Effects of rule of law on firm performance in South Africa

Banjo Roxas
(School of Management and Marketing, Deakin University, Melbourne, Australia)

Doren Chadee
(School of Management and Marketing, Deakin University, Melbourne, Australia)

Ronel Erwee
(School of Management and Marketing, University of Southern Queensland, Toowoomba, Australia)

Abstract:

Purpose

– South Africa (SA) has undertaken significant institutional reforms since the change in its political regime in 1994. During the same period, SA has also experienced rapid economic growth. Although it is widely accepted that institutional reform generally has positive impacts on firm competitiveness and economic growth, the extent to which institutional reforms in SA have been of benefit to businesses is not well understood. The purpose of this paper is to focus specifically on the rule of law and assesses the extent to which the rule of law affects business performance.

Design/methodology/approach

– The study uses multinomial logistic regression techniques and data, from a large-scale firm level survey (n=751) of SA businesses undertaken by the World Bank in 2007, to estimate the effects of various elements of the rule of law on firm performance.

Findings

– Crime and theft were found to have the largest impact on business performance, followed by corruption and tax administration. Political instability and the effectiveness of the court system were not perceived to affect business performance significantly.

Research limitations/implications

– Ongoing institutional reforms aimed at improving business performance and competitiveness in SA should pay particular attention to the design of effective policies to address crime, theft, corruption and tax administration issues faced by businesses.

Originality/value

– The study is one of the first to provide empirical evidence based on a large-scale survey of the extent to which crime and theft, corruption and tax effectiveness inhibit business growth in SA.
Introduction

The formal institutional environment comprised of government legislation, policies and programs has been found to be an important element of international competitiveness and national economic growth and development (Ahn and York, 2009; Ismail et al., 2008; North, 1991; Peng, 2010). Not surprisingly, institutional building has become a priority in many high-growth economies such as China, India and Russia, and has become a common endeavour in many emerging economies. An integral element of the change in political regime which occurred in South Africa (SA hereafter) in 1994 was the accompanying process of change in the overall formal institutional environment underpinning the country's economy. Over the last two decades, SA has also experienced real GDP growth rates well in excess of the African regional average rate (The World Bank, 2010b) and has become a leading destination for foreign direct investment (FDI), accounting for approximately 17 per cent of total FDI in sub-Saharan Africa in 2009. The 2010-2011 Global Competitiveness Report also ranked SA in 54th place among 139 countries in the world and was noted for its efficiency-driven development (IMD, 2011). The stellar economic performance in recent years also saw the country added to the list of the so-called BRIC countries (Brazil, Russia, India, China) that are reshaping the nature, magnitude and direction of global finance, trade and investment.

The indicators above paint the picture of a prosperous country which is poised to become a leading regional economy in Africa (Kahn, 2011). However, doubts remain about whether SA has the necessary institutional environment to sustain economic growth and the competitiveness of its firms (Andreasson, 2011; Kahn, 2011; Nwankwo, 2011; Shoeman, 2011). In particular, little is known about how well the institutional infrastructure in SA can support successful entrepreneurship and private business ownership, which play critical roles in the overall trajectory of economic development (McDade and Spring, 2005; Nwankwo, 2011). To date, there is little empirical evidence on how the institutional environment in SA affects business performance and economic growth. To the extent that national economic growth and competitiveness are reflected through the collective behaviour and performance of firms, an interesting question arises regarding the effects of the institutional environment on firm behaviour and performance in SA, which is the subject of this paper.

This research builds on institutional theory in its contemporary form (Ahn and York, 2009; North, 1992, 2005; Peng, 2010) to focus on how one particular element of the formal institutional environment, the rule of law, affects business performance. Institutional theory suggests that the nature and dynamism of SA's formal institutional environment necessarily influences economic activities in the country by determining the rules, constraints, rewards and incentives of the socio-economic behaviour of various players in the economy. The particular focus on how the rule of law affects the performance of SA firms addresses three major research gaps in the literature. First, there is a paucity of published research on the behaviour and performance of SA firms in general, despite their growing regional and global importance (Mbonyane and Ladzani, 2011). Previous studies (Verheul et al., 2002; Amine and Staub, 2009) fall short of explaining how well the institutional environment can explain the variation in performance of firms in SA. Second, there is little understanding of how the profound institutional changes following the change in the political regime in 1994 which reshaped the political economy of SA, have impacted on businesses (Andreasson, 2011; Kahn, 2011). Insights into how firms perceive changes in the institutional environment to have impacted their businesses are critical in the design and implementation of effective economic and industrial policies for economic growth. Third, there is little understanding of how specific elements of the overall institutional environment impact on the performance of firms in the context of emerging
economies such as SA (McDonald et al., 2006; Naudé et al., 2008; Preuss, 2011; Vaillant and Lafuente, 2007). While previous studies have attempted to shed light on the role of institutions, they have tended to focus on the macro elements of institutions rather than on the effectiveness of specific formal institutions.

Research on the impacts of the rule of law on firm performance in SA remains underdeveloped despite common knowledge that the rule of law, as evidenced by high crime rates, theft and declining security and safety, has deteriorated in recent years (Mbonyane and Ladzani, 2011; Fraser-Moleketi and Boone, 2003; South African Police, 2010; Pillay, 2004). The rule of law remains one of the biggest challenges facing the SA Government in its quest to sustain firm competitiveness and to attract FDI (Gould, 2009; Louw, 2005; Nolutshungu, 2011; IMD, 2011). Thus, this study is timely in addressing how managers perceive different elements of the rule of law to impact on their businesses, and should provide valuable insights to policy-makers concerned with reforming the rule of law in SA.

The rest of the paper is organised as follows. The next section reviews the literature on institutional theory and the rule of law to develop the conceptual model of the study. The research methods and data are then presented, followed by the data analysis and the discussion of the results. The conclusions, limitations and avenues for future research are contained in the last section.

Review of literature and conceptual model

Institutional theory, in its contemporary form, explains that institutions serve as the “humanly devised constraints that shape human interactions” in order to reduce uncertainty in economic transactions by establishing an efficient, predictable and stable structure to exchange (North, 1991, 2005; Peng, 2010). Institutions are “the rules of the game or humanly devised structures that provide incentives and constraints to economic players” (North, 1990, p. 3). The primary role of institutions is to reduce uncertainty (Peng, 2010) and risks associated with political instability, social unrest, government policies and interference in business operations. Socio-political risks increase the degree of economic uncertainty that can severely impact or even prohibit private economic transactions (Peng, 2010; Fogel et al., 2006). Uncertainty has been found to increase transaction and production costs (Ali et al., 2010; North, 1991; Peng, 2010). Formal institutions help avoid or minimize uncertainty by setting the “rules of the game” in the form of formal rules, informal norms, and their enforcement, in order to prosecute misconduct and establish an efficient system of seeking redress (North, 1992, 2005). According to Peng (2010), understanding formal institutions is particularly relevant in explaining the economic development of developing, emerging or in-transition economies due to their less-developed institutional landscapes. This is because in these economies, institutional voids and rigidities make it costly for firms to engage in productive economic transactions. In the absence of efficient, stable and reliable formal institutions, firms may find it costly to engage in productive entrepreneurial undertakings which could subsequently impact negatively on their performance.

For the purposes of this study and with specific reference to the SA context, formal institutions refer broadly to the role of government in upholding the rule of law and in setting and implementing a sound regulatory framework for business taxation, the provision of adequate business infrastructure and the provision of an environment which is free of corruption and crime (Aidis, 2005; Fogel et al., 2006; Nkya, 2003; Prasad, 2003). A well-developed? Formal institutional environment provides a
solid platform for firms to engage in productive economic activities without the constant threat of rent-seeking behaviour (Tambunan, 2007), and creates a level playing field whereby no economic player enjoys undue privileges nor is disadvantaged (Meyer, 2001). In sum, a well-developed and functioning formal institutional environment is conducive to firm growth by encouraging entrepreneurship (Manolova et al., 2008; Nkya, 2003; North, 2005), free exchange of information (Shane, 2003), and protection of property rights (Vatn, 2005).

**Rule of law and business performance**

The rule of law constitutes one of the most important components of the formal institutional environment. Collectively, it refers to the laws, regulations, government policies and programs, and basic infrastructure and services that support the full functioning of a market-based economy (North, 1992). The rule of law determines the extent of protection and enforcement of legal rights of the local populace including corporate entities such as business firms (Ahn and York, 2009; Fogel et al., 2006). A place with a strong rule of law is defined as having sound political institutions, a strong court system, and provisions for orderly succession of power, as well as citizens who are willing to accept the established institutions and to make and implement laws and adjudicate disputes (Oxley and Yeung, 2001). The rule of law promotes and sustains peace and order, safety and security which constitute the basic elements in creating and nurturing a productive community. The rule of law also contributes towards creating a business environment conducive to growth by ensuring the protection of property rights (Haggard et al., 2008) and transactional trust (Fogel et al., 2006), and ensures financial stability (Hausmann et al., 2005).

But what constitutes the rule of law and how does it affect business performance? In order to identify the main factors which characterise the rule of law as they relate to business performance, we draw from the works of Daniels and Trebilcock (2004), Licht et al. (2007) and Frye and Zhuravskaya (2000), and the realities of the broader institutional environment in SA. Accordingly, the factors identified as being most relevant for the purposes of this research include the presence of an independent, effective and non-corrupt judiciary, control of crime and theft through effective law enforcement, the existence of an efficient and equitable tax administration system, political stability, and the existence of a corruption-free system of governance, including the delivery of basic government services. Together, these factors provide the necessary legal environment to ensure a sound environment for businesses to develop and grow. Each of these factors is discussed in the succeeding sections below.

Court system: an efficient and transparent court system is necessary for the protection, enforcement and restitution of contracts and property rights. Judicial independence, impartiality, accessibility, and efficiency are features of a functional court system that has the capability to effectively uphold property rights governing business and entrepreneurial activities (Cross and Donelson, 2010). A functioning court system also improves transactional trust (Fogel et al., 2006) in the sense that parties to a transaction are protected from opportunistic and corrupt behaviours such as cheating and illegal deviations from agreed terms. An efficient justice system also serves as a reliable grievance system to seek redress when contracts are not honoured. Previous studies have shown the critical role that functional judicial or court systems play in fostering an institutional environment that is conducive to local entrepreneurial development (Aidis et al., 2008), innovation (Ahn and York, 2009; Chaudhry and Garner, 2007), business growth and development (Aidis, 2005), attraction of FDIs (Ali et al., 2010; Meyer, 2001), and economic growth and development (North, 2005).
Political stability provides the necessary environment for firms to prosper and grow through increased business confidence brought about by stable, predictable, and reliable political processes. A political system that thrives on orderly and transparent transition of power in governance ensures the continuity of government services, including the maintenance of peace and order as preconditions for building a sound and stable environment for business and investment (Fogel et al., 2006; Daniels and Trebilcock, 2004; Manolova et al., 2008). Political stability has been noted as one of the critical formal government institutions that impact on entrepreneurship development in Russia and China (Aidis et al., 2008; Puffer et al., 2010). A politically unstable country can be characterised by a weak, tumultuous and often times transitory political system, where succession of power and authority is unpredictable and marred by violence. Political instability increases risks, transaction costs and uncertainty in doing business, stifles entrepreneurial activities, deters entry of foreign investments and ultimately inhibits economic growth (Roe and Siegel, 2011).

Corruption is defined as abuse of entrusted power for private gain (Transparency International, 2010; Calhoun, 2011), and refers to the self-enriching and self-gratifying modus operandi of government officials from the top of the hierarchy down to the lowest-level government employee to extract personal monetary and non-monetary gains from every government transaction, whenever possible. Corrupt practices entail the abuse of government authority and power to extract private gains through bribery, contract kickbacks and embezzlement of government property (Jensen et al., 2010). Corruption undermines the overall quality of governance within a country and has wide-ranging negative effects on investment decisions, firm productivity, and national economic growth (Jensen et al., 2010). Corruption leads to increased transaction costs due to delays in getting government services such as business permits and licenses, uncertainty, and unpredictability of corrupt-laden government administrative machinery. According to the corruption perception index (CPI) published by Transparency International (2010), SA was ranked 54th among 178 countries, and fifth among sub-Saharan African countries in terms of the most corrupt countries in the world.

Crime and theft are a function of the capability of the government and its agencies, such as law enforcement agencies, to maintain peace and order in the community and to prosecute criminals in an efficient and timely manner. The prevalence of criminal activities increases the cost of maintaining security in business premises and can negatively impact on business performance through increased transaction costs (Fogel et al., 2006). Businesses often have to resort to private means of protection against crime and theft for their employees and property in countries where crime and theft is out of control. The high cost of crime has been noted as one of the major institutional deficits undermining business confidence, growth and development and discouraging foreign investment in SA (Mbonyane and Ladzani, 2011; Rogerson and Rogerson, 2010).

Tax administration refers to the presence of an equitable and efficient tax system. A burdensome tax administration system often represents an institutional obstacle, particularly for small and medium enterprises, when tax compliance costs and reporting requirements are excessive relative to the size of their business operation. Firms often incur unnecessary operating and transaction costs to meet the burden of a tax administration marred by inefficiency, red tape and corruption (Ali et al., 2010; Fogel et al., 2006; Puffer et al., 2010). A burdensome and corruption-laden system of tax administration has been found to impair the role of the government in Russia to nurture a business environment that is conducive to entrepreneurial growth and development (Aidis et al., 2008).
Together, these five elements constitute the main factors which characterise the rule of law within a country’s broader formal institutional environment. Conceptually, the relationship between the different elements of the rule of law and firm performance is shown in Figure 1. It is hypothesized that a well-developed rule of law which is perceived to be efficient, transparent, fair and equitable has positive impacts on firm performance by providing a legal environment conducive to business development and growth.

Methods and data

In order to assess the extent to which different elements of the rule of law in SA impact on firm performance, we proceed by specifying the following econometric relationship between firm performance and elements of the rule of law: Equation 1 Where $\beta_0$, $\beta_6$ are the regression coefficients to be estimated and $\varepsilon_i$ is the error term. The dependent variable PERF is a measure of firm performance. The different elements of the rule of law are represented by the explanatory variables COURT (court system), POL (political stability), CORUP (corruption), CRIME (crime and theft), and TAX (tax administration). We also include the variable SIZE to control for any firm size effects that may explain variations in firm performance.

The necessary data for estimation purposes were drawn from the Enterprise Surveys Unit (ESU) of the World Bank (The World Bank, 2010a). The ESU conducts regular firm-level surveys in approximately 125 developing countries with the main aim of developing reliable data sets on business behaviour and performance in those countries. The ESU survey covers a broad range of business environment topics including corruption, infrastructure, crime, competition, and performance (The World Bank, 2010a). The ESU surveys are usually administered via face-to-face interviews with business owners and senior executives in order to ensure higher rates of survey participation, integrity and confidence in the quality of data, and confidentiality of survey participants. The survey uses stratified random sampling based on firm size (i.e. 5-19 employees as small; 20-99 employees as medium; and 100 or more employees as large firms), business sector (i.e. manufacturing and service), and geographic regions within each country. This data source is considered reliable and has been widely used by other researchers in recent years (Amin, 2009; Kaplan, 2009; Hope et al., 2011).

Data for the present study were extracted from the SA file which contained 751 firms. The information in Table I which summarises the profile of the sample firms shows that approximately 75 per cent of the sample consisted of small and medium size enterprises distributed across a broad range of industries, with food processing, fabricated metals, garments and chemical manufacturing constituting 55 per cent of the sample. The regional distribution of firms in the sample also reflects the national concentration of business activities, with the majority (64 per cent) located in Johannesburg. In terms of business experience, 74 per cent of firms in the sample are deemed to be well-established with more than six years of business experience. The majority of firms in the sample (72 per cent) are also purely domestic and do not engage in any type of international business.
Measures

Measures of the dependent and explanatory variables used in this paper were extracted from the ESU survey where they are defined as follows: COURT refers to management's perception of the extent to which the court system inhibits business performance; POL refers to management's perception of the extent to which political instability inhibits business performance; CORUP refers to management's perception of the extent to which corruption and corrupt practices inhibit business performance; CRIME refers to management's perception of the extent to which crime and theft inhibit businesses performance; TAX refers to management's perception of the extent to which the effectiveness and fairness of the tax system inhibits business performance. The five explanatory variables referring to the rule of law are measured on a five-point Likert-type scale anchored at both ends, with 1 – does not constitute an obstacle to business at one end, and 5 – constitutes a severe obstacle to business, at the other end. The control variable (SIZE) is measured as a 0-1 dummy variable which controls for firm size, where 0 – small and medium size firms based on the number of employees (200 or fewer), and 1 – large firms (more than 200 employees).

The dependent variable PERF is a composite measure of the financial, economic and strategic dimensions of firm performance. Previous studies have used composite measures of firm performance to capture several aspects of the multifaceted nature of the construct, and to maintain parsimony in data analysis (Hult et al., 2008; Delaney and Huselid, 1996). Firm financial performance is measured as the three-year average change in sales revenues (Brush et al., 2000). Economic performance is measured by the capacity utilisation rates of the firm (Klein et al., 1973), while strategic performance is captured by the firm's recruitment activities. Recruitment intentions have been used as a proxy which captures a firm's strategic outlook and also reflects the degree of economic confidence in the economy (Delmar, 2006; Havnes and Senneseth, 2001). Respondents were asked to rate their economic, financial and strategic performance on a five-point Likert-type scale, where 1 – performing well below expectations, and 5 – performing well above expectations. The overall performance measure (PERF) was computed as an average of the three measures above and, in order to ensure that all data cells were sufficiently populated, the data were collapsed into a three-point scale as follows: 1 – performance is below expectation, 2 – performance is as expected, and 3 – performance is above expectation.

Logistic regression estimation and results

Given the qualitative and categorical nature of the dependent variable (PERF), we use multinomial logistic regression techniques (McFadden, 1974) available in statistical analysis system (SAS) to obtain the maximum likelihood estimates of the parameters of equation (1). Logit type models assume the effects of the independent variables (X) to be linear in the logarithm of the odds ratio of the dependent variable; that is, $\text{Logit}(P) = \log \left( \frac{P}{1-P} \right) = \alpha + \beta'X$; where $P = \Pr(Y=1|X)$ is the response probability to be modelled, and $\alpha$ is the intercept. The estimated $\beta$ coefficients show the effect of a change in the explanatory variables (X) on the logarithm of the odds that a particular choice will be made.

The use of categorical and dummy variables also increases the incidence of multi-collinearity. A close examination of the Pearson correlation coefficients among the explanatory variables (Table II) does
not indicate any serious occurrence of multi-collinearity. None of the variables that are statistically correlated presents any major concern given the low level of correlations (23 per cent or lower).

The maximum likelihood parameter estimates and their levels of significance are summarised in Table III. All explanatory variables have the expected signs and are statistically significant at various levels, except for COURT. Although the parameter estimate for POL has the expected sign, it is not statistically different from zero. The lack of significance for both variables suggests that managers do not perceive the effectiveness of the court system and political instability to inhibit the performance of their businesses. The results also confirm that corruption (CORUP), crime and theft (CRIME) and tax administration (TAX) significantly inhibit the performance of businesses. All three variables have the expected a priori signs and are also statistically significant. The control variable (SIZE) is also statistically significant, and the positive relationship suggests that larger firms tend to perform better than smaller ones.

The results of the current empirical study offer a more nuanced explanation of why and how institutions matter to business and economic development in general, and to economic activities at the firm-level in particular. In order to understand the impact of different elements of the rule of law on performance, we compute the odds point ratios for CORUP, CRIME and TAX (Table III) to show the extent to which a change in each of the variables impacts on the dependent variable. Accordingly, crime and theft have the largest impact (0.89), followed by corruption (0.88), and tax administration (0.75). The results confirm previous research findings (Mbonyane and Ladzani, 2011; Demombynes and Ozler, 2005) that crime and theft remain a major factor affecting business in SA.

An interesting and unexpected finding relates to the non-significance of the impact of the court system and political instability on business performance. A plausible explanation is that SA is known to have a well-functioning system of government and legal framework, as evidenced by the presence of a large number of multinational enterprises which trust these institutions. Thus, the development of the formal institutional framework underlying the political and legal systems may have attained a certain level where their direct impact on business performance diminishes. Peng (2010) argues that when markets work smoothly, typically in developed economies, the impact of the institutional environment is almost invisible, while poorly functioning markets highlight the presence of weak institutions.

Conclusion, limitations and implications for future research

Institutional building has become a key focus in many developing and emerging countries in order to deliver economic growth in an increasingly competitive global marketplace. High-growth economies, such as China and India, embarked on institutional reforms in order to align their economies to the realities of the global market place, and to provide an environment which is conducive to business development and growth. Such an environment is usually characterised as being business-friendly where transaction costs and administrative barriers are minimal and the rule of law is well-developed, enforced and upheld. Thus, the government plays a critical role in establishing an environment which provides firms with a strong base to become internationally competitive.
This paper focuses specifically on the extent to which the rule of law in SA affects business performance. The paper is novel in several ways. First, despite common knowledge that the rule of law in SA is a major concern for the public in general, no comprehensive research on how the rule of law affects businesses has been undertaken to date. Second, this study is among the first to assess different elements of the rule of law in the SA context. Third, the paper is also among the first to utilise a large data set (n=751) of SA firms obtained from the World Bank. Overall, the paper adds to the research literature on SA businesses; an area which remains under-researched despite the growing role of SA in the global economy, and recent recognition that SA is an important emerging economy similar to the BRIC economies (Brazil, Russia, India, China). Thus, the topic of this paper is timely as it provides valuable insights into the conduct and performance of SA firms in general, and specifically, in relation to their perception of the rule of law in SA.

The results suggest that of the different elements of the rule of law, crime and theft, corruption and the effectiveness of the tax system are the most urgent areas requiring institutional restructuring. The perception of businesses is that these three areas constitute the most immediate constraints to their growth and performance. SA has undertaken significant institutional reforms since the change in its political regime in 1994, and the results confirm that, as a result, businesses do not perceive several aspects of the rule of law, such as the court system and political stability, to be a major constraint for firm performance. However, reforms which improve the country's crime and theft rates, corruption and the effectiveness of the tax system, should lead to better performance of firms and, thus, deserve the urgent attention of policy-makers.

The legislative and policy frameworks formulated by the Department of Trade and Industry, for example in terms of the Companies Act, aim to create a more efficient system of company regulation and to identify companies in distress (DTI South Africa, 2011). The Industrial Policy Action Plan also includes programs, such as that in the Empowerment and Enterprise Development Division, to create enabling environments for SMEs. While these initiatives by the SA Government are commendable, particularly their specific focus on SMEs, a more targeted policy intervention, which addresses business concerns with crime, theft, corruption and the effectiveness of the tax system, is recommended to improve business performance and overall economic growth. Greater research is needed to identify the specific aspects of crime, theft and tax reforms, which need to be targeted to ensure the effectiveness of policy interventions.

As with any research, this study has a number of limitations. The goal of describing the impact of formal institutions in this study is limited by the availability of data generated by the World Bank enterprise survey. The questions about the rule of law are broad, such that it is difficult to ascribe a particular aspect of the rule of law as a function of national or sub-national governmental institutions. To the extent that the rule of law at the sub-national levels may also impact business performance, future research should usefully distinguish between national and sub-national institutions. For example, corruption may vary widely in different regions purely because of differences in regional customs and habits and attitudes.

Formal institutions operate alongside informal institutions. Because formal and informal institutions lie in a continuum (North, 1991), their functions, operations, and effects on macro and micro economic phenomena are likely to overlap, contradict, reinforce or substitute one for the other. The study's focus on a set of macro formal government institutions specific to the rule of law, did not take
into account the confounding impact of informal institutions such as cultural norms, practices, business norms and industry-based practices. Future research could usefully explore these areas.

Future research may be designed to examine other manifestations of firm performance and competitiveness, in addition to the five measures used in the current study. Studies that examine the mediating roles of other firm-level variables, such as absorptive capacity, innovation, and other strategic configurations of the firm in the institutions-firm performance linkages, are worth pursuing in the future. Longitudinal studies to account for the dynamic development and evolution of institutions are potentially useful, particularly in the SA context, given the structural changes that have taken place in the country. Formal institutions do not exist in a vacuum, and tracking the progress of government reforms and how they shape the institutional environment over time provides an opportunity for policy action.

**Figure 1**

\[
PERF_t = \beta_0 + \beta_1(COURT) + \beta_2(POL) + \beta_3(CORUP) + \beta_4(CRIME) \\
+ \beta_5(TAX) + \beta_6(SIZE) + \epsilon_t
\]

**Figure 2**
Figure 3

<table>
<thead>
<tr>
<th>Firm size</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (5-19 employees)</td>
<td>240</td>
<td>34.56</td>
</tr>
<tr>
<td>Medium (20-59)</td>
<td>286</td>
<td>36.72</td>
</tr>
<tr>
<td>Large (50-99)</td>
<td>185</td>
<td>25.69</td>
</tr>
<tr>
<td>Industry/sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food processing</td>
<td>122</td>
<td>16.3</td>
</tr>
<tr>
<td>Fabricated metal products</td>
<td>110</td>
<td>14.7</td>
</tr>
<tr>
<td>Garments</td>
<td>108</td>
<td>14.4</td>
</tr>
<tr>
<td>Chemicals</td>
<td>63</td>
<td>11.1</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>34</td>
<td>4.6</td>
</tr>
<tr>
<td>Electronics</td>
<td>22</td>
<td>2.9</td>
</tr>
<tr>
<td>Pastes and rubber</td>
<td>22</td>
<td>2.9</td>
</tr>
<tr>
<td>Textiles</td>
<td>11</td>
<td>1.5</td>
</tr>
<tr>
<td>Other manufacturing</td>
<td>235</td>
<td>31.5</td>
</tr>
<tr>
<td>Location of firm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johannesburg</td>
<td>478</td>
<td>64.0</td>
</tr>
<tr>
<td>Cape Town</td>
<td>120</td>
<td>16.1</td>
</tr>
<tr>
<td>Port Elizabeth</td>
<td>53</td>
<td>7.1</td>
</tr>
<tr>
<td>Durban</td>
<td>96</td>
<td>12.9</td>
</tr>
<tr>
<td>Firm age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 5 years</td>
<td>194</td>
<td>26.0</td>
</tr>
<tr>
<td>6-20 years</td>
<td>336</td>
<td>45.0</td>
</tr>
<tr>
<td>21-59</td>
<td>164</td>
<td>22.0</td>
</tr>
<tr>
<td>Over 50 years</td>
<td>53</td>
<td>7.1</td>
</tr>
<tr>
<td>International business activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-exporting firms</td>
<td>535</td>
<td>72.4</td>
</tr>
<tr>
<td>Exporting firms</td>
<td>204</td>
<td>27.6</td>
</tr>
</tbody>
</table>

Table I
Sample characteristics

Figure 4

<table>
<thead>
<tr>
<th>PERF</th>
<th>COURT</th>
<th>POL</th>
<th>CORUP</th>
<th>CRIME</th>
<th>TAX</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>0.02</td>
<td></td>
<td>0.05</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0.02</td>
<td></td>
<td>0.03</td>
<td>0.20</td>
<td>0.06</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0.12</td>
<td>0.03</td>
<td>0.01</td>
<td>0.07</td>
<td>0.06</td>
<td>0.13</td>
<td>1</td>
</tr>
<tr>
<td>0.06</td>
<td>0.025</td>
<td>0.01</td>
<td>0.07</td>
<td>0.06</td>
<td>0.01</td>
<td>1</td>
</tr>
</tbody>
</table>

Table II
Pearson correlation coefficients

Note: *p < 0.10

Figure 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter estimate</th>
<th>Wald $\chi^2$</th>
<th>Odds ratio point estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept 1</td>
<td>-1.86</td>
<td>21.8**</td>
<td>-</td>
</tr>
<tr>
<td>Intercept 2</td>
<td>0.70</td>
<td>5.429**</td>
<td>-</td>
</tr>
<tr>
<td>COURT</td>
<td>0.044</td>
<td>0.089</td>
<td>1</td>
</tr>
<tr>
<td>POL</td>
<td>-0.035</td>
<td>0.034</td>
<td>0.93</td>
</tr>
<tr>
<td>CORUP</td>
<td>-0.125</td>
<td>2.234**</td>
<td>0.68</td>
</tr>
<tr>
<td>CRIME</td>
<td>-0.136</td>
<td>2.01**</td>
<td>0.89</td>
</tr>
<tr>
<td>TAX</td>
<td>-0.286</td>
<td>3.415**</td>
<td>0.75</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.281</td>
<td>2.501**</td>
<td>1.32</td>
</tr>
</tbody>
</table>

Sample size: n = 581

Table III
Results of logistic regression

Notes: “Significant at: *p < 0.01; **p < 0.1;” the maximum likelihood estimates (MLES) of the regression parameters are computed using the iteratively reweighted least squares (IRLS) algorithm. Hence, the heteroscedastic problem has already been taken into account by parameter estimation procedure; following data cleaning and after eliminating entries which had missing data for an excessive number of variables of interest for the present study, a final sample size of 581 firms was retained for analytical purposes
References


49. Peng, M. (2010), Global Business, South-Western Cengage Learning, Mason, OH.


Corresponding author

Ronel Erwee can be contacted at: erwee@usq.edu.au