation attempts to improve existing products and processes (Bierly III et al., 2009). “Exploration implies firm behaviors characterized by search, discovery, experimentation, risk taking and innovation, while exploitation implies firm behaviors characterized by refinement, implementation, efficiency, production and selection” (He & Wong, 2004, p. 481). For this purpose, exploitation is centered on refining and elaborating the firm’s experience. However, exploration is addressing the diversification of the experience through experimentation and free associations (Holmqvist, 2004). The extent of an exploration can be assessed through technological and market novelty for the firm, not for the industry as a whole (Greve, 2007).

Yet, exploration entails some risk taking, given that it intends to discover novel solutions (March, 1991). As a matter of fact, the returns of exploration are more remote in time (Greve, 2007), and less certain regarding useful related applications and best targeted receivers (March, 1991).

Both processes of exploitation and exploration apply to cross-border knowledge creation as well (Bartlett & Ghoshal, 1989, 2000). Several authors acknowledge the growing presence of both types of assignments during globalization, i.e., existing specific-advantages exploitation and new specific-advantages exploration (Gassmann & Keupp, 2007; Li & Yue, 2005; Macpherson & Holt, 2007). Exploitation and exploration assignments are devoted to upgrade the knowledge base of the global firm. The new interpretation of a global firm suggests that any local embedment should lead to the creation of new knowledge for the entire organization (Stonehouse et al., 2007). For those companies, globalization targets the local knowledge pool. Such an approach is qualified as a “transnational solution” (Bartlett & Ghoshal, 1989, 2000). In the past, subsidiaries given exploitation assignments were not empowered to conceive new solutions for headquarters. Nevertheless, evidence shows that

subsidiary assignments are evolving (Almeida & Phene, 2004). Furthermore, exploitation could support cross-border knowledge creation, however at a slower pace than exploration (Chiesa, 1996; Li & Yue, 2005). Adapting products to specific local needs upgrades the firm's knowledge pool (Miesing et al., 2007). Market closeness, enhanced by exploitation of home-country specific advantages, enables a certain augmentation of existing know-how (Chiesa, 1996). In fact, outcomes of exploitation lie in adapting to home-country developed products to the local market, which yields minor improvements on existing specific advantages. Exploration, however, allows for a more fundamental increase in a firm's knowledge base (Gassmann & Keupp, 2007; Li & Yue, 2005). Exploration mission consists in crossing new technological areas, in which the host country is relatively more advanced. This entails that a global firm browses local technological trends in order to capture what would be useful for the entire company (Chiesa, 1996). For this purpose, exploration subsidiaries are relatively less bound to the center's technology (Nobel & Birkinshaw, 1998). They strive rather to capture local know-how and communicate it to the rest of the company (Singh, 2008).

Nevertheless, several scholars note that there is an interplay that should be managed in organizations between exploitation and exploration processes (He & Wong, 2004; Holmqvist, 2004; Kane & Alavi, 2007; Levinthal & March, 1993; March, 1991). Given that they share a scarce amount of organizational resources, any excessive focus on one of these approaches can create tensions (He & Wong, 2004). On the one hand, excessive exploration pitfalls are correlated to the lack of short-run returns. Exploration is favored when the organization is committed toward ongoing change and experimentation. However, such an engagement could sometimes be unrewarding, which can be risky when exploitation is overlooked (Levinthal & March, 1993). On the other hand, obsolescence is a drawback of excessive exploitation. When an organization realizes high productive activities, it creates rapid rates of turnover. Thus, an organization could benefit from further exploitation of successful activities. This would drive out exploration into novel domains. Besides, the most common situation is when exploitation drives out exploration. In fact, learning processes are catalyzed by experience and therefore, organizations will tend to sustain exploiting their existing products because the related feedback is clearer, closer in time, and can be integrated rapidly (Levinthal & March, 1993).

In hindsight, dissatisfaction is a key factor that permits organizational members to shift their learning processes toward more exploitation or more exploration. Dissatisfaction is resented when performance is under expectations. Furthermore, dissatisfaction along with exploitation can drive more exploration and vice versa (Holmqvist, 2004).

Dissatisfaction along with exploitation occurs from low performance. Thus, an organization would need to gather new experiences, sometimes from other organizations. Therefore, dissatisfaction with excessive intra-organizational exploitation leads to inter-organizational exploration to diversify experience. Excessive exploration can also yield dissatisfaction when few returns are collected and consequently, more focused experience is needed (Holmqvist, 2004). In summary, balancing between both learning processes ensures "current viability" through exploitation, as well as "future viability" via exploration (Levinthal & March, 1993). According to Greve (2007), decoupling exploitation and exploration activities across subunits or over time can be an alternative to handle them.

Organizations making trade-offs between exploitation and exploration are qualified as ambidextrous organizations. These organizations are able to compete in mature markets where incremental innovation is

needed, and to supply also emerging markets, where attention is turned to the search for new alternatives and products (He & Wong, 2004).

Our intention in this manuscript is to investigate how global high-tech SMEs manage their FDI within a knowledge creation perspective. We chose to concentrate on high-tech SMEs because of their presence in competitive oligopolistic industries, in which they are constantly concerned by seeking new capabilities (Bell et al., 2003). For these reasons, our focus is two-fold: strategic and organizational. First, we propose to explore the strategic guidelines that could inform us on how global SME can balance exploitation and exploration in order to better perform cross-border knowledge-creation. Second, we will investigate the organizational practices that global high-tech SMEs can apply to accommodate the strategic trade-offs between exploitation and exploration processes. As a matter of fact, literature has shown that exploitation and exploration require different structures, strategies, cultures, processes, and capabilities (He & Wong, 2004). Therefore, our propositions will attempt to capture the strategic choices as well as organizational practices applied by global high-tech SMEs in order to enhance cross-border knowledge-creation.

### **Conceptual Framework**

The ever-increasing globalization of firms makes it necessary to understand how global small and medium-sized firms attain higher competitiveness in such context, given their shortage of resources. Knowledge has been the backbone for the globalization of SMEs. Acquiring worldwide knowledge allows “global SMEs” to foster their commitment toward foreign markets (Casillas et al., 2009). Thus, global high-tech SMEs could be concerned by developing their internal capacities from their direct presence in other countries. SMEs would invest in order to extend the exploitation of their home-based specific advantages and increase their sales. At the same time, they could show an interest to access local knowledge sources and to transform them into new capabilities through collaboration between all firm units. Generally speaking, an SME’s strategic and organizational developments during the FDI stage represent the broader topic to be investigated in this paper. We will analyze the evolutionary globalization process of global high-tech SMEs from the perspective of knowledge creation.

A firm can gather new knowledge by spreading out its activities to foreign locations (Adenfelt & Lagerstrom, 2006b). Offshore decentralization of knowledge creation activities is opposed to the centralized approach (Mendez, 2003), which is in conformity with the product life-cycle theory of Vernon (1966). Nowadays, decision making in global firms is considering the need to perform each activity in its corresponding optimal location (Buckley & Ghauri, 2004).

Designing a global architecture of value-chain activities is important to develop new specific advantages abroad. This requires a global firm to determine the number of locations to host a given activity, with consideration given to the critical mass needed in order to achieve economies of scale. Moreover, a global firm has to choose the appropriate location for each activity. Designing an optimal global architecture consists of reducing duplications across locations for each activity performed. This global architecture has to be reassessed on a regular basis in order to accommodate for the changing environments in foreign countries (Gupta & Govindarajan, 2001).

High-tech global SMEs are locally embedded, which means that they are more responsive to local market and develops location-bound specific advantages (Rugman & Verbeke, 1992). The aforementioned diamond

model of Porter (1990) informs on the local factors to which global firms can be responsive. Local embedment is linked, though, to the extent of the attributed assignment: exploitation or exploration (Macpherson & Holt, 2007). Knowledge is created from performing learning activities during exploitation or exploration (March, 1991). The latter is associated to an increased local embedment (Kurokawa et al., 2007; Madambi & Navarra, 2004; Nobel & Birkinshaw, 1998). According to the transnational solution, any local embedment should lead to knowledge creation (Bartlett & Ghoshal, 2000).

Moreover, some authors argue for a sequential relay between these two knowledge creation processes (Hedge & Hicks, 2008; Kuemmerle, 1999). Globalization is usually done in a sequential manner: subsequent FDI flows into a given location are addressing different kinds of objectives than the initial introduction (Chang & Rosenzweig, 2001). Most commonly, assignments evolve from exploitation to embrace exploration (Le Bas & Sierra, 2002). Several researches noticed that the local market potential is the preliminary incentive for internationalizing firms. Afterwards, foreign firms will start showing more attention to other knowledge sources such as the location's specific capabilities (Frost & Zhou, 2000; Hedge & Hicks, 2008).

For global SMEs, the first introduction into the host country, on the one hand, would be motivated by developing existing knowledge throughout its adaptation to local market (i.e., exploitation). On the other hand, subsequent entries would focus on experiencing new knowledge fields (i.e., exploration). We should be aware of the aforementioned statement that an ambidextrous organization should not have any excessive concentration on one learning process at the expense of others (He & Wong, 2004; Levinthal & March, 1993). Thus, we believe that a certain balance between the two processes would be maintained in global SMEs.

When exploitation is favored, firms would be able to learn more about the host country setting, which represents a springboard before engaging in exploration. As a matter of fact, the latter assignment is associated to more critical challenges. Thus, the sequential relay between both assignments is needed to perform exploration (Kuemmerle, 1999). As a result, we assume that during its first introduction into a host country, a global SME would create knowledge by undertaking more exploitation activities. Afterwards, an SME would engage in more exploration activities. Such an assumption adheres to the evolutionary trend discussed in the Uppsala model of Johansson and Vahlne (1977).

Proposition 1: Global SME creates knowledge through more exploitation, before engaging in more exploration.

In Figure 1, the focus shift from exploitation to exploration is actually quite general at this level. We do not have knowledge about how this evolution will occur, whether gradually or drastically. Following this evolution, we do not know at which level global SMEs will arrive on the right side of the continuum. Will they commit a higher disproportional attention to exploration over exploitation, or will they be maintaining a more equilibrate balance between both activities? Obviously, if they move to the extreme right (left) of the continuum, we would assume that they show a deep commitment in exploration (exploitation). However, any excessive focus on either exploitation or exploration is an unfulfilling choice (He & Wong, 2004; Levinthal & March, 1993). Consequently, we expect that global SMEs will not overlook either exploitation or exploration. They will remain close to the equilibrium point on the graph. In other words, we believe that global SMEs will not position themselves on the extreme right. Such an initiative could be risky to their survival, given their lack of funds and knowledge. This exploitation-exploration evolution represents our strategy-related assumptions,

regarding knowledge creation trade-offs in global SMEs. In summary, we suggest that a global SME would tend to engage more efforts in exploration as its FDI increases in a given location. The following propositions will deal with the organizational practices that will reflect this advocated strategic evolution.

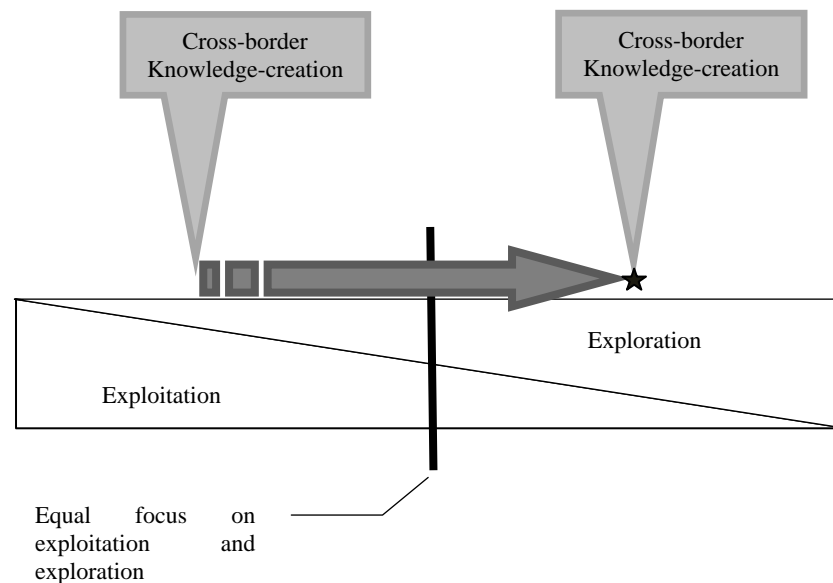


Figure 1. Global SME's evolution from more exploitation to more exploration during subsequent FDI.

The first organizational issue to be addressed in our propositions concerns how a global SME handles local knowledge sources, in accordance with the strategic move toward more exploration. Knowledge creation is performed by converting tacit into explicit knowledge (Nonaka & von Krogh, 2009). In global SMEs, the search for new knowledge abroad is an iterative process based on appraisal of information relevance. Information on global markets can be sourced either from internal or external sources (Casillas et al., 2009). Internally, tacit knowledge is acquired through action and daily practice (Nonaka & von Krogh, 2009). Global firms can also source knowledge assets from external actors (Dunning, 2000). The social capital consisting in vertical relationships with large foreign customers is a prominent source of knowledge for start-ups abroad (Presutti, Boari, & Fratocchi, 2007). Furthermore, global SMEs can establish partnerships with suppliers (Yeoh, 1994), and within local scientific communities (Autio, Kanninem, & Gustafsson, 2008; von Zedtwitz, 2004). Evidence shows that exploration is better supplied from partnerships established with universities and public R&D centers. Such scientific partners provide academic knowledge, which is hard to source otherwise. Academic knowledge underpins the reinvention of existing capabilities (Van Beers, Berghall, & Poot, 2008). We would then expect that global SMEs to engage in more cooperation with universities and public R&D centers in the host country, when exploration becomes the predominant part in knowledge creation. On the other side of the spectrum, exploitation needs applied knowledge to become more available to suppliers and customers. Applied knowledge is more helpful when it comes to market trends and specific customer needs (Van Beers et al., 2008).

Proposition 2: Global SME cooperates more with local customers and suppliers, as it performs more exploitation than exploration.

Proposition 3: Global SME cooperates more with local universities and public R&D centers, as it performs more exploration than exploitation.

Transforming multi-domestic knowledge into new products relies not only on transferring it, but also on appropriate integration effort (Subramaniam, 2006). Synergies, stimulated by internal knowledge integration, enable the development of new specific advantages (Singh, 2008). Knowledge integration is the ending phase of knowledge creation process in global SMEs. Three stages are identified within this process, i.e., the possession of previous knowledge, the decision to search new knowledge and the absorption and combination of new knowledge with existing knowledge (Casillas et al., 2009). In short, knowledge is effectively created during this integration phase. The tacit knowledge gathered during exploitation and/or exploration is converted into new specific advantages through internal interdependence of all business units. Therefore, it is important to understand how decentralized units communicate together in order to convert the tacit knowledge they gather locally into explicit knowledge. The following propositions will attempt to grasp the organizational choices that global SMEs can make in order to facilitate internal communication and on the whole, to convert knowledge into new specific advantages.

Global knowledge integration relies on the capacity of the headquarters to absorb the knowledge generated by subsidiaries (Birkinshaw, Hood, & Jonsson, 1998). For this purpose, it is important to develop formal as well as informal organizational routines that will guide the transmission of knowledge between all firm units (Feinberg & Gupta, 2004). In other words, global knowledge integration needs the presence of a well-definite organizational structure (Lipparini & Fratocchi, 1999). In this regard, Adenfelt and Lagerstrom (2006a) identified two possible organizational structures that support cross-border knowledge integration: multi-domestic and independent. The former consists in empowering several subsidiaries, from different locations, to work on the same assignment. These subsidiaries will rally and manage their forces in order to attain the assigned goal. The multi-domestic structure exists for a predetermined period of time, where knowledge is created collectively in several sites. Once developed, each plant will apply this knowledge locally, according to the idiosyncrasy of its environment. The independent structure, on the other side, refers to the designation of a single subsidiary to take in charge the whole innovation process. This independent structure implies that subsidiaries are more autonomous during knowledge development process. They can define more independently their future technological orientations, in an emergent way, without being bound to other plants. The knowledge outcome, locally and independently developed in each site, is shared afterward with the rest of the firm (Adenfelt & Lagerstrom, 2006a).

The independent structure has been advocated for highly strategic tasks. In fact, when firm members are asked to explore new specific advantages, more interaction will be needed in order to enhance tacit knowledge communication (Gassmann & von Zedtwitz, 2003). Bearing this in mind, we endorse the same assumption for global SMEs. When a global SME favors exploration over exploitation, it will likely benefit from the independent mode given its intention to experiment in new knowledge domains.

Proposition 4: Global SME applies a multi-domestic structure, as it performs more exploitation than exploration.

Proposition 5: Global SME applies an independent configuration, as it performs more exploration than exploitation.

### Conclusion

Cross-border knowledge creation in global SMEs has been discussed as a crucial topic (Casillas et al., 2009). Our stage-assumptions are dealing with this evidence. They reflect the strategic as well as the organizational choices that a global high-tech SME would make in order to achieve knowledge creation goals through exploitation and exploration. In previous studies, FDI utilization was a matter of increasing control over existing specific advantages, exploiting market imperfections and attenuating risks related to an agent's opportunism (Rugman & Verbeke, 1992). The product lifecycle theory, developed first by Vernon (1966), was underpinning this transaction cost apprehension of FDI flows. According to this conception, knowledge creation is bound to the home country (Almeida, Song, & Grant, 2002). Later on, theoretical developments started pointing out the usefulness of developing host country-bound specific advantages (Chen, Chen, & Ku, 2004; Rugman & Verbeke, 1992). Furthermore, FDI aiming at knowledge creation was not discussed enough in literature (Frost & Zhou, 2000). The shortcoming of the transaction cost theory with respect to the FDI explanation lies in its incapacity to underline cross-border knowledge-creation as a fundamental issue in a global SME's survival. Thus, our paper extends the Uppsala model using a new avenue in the OLI model, traditionally dominated by the transaction cost interpretation. However, even though some critics were directed toward the adequacy of the Uppsala process with respect to high-tech SMEs and especially those called "Born global SMEs", we believe that our assumptions can reveal how these SMEs manage their direct presence in foreign markets. Scholars claim that born global SMEs do not stick to the evolutionary stage process, i.e., once they are created, they engage in international activities (Compagno, Pittino, & Visintin, 2005; Crick & Spence, 2005). A large portion of born global SMEs operate in technology-intensive sectors (Bell, Crick, & Young, 2004). To explain this idiosyncratic aspect, authors advance the usefulness of the entrepreneur's social capital in gathering valuable know-how about the international marketplace. The bonds established with other organizations have significant influence on the internationalization speed of these SMEs (Coviello & Munro, 1997).

Other theoretical contribution can be assessed in this paper. Our contribution to the OLI model consists of analyzing market-seeking FDI and strategic asset-seeking FDI from the same perspective, i.e., knowledge creation. As a matter of fact, Dunning (2000) did not consider that the exploitation of home-based specific advantages on the global marketplace could be a knowledge source. Moreover, we assume the presence of a potential relay between both objectives for global SMEs. Knowledge creation will be accelerated in the presence of valuable knowledge sources. From this evolving perspective, we point out our principal theoretical contribution with respect to the Uppsala stage model. We assume that a global SME would start creating knowledge by undertaking more exploitative activities than exploration activities. A global SME needs to fully exploit its home-based specific advantages in the host country. The returns of exploitation are rapid and more certain. Thus, a global SME can rapidly offset the costs engaged in FDI. Exploration is supposed to be privileged, then, if the host country environment is wealthy in terms of valuable sources of knowledge. Further, we argue that such a strategic evolution toward more exploration should be followed by some organizational steps, i.e., partner selection, IDE mode, integration channels. However, our manuscript contains some shortcomings. First, SMEs are reputed to have a clear core business. Thus, it could be unconceivable to some of them to experiment in distant technological fields. These global SMEs could maintain more focus on exploitation

during subsequent FDI. Thus, they could stay positioned on the left side of the continuum. Consequently, it will be promising to carry an empirical study in order to determine whether global SMEs can illustrate different knowledge creation trends on the exploitation-exploration continuum, depending on specific features. Furthermore, Dunning (2000) advocates the presence of three sorts of objectives in FDI, i.e., cost economies, market growth, and knowledge creation. Our propositions did not inform on how cost objectives interfere with knowledge creation and sales issues. Of course, we do not advocate the exclusion of transaction cost validity in the diagnosis of global SMEs. We believe that transaction cost theory is still valid in analyzing global SMEs. Chen and Hu (2002) notice that the transaction cost analysis is necessary to make sure that the intended entry mode will lead to the upper performance. However, Madhok (1998) stipulates that firms must give consideration to entry modes that yield more knowledge flows to the firm, despite transaction cost disadvantages. As a result, global SMEs could balance exploitation and exploration activities differently, according to the established priorities. Further studies are needed in order to grasp if cost concern determines the importance a global SME gives to cross-border knowledge creation and the evolution that results from the choice made.

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# The Challenges of Human Resource Management Practices in the Informal Sector in Nigeria

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Unemployment in the third world countries has led to various negative and positive challenges from brain drain, increased crime cases to emergent of entrepreneurial businesses. This paper examines the Nigerian informal sector and the extent of conformity with proper human resource practices. This paper adopts survey approach in analyzing data to test whether or not SMEs can conform to global HRM practices by analyzing some variables. Graphs and simple statistics were used to test the probability of conformity of informal sector activities with HRM practices in Nigeria. This paper also relied on secondary data from Bureau of Statistics and other government agencies. Past literatures were also examined. It was discovered that due to low capital outlay and inability to access funds from financial institutions, global human resource practices like proper recruitment, training, career development are being ignored.

*Keywords:* human resource practices, informal sector, entrepreneur

## Introduction

According to Drucker, an entrepreneur is a person who understands the business opportunities and benefit by scarce resources and use them profitably. In his book *Management*, he said the purpose of an organization is to enable ordinary human beings to do extraordinary things, i.e., a means to make strengths productive and weakness irrelevant.

In Nigeria, the small and medium enterprises sub-sector has been expanding, especially since the mid-1980s, following the prolonged recession in the economy which forced many large enterprises to lay off large proportion of their work-force. The sector accounts for 70 percent of industrial employment (World Bank, 1995). Mazzarol, Volery, Doss and Thein (1999) indicated that emerging and transitional economies rely on small businesses in replacing state-owned organizations and stimulate economic growth.

A proper analysis of the developed economies of the advanced countries highlighted key imperatives needed to support the SME sector in its bid to opening the floodgates of economic prosperity. The key strategic imperatives identified, in order of priority, include provision of adequate infrastructure, sustained and sufficient institutional support, education and skills upgrading, technological adaptation and innovation and availability and access to funding and financial services.

In advanced economies, the SME sector is acclaimed as the engine of economic growth and development however against international best practices Nigeria is rated poorly. Extensive efforts in terms of strategic

programmes, policy and practice will be required to elevate Nigeria to a leading position by 2020—Report of the Vision 2020 National Technical Working Group on Small and Medium Enterprises (SMEs), July, 2009.

In the more recent past, Nigerians adapted their natural talents to evolve traditional businesses and crafts that have sustained most of the country's rural and urban poor for the better part of the last half century. While the oil boom of the 1970s brought in billions of petrodollars, most of the country's population remained untouched by the new-found prosperity, thanks to widespread political corruption and catastrophic economic mismanagement. Because of these and other factors, the World Bank estimates that 80% of oil revenues benefited just 1% of the population.

Most of Nigeria's current woes trace back to a historic overdependence on oil to the negligence of all other sectors, including customary trades and agriculture. Decades of non-inclusive policies alienated the vast majority of Nigerians, plunging the country into a miasma of extreme poverty and ravaging civil and political strife. The climate of economic stagnation spawned a mammoth informal economy that continues to sustain the bulk of Nigeria's 148 million people. It is a measure of Nigeria's inherent entrepreneurial capacity that this informal, unorganized sector presently accounts for 65% of Gross National Product and accounts for 90% of all new jobs (Osolor, 2010).

### **Literature Review**

There are no more important decisions within an organization than people decisions: staffing a job, placing people into jobs and into assignments, promoting people, letting them go, and so on. No matter how carefully organizations hire people, they won't perform if put into jobs that are the wrong ones for them. No matter how brilliant and clever top management decisions are regarding a company's business or its strategy, its products, or services, they will not produce results if the company's decisions do not work out (Drucker & Maciariello, 2008).

The history of the informal sector started with the surplus production of goods. When they had created too many products in their domain they would trade that product for something else they needed (Maranda).

According to Yimothy S. Hatten in his book *Small Business Management, Entrepreneurship and Beyond*, he said some of the most valuable resources and competitive advantages a small business has are its employees. He also emphasized that there are too many costs and risks involved in not paying attention to human resource issues.

#### **The Need for Human Resource Management**

According to Fajana (2006), Human resource management is connected with concepts, theories (including models), policies, plans, programmes, strategies, procedures, rules and regulations that must be employed in the acquisition and utilization of men towards the achievement of organizational goals.

According to him, he divided the scope of HRM into 3 levels, viz:

- Before employment: Career choice, work design, technological change, self preparations, growth-related conflicts;
- During employment: Self development, motivation, leadership, trade unionism, counseling, on-the-job training, conflict management, workplace communication;
- Post-retirement: Exit interview, post-retirement follow-up, pension policies, job redesign and evaluation.

Various aspect of human relevance to the informal sector:

- Recruitment and selection: This is to attract high calibre candidates and identification of candidates with the highest potential for performance for the job;
- Orientation and induction: This is to help new employee get acquainted with the organization, its policies, programmes and other colleagues. It includes training (on-the-job training, formal classroom training) during the

introductory/probationary period;

- Training and development: This involves developing skills and learning concepts which are aimed at improving productivity. This could be in the form of in-house training, on-the-job training, apprenticeship and committee/group methods;
- The owner-manager as personnel manager, leadership style, time management, recognize the importance of time, reexamine and clarify priorities, analyze present time-consuming activities, implement time management principles;
- Motivation and loyalty, working conditions, employee needs, paying employees, fringe benefits, job rotation, job sharing, working from home, flexible hours, employee suggestion systems, controlling and evaluating performance, pinpoint, record, involve, coach, evaluate. This involves the use of integrated set of activities to ensure that the organization attracts, retains, motivates, and develops the talented people it needs now and in the future (Armstrong, 2006);
- Handling grievances, implement a method for expression grievances, assure that concerns will not affect relationships, minimal red tape, offer alternative methods, unionization and the small business, labor relations act;
- The owner-manager as personnel manager, leadership style, time management, recognition of the importance of time, re-examine and clarify priorities, analyze present time-consuming activities, implement time management principles;
- Exit interviews and post-retirement packages: This is to enhance commitment and sense of belongingness from employees. Adapted from Wesley D. Balderson, University of Lethbridge.

### **The Informal Sector Examined**

The informal sector in Nigeria refers to economic activities in all sectors of the economy that are operated outside the purview of government regulation. This sector may be invisible, irregular, parallel, non-structured, backyard, underground, subterranean, unobserved or residual (Magbagbeola, 1996).

The traditional informal sector is defined crudely to include those labour intensive oftentimes self-employment economic activities which exist side by side with or partly dependent on the modern sector of the urban labour market (Fajana, 2000).

Activities in the informal sector in Nigeria are difficult to measure; they are highly dynamic and contribute substantially to the general growth of the economy and personal or household income (Ekpo & Umoh, 2010).

The formal sector comprises of public sector and large private sector firms and industries whose operations are covered by existing product and factor markets' regulations. The informal sector on the other hand, is made up of small-scale firms and business enterprises that either do not comply at all, or only partially with existing markets regulations (Scherer, 1980; Goldberg & Pavcnik, 2003; Folawewo, 2004; Olofin & Folawewo, 2006).

The informal sector has continued to play a prominent role in these economies by way of income and employment generation activities. It is estimated that in sub-Saharan Africa, as much as over 50 percent of the entire workforce is employed in the informal sector (Vandemoortele, 1991). The slow pace of development, which has manifested in sluggish growth, poor industrial development and persistent high rate of unemployment, coupled with the economic crises of the early 1980s and political instability in a significant number of African states has led to the expansion of the informal sector in the region over the years (Olofin & Folawewo, 2005, 2006).

Figure 1 compares the contribution of small businesses to GDP of various countries in 2005.

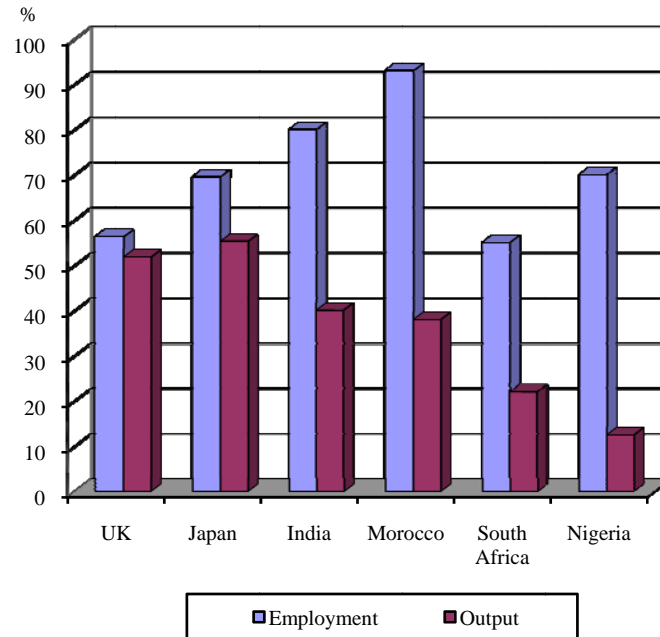


Figure 1. The contribution of small businesses to GDP of various countries in 2005. Source: SMEDAN, 2006, industrial sector figures only.

### State Intervention in the Informal Sector

Given the uncertainty surrounding the current economic crisis and their own deteriorating balance sheets, many companies have not hesitated to make cuts in their workforce without realizing that in most cases, such measures will not solve fundamental problems and will more likely worsen the labor climate and worker motivation (Valle, 2008). Companies should aim at encouraging and stimulating entrepreneurial activities within the organization.

However, with more people being educated and the fact that government could no longer employ most school leavers, economic programs to encourage individuals to go into private business and be self reliant were initiated.

Two approaches are used for entrepreneurship development in Nigeria. One of them is concerned with the provision of generous credit facilities for small-scale industrialists with the aim of giving these entrepreneurs seed money. The second approach was the establishment of a training institution known as the Industrial Development Centre (IDC). The centre's purpose is to provide resources for on-the-job training of entrepreneurs in various aspects of industrial management—especially those in the informal sector, such as petty traders, artisans, or farmers. Unfortunately, these initiatives failed to achieve desired results.

Such economic policy programs that are geared towards self reliance for individuals are programs as Open Apprenticeship Scheme, Graduate Employment Programs etc. and other policies that encourage or make it easy for entrepreneurs to acquire the needed funds, e.g., Peoples Bank of Nigeria, Funds for Small-Scale Industries(FUSSI), co-operative societies etc. were established to assist entrepreneurs in Nigeria.

One of the major factors that have in many ways discouraged this flow of entrepreneurship development in Nigeria is the value system brought about by formal education. For many decades, formal education has been the preserve of the privilege. With formal education people had the opportunity of being employed in the civil service, because in those days the economy was large enough to absorb into the prestigious occupation all Nigerians their

goods. As such, the system made Nigerians to be dependent on the colonial masters (Nicks, 2008).

### **Barriers to Youth Entrepreneurship**

The country's entrepreneurial potential also remains stunted due to entrenched systemic weaknesses. These challenges include:

- **Low standard of education:** Education is a crucial factor in preparing and empowering young entrepreneurs with business-related skills. Unfortunately, the role of education in preparing young people to become agents of change has largely been ignored in Nigeria. Year after year, education quality declines. The country has also experienced brain drain due to lack of proper incentives. Those stuck in the system are often only there due to an absence of alternative jobs;
- **Inadequate basic infrastructure:** Significant infrastructural deficits (especially with regards to roads and electricity) and systemic irregularities are inimical to small businesses;
- **Government policies:** Or lack of it thereof, has been a major bane of education in Nigeria. Schools are not adequately funded, equipped, or managed to bring out students' potential. Most of the time, students stay home due to strikes called by teachers. Most people in government send their children abroad for their education, neglecting the urgent need for reforms. The result is a workforce lacking in the skills and confidence needed for a better quality of life in Nigeria. Also, the absence of a pro-active regulatory environment discourages innovative enterprise development at the grassroots level;
- **Inadequate training:** The absence of adequate training for students that would help them become future business and community leaders is a regrettable consequence of poor education. The educational curriculum in Nigeria focuses heavily on theory without a corresponding practical approach. As a result, most employers are compelled to retrain their young employees due to their lack of basic workplace skills. Where some practical training is offered, it is usually directed at the employees of larger companies that can afford the exorbitant fees charged by the training institutions. With little or no money to spare, most young people miss these opportunities to equip themselves for leadership roles, resulting in low morale, inefficiency, and lack of confidence. Poor access to vocational and skills-development training for rural and urban youths involved in the informal economy constitutes a problem and affect the informal sector;
- **Lack of proper technology:** Technology has the potential to improve quality of life and economic performance. When youth do not have the knowledge or skills to use the latest technology, it affects their outlook on life. It is surprising that in an age when computers and the internet are taken for granted in so many parts of the world, the reverse is the case in Nigeria. The internet and other information and communications technology (ICT) infrastructure are not available in rural areas, where the majority of the Nigerian youth reside. This situation denies them an alternative means of skill acquisition, information access, and other advantages. Consequently, employers prefer to hire experienced professionals, making it impossible for young people to acquire much needed skills, familiarity with the work environment, or basic tools to pioneer their own successful businesses;
- **Other economic, social, and political factors:** There are other elements that play a role in stifling the dreams and aspirations of the Nigerian youth. Economic factors such as policy reversals, high and double taxation, difficulty in procuring business licenses, high inflation, and unstable exchange rates are some concern areas for potential entrepreneurs. Registering businesses is also incredibly difficult: An entrepreneur must procure a lawyer and an accountant to confront the legal and financial aspects of starting a business. The presence of administrative and trade barriers also curtails capacity building and inhibit access to technical support.

Here is the result of a study conducted by *Doing Business in Nigeria 2010* which is a collaboration between the World Bank Investment Climate Team for Africa, the subnational *Doing Business* team and the UK Department for International Development (DFID), the Government of Germany, through the Gesellschaft für Technische Zusammenarbeit (GTZ), and the Government of Switzerland, through the State Secretariat for Economic Affairs (SECO) (see Table 1).

Table 1

*Best Practice in Nigeria Compared Internationally*

Indicator	Nigeria in DB 2010 (represented by Lagos)		Nigeria best practice		
	Performance	Global rank (183 economies)	Best-performing state within Nigeria	Performance	Global rank (183 economies). How Nigerian States would compete globally
Days to deal with construction permits	350 days	167	Jigawa	47 days	6
Number of procedures to deal with construction permits	18 procedures	101	Jigawa	10 Procedures	9
Days to enforce a contract	457 days	64	Jigawa	261 days	10
Number of procedures to start a business	8 procedures	94	Abuja, FCT	5 Procedures	25
Days to register property	82 days	140	Borno	14 days	26
Cost to deal with construction permit	580.3% of income per capita <sup>a</sup>	143	Kano	94.6% of income per capita	67
Days to start a business	31 days	117	Abuja, FCT	22 days	92
Cost to register property	20.9% of the property value	178	Yobe	5.2% of the property value	104
Number of procedures to register property	13 Procedures	177	Borno, Gombe, Kwara	8 Procedures	136
Cost to start a business 77.0% of income	77.0% of income per capita <sup>b</sup>	153	Abuja, FCT	58.5% of income per capita	148

Notes. <sup>a</sup> At the time of publication of *Doing Business 2010: Reforming through difficult times* the cost was 573.4% of income per capita; <sup>b</sup> At the time of publication of *Doing Business 2010: Reforming through difficult times* the cost was 76.7% of income per capita. Source: Doing Business 2010 database.

*Doing Business in Nigeria 2010* provides a quantitative measure of the federal and state regulations for starting a business, dealing with construction permits, registering property, and enforcing contracts—as they apply to domestic small and medium-size enterprises.

Benchmarking exercises like *Doing Business* inspire governments to reform. They uncover potential challenges and identify where policy makers can look for good practices. Comparisons between cities within the same country are even stronger drivers of reform, because local governments have a hard time explaining why doing business in their city or state may be harder than in neighbouring locations. The good news is that sharing a national legal framework facilitates the implementation of existing good practices within a country. National governments can also use *Doing Business* data to monitor how local branches of their agencies implement national regulations. In a world where locations compete against each other to attract investment, subnational *Doing Business* data allow local governments to review the conditions facing entrepreneurs in their cities from a comparative perspective (Doing Business in Nigeria, 2010).

This result shows that doing business in Nigeria is bureaucratic and filled with various bottlenecks. This, of course will deter young entrepreneurs from getting into the business.

The resulting social malaise from systemic corruption dissuades many people from venturing into business. All too often, it seems that gaining legal approval is coupled with some kind of favour to the person or authority granting the approval. Frustrated youth look away from entrepreneurship, frequently to the public sector where they are certain they will collect their pay at the end of every month without the worries associated with running a business (Onwubiko, 2005).

### Why the Informal Sector?

When the Obama administration started work on a massive stimulus bill to revive the economy, it remained to be seen how strongly the new president focused on small businesses. Numerous studies over the years have found that small businesses and start-ups create anywhere from 60 percent to 80 percent of all new jobs, which is something the economy desperately needs right now. To create jobs, however, small businesses need access to capital. It's the life-blood of any new or growing business (Girard, 2005) (see Table 2 and Figure 2).

Table 2

*National Unemployment Rates 2000-2009*

Year	Rates
2000	13.1
2001	13.6
2002	12.6
2003	14.8
2004	13.4
2005	11.9
2006	12.3
2007	12.7
2008	14.9
2009	19.7

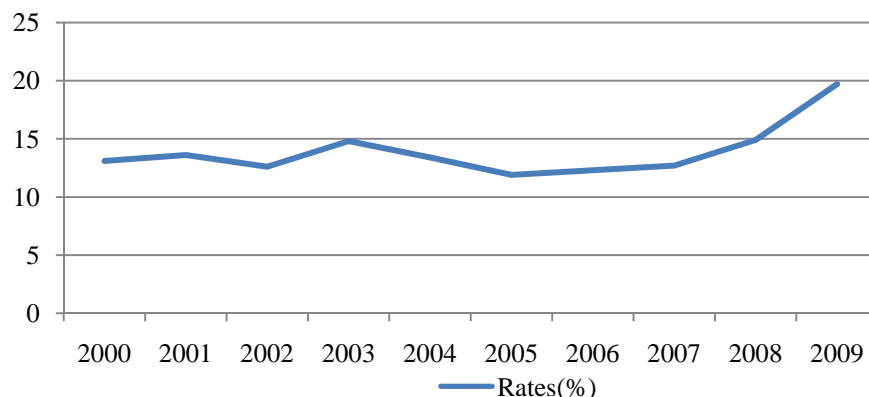


Figure 2. National unemployment rates, Nigeria 2000-2009. Source: Labour Force Survey, March, 2009; National Bureau of Statistics.

Analyzing Figure 3, Nigeria may move from 8th most populous to a projected 7th most populous country of 206m in 2025 with more people living in cities. Nigeria has been and will continue to experience a high

population growth rate and the base population consists of mainly people within the working age group. It can be reasonable to deduce the following:

- (1) The population will consist of groups within the working age group who are unable to find paid employment;
- (2) There will be consumers who have needs to be met by trade hence the relevance of informal sector;
- (3) This will spur the entrepreneurship business as people must be employed and this can mostly be achieved by trade and this will spur small and medium scale businesses (MTNN Enterprise Solutions Conceptual Segmentation Framework Research for MSME 2010).

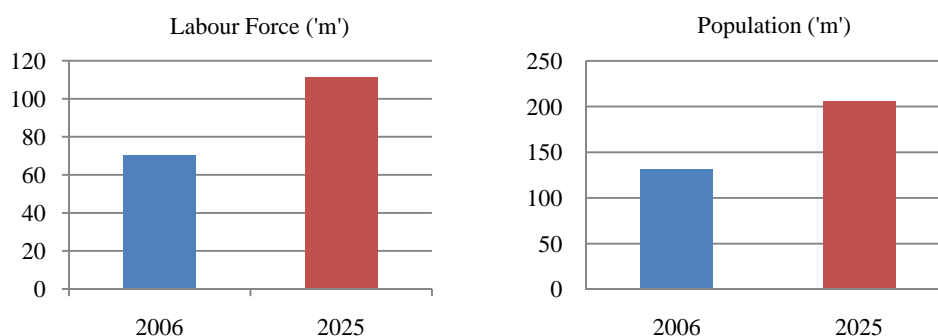


Figure 3. Projection of Nigerian population and labour force by 2025. Source: MTNN Enterprise Solutions Conceptual Segmentation Framework Research for MSME 2010.

### Research Methodology

This paper relied on secondary data from Bureau of Statistics, Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and other government agencies. Past literatures were also examined.

The Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) in collaboration with the United Nations Development Programme (UNDP) conducted a baseline survey of Micro, Small and Medium Enterprises (MSMEs) in six major commercial centres of Nigeria including Aba, Abuja, Kaduna, Kano, Nnewi and Port-Harcourt. Michael Jacobs consulting was contracted to carry out the survey. The paper focused only on 2 areas which are Aba and Abuja. This is because these are the main commercial centres in Nigeria out of all the centres and business transactions and industrial layouts are concentrated in these areas. The methodology employed in carrying out this survey was face to face interviews making use of questionnaires. After the design of the questionnaire, it was vetted by other consultants and tested on the field to assess the applicability of the questionnaires. Amendments were made and the final copy of the questionnaire was then sent to SMEDAN for their approval and validation. In this survey, a total of 2,786 questionnaires were administered within Aba metropolis excluding some questionnaires that were found to be invalid. Two thousand, seven hundred and eighty six were analyzed basically on frequencies. The statistical Package for Social Sciences (SPSS) was used to run the analysis and graphs developed.

Five local government areas were visited in this study. In Aba North Local Area Council 612 respondents were interviewed, Aba South 1,138, Obingwa 8, Osisioma 943 and Ugwunagbo 85 respectively. Aba South and Osisioma have the highest number of entrepreneurs interviewed. Another reason for this is the major markets sited in these local government areas.

### Research Analysis

This section is to analyze the data gathered from the survey in order to establish whether good HRM practices in terms of training, planning, hiring decisions and career development are in the informal sector. Some variables are used in order to determine the level of exposure of the informal to risks associated with vague HR practices.

Table 3

#### *Educational Background of Proprietor*

		Frequency	Percent	Valid percent	Cumulative percent
<b>Abuja</b>					
Valid	Graduate	796	34.0	34.0	34.0
	SSCE	1,324	56.5	56.5	90.4
	Primary school leaving certificate	219	9.3	9.3	99.8
	No formal education	5	0.2	0.2	100.0
Total		2,344	100.0	100.0	
<b>Aba</b>					
Valid	Graduate	369	13.2	13.2	13.2
	SSCE	2,046	73.4	73.5	86.7
	Primary school leaving certificate	367	13.2	13.2	99.9
	No formal education	3	0.1	0.1	100.0
Total		2,785	100.0	100.0	
Missing	System	1	0.0		
Total		2,786	100.0		

Note. Source: SMEDAN.

From Table 3, it can be deduced that only 34% of the respondents in Abuja have tertiary institutions education while the percentage is lower in Abuja with 13.2%.

Table 4

#### *Registration Type*

		Frequency	Percent	Valid percent	Cumulative percent
<b>Abuja</b>					
Valid	None	1,354	57.8	57.8	57.8
	Business name	564	24.1	24.1	81.9
	Partnership	75	3.2	3.2	85.1
	Limited liability	350	14.9	14.9	100.0
Missing					
	Total	2,343	100.0	100.0	
	System	1	0		
		2,344	100.0		
<b>Aba</b>					
Valid	None	1,596	57.3	57.3	57.3
	Business name	681	24.4	24.4	81.7
	Partnership	84	3.0	3.0	84.7
	Limited liability	425	15.3	15.3	100.0
Total		2,786	100.0	100.0	

Note. Source: SMEDAN.

The analysis of Table 4 show that 57.8% of the respondents in Abuja do not have businesses registered and 57.3% in Aba do not have their business registered. This means that they have not realized the benefits of having their companies registered.

Table 5

*Has Had Vocational/Entrepreneurship Training in the Past*

		Frequency	Percent	Valid percent	Cumulative percent
<b>Abuja</b>					
Valid	Yes	1,860	79.4	79.5	79.5
	No	481	20.5	20.5	100.0
Total		2,341	99.9	100.0	
Missing	System	3	1		
Total		2,344	100.0		
<b>Aba</b>					
Valid	Yes	563	20.2	20.2	20.2
	No	2,223	79.8	79.8	100.0
Total		2,786	100.0	100.0	

Note. Source: SMEDAN.

The result of Table 5 shows that 20.5 % of the Abuja respondents and 79.8 % of the Aba respondents have not undergone any type of training while most of those that had been trained had just one training from their former masters. Most of them just got in the sector without prior training, hence the need for on-the-job training.

Table 6 shows that 94.2% and 83.4% of the respondents in Abuja and Aba respectively have no plan beyond 3 years. Also 3.6% and 2.6% of the respondents in Abuja and Aba respectively have no plan at all. This is not surprising because their level of education may not give them the exposure to know the need for long term planning.

Table 6

*Number of Years Planned Ahead*

		Frequency	Percent	Valid percent	Cumulative percent
<b>Abuja</b>					
Valid	Under 1 year	1,767	75.4	75.4	75.4
	1-3 years	441	18.8	18.8	94.2
	4-5 years	32	1.4	1.4	95.6
	5 year above	20	0.9	0.9	96.4
	Never applied planning	84	3.6	3.6	100.0
	Total	2,344	100.0	100.0	
<b>Aba</b>					
Valid	Under 1 year	773	27.7	27.7	27.7
	1-3 years	1,550	55.6	55.6	83.4
	4-5 years	218	7.8	7.8	91.2
	5 year above	172	6.2	6.2	97.4
	Never applied planning	73	2.6	2.6	100.0
	Total	2,786	100.0	100.0	

Note. Source: SMEDAN.

### Summary and Conclusions

Human resource practice in the informal sector in Nigeria is at its infancy. There are other pressing needs like raising capital for expansion and adhering to various government laws and regulations relating to small scale businesses.

It can be seen from the analysis that:

- (1) The percentage of informal sector operators that are uneducated is alarming;
- (2) This seems to be affecting their view of business in terms of planning, i.e., short plan or even no planning at all;
- (3) Most of the businesses are not registered due to lack of awareness;
- (4) Some of the business owners have had access to little or no vocational training in respect of their trade.

This shows that there is need for more awareness on its negative effects of improper HRM on the organization and its employees alike. This can be reduced by using the services of professionals to shape the informal sector to be able to compete internationally. It is envisaged that this enigmatic and ugly situation requires immediate and concerted efforts to shape a new directional focus that will ensure an efficient and effective human resource practice in Nigeria's informal business sector.

In view of these facts, the following suggestions are advanced with a view to reversing the situation at a minimal cost.

#### Employers

- There is need for more awareness programs on the negative effects of improper HRM on the organisation and its employees alike;
- Given the uncertainty surrounding the current economic crisis and their own deteriorating balance sheets, many companies have not hesitated to make cuts in their workforce without realizing that in most cases, such measures will not solve fundamental problems and will more likely worsen the labor climate and worker motivation (Cabrera, 2008). The company should aim at encouraging and stimulating entrepreneurial activities;
- Engage the services of professionals in order to make better planning, hiring and career development decisions. There should also be strict adherence to professional instructions;
- Design retirement plans for employees to increase motivation and sense of belongingness;
- The company should aim at encouraging and stimulating entrepreneurial activities.

#### Government

- The government should intensify awareness campaign in order to train and expose small business owner on the need to engage in best human resource practices;
- There should be a conscious effort at including entrepreneurship courses in University Degree curriculum;
- Government should create a conducive environment for business by eliminating business start-up bottlenecks;
- Government should closely monitor the loan profile of banks in order to ensure that small-scale entrepreneurs benefit from them.

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# Social Responsibility and Environmental Sustainability: The Case of Caixa Geral de Depósitos (Portugal) and Vale (Brazil)

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Social responsibility requires a set of duties and obligations, whether individuals or firms in relation to society and to the communities in which the organization is operating. The tradition of social intervention in Portugal dates from the fifteenth century and the founding of Mercy. However, environmental issues have never been felt in a sensitive position in responsible business, given the weakness of industrial development which lasted until the 60's. In Brazil, the corporate social responsibility is still particularly a big challenge, since the actions of social responsibility have not contributed effectively to improve the living conditions of society and the transformation of existing social reality. The purpose of this study is to emphasize the perspective of environmental sustainability that underpins the more general concept of social responsibility and, through the case study Caixa Geral de Depósitos, assess the strengths and weaknesses of the development of measures of social responsibility in this area in Portugal, and present the case of the company Vale, carrying out business in Brazil.

*Keywords:* social responsibility, sustainable development, environmental sustainability, Caixa Geral de Depósitos, Vale

## Introduction

An organization must be socially responsible. For that, the organization has to take into account all stages of decision-making process and has to shape it in the context of the community in which it appears. The organization must be active and lead the economic, technological and human development. To that extent, its performance requires full respect for human rights, investment in personal enhancement, environmental protection, combating corruption, compliance with social norms and respect for ethical values and principles of

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the society in which it operates. Social responsibility requires a set of duties and obligations to be accomplished by individuals and firms in relation to the society and to the communities.

In Portugal, the tradition of social intervention dates from the fifteenth century and the founding of Mercy. However, environmental issues have never been felt in a sensitive position in responsible business, given the paucity of industrial development which lasted up to 60's.

Although traditionally, social responsibility has come to be practiced by larger firms in an informal manner in Portugal, the emergence of "social responsibility" as a theme of autonomous management brought a new perspective on the part of some agents which led some firms with greater economic dynamism to become interested in environmental issues, beyond the more traditional paternalistic sense which put the accent on the relationship with employees.

In Brazil, the basic needs of large segments of the population are still not being met. Issues related to survival, hunger, unemployment and social exclusion, among others, lead discussions about social responsibility of business to a lower level. In this sense, it is necessary an important debate on the corporate social action in Brazil.

The discussions about corporate social responsibility in the United States and Europe dealt with problems relating to environment and consumer rights. The Brazilian reality raises other questions, much more urgent to be tackled and solved. The concept of social action is the one that, currently, more closely reflects the performance model of the Brazilian companies that practice social responsibility, as defined by the IPEA. In that definition, CSR complies the actions that are not obligatory, performed by the companies through donations or projects in areas such as social assistance and food, among others. Some interesting developments in this area are made by some companies in Brazil.

The examples of Caixa Geral de Depósitos (CGD) in Portugal and Vale in Brazil are presented to show important strategic policies in companies dealing with social responsibility.

The purpose of this study is to emphasize the perspective of environmental sustainability that is comprised in the more general concept of social responsibility. Through the case study of Caixa Geral de Depósitos, it is intended to analyze the strengths and weaknesses of the development of measures of social responsibility in this area in Portugal. At the same time, Vale case is studied to establish comparative analysis between two cases in two different locations and two economic spaces with particular economic development contexts. Vale is seen in this particular study analysing what the company is doing now on this matter in Brazil.

### **The Concept of Social Responsibility**

According to *European Commission Green Paper* (2001) conceptualization associated with the idea of social responsibility concerns the situation according to which companies decide on a voluntary basis and contribute to a fairer society and a cleaner environment.

Corporate social responsibility refers to the adoption of a model of business management in which the companies, being aware of their social commitment of co-responsibility in social and human development preserve and respect the interests of different parties, their stakeholders, incorporating different needs of the business planning and operating them through their decisions and activities.

Although much discussed, the concept is not yet finally stabilized. In any case, the effort of researchers to

differentiate the simple idea of charity has proved essential to its proper scope and understanding by companies and managers.

There are countless interpretations and definitions of corporate social responsibility.

Possibly the best way to analyze the concept of corporate social responsibility is to identify some different views (Melo Neto & Froes, 2001):

- The social responsibility as an attitude, an ethical and responsible corporate behaviour: Concept and duty associated with the organization's commitment to assume a transparent, accountable posture, and ethical relationships with its stakeholders (customers, suppliers, government, community in general);
- The social responsibility as a set of values: not only incorporates ethical concepts, but a series of other concepts that give sustainability, for example, self-esteem of employees, social development and others;
- The social responsibility as corporate strategic posture: The quest for social responsibility is seen as a social action strategy that generates positive return to business;
- The social responsibility as a relationship strategy: Focusing on quality improvement of relationships with different stakeholders, i.e., social responsibility is used as a strategy of marketing relation, particularly with customers, suppliers and other collaborators;
- The social responsibility as institutional marketing strategy: The focus is on improving the corporate image. It is the institutional gains that justify the investment in social projects undertaken by the company.
- The social responsibility as a strategy for recovery of the shares: The reputation of a company and the value of its shares on the market go together.
- The social responsibility as a human resources strategy: The actions are focused on employees and their families with the aim of increasing personnel satisfaction and generating increased productivity;
- The social responsibility as a strategy for recovery of products/services: Beyond the mere affirmation of quality of the products and services of the company, is the purpose of guaranteeing them the status of "socially correct";
- The social responsibility as a strategy of integration in the community: The firm seeks to improve its relations with the community and redefine innovative ways to keep it inserted;
- The social responsibility as a strategy of social development in the community: The organization takes over the role of agent of local development, along with other community organizations and the government itself;
- The social responsibility while promoting individual and collective citizenship: By their actions, the companies help their employees to become true citizens and contribute to the promotion of citizenship in the community;
- The social responsibility as an exercise in ecological consciousness: The social responsibility is seen as leading to environmental liability company to invest in education and preserving the environment by becoming a broadcaster of values, attitudes and environmental practices;
- The social responsibility as a strategy for social inclusion.

All these dimensions are, in fact, a part of a comprehensive overview of the concept. Thus, we can withdraw this central idea, as greatest common divisor: Corporate social responsibility as a voluntary integration of social and environmental concerns in the daily operations of the organizations and interaction with all stakeholders.

Social responsibility requires the accomplishment of a set of duties and obligations, whether individuals or

firms in relation to society and the communities in which the organization operate.

Social responsibility presupposes the existence of an ethical and responsible corporate behaviour; a set of values; an entrepreneurial strategic posture; a relationship strategy; a strategy of institutional marketing; a strategic valuation of the shares; a human resources strategy; a strategy to develop products/services; a strategy of integration into the community; a strategy of social development in the community; the promotion of individual and collective citizenship; the exercise in ecological awareness and professional training. Those are the multiple aspects that constitute an integrated support to a responsibility that organizations must take, including to ensure their long-term operation.

### **Environmental Accounting**

The social accounting arises in order to contribute effectively to the prosperity of organizations and nations, transforming the accounting information system in a broader package, whereby statements are presented not only financial and economic, but also those of character social and environmental indispensable for the analysis, control, evaluation and decision-making, and of the entities in the world context of globalization and constant change (Kroetz, 1999).

Environmental accounting can be defined as the record of environmental assets: assets, rights and environmental obligations, a certain entity, and their mutations, expressed monetarily.

Paiva (2003) defines it as the activity of identifying data and records of environmental events, processing and generating information that assists the user serving as a parameter in their decision-making.

For Ferreira (2003), the development of environmental accounting results from the need to provide information tailored to the needs of environmental management. The author states that the environmental accounting does not refer to a new accounting, but a set of information to report fairly, in economic terms, the actions of an entity that alters its assets. This set of information is no other accounts but a specialization. This is a new base and a new system of recognition and measurement of costs, including externalities.

For Bergamini Jr. (1999), environmental accounting aims at the registration of the company's transactions that impact on the environment and their effects that affect or should affect the economic and financial position of the business, ensuring that costs, environmental assets and liabilities are accounted for in accordance with generally accepted accounting principles or in his absence, with the generally accepted accounting practices and environmental performance and with the wide transparency that users of accounting information need.

For the *Environmental Reporting Guidelines* cited by Tinoco and Kraemer (2004), environmental accounting is a framework that quantitatively estimates the environmental conservation efforts in monetary terms. It is also a significant technique that may indicate the state of environmental conservation to stakeholders. This accounting is more ambitious than the traditional, since it aims to know the negative externalities and record, measure, assess and disclose all environmental events.

Yet, environmental accounting can provide regular information to internal and external users about the environmental events that caused changes in the assets of the respective entity, measured in currency.

### **Environmental Event**

Environmental event is any entity's interaction with the environment that generates economic consequences of present or future, in view of the regulatory standards or social responsibility that is subject to a

specific company.

Examples of environmental events have been spending on development or acquisition of technologies, machinery and equipment antipollution; search for waste reduction, employee training methods of clean production and the laws, raising revenue as a consequence of materials recovery (recycling), among many others.

Tinoco and Kraemer (2004) list events and environmental impacts related to operational activities of various sectors that affect the assets and business continuity, quality of life, fauna, flora, rivers and seas, and that therefore shall be subject to registration, collection, measurement, evaluation and dissemination by the accounts, highlighting in particular:

- Coal mining: Causes impacts on the environment evidenced in the atmosphere, soil and surface water and groundwater;
- Steel: Degradation of water quality, which requires local water-dealing, construction of landfills, air pollution, pollution emissions from power plants, especially particulate matter, release of oils and greases, organic loading, soluble manganese, ammonia, etc. involving investments to control them;
- Other activities that also deserve mention: The production of lime, cane sugar, pulp and paper production and the oil industry.

It is based on these events that it is possible to quantify and record, through the accounting techniques, the environmental interactions surrounding businesses and entities.

#### **Advantages of Environmental Accounting**

According to Tinoco and Kraemer (2004), several advantages related to the use of accounting in the environmental focus may be pointed, such as:

- Measurement and allocation environmental costs, allowing a continuum of planning applications;
- Measurement of environmental liabilities;
- Intensive use of explanatory notes and environmental performance indicators;
- Being able to accurately verify the reductions in resources such as water, energy, soil and other potential physical environment;
- Making decisions based on the costs and benefits recorded in their own environmental accounting;
- Providing information and statements about the effectiveness and economic feasibility of the environmental actions;
- Publishing the social and environmental issues, creating transparency and social interest;
- Constant corrections of environmental actions, reducing the level of aggression against nature in the manufacture of products and services essential to the population;
- Quality data analysis and interpretation by both internal and external audiences, allowing an evaluation of the quality of environmental management of the entity.

### **Social Responsibility and Environmental Sustainability in Portugal and Brazil**

#### **Environmental Sustainability**

The concept of sustainable development has emerged from studies of the United Nations on climate change in the early 1970s, as a response to the concern of humankind, given the environmental and social crisis that has befallen the world since the second half century. This concept, which seeks to reconcile the need for

economic development of society to promote social development and respect for the environment, today is a vital topic on the agenda for discussion on a variety of organizations, and with different levels of organization society, as in discussions on the development of cities and regions, current day-to-day society. This text presents the evolution of the concept since its inception to the present.

The year 1968 was the first serious sign of popular discontent with the model of industrial capitalism towards the end of its cycle, with the outbreak of student protest in the chain, started in Paris in May 1968, rising Berkeley, Berlin and Rio de Janeiro.

Breaking the walls of the citadel economic, environmentalism is to question the economic rationality in terms of their own criteria. More specifically, the new debate shows that, compared to several problems and dilemmas that industrial development poses, the solution may not require a new jolt, but the adoption of restrictive measures to increase economic production, which raises the idea of ecological rationality as the basic principle and limits the economic rationality and self development.

The Club of Rome, an entity formed by intellectuals and businessmen, who were not environmentalists, was an initiative that grew out of discussions regarding the preservation of natural resources of planet earth. He produced the first scientific studies about environmental preservation, which were presented between 1972 and 1974, and that related to four major issues that should be resolved in order to reach sustainability: control of population growth, control of industrial growth, lack of production food, and depletion of natural resources.

Development and environment have merged on the concept of eco-development, which in the early 80's was supplanted by the concept of sustainable development that has been adopted as the official expression in UN documents, IUCN and WWF.

### **Environmental Sustainability as a Pillar of Corporate Social Responsibility**

The concept of social responsibility can be understood at two levels:

- The internal level, it relates to workers and, more generally, with all actors and stakeholders (who are affected by business and, in turn, may influence the results);
- And the external level which considers the consequences of the actions of an organization on its external environment, including, among other things, its business partners and the environment.

Before proceeding, let's prior to submit an evaluation of the more general features of social responsibility in Portugal to better enter the CGD event in the general context and highlight its special features. Later some features of social responsibility in Brazil will be presented as well.

**CSR in Portugal.** The tradition of social intervention in Portugal, dates from the fifteenth century and the founding of Mercies.

Environmental issues have never been felt in a sensitive position in responsible business given the paucity of industrial development that lasted up to 60's. Although, traditionally, social responsibility have come to be practiced by larger companies, in an informal manner, the emergence of "social responsibility" as an independent theme/subject in management (following the Lisbon Summit in 2000), caused a new perspective to some agents. The demand from large companies to distinguish themselves in this process with the ultimate goal to ensure/enhance the "brand image", has led some larger enterprises with greater economic dynamism to become interested in environmental issues, beyond a more traditional and paternalistic position which put the

accent on relationships with employees.

Some studies<sup>1</sup> carried out previously have sought to characterize the state of the art of social responsibility in Portugal and uncover the motivations that lead Portuguese companies to become interested in this type of action. Simultaneously wonder about the difficulties and bottlenecks that hinder the development of more effective action to corporate social responsibility. Next, some of the most relevant conclusions of this analysis are presented:

Firstly, it is important to highlight the fact that it is not yet well known the concept of social responsibility and it is especially lower (compared to European levels) the percentage of consumers self-considered as “activists of social responsibility”.

However, after the “boom” definitive, located somewhere in 2003/2004, with the emergence of new organizations related to social responsibility, the significant increase of reports of social responsibility and the media attention around the issue, the current scenario is a gradual increase of companies active in social responsibility and in the monitoring and dissemination of its outcome. This is translating into the adoption of codes of conduct in relation to the employees, customers and community, adoption of certifications within the product quality and service as well as environmental quality, improvement of hygiene and safety in workplaces, etc..

Secondly, the main motivations that lead companies to be socially active are emphasized. The results of investigations carried out do not always seem particularly consistent. According to some of these surveys, the companies’ main reasons for their own social responsibility are related to ethics and to the improving of community relations. These aspects seem to be thus in a much better position than that resulting from the trade benefits that may result from a position of “sympathy” for the community. It seems to be inferred that what makes companies take the social responsibility is more the domain of “should be”, than the understanding of the benefits that may accrue to the business itself.

In terms of environmental responsibility motivations arise primarily from the need for regulatory compliance, cost reduction and improved image with customers. The activity of social responsibility is also seen as a way to remedy the increasingly intense pressure from the community on issues that relate to the use of natural resources and preserving the ecological balance of the planet.

In any event, when asked about the benefits associated with social responsibility results appear more clarified:

- Improving the brand image of the company, ensuring customer loyalty and other employees;
- The best internal conditions of operation, with workers identified with the objectives of the company, with high self-esteem and “team spirit”, ensuring high productivity;
- Improving the relationship with the community and the public, ensuring a comfortable position, safe, with “confidence in the future” or in how the community recognizes the company wants for possible support from governments at different levels.

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<sup>1</sup> CECOA (2004), Responsabilidade Social das Empresas—Estado da Arte em Portugal, 2004, Centro de Formação Profissional para o Comércio e Afins, Lisboa.

DELOITTE (2003), O Desafio do Desenvolvimento Sustentável nas Empresas Portuguesas, Management Solutions, Relatório, Deloitte, Lisboa.

KPMG (2007), Estudo da KPMG sobre a Publicação de Relatórios de Sustentabilidade em Portugal, KPMG Advisory, Consultores de Gestão; BCSD Portugal; Informa, D&B.

Here, the activity of social responsibility is sustained on a more adjusted level, not to be confused with mere charity and reset the social responsibility in the centre of business performance perspective.

In Portugal, the social responsibility is still essentially of internal sense. To some extent, it still favours the more patronizing aspects of industrial relations (with the support of health, culture and sport of employees and family members) but the progressive entry into other areas (such as the environment) seems unstoppable as companies increasingly realize that altruism and ethics underpinning social responsibility, “also yields”.

Finally, the main barriers that were identified in the involvement of companies with social responsibility concern:

- The lack of information on this subject (especially for smaller firms and more traditional management);
- Lack of time, human resources, knowledge and money to develop these activities and their assessment through the reports of social responsibility;
- The lack of interaction between various functional departments and decision-making levels within the company;
- And their own inability to identify the links between it and the business corporate social responsibility.

With regard to environmental responsibility as main obstacles appear to result from the lack of human and financial resources, attitude and business culture and the lack of information associated with environmental issues. Say it is basically a matter involving the financial capital, but eventually has more on its core areas of human and social capital.

**CSR in Brazil.** The case of Caixa Geral de Depósitos is particularly interesting and an example from which to draw some significant indications of good practices to develop this area and so is the example of Vale in Brazil.

In Brazil, studies about CSR are still in a preliminary phase, but motivations seem to be similar. The interventions are perhaps different because concerns and objectives are specific.

Although with regional differences in the way of realization of social action for communities, donating resources is the most frequently used by many companies from all regions, and in South and Southeast, this donation is directed to organizations running social projects.

In the northeastern region of Brazil, the large majority of donations of funds are held by companies for direct assistance to needy individuals and communities. However, from the real meaning of corporate social responsibility, donating resources is not the essence, but the severity of problems in Brazil and the large proportion of the population lives below the poverty line make the social performance a big problem.

Nowadays, there are already many actions being planned by companies in order to incorporate activities of environmental sustainability and contribute through programs to the welfare of populations and resources preservation.

### **CGD and Environmental Sustainability**

The case of CGD is particularly interesting to assess how environmental issues have come to integrate the

concerns of social responsibility in Portugal<sup>2</sup>.

### **Mission and Goals**

In 2009, CGD joined the United Nations Environmental Programme for the Financial Sector (UNEP-FI) and became the first Portuguese bank to join this program.

Since 1991, when it was created, UNEP-FI works the themes of sustainability in the financial sector with the aim of promoting good practices in the international financial institutions. This program reflects the recognition by the United Nations concerning the role of this sector in promoting sustainable development in that the processes of financial intermediation have repercussions in investment programs and, indirectly, in the allocation of natural resources.

Sustainable development is aimed at rational utilization of natural resources while maintaining capacity for renewal and ecological stability and respect for inter-generational solidarity. According to the Brundtland Report (1987), sustainable development is one that meets present needs without compromising the ability of future generations to meet their needs.

The accent on the issue of environmental sustainability and eliminating poverty is key aspects of this new vision, which is raising the banner of growth with quality of life based on three pillars: economy, society and environment, combined with the issues of governance.

This adherence to the program highlights CGD concerns with the long term and confirmed its activity in supporting environmental sustainability. The basis is the conviction that the principles of sustainable development will form the basis of guidelines for future development. According to Mr. Faria de Oliveira, President of CGD, the times where structural changes are the ethical, environmental and social have been gaining weight. There are conditions to innovate and develop a better society and that membership of the UNEP-FI is a public commitment to sustainable development.

This commitment of CGD with environmental sustainability and corporate social responsibility in general seems to be, according to the statements of those responsible, the “genetic code” of the company/group.

Built in 1880, the Caixa Económica Portuguesa, as then called, revealed at once their social concerns being intended to receive the savings of the less wealthy and providing a “nest egg” in the long term. By 1885, with the reform, Caixa Nacional de Aposentações (National Fund for Retirement) was born. After, CGD was going to be established as Caixa Geral de Depósitos e Instituições de Previdência. In the Estado Novo regime, CGD became a key institution in the operations of agricultural credit and industrial, and in 1969 assumed a central role in housing loans. All these aspects permit to understand the role that public authorities were successively assigning to the Caixa Group, the largest institution of public nature on the financial sector.

As you can read in a text of the Office of Historical Heritage (Gabinete do Património Histórico) of CGD—“From the History of the institution over 133 years, CGD served various aspects of Portuguese society, having had in mind the moral principle of social intervention”.

The great values that guide the work of CGD and are the basis of its performance in terms of social responsibility are appreciable in the *Code of Conduct* issued by the institution and designated in the *Good Government Report*.

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<sup>2</sup> CGD, Relatório Sobre o Governo da Sociedade, 2008; CGD , Relatório de Responsabilidade Social; CGD , www.cgd.pt.

The commitment of CGD is immediately identifiable, if we hold fast to its mission.

According to published texts, CGD's mission is consolidating its position as a group structuring the Portuguese financial system, distinguished by strong accountability and relevance of its contribution to economic development and to strengthen the competitiveness, innovation and internationalization of Portuguese companies.

In this context, the group's strategic priorities defined for the three years 2008-2010 included the supporting of the cultural and social development, promoting sustainability and being a reference to the *Good Government in Portugal*.

These guidelines are then translated into 19 management priorities that include, among others:

- To boost the performance at the cultural level, and promote social sustainability;
- Proactive in developing best practice governance and ethical conduct.

CGD has adopted the principles of good governance and public sector undertakings (Council of Ministers Resolution 49/2007) and undertook initiatives for compliance including preparation of an annual business plan.

### **Caixa 2010, Zero Carbon Strategy**

By the end of the twentieth century, humanity faces the challenge of climate change and overuse of natural resources, and issues that dominate the UN agenda. This has promoted a fundamental discussion about a new development model.

The scientific evidence of the phenomenon of climate change suggests a range of impacts that are not only environmental but also economic and social. The impacts are being felt in politics, markets and quality of life, affecting employees and customers of CGD, worldwide.

It is clear that this new reality changes the logic of economic decision imposing new requirements for investment and risk management, while encouraging new markets (such as renewable energy) and adding new financial solutions. CGD sees this and recognizes this as an opportunity.

In this line, promoted by CGD since 2007, the program Caixa Zero Carbon is a strategic program that aims to help reduce the environmental impact of its activities while it induces good practices among its employees, customers and society in general.

These are ambitious objectives involving:

- More knowledge about the carbon footprint/emission levels of the activities of Caixa to allow the setting of reduction goals;
- More economic and energy efficiency, including through the adoption of measures to gain the use of renewable energy;
- Monitoring and evaluation of performance at this level;
- And new business development to strengthen the group's position in the domestic market—with new solutions to support and incentives to customers of cash to change their energy bill, support for demonstration projects in the fields of energy efficiency and promoting education and literacy carbon to employees and customers.

The Caixa Zero Carbon Program 2010 implements the strategy acting on five axes:

- (1) Information—Case reports on carbon reductions;

- (2) Internal Action—Caixa reduces energy consumption and carbon emissions;
- (3) Compensation—Caixa offsets carbon emissions inevitable;
- (4) Market—Caixa promotes low carbon business;
- (5) Communication—Communicate through Caixa Carbon Zero.

### The Projects

**Central solar térmica (thermal solar central).** One of the most visible projects to the reduction of CO<sub>2</sub> emissions was the installation of solar panels on the roof of the headquarters building of CGD, transforming this building, located in Lisbon, in a huge Central Solar Thermal.

The installation of 150 of solar collectors on the roof (1,600 m<sup>2</sup>) of the headquarters building at Avenida Joao XXI, allows the production of energy used to heat water for air conditioning systems and plumbing. In total, there is a saving of more than 1 million kWh of electricity per year (about 5% of global consumption).

The plant has a system for monitoring the energy produced, allowing analyzing the performance of the facility, and outlining a possible expansion of the use of solar energy to other buildings in CGD.

The Thermal Solar Central CGD, along with other energy efficiency measures already implemented, results in electricity savings equivalent to annual consumption of about 2,000 people, thus preventing the annual emission of more than 1,700 tonnes of CO<sub>2</sub>.

This office building has a certificate of Energy and the Ambient Air Quality, issued by ADENE-Energy Agency, with the highest A+ rating.

The policy of energy saving is extensible to the network of agencies that is being gradually equipped with PV.

**Dia a dia carbono zero (day to day zero carbon).** Along with new technology and with the direct participation of employees, Caixa has been producing a kind of guide on best environmental practices to adopt in our daily lives, whether at work or at home, which is available (PDF) in the site of Caixa.

The mission of awareness extends to the general public through the production of the TV show “O Planeta Agradece” (The Planet Appreciates), an item on the radio and a “blogue”. This program is part of the Caixa Zero Carbon Program 2010, and aims to promote behaviours that help Caixa to reduce her own emissions. Simultaneously, it is to be replicated in a larger universe, to help the country meet its international commitments in this matter. Day by day, zero carbon is a program involving customers and employees around the world in combating climate change.

**Floresta caixa (caixa forest).** Of vital importance to the planet as CO<sub>2</sub> sinks, the forests have, also, been addressed in the program. The forests are a major renewable resource of Europe and the most important component of nature within EU. In Portugal forest (occupying nearly 40% of the country) constitutes an important area of activity that involves more than 150 thousand workers. Forests are also essential in promoting biodiversity, protection against soil erosion, correction of water regimes and air quality. It is therefore essential to promote effective forest management as a way to preserve and foster an important renewable resource, while contributing to meeting the emission limits set for Portugal under the Kyoto Protocol.

The program Floresta Caixa represents a set of initiatives aimed to contribute to the construction of a new forest in Portugal. These are developed in partnership with some major environmental groups and linked to the stakeholders in the sector such as QUERCUS and ANEFA (National Association of Business—Agriculture, Forestry and the Environment).

The actions that the program will materialize: recovery of areas burned and the creation of sustainable forests with preservation of native species. It includes several projects for forestation and raising awareness of the importance of the forest.

**Environmental awareness.** In the field of the *Forest Environmental Awareness—Caixa* includes initiatives aimed to promote the adoption of appropriate environmental behaviour. In addition to the above set of actions, we can cite the sponsorship of the Conference of Al Gore in our country and Portugal's edition of the book *An Inconvenient Truth*.

In the "lounge" area of the headquarters of Caixa there are several brochures available on forests and on the theme of climate change. Shares of Christmas "for a better future" call attention in this court, to the importance of forest preservation... and for indigenous species to be preserved.

It also counts the support measures to forestation with children and young people from schools, participation of employees and their families.

**Cartão caixa carbono zero (caixa card zero carbon).** One of the recent innovations in this field gives the name of Caixa Card Zero Carbon (the card that embedded in nature, according to advertising copy CGD) and represents another step in implementing the strategy of CGD in combating climate change. It is a card truly innovative, unique of its kind in Portugal.

Integrated in the program *Caixa Zero Carbon 2010* (market axis), this Caixa Card Zero Carbon intended to be a means of encouraging a lifestyle of low carbon and allows its user to offset emissions that can't not avoid.

The card provides special conditions in the purchase of goods and services with greater energy efficiency and better environmental performance, providing a solution that simultaneously reduces emissions, preserving the planet, and provides a significant financial savings for its user. Presents a set of features that make it attractive for the user, in particular, on favourable terms involving the return of annuities according to their original use and the amounts reached in the transactions, the flexibility of the conditions and terms of payment and in consideration of an interest rate of operations truly competitive.

Caixa Card Zero Carbon is a genuine product of low carbon, in which key elements were designed to minimize the effects of climate change. Firstly, because it is a credit card made from recycled material, free of chlorine and that fosters communication by electronic means, thus thought to cause minimal effects on climate. By contributing to projects that absorb or prevent CO<sub>2</sub>, the card offers a portfolio of carbon credits to offset unavoidable emissions permits, making the day-to-day more "user-friendly" environment. In choosing this card, customers have access to special discounts on the purchase of goods and services more energy efficient, including a cash-back program that offers them carbon credits to offset emissions. The card gives therefore CO<sub>2</sub> credits, which means that the amount accumulated in the cash-back program is channelled to projects that absorb or prevent carbon dioxide. Emissions from the production and distribution of the card are quantified and compensated. To that extent, it can be said that the name Card Zero Carbon is justified, and it is a card with no effect on climate.

Tapada Nacional de Mafra is the first project to benefit from funds provided by the Card Box Carbon Zero. This is an area of 50 hectares, which is strongly affected by the fires of 2003. Integrating project in forest area, the Card came enable the proper management of this area, with special attention to newly installed stands and processes of natural regeneration. It is intended to ensure sustainable forestry, fire

protection and enhancement of biodiversity. The project ensured the monitoring of the action over 30 years. The project includes the development and implementation of a management plan that will allow carbon sequestration of a total of about 3,000 tons CO<sub>2</sub> equivalent (CO<sub>2</sub>e).

The recent innovation in this area is called “cash carbon calculator”. Installed at the site of the institution allows the user to calculate their carbon footprint quantifying the emissions associated with daily life from issues that relate to two key areas: housing (domestic consumption) and mobility (use of means of transport).

**Support scientific research.** Along with these actions that directly target the environmental, Caixa is integrating its activities in the promotion of scientific research as central to the evolution of knowledge and change attitudes and mentalities.

The role of education is central to sustainable development. Hence: firstly, and according to the desideratum of increasing the financial literacy of potential users, CGD has created mechanisms that are simple, practical and accessible, to encourage savings. This has created a financial education program, called Positive Balance, with access to the Net ([www.saldopositivo.cgd.pt](http://www.saldopositivo.cgd.pt)) to customers and non-customers. The contents are useful application in the daily management of the family budget, and include suggestions for energy saving approach of diagnostic tools to prevent financial indebtedness, financial products etc..

For young people there is a program—Ciclo da poupança (cycle of savings) which points to the need for savings and simple formulas to achieve them. It led in 2007 to a game with hundreds of agencies and students of 1st and 2nd cycles, on the celebrations of world savings.

Most interesting, the Programa Nova Geração de Cientistas Polares (New Generation of Polar Scientists Programme) results of a collaboration with the Portuguese for the international polar year. It assigns scholarships to young scientists for studies to focus on relevant issues of climate change and its effects (biology, physics of the atmosphere, etc.) on Antarctica region. Simultaneously, Portuguese started a major campaign in Antarctica with the participation of Portuguese scientists held until 2009, November. The Committee for the polar year, consisting of researchers from several universities in Portugal and its action promotes the integration of young scientists in the work of teams who are developing this area of science, creating critical mass and promoting the image of the Portuguese Science World.

The lectures Um Alerta Global para o Desenvolvimento Sustentável (A Global Warning for Sustainable Development): In this field, there are alerts for sustainable development by supporting a series of conferences in Culturgest promoting discussion of relevant issues and with the participation of some of the most significant researchers (with themes such as climate change, human rights, sustainable development and the information society, architecture responsible).

A way that promotes the development of skills in the area still refers to the Concurso de Design de Mobiliário com Materiais Recicladados (Furniture Design Competition with Recycled Materials) that challenged the young people of Portuguese universities and polytechnics to display their talents, contributing to the development of proposals for eco-design and thereby furthering rows of recycling.

And others:

- Publications (the magazine Azul);
- Renewable energy credit programs, with special conditions for acquisition and installation of equipment;
- My energy program, in partnership with EDP—integrated solution of micro-generation solar thermal,

photovoltaic and wind power for small and medium consumers.

Obviously that environmental sustainability should not be disconnected from the other two pillars of development: economic and social. We do not want to enlarge this communication, but we would like to stress the importance of CGD's solidarity actions, as well as actions to support culture and sport of its employees and the community, or their efforts on the transparency of information.

## **Vale and Environmental Sustainability**

### **Environmental Issues in Brazil**

The evolution of society especially after the re-democratization of Brazil and the 1988 Constitution, which guaranteed political participation through questioning of autonomous social organizations, NGOs and other institutions, and international pressure of all kinds on the expansion of economic projects in the region showed a new way to analyze the environmental and social impact.

With the new ecological and social, the state itself has changed its approach to geopolitics to the area and began to seek a return to society of the projects to be implemented and also their approach to sustainability, long-term perspective, the degree of exploration and employability. To demonstrate this, the companies that own or want to develop projects in the region began to show a series of socio-environmental in their statements, in addition to campaigning for clarification of its participation in the region. The main tool for informing the government and investors on these issues is the balance social and environmental accounting that can come as part of the accompanying financial statements have already been published by the company.

### **The Company**

Vale (originally state-owned enterprise, privatized in 1997) called Companhia Vale do Rio Doce was founded by decree on June 1, 1942, with operations concentrated in Minas Gerais, with the purpose of mining iron, during the government of President Getúlio Vargas, then a dictatorship began with the revolution of 1930.

The connotation of the nationalist government Vargas was incorporated in the vision of the company that originally served only the domestic demand particularly CSN (Companhia Siderurgica Nacional). However, in the 60s the company takes an entrepreneurial leap and is now exporting iron ore to Japan. This change of attitude will take the company to the next level to have a place to insert performance as an exporter of long range.

The evolution of the Vale over the years caused the company to turn into a mining giant, the second mining company in the world at the beginning of the century, when the company had undergone a radical transformation in its concepts with its privatization in 1997. Vale expanded throughout the country, with investments in various areas of economy, such as pulp manufacturing, logistics, rail and port, aluminum fabrication, reforestation energy than the holding of all kinds of minerals such as gold, manganese, bauxite and kaolin.

In these circumstances, the company began operating in 14 of the 27 states, with much emphasis on the Eastern Amazon in the states of Para and Maranhão, from the Carajás project installed in Pará, the largest mining project in the planet and having the iron ore with the best quality. The impact of this project, as well as other smaller but no less important and constant social and environmental concerns, the company

became the main economic actor in the region. Since its privatization, the dialogue between the society and the company has been focused on the economic developments and sustainability, which are possible to be reached or just discussed in this process.

The company Vale is the second largest diversified mining company in the world market value. World leader in the production and export of iron ore and pellets, and an important producer of nickel, copper concentrate, bauxite, alumina, potash, kaolin, manganese, ferroalloys and coal, the company has offices and operations in over 30 countries on five continents. Vale was the first Brazilian company to achieve the rating of investment grade and the first Brazilian company to trade its shares on Euronext (Paris).

The company has gained momentum with the ore extraction in the Amazon, more specifically in the Carajas region, located in the southeastern state of Para Company, in its first year, produced 40 thousand tons of iron ore, equivalent amount that is loaded per hour today.

Vale has diverse activities within the mining sector. The company operates in the segments below:

- Ferrous: Iron ore and pellets, manganese and ferroalloys;
- Non-ferrous: Kaolin, potash, copper and nickel;
- Logistics: Railroads, port terminals, coastal shipping and logistics solutions;
- Aluminum: Bauxite, alumina and aluminum;
- Energy: Eight hydroelectric dams, seven of which are already in operation;
- Coal.

Figure 1 shows the diversity of work, identifying what each product represents the composition of gross revenue.

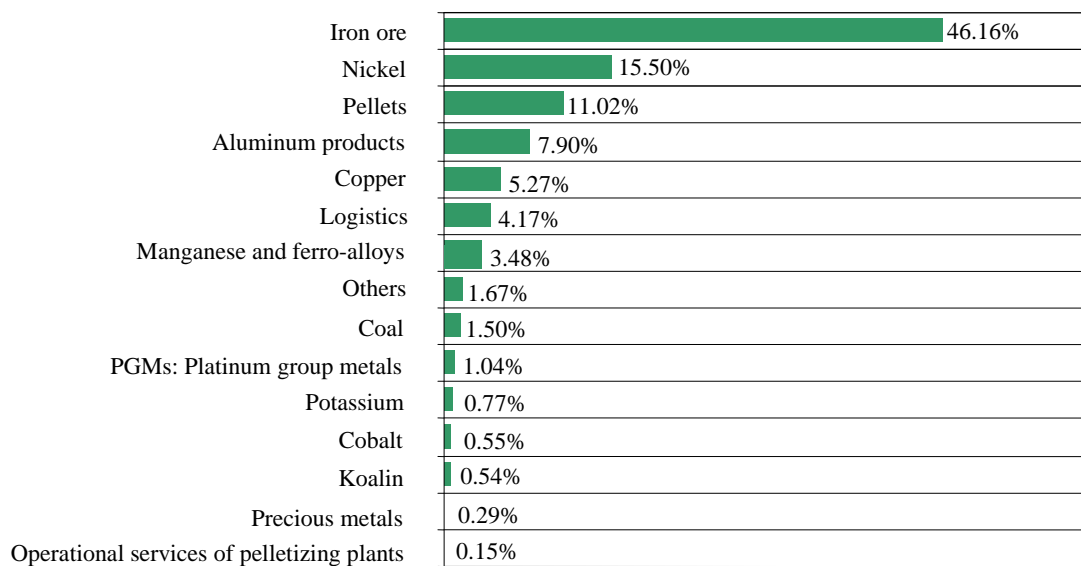


Figure 1. Composition of gross revenue. Source: Vale.

CVRD holds maximum production of nickel, bauxite, alumina, copper, thermal coal, cobalt, platinum group metals and precious metals. The company guarantees sales maxima of iron ore, nickel, copper, alumina, cobalt, precious metals, platinum group metals and thermal coal.

Privatized in May 6, 1997, the company had a net worth in 1997 of U.S. \$350 million, with a market value

around \$10.5 billion by offering 11 thousand direct jobs. In less than a decade after massive investment, the company increased nearly 10 times its gross revenue, according to data presented in Figure 2.

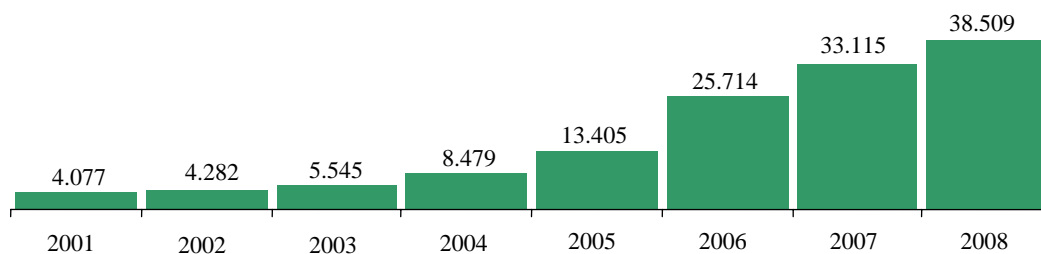


Figure 2. Gross revenue in millions. Source: Vale.

The privatization of Vale, whose sale is questioned today, brought the company a sum demeaning investment. On August 11, 2006, CVRD made a public offer of \$18 billion for Inco, Canada, owns the largest reserves of nickel in the world, becoming a historic deal to offer: more than buying a Brazilian company has made abroad, making Vale one of the largest nickel producers in the world, with production of 234,900 tons in 2006.

The transaction increased the market value of Vale and in December 2007 the company was worth U.S. \$151,711 billion, a number of employees from 152,724 in 2007.

In 2008, the company was considered the most mine that invests in its production process, as shown in Figure 3.

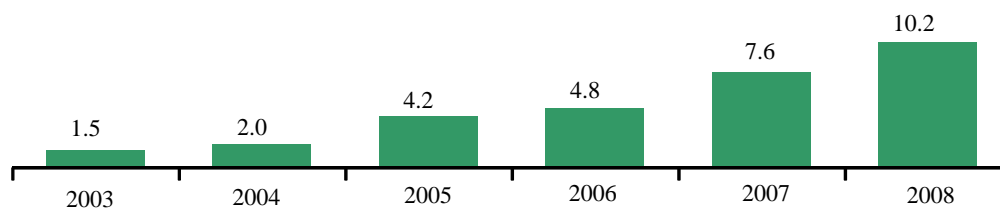


Figure 3. Increased investment in mining company in the world (billions). Source: Vale.

According to the data, the company was worth more investment and increased profitability after its privatization in 1997. The process of privatization of CVRD requires a brief statement.

### Vale and the Environment

According to the company report, the essence of its work is the search for balance between socio-economic development of territories and maintaining the quality of natural resources, biodiversity and life.

For that, Vale made continuous investments in the management of environmental impacts of operations and research of new technologies that improve the environmental control systems. The guidelines that guide the actions are explained in the policy of sustainable development of Vale, a document that guides the process from decision making to the actions performed on the day to day operations.

Vale considers the respect for the environment a key component of its sustainability strategy, seeking to balance environmental protection and economic development. To this end, the company has an environmental policy, in which commitments to environmental aspects are clearly explained.

The company's main points of its environmental policy:

- Maintain an environmental management system, aiming to ensure that activities comply with applicable

laws and standards set by the company, in the absence of specific legislation, Vale will implement the best measures of environmental protection and minimizing risk;

- Educate and train employees to act in an environmentally responsible, ensuring the implementation of environmental policy;
- Develop research and incorporate new technology for continuous improvement activities, aimed at reducing environmental impacts and consumption of energy and matter;
- Maintain ongoing dialogue with its employees and the community, aiming at improving environmental actions;
- Strive to their subsidiaries and affiliated companies to adopt practices consistent with this environmental policy;
- Request their products and services suppliers with proven environmental quality.

Policies, standards and procedures are defined by the Department of Environment and Sustainable Development, which coordinates the Management System for Environmental Quality (SGQA) of the company, setting guidelines and targets, monitoring the development of environmental performance and providing tools for managing the environmental aspects related to the activities, products and services of Vale.

The company is also in a process of discussion and alignment of Environmental Policy with the subsidiaries. In the context of the Management System of Environmental Quality there are developed measures for monitoring, conservation, environmental protection and recovery to ensure the maintenance and recovery of ecosystems in which Vale operates.

The environmental management system is based on the guidelines ISO 14001 (International Organization for Standardization). Periodically, the transactions are subject to external audits.

In recent years, important achievements were obtained in the rational use of water and energy, waste disposal and the awareness of people to environmental quality. Vale is aware that there are opportunities for improvement and committed to continuous improvement in building an environmentally friendly business model.

According to the report of the company, Vale has a great concern for environmental issues, and as a consequence of this there are the significant investments in their environment. The commitment is not limited to environmental control systems required. The environmental aspect is an important component of the evaluation of new projects and decision-making investment for expansion. Expenditures are monitored monthly and reported quarterly to the general public, and we count on periodic financial audits.

The relationship with the various stakeholders is present in environmental management. In each area where Vale acts, seek to be agents of change, listening demands, proposing alternatives and integrating other social actors in the effort to find solutions to environmental issues.

The volume of resources invested in the environmental area for Vale in 2008 was U.S. \$678 million, almost 50% higher than that achieved in 2007. Most of the resources allocated to three lines of expenditure:

- Acquisition and implementation of environmental control equipment, aiming to improve performance in existing operations;
- Maintain environmental and geotechnical safety of dams and waste dumps;
- Reforestation and rehabilitation of degraded areas, which form the program Vale “Florestar”.

### **Environmental Quality**

The management system of environmental quality determines the development of effective monitoring, conservation, environmental protection and rehabilitation, aimed at ensuring the maintenance and recovery of ecosystems in which Vale operates. The system is based on the guidelines of ISO 14001 (International Organization for Standardization) to which were added additional aspects that make up the standard of environmental quality in Vale. Aiming to assess the management and guarantee the evolution of performance, multiple transactions are submitted periodically to internal and external audits.

Policies, standards and environmental procedures of a general nature are defined corporately, and management is under responsibility of operations and business areas.

### **Social Aspects**

The quest to build a legacy of social, economic and environmental positive in regions where Vale operates is one of the principles that underlie the Sustainable Development Policy in Vale.

Activities, especially mining, are limited to the lifetime of the mineral deposit and therefore the presence in a particular place, in general, is finite.

The challenge is to make Vale, along the mineral cycle, actions catalyst of regional economic vocations, which can ensure the perpetuity of social welfare in equilibrium with the environment. In that quest, Vale performs management actions that enhance the positive effects of the presence of Vale, reduce the social risks of operations and at the same time, contribute to strengthening the foundations for local development in the long run. Vale invests in integration with public officials and social workers to encourage:

- The hiring of local employees and suppliers;
- Education for human development, for work and income generation;
- Planning the use of taxes generated by the operations of the company;
- The diversification of local economies;
- The strengthening of institutions;
- Environmental conservation and cultural heritage.

Thus, the company seeks to build social networks transparent, based on dialogue and permanent respect for the culture of each people. At the same time, Vale invests in management tools to foster the development of the territories. Its intention is to build the foundations for continuous improvement of quality of life.

### **Management of Local Development**

Vale has several programs and tools, in different areas and regions of operation, to manage social and environmental impacts arising from the activities.

The analysis of the feasibility of implementing projects, adopts the methodology Front-End Loading (FEL), which covers social, health, safety and environment, and economic and operational risks.

Furthermore, based on environmental assessment, social and economic performed in the EIA (Environmental Impact Assessment and Impact Report for the Environment), are considered potential impacts of the presence of Vale regions in the phase of licensing and deployment projects.

These tools, together with the diagnoses made by Socioeconomic Vale Foundation, guided Programs Management Environmental and Socioeconomic Impacts, intended to find mechanisms to avoid or minimize

negative impacts and maximize positive impacts on the performance of Vale. These programs are implemented according to the needs of each project and consider the particularities of each region. Through these tools, it identifies the main impacts associated with the presence of mining. Among them stands out:

- Direct economic impacts positive: Generation employment, vocational training, increased tax collection, hiring of local products and services, investments in infrastructure;
- Direct negative economic impacts: Environmental impacts such as dust and noise, interference with land use, risks of accidents.

Positive indirect economic impacts, increase the wage, benefit income generation, leverage of other economic sectors, suppliers of attraction, development of local suppliers, attraction of investments from various spheres of public and private sectors. Indirect negative economic impacts: pressure on infrastructure and public services, due to population increases, speculation in remote areas, due to the low housing supply and high demand, generation of economic leakage effects, due to the hiring of suppliers and employees of other regions, lack of businesses and experts on site.

### **Programmes and Management Impact Practices**

In order to leverage and maximize the positive outcomes of Vale in the territories, working with structured programs in the various relationships that Vale set.

**Qualification.** Seeks to maximize the hiring of residents of the localities where it operates, especially in developing countries and remote areas.

Vale invests in professional training programs related to mining activities and other activities of the local economy. Through these programs, we seek to contribute to employment and income generation and diversification of the economy of the communities where it operates.

**Relationship with communities.** At all stages of the company's ventures—inception to the closing of the transactions—account with a team of Institutional Relations and Communication. Programs for community relations are based on a dialogue between the permanent and participatory community and Vale. Programs include visits to mining communities, meeting with leaders and participatory forums. In addition, we seek to establish a direct dialogue and transparent with not only the community but also with the local government in order to build a harmonious relationship.

**Relations with traditional communities.** Give special attention to these traditional communities in the localities where it operates. The basic guideline of the Program Interaction with Indigenous Communities is to ensure that the benefits generated by the project are enjoyed by the indigenous communities, respecting their cultural traditions so as to avoid, minimize or offset any adverse effects that the activity can.

**Culture appreciation.** It is understood that one can contribute and participate in programs of recovery, revitalization and protection of cultural property. Support to projects and settle agreements restoration of cultural heritage and archaeological sites where it operates. An example is the project of rescuing the language of the Kanak people.

Besides these programs, implanted directly in the units, Vale foundation works for the development of communities where Vale is present, helping to empower people and respecting local cultural identities through social programs structured.

### **Investment in Infrastructure**

Over the past three years, the amount applied was approximately \$169 million. The fall in investment in infrastructure in 2008 is due to the completion of projects.

In coming years, southeastern Pará need significant investment to remedy deficiencies in existing social infrastructure and prepare the country for projected economic growth of 18% per annum. To deal with these investments, the municipalities could count on an ability to own investment which will generate a gross savings of \$504 million between 2006 and 2010.

This is one of the main conclusions of the Integrated Diagnostic Socioeconomics of southeastern Pará, a study between 2006 and 2007, Vale and Vale foundation, under the auspices of Diagonal Urbana, a Brazilian consultancy specialized in integrated social management that counts with the participation of communities.

Although a significant structural deficit, the Southeast of Pará presents itself as a world of opportunities for sustainable development. After all, it is one of the regions of the world's richest in natural resources and major mineral provinces of the world. Since it began operations in the region, in the 80s, Vale has been supporting the development of the municipalities that are in their area of influence, while helping to preserve an area of 8,000 km<sup>2</sup> of native forest in Mosaico of Carajas.

Investments in infrastructure, urban sanitation, education and culture have contributed significantly to the development of the region. Even the company's growth over this period brought more opportunities for skills and employment for residents, more business for local suppliers and increase tax collection by government agencies, contributing to the local socioeconomic development.

Vale currently has 15 projects in the area and wants to make new investments, even to the total value of U.S. \$13 billion (2003, 2010). To increase its presence and have an even more effective and socially responsible, Vale and his foundation have decided that, first, it was necessary to know the region, understanding the present moment and projecting the future.

Diagnostics marks only the beginning of the Integrated Management Plan Socioeconomics Southeast of Pará, which also includes the steps of preparing and implementing the Plan of Action Planning, which is already being prepared in 2007, determines what should be done investments and how each party should participate. Already taking action is the stage of implementation of improvements, including efforts to seek financing. "This is a powerful tool that allows Vale contribute to sustainable development in regions where it operates", says Silvio Vaz, director of the Vale Foundation. Plan includes six municipalities (Parauapebas, Canaan dos Carajás, Curionópolis, Maraba, Ourilândia North and Tucumán), and influences Eldorado dos Carajas.

### **Health and Safety Activities and Policies**

In 2007, it has been continuing to carry out the strategy for health and safety through various activities, among which are:

- Policy review health and safety—The new text of the policy specifies the commitments and the basics of managing Health and Safety, which embody the value of respect for life;
- Elaboration of requirements for systemic health and safety—The standard defines what must be done to ensure the proper development of the organizational processes of Vale. These requirements stem from the health and safety policy and its principles. They are the ones that underlie the procedures, tools and

performance indicators of health and safety management;

- Elaboration of requirements for critical activities (RACs)—The requirements established for the execution of critical operational activities, with the purpose of preserving people's lives, ensuring the integrity and protecting health in all areas of the company, so as in its subsidiaries and affiliates. The 10 activities of greater risk appetite for Vale are working at height, motor vehicles, mobile equipment, blocking and signalling, cargo handling, confined space, machine protection, slope stabilization, and detonated explosives and chemicals;
- Implementation of information system health and safety—In order to improve the management and flow of information from Health and Safety, it begins the deployment of a single information system for Vale in Brazil. The tool will support management decisions, according to the results of business areas;
- Membership in the global business coalition on HIV/AIDS, Tuberculosis and Malaria—GBC (Global Business Coalition against HIV/AIDS, Tuberculosis and Malaria)—Joins the group of more than 200 member companies of the GBC, an organization aimed at mobilizing resources for initiatives for combating and prevention of HIV/AIDS, tuberculosis and malaria;
- Event "Construction"—In June and July 2007, approximately 2.5 thousand leaders in Vale gathered in 19 cities of Brazil, to build together the foundations of a culture of prevention in health and safety.

The new health and security policy of Vale, released in March 2008, establishes the following commitments:

- To control all risks associated with activities, processes, facilities, products and services;
- To act proactively in managing risks to health and safety of persons and facilities;
- Meet the legal requirements of health and safety and to take voluntarily;
- To continuously improve their performance in health and safety through the improvement of activities, processes, products and services, focusing on the use of innovative solutions and developing people;
- To encourage the development of performance in health and safety service providers;
- To maintain communication channels with the communities where operate and other stakeholders, so as to remain always alert to the influence of its operations in the health and well-being of people.

Since 2006, the performance goal of workplace safety (accidents with remote and internal corporate standards) is tied to variable pay of employees. In 2007, the process changed so that in contemplating the health data. The set of actions has already implemented and the beginning of the process of cultural transformation has already shown some results.

Between 2005 and 2007, various measures to improve management of health and safety are implemented, for example, setting targets covering issues of health and safety for all departments and the intensification of awareness campaigns.

Starting from 2007, there began a process of improvement of registration procedures and data collection on health and safety. Implanted with the classification standards of accidents according to the rules Occupational Safety and Health Administration (OSHA), the Agency for Safety and Health at Work in the United States, and held several training initiatives and awareness for employees in order standardize recording information.

With the implementation of this process, in 2007 it moved to separate the care of first aid records of accidents without removal of permanent employees. In coming years, we should replicate this model for employees to third parties.

Regarding the rate of accidents with lost time, the objective is worth a significant reduction of 33% over the period 2005 to 2007. This means that the accidents of greater severity were reduced. The perspective is that in the coming years, accident rates have continued with clearance reduction, both because of the improvements implemented as stability in the form of gathering and recording data. In this sense, began also to participate in a working group of ICM (SCHE Benchmarking) in order to align indicators of health and safety and occupational hygiene.

With regard to risk prevention and health guarantee, Vale maintains a rigorous system for identifying health risks in all its units. The goal is to use this information to the creation of specific programs that can be deployed in a corporate, promoting an attitude of prevention by employees, relatives and the communities in which CVRD operates. By the end of 2007, risks were identified by the following diseases:

- Occupational: Musculoskeletal diseases, back pain, risk of hearing loss and pneumoconiosis;
- Endemic: Intestinal parasites and diseases carried by animals, dengue, malaria, Chagas disease, yellow fever, hepatitis A and B, HIV/AIDS, leishmaniasis, and worms. Among the programs maintained by the company are: Campaign to prevent sexually transmitted diseases—STD/AIDS, World Day to Combat AIDS, workshops on alcohol and smoking, and prevention campaigns against cancer and diabetes; support group for diabetics, hypertensives and people with cardiovascular risks; program of gym work, education program affective-sexual (Vale youth—developed by Vale foundation), aimed at young people from nearby communities in order to guide the sexual life and prevent the occurrence of sexually transmitted diseases; campaigns of vaccination against influenza, and inspections to prevent and treat dengue and yellow fever. Besides these initiatives, Vale offers health plans to their employees and third parties as described in the job session and people development.

Such efforts have earned public recognition. The Healthy Living Program, Albras, won in 2005, the social value award (jury of experts and jury) in the category “quality of working environment”, and in 2007, Lennart Levi Award in the category “poster enterprises”, VII Congress of Stress of ISMA (International Stress Management Association). Vale invested U.S. \$25.2 million by mid-2009.

According to the testimony of some local politicians, royalties would be a form of compensation to alleviate the problems acquired with the implementation of projects in Vale Hall of EPC. They would also help solve problems such as sanitation, health, etc.. Socially critical areas now considered by municipalities, whose solutions would not be viable only with the transfers of state resources and the union.

## **Concluding Remarks**

### **CGD**

It is too early to gauge the results of this strategy. The impact of the conduct of social responsibility, especially in this aspect of environmental sustainability can only be realized in a longer period. In any case, and a perspective that brings us closer to an ex-ante, it is possible to draw attention to the following notes conclusive:

Firstly, it should be noted that have been recorded signals of recognition by the community’s action on CGD activities. Besides the prize in the study cited “trust marks” where CGD was considered Trusted Brand in Portugal and highlighted its role in the environmental sphere, the program “Planet Thanks” was awarded the prize “effectiveness in social responsibility”. Another public recognition comes from studies of brand score

which show the association of CGD brand social responsibility and a strong brand association culture.

How far this activity has had an impact on the market and the performance of CGD is a matter for future research.

Second, is to recognize the importance of tradition in terms of social responsibility. Companies where management strategy always believed in ethical and solidarity with their colleagues and with the community to share these processes as an important “capital”.

Thirdly, social responsibility is certainly not just philanthropy, but can/should also include this activity. Increasingly, social responsibility, in general, and promoting environmental sustainability, in particular, carries out an operation more effective if integrated into the global perspective of business and relationship with their surroundings.

Finally, the CGD case highlights the advantages of establishing a coherent and integrated strategy, with a thread that organizes the various lines of action and their actions. In this case, the establishment of the whole strategy around climate change avoids dispersion and stray image of a policy or meaningless without clear objectives. It reinforces the brand image with a seal of pertinence and internal coherence that enables more effective performance.

### **Vale**

The company Vale, privatized in 1997, formerly CVRD, is one of the biggest agents of social change in the state of Para in Brazil, more precisely in the region it operates. The consequences of the trade of mineral resources in regional terms, although they involve the production of very different goods, are highly valued by companies that have been installed at different points historically which retain important and decisive singularities with respect to the impact on regional development processes.

Vale is a company that owns its own *Sustainability Report*, with great emphasis on its search for balances between economic development and preservation of natural resources. It tries to act with strict control of aggression to the environment, and involvement with social problems of the localities in which acts, often performing the role of provider of social investments like education, health, sanitation, urban development, appreciation of culture and professional training.

The report follows the company's main document, sharing the costs and investments in sustainability. Being a mining company and generating its wealth from non-renewable resources, the pressure on Vale is expected to grow further in the future because acting on a global scale, its main and largest projects are located in the Eastern Amazon state of Pará with large concerns about resources.

### **Final Note**

After some individual considerations, it is necessary to refer some important ideas about global concerning.

First, it is necessary to join some ideas about what is relevant in these two cases that give a particular idea about both companies in both countries, convergent and divergently. So, it is first necessary to say that both companies are concerned about the way to show society the idea they have and about the way they are related to society.

Second, it seems important to highlight that corporate social responsibility must not be confounded with philanthropy. The responsible positioning of both companies must have some results in terms of the

performances of companies. And consequently, there is yet lot of research needed in terms of constructing economic indicators to reveal the impacts of the corporate social responsibility actions on the profits and other economic results of firms' activity.

Third, this study also reveals the importance of developing a research on the themes of business ethics in companies and the respective impact on organizational structure in companies and their relationship with stakeholders, both internal and external to the company.

Finally, this study is mostly an empirical based research. However, it also reveals that there are also theoretical issues related to corporate social responsibility that must be considered in the agenda of the researchers and scientists interested on these fields of investigation. The traditional economics of natural resources and environment has a focus, in terms of regulation in the presence of governmental and public policy. Maybe some economical developments can be developed using the idea that private organizations can supply some rules and regulation, supplying additional social assistance and creating conditions for the efficient use of natural resources.

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# Political Skill of Narcissistic Leaders

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A vast number of researches and studies have been conducted on narcissism, since the term was used to explain a psychological phenomenon in 1898. However, the discussions about narcissists as organization members or leaders have recently become a research topic in the organizational sciences. In this scope, the recent research on narcissism indicates that narcissistic leaders can either cause organizational tragedies or contribute to organizational success by their great vision. In addition to narcissism, another popular leadership feature is political skill which has attracted considerable attentions in recent years, and become one of the important topics of management studies. Moreover, political skill has been asserted to be a positive characteristic which is related to develop vision and team insight as well as to increase in members' trust and support; whereas narcissism has both harmful and beneficial effects on organizations. In this study, the relationships between the dimensions of narcissism and political skill are examined via the 16-item Narcissistic Personality Inventory (NPI) and the 18-item Political Skill Inventory. Analysis has shown that the authority, which is the adaptive dimension of narcissism, correlates positively with social astuteness and networking ability dimensions of political skill. Accordingly, entitlement, which is one of the maladaptive dimensions of narcissism, correlates significantly and negatively with the networking ability, interpersonal influence and apparent sincerity dimensions of political skill. When political skill is considered as a composite score, the findings indicate that the authority dimension of narcissism has a positive effect whereas, the entitlement dimension has a negative effect on political skill. Besides, implications for future studies are discussed.

*Keywords:* political skill, narcissism, leadership, adaptive and maladaptive dimensions

## Literature Review

### Narcissism

The narcissism notion, which has numerous definitions, has been argued for more than hundred years in psychology literature. Simply, Kernberg described narcissism as defensive grandiosity and Kohut demonstrated the concept as the prevention of a child's grandiosity from turning into healthy self-esteem (Kernberg, 1999; Kohut, 1998). Narcissism was defined as the withdrawal of libidinal investment from the external world and back toward the self in the essay *On narcissism: An introduction*, which was Freud's (1914) most important work regarding narcissistic phenomenon (Rozenbaltt, 2002, pp. 47-48). In spite of the variety of definitions, there is a great consensus on the behavioral description of narcissism. Narcissism involves a turning inward for

gratification, a reliance on self rather than others for safety and self-esteem. Narcissists tend to be preoccupied with power and prestige, enhancing themselves with beliefs that they are stronger and more important than others, greater in their abilities, or more beautiful to behold (Duss & Chiodo, 1991, p. 183). Moreover, prior researches indicated that there are seven dimensions for the narcissistic individuals. The dimensions of narcissism were found to be associated with some characteristics which are summarized below (Raskin & Terry, 1988, p. 891):

- (1) Superiority: Capacity for status, social presence, self-confidence, and narcissistic ego inflation;
- (2) Exploitativeness: Rebelliousness, nonconformity, hostility, and a lack of consideration and tolerance for others;
- (3) Authority: Dominance, assertiveness, leadership, criticality, and self-confidence;
- (4) Entitlement: Ambitiousness, need for power, dominance, hostility, toughness, and a lack of self-control and tolerance for others;
- (5) Self-sufficiency: Assertiveness, independence, self-confidence, and need for achievement;
- (6) Exhibitionism: Sensation seeking, extraversion, and a lack of impulse control;
- (7) Vanity: Both regarding oneself as physically attractive and being actually judged to be physically attractive.

Narcissism is an older concept in psychology literature; however, the discussions about narcissistic individuals as organization members or leaders have recently been subject to the researches of the management and organizational sciences. The argument, focused on narcissistic leadership, has shown that narcissistic leaders can be classified into two groups as productive and destructive narcissistic leaders (Maccoby, 2000; Lubit, 2002). Moreover, the researches indicated that productive leaders can have crucial roles which contributes to organizational success and create difference, whereas, destructive narcissistic leaders can cause organizational tragedies.

### **Political Skill**

Political skill is defined as “the ability to effectively understand others at work, and use such knowledge to influence others to act in ways that enhance one’s personal and/or organization objectives” (Ferris et al., 2005, p. 127). Findings of the recent researches have emphasized that political skill is distinctive on issues which are closely related to organization success such as team performance (Ahearn, Ferris, Hochwarter, Douglas, & Ammeter, 2004), stress factors (Meurs, 2008), employee reactions (Treadway et al., 2004), leader effectiveness (Douglas & Ammeter, 2004) and work outcomes (Brouer, 2007). Ferris and colleagues specified four dimensions of political skill which are social astuteness, interpersonal influence, network ability and apparent sincerity (Ferris et al., 2005, p. 129).

(1) Social astuteness: Politically skilled individuals are astute observers of others and are keenly attuned to diverse social situations. They comprehend social interactions and accurately interpret their behavior, as well as that of others, in social settings. They have strong powers of discernment and high self-awareness;

(2) Interpersonal influence: Politically skilled individuals have a subtle and convincing personal style that exerts a powerful influence on those around them. Individuals high on interpersonal influence nonetheless are capable of appropriately adapting and calibrating their behavior to each situation in order to elicit particular responses from others;

(3) Network ability: Individuals high on network ability are adept at developing and using diverse networks of people. They can easily develop friendships and build strong, beneficial alliances and coalitions. They are often highly skilled negotiators and deal makers, and adept at conflict management;

(4) Apparent sincerity: Politically skilled individuals appear to others as possessing high levels of integrity, authenticity, sincerity, and genuineness. They are, or appear to be, honest, open, and forthright.

### **The Relationship between Political Skill and Narcissism**

Having good human relations and managing them effectively in the organizations which were defined as political arenas are accepted as one of the key elements of organization success for the leaders. Nonetheless the importance of having political skill is increasing because it is proved to be a predictor of successful leaders. Considering the knowledge about narcissism, it is seen that narcissists are perceived as persons who are immodest, egocentric, not giving, not empathic, arrogant and impatient to criticism by others around them (Köroğlu & Bayraktar, 2007 p. 93). Consequently, it is hard to establish sincere relationships, and further, to have political skill for narcissists.

Although narcissism is generally considered as a negative personality characteristic, authority dimension of narcissism is one of the positive characteristics, which is seen related to the success feelings and influence on others. Besides, some of the researchers asserted that authority dimension contributes to be a leader among others. On the maladaptive aspects of narcissism, exploitativeness is the manipulative and engaged in seeking for special treatment dimension of narcissism which reflects on interpersonal relations as an undesirable behaviour (Bogart, Benotsch, & Pavlovic, 2004, p. 36). Entitlement, which is the second maladaptive dimension, has been related to negative personality characteristics, such as neuroticism, suspicion, tenseness, and anxiety. Emmons' (1987) observation was that the entitlement subscale of the NPI measures the maladaptive and pathological aspects of narcissism (Bogart et al., 2004, p. 42). For entitled individuals, the objective is not only to protect what is deserved but also to acquire more than what is deserved, even if doing so causes harm to others (Hochwarter et al., 2007, pp. 507-508). In conclusion, it is supposed that authority is positively related to political skill and its dimensions, whereas entitlement and exploitativeness are negatively related.

**Hypotheses.** This research based on the assumption of “leaders who are high in narcissism are going to be less politically skilled”. Hereby, it is surveyed whether the dimensions of political skill are affected by the dimensions of narcissism or not. Besides, as the literature findings indicate that political skill is a whole characteristic beyond its dimensions, the effects of the dimensions of narcissism on political skill are surveyed.

H1: Authority dimension of narcissism has a positive and significant relationship with political skill and its dimensions.

H2: Entitlement dimension of narcissism has a negative and significant relationship with political skill and its dimensions.

H3: Exploitativeness dimension of narcissism has a negative and significant relationship with political skill and its dimensions.

## **Method**

### **Sample**

The sample consisted of 90 female (34.6%) and 170 male (65.4%) and totally 260 managers. According to education level, 58.7% of the respondents has bachelor, 25.10% has master and PhD degree and the left (16.2%) graduated from associate or high school. The average age of respondents was approximately 31.96 years and they had an average of almost 12.26 years of full-time work experience. When the work positions were analyzed, it

was seen that 53.9% of the respondents were middle echelon staff member, 21.30% of the participants were top managers and 17.40% of the sample were low echelon managers. The rate of the managers who indicated that they are entrepreneurs was 7.40 %.

### **Measures**

The Turkish forms of Narcissistic Personality Inventory and Political Skill Inventory were used in the conducted research (Atay, 2009a, p. 181; 2009b, p. 892).

(1) Narcissistic Personality Inventory: To survey narcissism degree and dimensions, 16-item Narcissistic Personality Inventory which was developed by Ames and his colleagues in 2006 and standardized into Turkish by Atay was used. Besides, original scale consists of six dimensions which are entitlement, exploitativeness, authority, exhibitionism, superiority and self-sufficiency. Each question has two statements and the participants are forced to prefer one choice. The reliability of the scale was found as 0.652 (Atay, 2009a, p. 191);

(2) Political Skill Inventory: The original form of Political Skill Inventory developed by Ferris, Treadway, et al. in 2005 consists of 18 items. The participants are asked to choose their answers from Likert scale including 7 statements between “1: Certainly agree” and “7: Certainly disagree”. The reliability of Turkish form of Political Skill Inventory was found as 0.863 (Atay, 2009b, p. 894).

### **Procedure**

In accordance with the aim of this study, the research was designed in a manner which involved national and international companies operating in Istanbul, Bursa, Ankara and Izmir. The online link of the survey was sent to the managers of the firms from 29 different and massive sectors composed of education, finance, software, communication, manufacturing, chemical, automotive, retail, health and food industries etc.. Hence, the surveys were applied via internet-based survey software. Initially, 303 surveys were distributed and 276 feedbacks (91.08%) were collected. After elimination of the surveys which have blank statements, 260 surveys were left in final stage to be analyzed.

## **Results**

In the present study, the linear correlation was researched between “narcissism and its dimensions” and “political skill and its dimensions”. Regression analysis was achieved over the characteristics that show linear correlations and two models were presented.

### **The Results of Correlation Analysis**

Correlation analysis has shown that authority dimension of narcissism correlated positively with political skill and its dimensions. Besides, the results of the research indicated that authority dimension of narcissism correlated positively with social astuteness and network ability dimensions. On the other hand, entitlement dimension of narcissism correlated negatively with both political skill and all of its dimensions. Further, it is determined that entitlement correlated significantly and negatively with interpersonal influence and apparent sincerity dimensions. The third dimension of narcissism, which is self-sufficiency, was found to have significant and negative correlations with political skill. Besides, it was indicated that self-sufficiency correlated negatively but not significantly with political skill. The only dimension which correlated significantly and positively with self-sufficiency was interpersonal influence (see Table 1).

Table 1  
The Results of Correlation Analysis

Descriptive statistics and correlations													
Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1 Social astuteness	5.49	1.03											
2 Network ability	5.64	0.94	0.760**										
3 Interpersonal influence	6.17	1.10	0.670**	0.739**									
4 Apparent sincerity	5.68	0.97	0.737**	0.751**	0.742**								
5 Political skill	22.99	3.62	0.885**	0.904**	0.887**	0.901**							
6 Superiority	1.36	1.01	0.046	0.036	-0.009	0.088	0.044						
7 Exhibitionism	1.55	1.04	0.048	0.073	-0.043	0.095	0.046	0.167**					
8 Authority	0.96	0.77	0.137*	0.164**	0.015	0.054	0.101	0.123*	0.303**				
9 Exploitativeness	1.25	0.82	0.098	0.097	-0.017	0.142*	0.086	0.177**	0.168**	0.219**			
10 Entitlement	0.32	0.54	-0.063	-0.099	-0.182**	-0.155*	-0.140*	0.058	0.143*	0.163**	-0.006		
11 Self-sufficiency	1.05	0.65	0.045	-0.007	-0.123*	-0.023	-0.033	0.242**	0.119	0.049	0.089	0.081	
12 Narcissism	6.52	2.66	0.105	0.098	-0.088	0.093	0.054	0.609**	0.656**	0.571**	0.527**	0.348**	0.443**

Notes.  $N = 260$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ .

### The Results of Regression Analysis

Regression analysis was used to examine the relationship between narcissism and political skill. Accordingly, two different models were introduced and analyses were performed over these models which were verified by the results. According to the first model, authority dimension of narcissism affects social astuteness and network ability dimensions of political skill significantly and positively. Surprisingly, the results indicated that the exploitativeness dimension affects the apparent sincerity dimension significantly and positively. Concurrently, it is found that entitlement affects network ability, interpersonal influence and apparent sincerity dimensions significantly and negatively. Towards the definitions of relations over dimensions, the effect of narcissism as a whole on political skill was researched and it was indicated that authority affects the development of political skill significantly and positively, whereas the entitlement affects significantly and negatively (see Table 2).

Table 2  
The Results of Regression Analysis

Variables	Social astuteness		Network ability		Interpersonal influence		Apparent sincerity		Political skill	
	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$
Model 1										
Superiority	0.015		0.013		0.030		0.072		0.036	
Exhibitionism	0.003		0.033		-0.022		0.087		0.026	
Authority	0.133*		0.162*		0.058		0.025		0.105	
Exploitativeness	0.062		0.054		-0.022		0.113*		0.056	
Entitlement	-0.088		-0.129*		-0.181**		-0.171**		-0.160*	
Self-sufficiency	0.036	0.009	-0.016	0.025	-0.114***	0.026*	-0.049	0.037*	-0.042	0.019
Model 2										
Narcissism	0.105	0.007	0.098	0.006	-0.088	0.004	0.093	0.005	0.054	0.000
Model 3										
Superiority										
Exhibitionism										
Authority	0.137*	0.015*	0.185**						0.127*	
Exploitativeness							0.142*			
Entitlement			-0.129*	0.035**	-0.181	0.033**	-0.154*	0.037**	-0.161*	0.028*
Self-sufficiency										

Notes. \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.10$ .

## Discussion

### **Authority-Political Skill Relationship**

Authority dimension is positively correlated both with political skill and its social astuteness and network ability dimensions. Since authority is accepted as a positive aspect of narcissism, the positive relationships are not surprising. Leadership characteristics are in the foreground of individuals who are high in authority and they exert dominance over others around them. Besides, by means of their self-confidence, they can easily adapt and develop diverse social networks. The results of regression analysis about significant and positive affect of authority dimension on social astuteness and network ability supports these aspects.

### **Exploitativeness-Political Skill Relationship**

The significant and positive relation between exploitativeness and apparent sincerity was an unexpected and surprising result. However, prior researches indicated that individuals high on exploitativeness dimension are perceived as charming at zero acquaintance (Back, Schmukle, & Egloff, 2010). Moreover, it is assumed that, narcissists who are high in exploitativeness could pretend as they are sincere in order to get approval and admiration they need, to achieve their goals, and to derive maximum benefit from people around them.

Rebelliousness, nonconformity, hostility, and lack of consideration and tolerance for others are the main characteristics of narcissism which are especially seen in highly exploitative individuals. This type of people is focused on how they can derive more benefit from others. Therefore, the needs, feelings and expectations of other people are not important for them, and they are not aware of these characteristics of their own. However, individuals high in interpersonal influence are capable of displaying effective communication style and making others feel confident and successful at developing strong friendships. Consequently, the negative but statistically not significant relation between exploitativeness and interpersonal influence dimensions could be interpreted as the individuals high in exploitativeness are not skilled enough at interpersonal influence. The positive and significant effect of exploitativeness on apparent sincerity might be meaningful when it is considered that they need to be perceived sincere by others to get approval and admiration.

### **Entitlement-Political Skill Relationship**

The negative correlation between political skill and the entitlement was an expected result. The aim of entitled people is not to protect what they deserve but to get more than they deserve (Hochwarter et al., 2007). Accordingly, these people do not believe in the importance of being sincere or simply, appearing sincere. On the other hand, because of their lack of concern and tolerance for other people, they do have no interest in understanding others and making them feel comfort. Entitled individuals believe they are superior in any condition and are worthy of any attention and admiration; that is why they are not concerned with understanding and satisfying other peoples' needs. Besides, entitlement is closely related to hostility and maladaptiveness (Raskin & Terry, 1988, p. 899). Therefore, it is possible for entitled individuals to be unwilling in improving social astuteness skills that express understanding social situations and adapting to them. The negative correlation between network ability and entitlement attracts attention on unwillingness of entitled individuals about improving relationship with other people. Regression analysis demonstrated that improvement of entitlement, which is maladaptive and unhealthy dimension of narcissism, is going to cause lower scores both on the political skill dimensions and political skill as a whole trait (see Figure 1 and Figure 2).

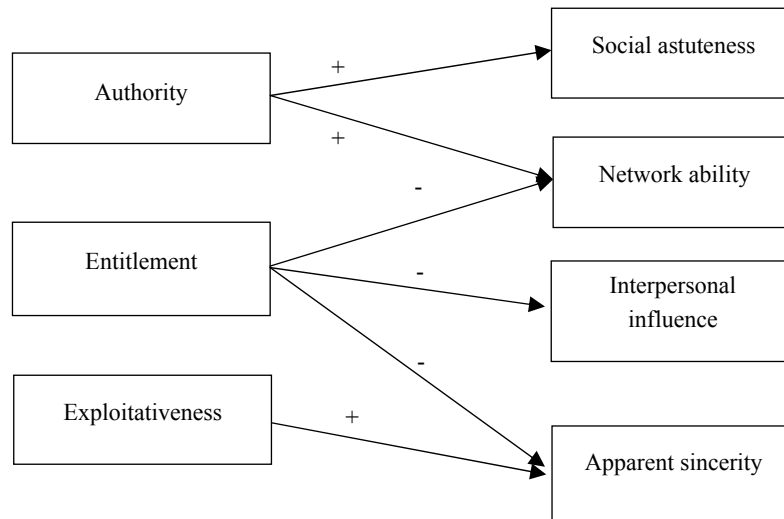


Figure 1. Model I.

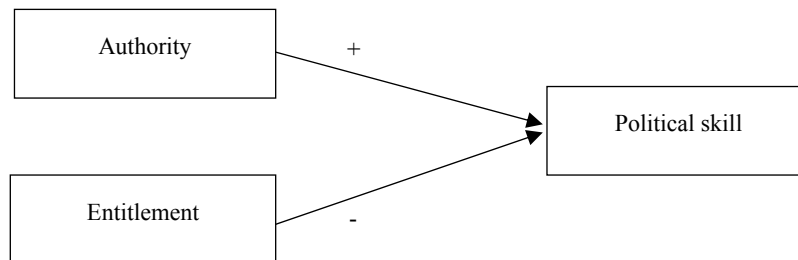


Figure 2. Model II.

### Conclusions and Implications

Based on the statistical analysis, the dimensions of narcissism and the dimensions of political skill showed significant relationships. Further, the entitlement and authority dimensions were found to be predictors of political skill. Since the entitlement dimension is seen as a maladaptive aspect of narcissism, the relationship corresponds to literature reviews. Moreover, authority, the adaptive dimension of narcissism, was found as a positive predictor of political skill. This is assumed as an expected and meaningful finding for the further studies and implications.

In conclusion, all these results might be evaluated for leadership development and increasing leader effectiveness. As narcissism is a personality characteristic with its both positive and negative aspects, leaders who have narcissistic tendencies can be orientated and directed to develop their adaptive traits. Furthermore, in today's challenging world, leaders' need for political skill is increasing day by day. Since political skill is asserted as a crucial ability for leader effectiveness and organizational success, the organizations might consider the narcissistic inclinations and political skill level of leaders.

Prior researches in the literature denote that political skill can be developed by trainings (Ferris, Davidson & Perrew, 2005), and this research indicates that narcissism affects political skill and its dimensions. Therefore, it is proposed that consideration of narcissism dimensions is going to contribute the quality of the trainings intended to develop political skill. Furthermore, findings would probably be useful for hiring and promotion procedures and, meaningful for executive and human resources managers for recruitment processes.

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# Improving Organisational Performance Through Understanding Human Motivation\*

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This article explores some thoughtful considerations for management related to understanding and improving the overall performance of individuals and teams in organisations. It reflects thoughts and learnings from several implementations of small and large projects in public sector. It also sheds light on various theories, tools and frameworks and how they can be used to improve overall organisational performance.

*Keywords:* competency development, motivation, performance, team building

## Introduction

In today's dynamic and rapidly changing workplace and globalised economy, development of organisational performance is associated with the development of personal performance, skills, knowledge and experience (Covey, 1989; Covey, 2004; Jones, George, & Hill, 2000). However, the ability to achieve and maintain high performance and productivity in organisations is a key challenge facing management today.

Our experience shows that management need to give higher attention towards understanding individual differences, needs and behaviours, as well as their criticality to enable them to understand and manage organisational complexity. Such understanding is considered important in helping individuals develop effective learning styles that is aligned with organisational objectives and needs.

Our primary learning is touching the subject of perceptions, beliefs and values that motivate our behaviours and impact the overall learning process we may decide to follow. A variety of theories regarding human nature and motivation in particular are explored here, to explain the diversified behaviours, and particularly, what influences people to do what they do. We also reflect our learnings and make sense of the presented theories in relation to our experiences in practice.

## Left-Brain and Right-Brain Management

If our life experiences and culture shape our mental models of the world then our own unique thinking styles and sensory preferences will shape the way we know the world... Our thinking is shaped by our very existence in our world, our

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thinking styles and sensory preferences, these styles and preferences are the ones we have always been comfortable with and familiarity is comforting (Potts, 2002).

A useful theory for management to always keep in mind is the right-brain and left-brain thinking. Most of us have one side of our brains dominant which influence the choice of thinking and learning styles. Figure 1 illustrates the differences between the two sides of the brain.

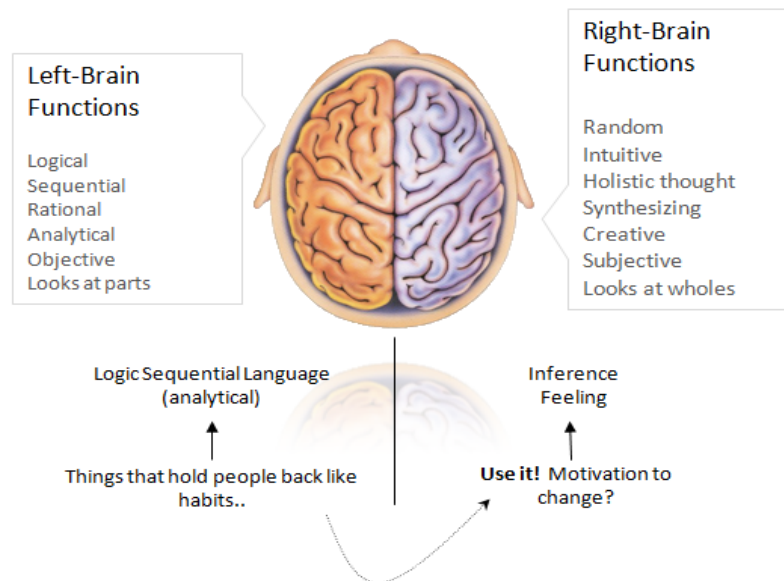


Figure 1. Left-brain and right-brain thinking model.

Numerous management styles can originate from the left or the right side of the brain (Heller, 2002). The left side has an exasperating devotion to numerical figures, details, analysis, time-bound logic, and sequential thinking, etc., concerning itself with cash flow and the dire consequences of mismanagement of finances. It processes information in an analytical and sequential way, looking first at the pieces, then putting them together to get the whole.

The right side is often based on intuitive, emotional decisions, synthesis, and holistic thinking, i.e., it processes information in an intuitive way, looking first at the whole picture then filling in details. While this approach can yield immediate success in the short run, it often comes at the risk of long-term sustainability and growth.

Our experience in projects also shows that it is important that we follow a “balanced-thinking” (i.e., to engage both sides of the brain) to analyse and identify elements that contribute towards the achievement and maintenance of highest performance and productivity levels (see Leonard & Straus, 1997). It was found vital that we constantly promote this way of thinking to enhance the overall performance of projects. Organisations aiming to improve productivity, with rigorous planned strategies, staff with balanced and mixed thinking skills can produce more efficient and innovative organisational outcomes (Cohen, 2008). The left-brain and right-brain model goes beyond mere issues of management style, but it reflects organisational thinking and how it approaches problem solving, and can better address the situational uniqueness of projects and conquer the challenges of contemporary projects.

### Beliefs and Perceptions

Perhaps, the most significant learning from the different projects was about how things like beliefs and perceptions can inhibit us from learning and development, or in other words, how our beliefs and perceptions may inhibit us from doing any right-brain thinking. Figure 2 demonstrates different motivation layers, showing how behaviour can determine our beliefs, habits, and needs. Motivation is a hidden power that stems from a deep rooted belief that activates and drives behavior and gives it direction; it is strongest when it comes from our inner values (Lock, 2001). Thus, understanding motivation should empower us to better understand ourselves and others. This should, in turn, enable us to change and/or further improve our behaviours and performance.

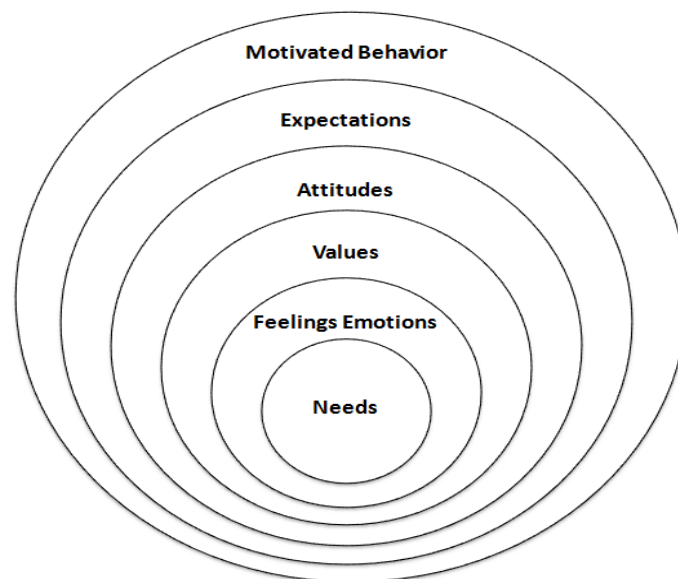


Figure 2. Motivation factors.

It is also important for management to understand the association between our unconscious mind and how it may determine particular motivated behaviours, i.e., how beliefs may be part of our unconscious mind and play the role of regulating many of our behaviours and actions we take in life. We correlate this to Freud's topographical model that represents the configuration of the mind (Person, Figueira, & Fonagy, 1995). The model makes three classifications of the human mind:

**Conscious:** Awareness of one's environment and one's own existence, sensations, and thoughts, i.e., part of the mind that holds what we are aware of. We can verbalize about our conscious experience and think about it in a logical fashion.

**Preconscious:** Memories or feelings that are not part of one's immediate awareness but that can be recalled through conscious effort.

**Unconscious:** Part of mind containing elements of psychic makeup, such as memories or repressed desires, that are not subject to conscious perception or control but that often affect conscious thoughts and behavior.

Figure 3 uses an iceberg metaphor to facilitate the understanding of Freud's topographical theory. It shows that more than 90% of an iceberg is beneath the water (preconscious and unconscious) whereas only 10% of it is visible (conscious).

Using Freud's topographical model of the mind, we can see that a substance may pass back and forth between the conscious and preconscious mind. Subsequently, substances from these two levels can easily slip into the unconscious mind. Rationally, the unconscious substances (e.g., unconscious fears and previous experiences) can very much direct our behaviours and instinctively make several decisions for us. It is our unconscious mind that effects what we can or cannot accomplish. By challenging and changing some of our beliefs and perceptions, we can utilise our abilities and potentials towards escalating our talents, achieving our goals and attaining significant success in almost every dimension of our progressive life. The following section explores various theories that represent the most common held views as to what motivates behaviour, and we reflect on each based on our experience.

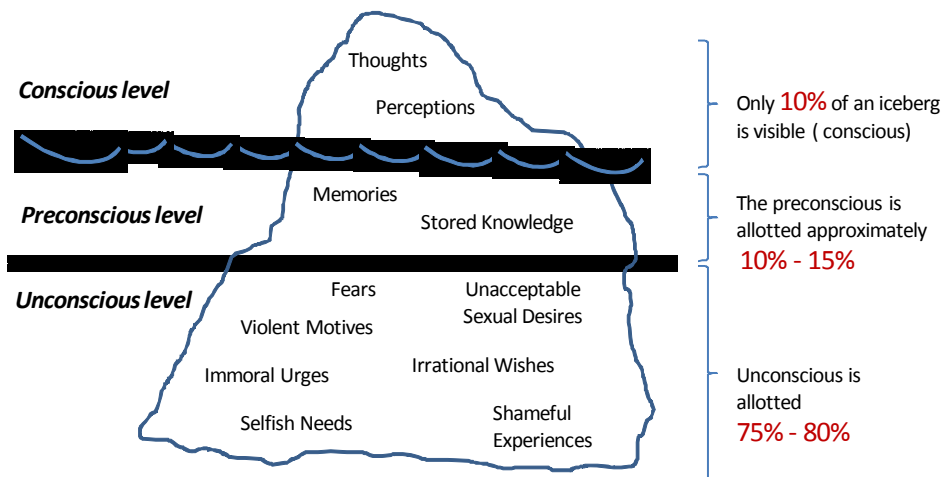


Figure 3. Mental iceberg of Freud's view of the human mind.

## Theories and Practice

We all have preferred unconscious and conscious habits of thought that influence how we make decisions, communicate, learn and interact with others.... Our mental models and maps are "configured" by the very nature of our experiences; they are "configured" by our cultures. The western concept of time is very linear, whereas the Australian Aboriginal notion of time is very holistic! Neither are right or wrong they are just different (Herrmann, 1996).

A survey of global employers in 2005 (eDison, 2005) revealed that:

- More than 50% of employees lack the motivation to keep learning and improving;
- 4 in 10 people cannot work cooperatively;
- Only 19% of entry level-applicants have enough adequate self-discipline for their jobs;
- 70% of all change initiatives fail due to people issues-inability to lead, lack of teamwork, unwillingness to take initiative, inability to deal with change, etc.;
- Primary derailleur of top executives: a lack of impulse control.

In today's competitive knowledge-driven organisations, leadership is more important than ever, and requires more than just possessing the right technical skills. Today's leaders need to recognise their own feelings and those of others to motivate themselves and effectively manage relationships, increase morale and motivation, improve productivity, promote greater cooperation and team work and increase retention of top talent.

**Theory X and Theory Y**

We have always believed that the main success factor for us in both our own personal life and at work is the ability to develop a positive environment. The different learning lessons from our projects indicate that in order to build such an environment, we need first to treat people as individuals and appreciate their personal differences. All of us are individuals; we have different personalities; we think differently; we have different needs, wants, values, expectations, and goals; we each change over time as well. Therefore, we need to recognise people as individuals and to work with their individual differences.

Our personal philosophies often influence the motivational approaches we normally select to deal with such differences. Such philosophies or attitudes towards others can be mapped to theory X and theory Y (McGregor, 1960) (see Figure 4). People in theory X have negative perceptions of other people’s potential and attitudes, whereas those in theory Y have an opposite view, and assume that other people can be self-directing and seek responsibility. Table 1 provides further examples of the perceptions of the two theories.

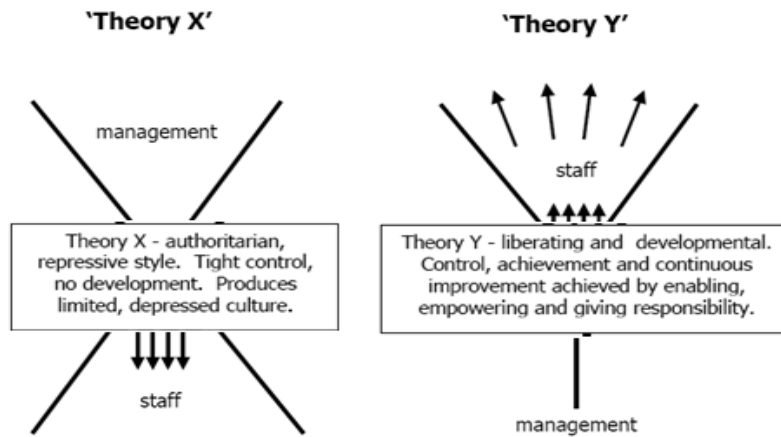


Figure 4. Theory X & Theory Y.

Table 1

*Theory X and Theory Y Perceptions (Jones et al., 2000)*

Theory X	Theory Y
The average employee is lazy, dislikes work, and will try to do as little as possible.	Employees are not inherently lazy. Given the chance, employees will do what is good for the organisation.
To ensure that employees work hard, managers should closely supervise employees.	To allow employees to work in the organisation’s interest, managers must create a work setting that provides opportunities for workers to exercise initiatives and self direction.
Mangers should create strict work rules and implement a well defined system of rewards and punishments to control employees.	Managers should decentralise authority to employees and make sure employees have the resources necessary to achieve organisational goals.

Figure 5 also presents a continuum containing positive and negative motivations. Positive leadership styles encourage development of employees and higher levels of job satisfaction. Negative leadership styles are based on the manager’s ability to withhold items of value from employees. The result of negative leadership may be an environment of fear, where managers are viewed with distrust and seen as dictators rather than as leaders or team players.

As we have stated this earlier, our perceptions, attitudes and behaviours are normally driven and motivated by

our needs, beliefs and values. The same applies to others around us. If we want to understand ourselves and/or others, we need to look at such motivators which would probably help us modify our perceptions and thereafter our behaviours. Many methods have been developed to explain why people choose to follow particular behaviours.

Two categories of motivation theories are covered next, content and process theories. Content theories are concerned with what motivates behaviour. Process theories are concerned with how the content of motivation influences behaviour. The next section starts the discussion with a content theory—Maslow’s theory.



Figure 5. Positive vs. negative motivation. Source: Maslow, 1943.

**Maslow’s Hierarchy of Needs Theory (Content Theory)**

Maslow’s theory is one of the very common tools used to understand human needs. It mainly identifies five basic levels of needs as illustrated in Figure 6, namely, physical, safety, social, esteem and self-actualisation needs. The principle argument of the theory is based around the following four premises:

- (1) Individual’s needs are arranged in a hierarchical order that starts from the most basic needs (water, food, shelter) to the most complex (esteem and self-actualisation);
- (2) Only an unsatisfied need can influence behaviour, where a satisfied need is not considered to be a motivator;
- (3) A person will at least minimally satisfy each level of need before feeling the need at the next level;
- (4) The level of satisfaction of needs always fluctuates, i.e., if satisfaction is not maintained for a need, it will become a priority need again. Once a need is satisfied, it will cease to influence behaviour.

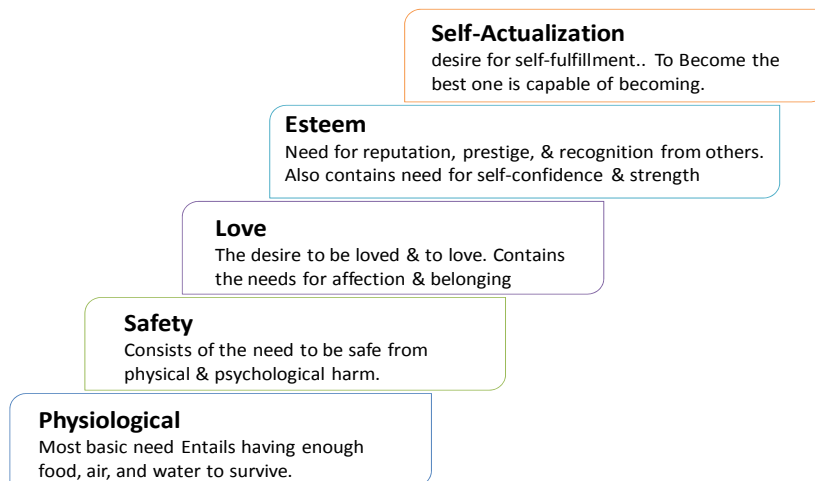


Figure 6. Maslow’s hierarchy of needs. Source: Herzberg, 1987.

To us, the theory represented a workable motivation framework that we utilised in analysing specific attitudes and behaviours to identify a particular need level an individual may attempt to satisfy, which gave us the opportunity in turn to assist and or/guide the individual to satisfy those needs.

**Herzberg’s Two-Factor Theory (Content Theory)**

Another relevant needs theory is called the two-factor theory. It principally uncovers two sets of factors:

- (1) Motivators: factors that produce satisfaction and motivation;
- (2) Maintenance, or hygiene factors: factors that lead to dissatisfaction.

As illustrated in Figure 7, the hygiene factors range from causing no dissatisfaction, if they are present in any given environment, to causing high dissatisfaction, if they are not present in sufficient quality (Herzberg, Mausner, & Snyderman, 1959; Herzberg, 1987). Motivators, if present in, can provide low to high satisfaction, where if they are not present, no satisfaction can result (ibid.). Figure 8 shows overlapping features shared by both Maslow’s and Herzber’s theories where:

- (1) Hygiene factors are predominantly related to lower level needs;
- (2) Herzberg’s motivators target higher level needs.

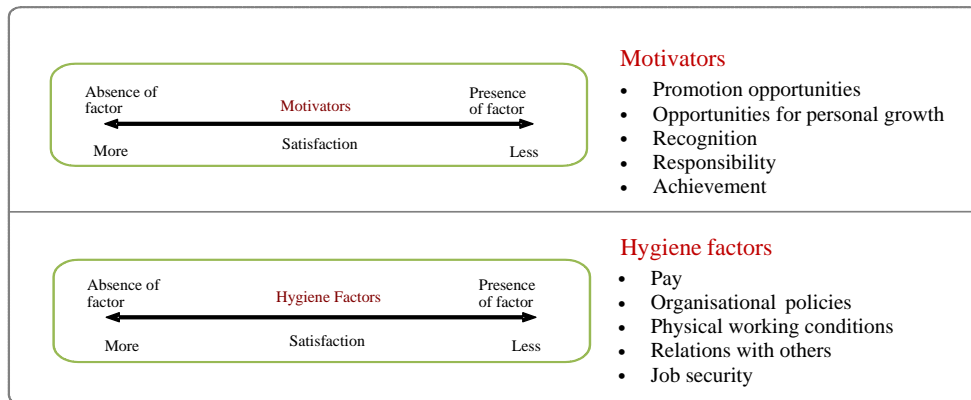


Figure 7. Herzberg’s two-factor theory.

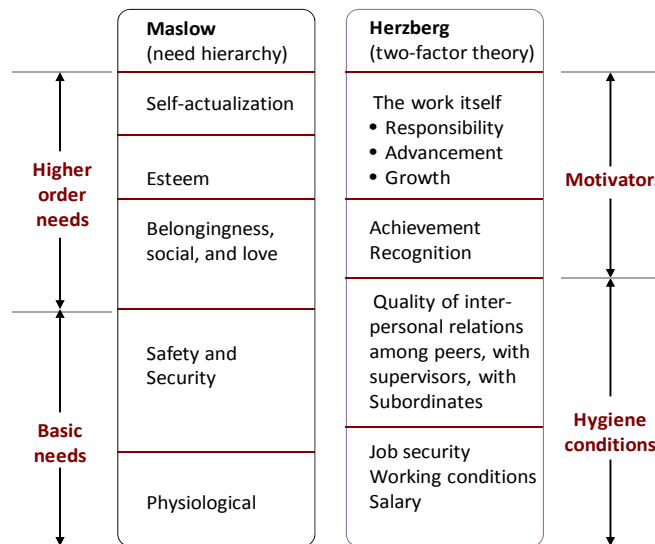


Figure 8. Maslow vs. Herzberg.

The theory in our view can be used to focus on ensuring presence and quality of maintenance factors as a foundation on which to build motivation. For instance, managers have the power to make subordinates jobs more rewarding by granting them more responsibility, praising their accomplishments, making them feel that they are succeeding, and so on.

**Vroom’s Expectancy Theory (Process Theory)**

Vroom’s theory also referred to as valence instrumentality expectancy theory, explains why people choose a particular behaviour to satisfy their needs (see Figure 9). It states that before choosing a behaviour, an individual will evaluate various possibilities on the basis of how much work is involved and what the reward is. Motivation is a function of how badly individuals want something and how likely they think they are to get it. It occurs in direct proportion to perceived or expected rewards.



Figure 9. Expectancy theory. Source: Vroom, 1964.

The strength of a tendency to act in a certain way depends on the strength of an expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual (Blumberg & Pringle, 1982). This is to say that behaviour is heavily influenced by perceptions of possible outcomes (see Figure 10). If an individual expects a certain outcome, possesses the competence to achieve it, and wants it badly enough, he or she will exhibit the required behaviour. If a person expects that a specific behaviour will produce an outcome that he or she perceives as undesirable, he or she will be less inclined to exhibit that behaviour. In this light, a person who knows the other person’s expectation and desires can tailor outcomes associated with specific behaviours to produce motivation.

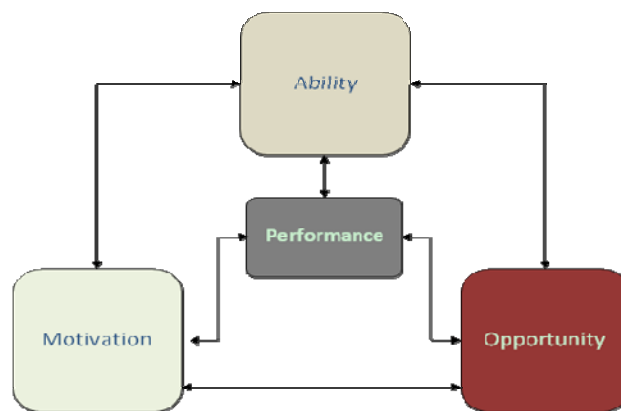


Figure 10. Performance dimensions.

### Some Further Reflection

There has been so much debate about the applicability of the presented theories in today's world specially that some of them have been developed as early as 1920's (Jones et al., 2000; Keuning, 1998; Mullins, 1996). From our own personal perspectives, we see those theories still valid today as tools and frameworks for understanding human motivation.

For example, we agree with Maslow that only an unsatisfied need can motivate a person's behaviour. We are never satisfied with what we have as we always want more; thinking that what we do not have will seemingly make us happier. This is our nature.

Some of the presented theories also do not believe that human beings are pushed and pulled by mechanical forces, either of stimuli and reinforcements (behaviorism) or of unconscious instinctual impulses (psychoanalysis) (Simons et al., 1987). It rather promotes the idea of focusing on human potentials, with the belief that they continuously and characteristically strive for an upper level of our capabilities (ibid.).

In our opinion, the theories explored here provide sound theoretical frameworks to better analyse and understand the basis of individuals' perceptions, behaviours, and attitudes. Table 2 shows some examples of our interpretations and understanding of the presented theories. Such understanding should enable us to enhance and improve our own thinking styles, motivation, and overall performance.

Table 2

#### *Theories and Further Reflection*

Theory	Examples
Theory X and Theory Y	Perceptions of how people view human behaviour mainly at work and organisational life.
Maslow's need theory	Confirms that human needs are an important part of human nature; Identity trial model vs. self-actualisation.
Herzberg's theory	Provide the foundation to build motivation and influence behaviour.
Vroom's expectancy theory	A framework to understand why people choose particular need (behaviour influence by perception of outcome).

We argue that performance improvement is more of a function of ability and motivation. Ability depends on education, experience, and training. Motivation is more related to our thoughts, i.e., we are the product of our own thoughts. The aim of motivation is to improve the quality of our thoughts. Thus motivation, for organisations need to be considered essential to learn best and maximise effectiveness.

For management, effective performance improvement needs to deal with the performance of the organisational system as a whole. It requires an analysis of the deeper, underlying systemic blockages for performance in organisations and/or broader systems by the actors (Hagmann, Peter, Chuma, Ngwenya, Kibwika, & Krebs, 2009). Such interventions should involve well managed learning processes which should in turn lead towards continuous performance-driven competence development.

Leading in successively larger contexts (from individuals to groups to organisation-wide efforts) requires successively larger sets of competencies in terms of knowledge, skills and abilities. To create the conditions and space necessary for such an objective, it is important for management to foster change processes within the organisation to allow competency development.

Table 3 shows a competency framework that we used to develop core personal competencies. The

framework looks at two prime competencies—personal and social. Personal competencies are those that determine how we manage ourselves, where social competencies are those that determine how we handle relationships. It sets out the skills, abilities, and personal qualities that leaders need to develop. We used this framework to develop leadership competencies and further identify training and development needs.

Table 3

*Competency Framework*

	Personal competence	Social competence
Awareness	Self-awareness: Knowing one’s internal states, preferences, resources, and intuitions. <ul style="list-style-type: none"> <li>• Emotional awareness: Recognizing one’s emotions and their effects.</li> <li>• Accurate self-assessment: Knowing one’s strengths and limits.</li> <li>• Self-confidence: A strong sense of one’s self-worth and capabilities.</li> </ul>	Social awareness: Awareness of others feelings, needs, and concerns. <ul style="list-style-type: none"> <li>• Empathy: Sensing others’ feelings and perspectives, and taking an active interest in their concerns.</li> <li>• Organisational awareness: Reading a group’s emotional currents and power relationships.</li> <li>• Service orientation: Anticipating, recognizing, and meeting customers’ needs.</li> </ul>
Actions	Self-management: Managing ones’ internal states, impulses, and resources. <ul style="list-style-type: none"> <li>• Self-control: Keeping disruptive emotions and impulses in check.</li> <li>• Trustworthiness: Maintaining standards of honesty and integrity.</li> <li>• Conscientiousness: Taking responsibility for personal performance.</li> <li>• Adaptability: Flexibility in handling change.</li> <li>• Achievement orientation: Striving to improve or meeting a standard of excellence.</li> <li>• Initiative: Readiness to act on opportunities.</li> </ul>	Social skills: Adeptness at inducing desirable responses in others. <ul style="list-style-type: none"> <li>• Developing others: Sensing others’ development needs and bolstering their abilities.</li> <li>• Leadership: Inspiring and guiding individuals and groups.</li> <li>• Influence: Wielding effective tactics for persuasion.</li> <li>• Communication: Listening openly and sending convincing messages.</li> <li>• Change catalyst: Initiating or managing change.</li> <li>• Conflict management: Negotiating and resolving disagreements.</li> <li>• Building bonds: Nurturing instrumental relationships.</li> <li>• Teamwork &amp; collaboration: Working with others toward shared goals. Creating group synergy in pursuing collective goals.</li> </ul>

*Note.* Source: Herrmann, 1996.

**Conclusion**

Human nature can be very simple, yet very complex. An understanding and appreciation of this fact is essential to effective employee motivation, and therefore effective management and leadership of result oriented organisations. The content of this article was prepared to raise management awareness and provide them with some fundamental pieces of knowledge about behaviours in organisations and how much they are determined by perceptions and personalities. The different learning lessons from the projects and the work we carried out to complete this paper, played a major role in clearing out what is to be “set of foundations and pivotal ingredients” for self motivation, assertive communication (Wertheim, 1998), personal empowerment, enhancing personal behaviours (Kagan, 2004), and interpersonal relationships. The presented theories are considered important tools and frameworks for management to understanding human motivation. The presented lessons, overall, should assist in formulating an effective learning contract for management to understanding the rudiments for building complementary teams, concerned with methods, systems, and procedures and at the same time with direction and results.

To acquire a functional balance, management need to exercise the weaker side of the organisational brain. For example, a team with left-brain skills should include individuals with right-brain minded, who could participate creatively in problem solving, and facing the challenges of contemporary projects. Unless they are

internally motivated, employees in organisations with superior systems and procedures and detailed job descriptions, may suffer performance challenges if things are excessively mechanical and formal. Management role lies in accomplishing organisation wide shared common vision, purpose, and sense of mission.

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