

**East Africa Collaborative Ph.D. Program  
in Economics and Management**

**Mind-set and Entrepreneurial Activities in  
Rwanda: A Firm Level Investigation**

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## **Preface**

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The objective is to increase research capacity and quality, to promote research and collaboration in research, to share gained insights into important policy issues and to acquire a balanced viewpoint of business, entrepreneurship and management policymaking which enables us to identify the economic problems accurately and to come up with optimal and effective guidelines for decision makers. Another important aim of the series is to facilitate communication with development cooperation agencies, external research institutes, individual researchers and policymakers in the East Africa region.

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# **Mind-set and Entrepreneurial Activities in Rwanda: A Firm Level Investigation**

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## **Abstract**

This study examines the effect of mind-set on an entrepreneur's activities in Rwanda. By doing so it seeks to establish whether the lack of an entrepreneurial mind-set contributes to the high rates of small and medium enterprises' failure in the country. This is necessary because evidence from various studies highlights that lack of entrepreneurial mind-set leads to business failure. We estimated an entrepreneurship activities equation and used the OLS regression analysis. The factors affecting a firm's sustainability include an entrepreneurial mind-set, the manager's years of experience, gender and competition that has entered the market. Our study also shows that an entrepreneurial mind-set is an important factor of performance and sustainability in Rwanda without which a business will fail. This study recommends entrepreneurial education to nurture and support a firm's success. There is a need to analyze the entrepreneurial mind-set at the household level. In addition a dataset collected for different time periods will help capture mind-set dynamics and inform the policymaking process.

Keywords: Mind-set, entrepreneurship, Rwanda.

## **1. Introduction**

Entrepreneurship is having the desire and wish to start and run a new business, to accept any associated risks with it and to take further action so that more profits can be earned in the future. Hebert and Link (1989) state that while an entrepreneur covers the existing needs of consumers he/she also goes beyond this to manufacture an innovative product or service that stimulates a new demand. An entrepreneur initiates the process of creative destruction or market instability that enables economic progress. Schumpeter (1942) provided an example of creative destruction with the change in power production from the water wheel to the modern power plant. Entrepreneurial innovations develop new products, interrupt the circular flow of economic life and transform an industry's operations. Disturbances provoke transformations and enable economic development. An entrepreneur enables economic development by developing innovative products or processes that make the existing ones obsolete.

Entrepreneurship is individuals' ability and willingness on their own or in a group within and outside existing organizations to perceive and create new economic opportunities and introduce new ideas in the market while facing uncertainties and other obstacles by taking decisions on the use of resources and institutions (Wennekers and Thurik, 1999). Entrepreneurs' motivation is the desire to generate a value added to what exists through the creation and/or expansion of economic activities by discovering new products, new processes, new practices or new markets. Since entrepreneurs might not clearly assess market returns for their services they run a greater risk because they depend on residual wages as they receive the remaining revenue, if any, after all other deductions.

It is generally agreed that entrepreneurship and entrepreneurs are created by a combination of three factors: opportunities, skilled people and resources (Ahmad and Hoffman, 2007). Skilled people are those with education, experience and also those having an entrepreneurial mind-set. An entrepreneurial mind-set is needed since most of the companies which are started die at an early age. For instance, in South Africa the number of firms that fail in year five of their existence varies between 50 and 95 per cent while about 75 per cent of new small and medium enterprises (SMEs) have no chances of becoming established firms. GEM (2011) reported that only 2.3 per cent of South African owned SMEs remained in existence for over 3.5 years. While there are no available records for other countries, it is safe to assume that this situation is not specific to South Africa.

In Rwanda, different development programs give full support to entrepreneurial activities. The Rwanda Development Board (RDB) has a Human Capital and Institutional Development Department (HCID) that aims at encouraging business starts-ups. It does this through training and creating awareness aimed at empowering youth and women with entrepreneurial skills to achieve their dreams. It is believed that building a young generation of Rwandan entrepreneurs will ultimately lead to vibrant SMEs, contribute to creating decent jobs and help in reducing poverty. The program also aims at preparing students to start thinking with an open mind about business innovations while at school. Its objectives include developing positive attitudes/mind-sets towards innovations, enterprise and self-employment.

However, formulating evidenced-based entrepreneurship policies requires a clear understanding of both the factors that affect entrepreneurship and their benefits. Unfortunately, very limited empirical information relating to these factors and benefits exists. And where there are policy references to entrepreneurship most of them simply equate it with SMEs in general or with the number of self-employed while neither of these fully capture what entrepreneurship is. An empirical investigation of the effect of mind-set on entrepreneurship has been ignored in most of the studies.

Our study attempts to examine and understand the effect of a mind-set on an entrepreneur's activities in Rwanda. By doing so, we seek to establish whether the lack of an entrepreneurial mind-set contributes to the high rate of SME failure in Rwanda. This is necessary because evidence from various studies highlights the fact that the lack of an entrepreneurial mind-set leads to business failure.

## **2. Literature review**

Mind-set is defined as a mental attitude which determines how an individual interprets and responds to situations. It is a predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object (Schwarz et al., 2009). An entrepreneurial mind-set indicates a way of thinking about business and its opportunities that aim at maximizing the benefits associated with uncertainty (Dhliwayo and Vuuren, 2007). It portrays an innovative and energetic search for opportunities and facilitates actions aimed at exploiting market opportunities within a country or getting access to foreign markets (Senges, 2007).

Attempts have been made to examine the relationship between mind-set and entrepreneurship. For instance, Fishbein and Ajzen (1975) suggest that a mind-set or attitude can only be seen through implied actions and by those actions that are not made explicitly by an individual. Establishing an entrepreneurial mind-set is a very efficient way of sustaining the competitiveness of economic organizations. Ireland et al., (2003) argue that the future generation needs to be more entrepreneurial for which it needs to be creative or innovative with the ability to use and expand existing opportunities. This shows that successful future strategists should exploit an entrepreneurial mind-set and have the ability to rapidly think, act and mobilize even under uncertain conditions. McGrath and MacMillan (2000) assert that individuals/SME owners capture these benefits in their search and attempt to exploit high potential opportunities commonly associated with uncertain business environments.

Dhliwayo and Vuuren (2007) suggest that an entrepreneurial mind-set is about creativity, innovation and taking opportunities that lead to organizational wealth creation and success. This type of a mind-set enables entrepreneurs to take optimal decisions when faced with uncertainties. Creativity is a means of unlocking the entrepreneurial potential of individuals, entrepreneurs and organizations since new ideas and approaches are key ways of promoting an entrepreneurial culture. Devanna and Tichy (1990) highlight that creativity is very important for the success of any organization and Trevisan et al., (2002) found creativity to be one of the strongest distinguishing characteristics for success. Encouraging creativity is

therefore a strategic choice that firms should take into consideration since creativity makes a significant contribution to organizational innovations.

Mind-set or attitude has been found to be influential in entrepreneurial conduct (Krueger, 1993). Luthje and Franke (2003) document that if public policies seek to raise the number of new entrepreneurs an improvement in an individual's attitude towards entrepreneurship is an effective tool. Moen et al., (1997) stress that programs and policies should aim at cultivating attitudes towards entrepreneurship as a person may have business knowledge but without a positive attitude about entrepreneurship, he or she may not plunge into the field without a change in attitude with more positive thinking about the entrepreneurial field. Those who wish to foster entrepreneurship must support and reinforce the perceptions that it is personally feasible and socially and personally desirable.

Different studies show that the sense of adapting to uncertainties and the ability to act and organize are fundamental to entrepreneurship (Ireland et al., 2003; Krauss et al., 2005; McGrath and MacMillan, 2000). Pihie and Sani (2009) show that an entrepreneurial mind-set in students after following an entrepreneurship education course as well as the various teaching techniques in improving entrepreneurial awareness and entrepreneurial skills are keys to a business' success.

SMEs' inability to create more job opportunities because of the owners' mind-set is well perceived as one of the major causes of SMEs' failure (Nieman, 2006). Entrepreneurs with entrepreneurial mind-sets consider constraints, problems and challenges as opportunities and thus develop innovative ways to deal with them and exploit and merge opportunities (Eno-Obong, 2006). Having an entrepreneurial mind-set is a successful tool that can help individuals to successfully move forward in an entrepreneurial process regardless of the problems that a business faces (McGrath and MacMillan, 2000). Dhliwayo and Vuuren, (2007) emphasize that an entrepreneurial mind-set is an important success factor for SMEs without which a business will fail. This means that the current business environment needs an entrepreneurial mind-set that must unlearn traditional management principles in order to minimize the high failure rates of SMEs (Morris and Kuratko, 2002). However, the effects of a mind-set may vary from country to country depending on market opportunities. This suggests that there is a need to investigate the effect of a mind-set on business sustainability using data from Rwanda.

Other empirical studies have linked entrepreneurship programs to a change in attitude towards entrepreneurship. For instance, Hatten and Ruhland (1995) found that students participating in entrepreneurship programs were more likely to become entrepreneurs because of the changes in attitudes through training and other programs. Similarly, Souitaris et al., (2007) suggest that it is possible to tune and shape individuals' entrepreneurial attitudes especially with well-planned entrepreneurship programs which could further enhance a rich entrepreneurial culture among individuals.

Other potential factors that may affect entrepreneurship too have been reported in literature. Studies show that being a woman was a constraining factor in entrepreneurship suggesting that women are less likely to start a business if there are no supportive factors. High levels of regulations were also found to discourage individuals with business skills from starting a

business. While regulations were reported to have an overall negative impact on entrepreneurial activities, their effect was stronger on certain types of people. Storey (2003) shows that public policy on entrepreneurship can be both constraining and supportive in case it provides financial assistance and services. However, since there is limited data on regulations, it is not included in our study.

Several studies have established that a risk taking attitude is an important factor in a firm's performance. A risk reflects the degree of uncertainty and prospective losses associated with the outcomes which may be gotten from a given behavior or a set of behaviors (Forlani and Mullin, 2000). Dhliwayo and Vuuren (2007) show that risk-taking is essential for the success and growth of a business which is based on how entrepreneurs perceive and manage the risks in their environment. Dunlap (2008) highlights that business ventures should adopt an entrepreneurial mind-set wherein at the heart lies the ability of an entrepreneur to accept and manage risks.

A study by Nieuwenhuizen and Kroon (2002) shows a strong relationship between the willingness to take risks (risk taking) and entrepreneurial business success which further stresses the need for including risk in entrepreneurship education and training programs. Ward (1997) concludes that 'without risk-taking, the prospects for business growth wane' and thus it becomes imperative for entrepreneurial firms to be willing to take risks.

Other studies have investigated the role of access to capital, research and development (R&D) and technology. These factors are known to be very important for entrepreneurs and entrepreneurship outcomes. The EU points out that access to capital is one of the most important factors that supports successful entrepreneurship activities. Capital covers different phases of a business' life from access to early seed funds to access to stock markets. R&D creates new inventions that entrepreneurs and entrepreneurial businesses can turn into new products or processes. It should be understood as a resource that can be created or purchased whether directly or in an embodied or diffused form. Blanchflower and Oswald (1988) suggest that the probability of being self-employed is a joint probability of having an entrepreneurial vision and then having access to the necessary capital to implement it. While individuals who receive an inheritance are more likely to be self-employed, those who receive an inheritance may also be from a background that encourages self-employment.

The drivers of entrepreneurship include available opportunities created by market conditions in a country. Market conditions include public involvement in markets, competition in the markets, access to foreign markets, procurement regulations and so on. Entrepreneurship happens within a regulatory framework which affects performance. A combination of opportunities, capabilities and resources does not necessarily lead to entrepreneurship if opportunity costs (for example, forgone salaries and losses in health insurance) and start-up costs outweigh the potential benefits. In this event, a rational, potential entrepreneur will not pursue the opportunity and will not create value through a new product, process or market.

Experience is another important factor of entrepreneurial success, especially if the experience is in the same industry sector of the proposed business venture. Most studies have tested and confirmed a positive relationship between an entrepreneur's prior experience and a firm's growth and survival of the business. Pihie and Sani (2009) document that students

who preferred running a real business technique acknowledged that it enabled them to obtain real business experience; allowed them to recognize and experience a sense of responsibility in understanding the risks and rewards of setting up a business; gain real experience in raising money; and planning all the business management functions (such as production, marketing, finance and the real business operations).

Davies (2001) brings to light the fact that it is difficult to introduce entrepreneurship as a discipline particularly in tertiary institutions because of different mind-sets, funding methods and confusion between entrepreneurship training and creation of small business managers. Considering this and reflecting on the state of entrepreneurship education and training in different countries, it is noticed that the existing strategies that are in place are not working. Therefore, there is a need to adapt new strategies.

At an individual level, the results suggest that the level of entrepreneurial activity is contingent upon the individual level of the need to achieve in society. Kahneman and Tversky (1979) reveal that the utility that an individual derives from an entrepreneurial activity depends on expectations, standard for success or the competition's performance.

A mind-set which influences business creation and sustainability has its own drivers. Mind-set literature suggests that some people have a fixed mind-set while others have a growth mind-set. Individuals with a growth mind-set believe that one's abilities and success are due to learning and that intelligence can grow and change with effort; they also believe in trying other approaches or seeking help when faced with difficulties and tend to adopt learning goals. The reasoning behind this is that most great business leaders who have been successful had a growth mind-set since building and maintaining excellent organizations in the face of constant change requires such a mind-set (Dweck, 2006). Mind-set drivers include training and education, work experience, risks, creativity and motivation.

Different studies have shown that education is an important factor affecting an entrepreneurship mind-set. Entrepreneurship education is considered a lifetime learning process to develop personal qualities and skills that enable one to survive in the world of business (Rugtvedt, 2006). Several studies have established a correlation between education and business creation. They recommend that for entrepreneurship education to maximize returns it needs more technical training in the dominant informal sector perspective. Timmons and Spinelli (2004) and Lüthje and Frank (2002) state that entrepreneurship education has a high contribution in job creation and that it also has an effect on poverty alleviation. This suggests that policies and training can influence and direct individuals' attitudes.

Ingrid and Yoshie (2008) recommend that entrepreneurship education should begin in the early childhood since individual values, behaviors, attitudes and skills acquired during this period might have a lasting effect on the rest of their lives. However, if entrepreneurship education is a strategy for reinforcing an individual's ability to see and exploit opportunities in an economic, social and cultural perspective then it should be used as a proactive strategy to build entrepreneurial personalities in organizations and societies. However, Isaacs et al., (2007) posit that education alone cannot completely prepare entrepreneurs to be successful business owners; it can increase the chances of business success though.



Numerous studies have confirmed that there is a relationship between motivations and opportunities. Shane et al., (2003) have established that individuals differ extensively in their motivation to seize opportunities and that it will be interesting to know if certain motivations influence entrepreneurs to take action in an attempt to discover new opportunities. Creating the right entrepreneurial mind-set is therefore a challenge for educators and trainers, educational institutions, businesses, public authorities and individuals because the demands for entrepreneurs with an ability to see opportunities and to be creative and innovative affect all spheres of life.

### **3. Data and Methodology**

Our study used secondary data collected by the World Bank between June 2011 and February 2012 in Rwanda. Through questionnaires and interviews in the manufacturing and services sectors, the survey assessed the constraints in private sector growth. The objective of the survey was to obtain feedback from enterprises on the state of the private sector and also to track changes in the business environment over time, thus allowing, for example, impact assessments of reforms. The primary sampling unit was the establishment. An establishment was a physical location where a business was carried out and where industrial operations took place or where services were provided.

A firm may be composed of one or more establishments. For example, a brewery may have several bottling plants and several establishments for distribution. For the purposes of the survey an establishment had to take its own financial decisions and have its own financial statements separate from those of the firm.

The standard Enterprise Survey's topics included firm characteristics, gender, age of the manager, manager's level of education, economic and individual factors like work status, individual experience and ability, mind-set, age of the firm, internationally recognized certifications, power outages, water supply, domestic sales, tax exemptions, competition, new products or services, annual services and the spending on research. The other variables included access to finance, costs of inputs and labor, workforce composition, bribery, licensing, infrastructure, trade, crime, competition, capacity utilization, land and permits, taxation, informality, business-government relations, innovations, technology and performance measures.

Over 90 per cent of the questions objectively ascertained characteristics of a country's business environment. The remaining questions assessed the survey respondents' opinions on what were the obstacles in a firm's growth and performance. The size of the sample was 241 establishments (230 in Kigali and 11 in Butare). In the sample, 65.5 per cent of the firms were from the services sector while 34.4 per cent were from the manufacturing sector.

In our paper the dependent variable is entrepreneurship activities. This is measured by a firm's sustainability proxied by the total annual sales of a firm. A firm's sustainability measure was chosen since firm owners with fixed mind-sets see their firms dying in the first five years. Among the explanatory variables, the variable of interest is the mind-set which is assumed to affect entrepreneurship behavior significantly. The other independent

variables are the age of the firm, manager's level of education, gender of the manager, internationally recognized certifications, power outages, insufficient water supply, total national sales, tax exemptions, competition in the field, new products or services and spending on research. We used the ordinary least squares (OLS) regression method to compute the estimates.

The estimated model can be written as:

(1)

$$Y_i = \lambda_0 + \lambda_1 X_{1i} + \lambda_2 X_{2i} + \lambda_3 X_{3i} + \lambda_4 X_{4i} + \lambda_5 X_{5i} + \lambda_6 X_{6i} + \lambda_7 X_{7i} + \lambda_8 X_{8i} + \lambda_9 X_{9i} + \lambda_{10} X_{10i} + \lambda_{11} X_{11i} + \lambda_{12} X_{12i} + \lambda_{13} X_{13i} + \varepsilon_i$$

where,  $Y_i$  measures the entrepreneurship activities of firm  $i$ ,  $\lambda$  s are the model parameters to be estimated and the subscript  $i$  for each variable stands for firm  $i$  since the unit of analysis in the survey is the firm.  $X_{1i}$  is the owner's mind-set for firm  $i$ ,  $X_{2i}$  measures the years of experience in activities or the age of the firm,  $X_{3i}$  is the educational level of the manager,  $X_{4i}$  is the manager's gender,  $X_{5i}$  stands for internationally recognized certifications,  $X_{6i}$  is the experience of power outages,  $X_{7i}$  is water supply,  $X_{8i}$  measures the percentage of national sales,  $X_{9i}$  is tax exemption,  $X_{10i}$  is the competition that has entered the market,  $X_{11i}$  captures the competition from unregistered or informal firms,  $X_{12i}$  is the new product or service while  $X_{13i}$  is the spending on research.  $\varepsilon_i$  is the disturbance or the error term representing all values which can influence entrepreneurship but which are not directly included in the model.

The use of descriptive statistics in the model helped in capturing qualitative information from the data. Since we used a sample of 241 firms and needed generalized conclusions for all Rwandan firms we used inferential statistics represented here by a regression analysis. The results of the study are relevant for forming policy. The STATA software package was used in all computation processes.

## 4. Results and discussion

We present the empirical results of the determinants of entrepreneurship in this section. We first report the descriptive statistics related to the model. For the first model, the coefficients (odds ratios) and estimates from OLS regression model are discussed.

### 4.1 Descriptive statistics

The sample used shows that among the 241 firms, only 19.92 per cent were owned by women while about 80.08 per cent were owned by men. Gender disparity seems to be a problem despite the government's efforts in terms of gender balance. There seems to be a big disparity in the sector for the top managers since it varied from 2 years to 42 years. The average working experience was 12.84 years. This means that a majority of the firms' managers had enough experience. However, the standard error is 9.45 showing that the different values were not close to the mean. About 3 per cent of the owners had no education or did not know their educational levels. At least 3.7 per cent of the owners had a primary certificate, 17.4

had at least a high school certificate, 5.8 per cent had vocational training and 70 per cent had done university studies.

Only 12.8 per cent of the firms had internationally recognized certificates, 68 per cent reported having experienced power outages while about 84 per cent of the firms reported that they had enough water supply for their production. A majority of the firms (79.25 per cent) stated that they communicated with clients and suppliers by emails, with 40.25 per cent of the firms having their own websites. A majority of the firms (61.41 per cent) reported that they had introduced new products or services during the last three years.

Regarding the biggest obstacles in a firm's development, 20.7 per cent of the owners believed that access to finance was the biggest obstacle affecting business development while 17 per cent of them considered the tax rate to be the biggest obstacle. For 11.6 per cent of the firms' owners, the problem was in the practices of competitors while 10.3 per cent said that there were no problems. Other factors affecting business development included access to land, crime, thefts and disorder, an inadequately educated workforce, electricity and tax administration and transport related issues (Table 1).

Table 1: Descriptive Statistics

Variable	Number of observations	Mean	Standard deviation
Annual sales	241	1.30e+09	6.03e+09
Mind-set	241	1.59751	1.076179
Years of experience	241	12.84647	9.455448
Education	241	4.81327	2.086262
Gender	241	1.80083	0.400207
Internationally recognized certifications	241	1.33610	2.097395
Power outages	241	1.182573	1.234853
Water supply	74	1.837838	0.371115
Domestic sales	241	96.23651	16.93314
Tax exemption	19	1.947368	0.229415
Competition in the market	241	1.867220	3.859917
Competition against unregistered or informal firms	241	0.547717	2.994231
New product or service	241	1.385892	0.487818
Spending on research	241	1.647303	0.829208

Source: Authors' compilation.

## 4.2 Determinants of Entrepreneurship activities in Rwanda

In Table 2 the Adjusted R-squared measuring the goodness of fit indicates that the estimated models give an adequate description of the data because it is highly significant implying that all the 13 model parameters are jointly different from zero. The results show that working experience was an important factor explaining entrepreneurial activities in Rwanda. The variable is significant at the 1 per cent level of significance. As experience increases by 1 year, entrepreneurship behavior increases by 0.0027 if all other factors are held constant.

The coefficient of gender is positive and significant suggesting that being a man rather than a woman improved entrepreneurship behavior by 0.00142. Its coefficient is positive and significant at the 1 per cent level. This means that while holding all other factors constant, being a man rather than a woman increased entrepreneurship by 0.00142. The coefficient of water supply is another factor influencing a firm's sustainability. Its coefficient although statistically insignificant shows that water supply shortages harmed a firm's sustainability. Tax exemption is another factor that affected a firm's sustainability. This result suggests that benefiting from tax exemptions improved a firm's sustainability by 0.0088.

The mind-set variable is positive and significant at the 1 per cent level of significance. The results suggest that having a growth mind-set increased a firm's sustainability. In the dataset, a number of variables were used to capture a growth mind-set including whether or not a firm's owners communicated with suppliers through email, used technology licensed from a foreign-owned company, had improved methods of manufacturing products or offering services, had improved organizational structures or management practices and had improved marketing and organized campaigns against HIV-AIDS. The results in Table 2 show that mind-set was significantly associated with a firm's sustainability. This finding is similar to Neneh's (2014) finding who established that entrepreneurs with entrepreneurial mind-sets performed better in creativity and had a risk taking propensity which are vital for a business' success.

Our results also find support in Dhliwayo and Vuuren's (2007) study who documented that an entrepreneurial mind-set is a firm's wealth creation and success and that this type of mind-set enables entrepreneurs to make optimal decisions in case of uncertainties. They further elaborate that an entrepreneurial mind-set unlocked the entrepreneurial potential of individuals, entrepreneurs and firms as new ideas and approaches are key ways of promoting an entrepreneurial culture. In addition, Devanna and Tichy (1990) maintain that a mind-set that opens creativity is very important for the success of an organization. Further, Trevisan et al., (2002) state that mind-set is one of the strongest distinguishing characteristics since creativity makes a significant contribution to organizational success. Spinosa et al., (1997) have established that business success needs an entrepreneurial mind-set that opens individuals/SMEs to modern styles (creativity, motivation, risk taking) to secure them a place in the modern business world and unlearn traditional management principles in order to minimize high failure rates among SMEs.

In addition, the coefficient of education was important for entrepreneurs since it was statistically and significantly different from zero. Our results are in line with Nielse's (2014) who documented that higher levels of education encouraged innovative thinking and creative problem solving which helped aspiring entrepreneurs to develop proprietary ideas for a new business or its expansion. Higher education levels enhanced an entrepreneur's credibility and helped reduce capital constraints. It is shown that entrepreneurship education could be used as a proactive strategy to build entrepreneurial personalities, organizations and societies.

Table 2: OLS Estimates: Dependent variable is Annual sales by the firm

Variable	Estimates	T-statistics
Mind-set	1.3**	3.08

Years of experience	0.11***	3.75
Education	-0.93***	-5.38
Gender	0.094***	4.12
Internationally recognized certifications	-0.00147	-0.29
Power outages	0.31	0.19
Water supply	-0.376	-1.17
Domestic sales	0.31	1.23
Tax exemption	0.0088***	16.13
Competition in the market	-0.013	-5.13
Competition from unregistered firms	0.0092***	8.43
New product or service	1.751	1.34
Spending on research	-0.0002***	-9.78
Constant	-1.22*	-2.94
Adjusted R-squared	0.9345	

Note: \*\*\* \*\* and \* = significant at the 1%, 5% and 10% levels respectively.  
Source: Authors' compilation.

## 5. Conclusion and recommendations

The objective of this paper was to find out the effect of a mind-set on entrepreneurial activities in Rwandan businesses. A clear understanding of this is necessary to guide the formulation of appropriate policy measures. We estimated an entrepreneurship activities equation and used the OLS regression analysis. The factors affecting a firm's sustainability include an entrepreneurial mind-set, the manager's years of experience, gender and competition that has entered the market. The mind-set variable was positive and significant suggesting that having a growth mind-set increased a firm's sustainability. This means that entrepreneurs with an entrepreneurial mind-set performed better in terms of creativity and in risk taking propensity which are vital for a business' success. Our study also shows that an entrepreneurial mind-set is an important factor of performance and sustainability in Rwanda without which a business will fail.

However, since acquiring an entrepreneurial mind-set requires re-learning how to motivate one-self, take risks and become creative and innovative our study recommends entrepreneurial education to nurture and support a firm's success.

Given that the data used in our study is cross-sectional collected only from Kigali and Butare, there is a need for further research using more representative data covering the entire country. There should be national representative data. Our study looked at the entrepreneurship mind-set at the firm's level in firms that are already established. There is a need to analyze the entrepreneurial mind-set at the household level. In addition a dataset collected for different time periods will help capture mind-set dynamics and inform the policymaking process.

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