Title: Factors affecting the success and failure of small and medium enterprises in Spain

Abstract

This study analyzes the factors that influence the success or failure of small and medium enterprises (SMEs) in Spain, using the Lussier Model (1995), which has been proven in several countries. The model, consider fifteen factors related with: age; parents; education; ethnic origin; prior administrative experience; previous industrial experience; marketing; capital; record keeping and financial control; human resources; product/service timing (life-cycle management); planning; professional advisors or consultants; partners and economic cycle. These were previously contrasted in the literature, as key factors in the success or failure of SMEs. Success was measured by comparing the performance of each company in the past three years, with the average of the productive sector to which it belongs, (Lussier & Halabi, 2010). Data were collected using a questionnaire of 36 questions. This study contributes to test the model in Spain with 135 SMEs of which, 81 are classified successful and 54 unsuccessful. The results support the model's validity in Spain. The most significant factors were administrative experience and economic timing for successful firms. This study adds the seven country using the model and reinforcing its validity in another region of the world.

Keywords: success and failure Lussier model, Spain SME, small firm performance

Resumen

Este estudio analiza los factores que influyen en el éxito o el fracaso de las pequeñas y medianas empresas (PYME) en España, utilizando el Modelo Lussier (1995), que se ha probado

en seis países. El modelo considera quince factores relacionados con: la edad; los padres; la educación; origen étnico; experiencia administrativa previa; experiencia industrial previa; mercadeo; el capital; mantenimiento de registros y el control financiero; recursos humanos; tipo de producto/ servicio (según el ciclo de vida); planificación; asesores o consultores profesionales; socios y ciclo económico. Estos fueron contrastados previamente en la literatura, como factores clave en el éxito o el fracaso de la PYME. El éxito se mide comparando el desempeño de cada empresa en los últimos tres años, con la media del sector productivo al que pertenece, (Lussier y Halabi, 2010). Los datos se recogieron mediante un cuestionario de 36 preguntas. Este estudio contribuye a probar el modelo en España con 135 PYMES de las cuales, 81 están clasificados como exitosas y 54 no exitosas. Los resultados apoyan la validez del modelo en España. Los factores más importantes fueron la experiencia administrativa y la situación económica al momento de abrir el negocio para las empresas de éxito. Este estudio añade el séptimo país que utiliza el modelo y se refuerza la validez del modelo en otra región del mundo.

Palabras clave: éxito y fracaso Modelo Lussier, PYMES España, desempeño de la PYME

Introduction

The role that small and medium enterprises (SMEs) play in the international trade is the result of a series of changes that have occurred in the global environment, (Carrero-Morales, 2014). The importance of SME around the globe is well documented due to its relation with employment and economic growth, (OECD, 2013). For example, in 2012 in the European Union (EU) there were about 20.7 million of small and medium-sized businesses (SMEs), accounting for 99.8% of the total number of enterprises, (EU, 2012). In the United States (USA) 28.4

million of SMEs represent 99.7% of total businesses and employ 56 million of private-sector workforce (SBA, 2015).

According to OECD (2015) in Spain, 99.9% of all enterprises were SMEs in 2010, employing 75.5% of the business labor force. Out of these, 93.8% were microenterprises, 5.4% were small and 0.7% were medium sized enterprises. In Spain, SMEs are classified according to European Union standard definition that is firms with less than 250 employees and annual turnover below EUR 50 million and/or balance sheet below EUR 43 million. According to the Central Companies Directory (DIRCE, for its acronym in Spanish) in early January 2014 in Spain there are 3,114,361 companies of which 3,110,522 (99.88 %) are SME. In addition, the Spanish SME contributes 66% of total employment. Given the importance of SME to society and economy, public policy makers and other stakeholders are concerned to help in the creation of SMEs and the reduction of failure. Therefore, predicting SMEs success has become an important area of research due to the lack of specific model and the importance of SMEs in every nation (Ciampi & Godini, 2013). In addition, Bono and McNamar (2011) stated that there is need to test models in different countries to assess the robustness of the findings. The goal of the research was to test the Lussier model in Spain.

Literature review

In some countries like Finland, laws exist to help SMEs restructure so as to prevent the failure of companies, (Collett, Pandit and Saarikko, 2014). In their study they found that poor management and adverse macro environment conditions influence the failure of SMEs. In the United States, Europe and Japan, more than 98 % of businesses are SMEs. For Teng, et al., (2011), SMEs produce more jobs than large companies and are the engine of growth and

innovation. According to Cullen and Parboteeah (2005), using more than 50 % of the workforce produce about 50 % of gross domestic product and create nearly 70 % of new jobs. In the study by Gomez-Martínez et al., (2009) also highlights the impact that SMEs have on the economy by generating capacity of employment and contribution to GDP, elements which are also analyzed in the work of Roark et al., (2013), where it is stated that the SMEs has become a key part of economic development.

Previous studies on success in other countries, are for example, Mexico (Velarde, Araiza & Garcia, 2013), Indonesia (Indarti & Langenberg, 2004), Malaysia (Munikrishnan & Veerakumaran, 2012; Rose et al., 2006), Bangladesh (Philip, 2011; Islam et al., 2011), Thailand (Chittithaworn et al., 2011), Australia (Walker & Brown, 2004); to name a few; on failure in, USA (Carter & Van Auken, 2006), Zimbabue (Carter & Wilton, 2006), Spain (Justo, 2007) and; on the success/failure prediction capabilities of Lussier work in Chile (Lussier & Halabi, 2010, 2008; Halabi & Lussier , 2010), Israel (Marom and Lussier, 2014) and Puerto Rico (Carrero-Morales, 2012, 2014, 2015).

Objectives

The objective of the present study was to research the success or failure of SMES in Spain using firm and owner characteristics and the economic timing presented in the Lussier model developed in the USA in 1995 and report comparison results with those countries that previously used the model. The Lussier model considers 15 key factors in the success or failure of SMEs, (Lussier, 1995). Table 1 in appendix A summarizes the independent variables of the model. As in the case of Chile the variable ethnic origin was eliminated because only 5 participants were foreigners. The model has been tested in six countries, USA, Singapore, Chile, Croatia, Israel and

Puerto Rico, and has demonstrated its ability to predict success or failure in SMEs, (Lussier, 1995; Teng et al., 2011; Lussier and Halabi, 2010; Lussier and Pfeifer, 2001; Marom and Lussier, 2014, Carrero-Morales, 2012, 2014, 2015). In order to generate a consensus researchers have begun to test the Lussier model in other parts of the world.

In order to fulfill the objective of the research four question guided the study (Carrero-Morales, 2015): what is the estimated value of Lussier model for Spain; is the Lussier model capable of predicting success or failure in the SME sector in Spain; what are the most significant factors related to success or failure; and what is Spain classification model rate in comparison with other countries?

Methodology

This study is an exploratory study since the focus is on identification of success and failure factors of Spaniard SMEs. The instrument used for the study was a questionnaire. A three parts questionnaire consisted of, the variables of the model, the actual situation of SME and demographic information of SMEs. The Lussier model which has been used in the USA, Croatia, Chile, Singapore, Israel and Puerto Rico was selected for the study.

The fifteen independent variables were grouped into three categories, according to the research on success or failure (Carrero-Morales, 2015, Indarti & Langenberg, 2004; Justo, 2007; Munikrishnan & Veerakumaran, 2012): (1) characteristics of the owner, (2) characteristics of the SME and (3) economic cycle in the success or failure of the company. The characteristics of the owner included were marketing, age, education, managerial and industrial experience, parents, and ethnic origin (ethnic origin was eliminated from the equation due to. The firm characteristics considered were, partners, record keeping and financial control, planning, product/service

timing, staffing, professional advisors and capital. The economic timing ranges from expansion to recession when businesses start operations. The dependent variable was measure based on the perception of the owner on the level of net profit of the industrial sector to which the respondents belong.

The survey research used was the previously validated Lussier (1995) and adapted from questionnaire used in Carrero-Morales (2015). The questionnaire consists of 36 questions. Different types of scales were used including seven-point Likert anchored by totally agree to totally disagree to measure the perceived success or failure of SME. Table 1 in appendix A summarizes the independent variables of the model.

To answer question number two of the research, regarding the ability of the Lussier model to predict success or failure, the values obtained by the SME participants in the equation were added in order to corroborate how well the model classifies them as success or failure. To determine the most significant factors the values of the variables were compared. Finally, results were compared for the classification of the model with those of other countries.

The numbers of respondents were 154. In the study, the sample is composed of SMEs with operations in Spain, according to the new definition of SME, (European Commission, 2005), are companies with 249 or fewer employees and annual turnover below EUR 50 million and/or balance sheet below EUR 43 million (EU, 2014). A non-probabilistic sample was used for convenience in compliance with the characteristics of the research, (Hernandez Sampieri et al., 2010). This study considers the member of the Business and Professional Woman Association of Valencia (EVAP, for its acronym in Spanish), the University-Business of the University of Valencia (ADEIT, for its acronym in Spanish), Chamber of Commerce of Valencia and the Valencia Business Confederacy, (CEV, for its acronym in Spanish).

The answer to question 20 was used to group data in accordance with the dependent variable, profitability. Using a Likert scale of 7 points the response was measured; those with answer number 4 were removed from the sample since they do not represent neither success nor failure, (Lussier & Halabi, 2010; Lussier & Pfeifer, 2001; Carrero-Morales, 2015). Of the total 154 responses, 19 were discarded because their answer was 4 to question number 20, leaving 135 questionnaires useful of which 81 classified as successful and 54 as a failure.

Results and discussion

The results of the factors affecting success or failure of SMEs are presented in this section. Table 2 in appendix B contains the results of the logistic regression model used to answer the first question of the investigation, regarding the estimate of the Lussier model with Spain data. The model equation for Spain is: $Y = -0.272 - 0.062\beta_1 - 0.228\beta_2 - 0.061\beta_3 + 0.0\beta_4 - 0.083\beta_5 - 0.008\beta_6 - 0.039\beta_7 + 0.219\beta_8 + 0.206\beta_9 - 0.094\beta_{10} + 0.029\beta_{11} + 0.046\beta_{12} - 0.010\beta_{13} - 0.157\beta_{14} + 0.225\beta_{15}$. The sign of the variable indicates the direction of the relation with the performance of the firm.

Results for question two regarding the model ability to predict success or failure showed that the model can correctly classified SMEs 64.4%. The model was a little superior to Chile (63%) but inferior to others countries. To answer question three, of the fifteen variables in the model, the parameter estimates for the logistic regression model found two of the variables to be significant, management experience and economic timing. Regarding question four comparing Spain results with other countries only was best to Chile, 64.40%. Table 3 in appendix C present a comparison of the general results of the model. Spain turn out to be better to Chile but lower to USA, Croatia, Singapore, Puerto Rico and Israel.

Conclusions

Local entrepreneur that take into consideration the variables of the model increases the chances of success than those that did not take them into account. In terms of public policy the study provides validated information on some of the variables that should be considered to make changes that benefit entrepreneurs in the country. To academy contributes with quantitative empirical data on factors that influence the success or failure of SMEs. For entrepreneur provides information about factors that influence their business operation to be successful or counterbalance the failure.

However, there are certain limitations. This research was based on data collected at a single point in time; rather than a longitudinal study. Another limitations is related to subjective measures and based on self-reporting data. There are many differences between the countries where the model has been tested, (Marom and Lussier, 2014).

In general the model is able to predict success in South America Chile, North America U.S.A, Asia Singapore, Caribbean Puerto Rico, Middle East Israel and Europe Croatia and Spain. The model will reliably predict a group of business as failed or successful more accurately than random guessing in all six countries over 99 % of the time, (Marom & Lussier, 2014). In general, there is a consensus about some factor that will help entrepreneur to be successful or counterbalance the failure.

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Appendix A

Table 1

Independent variables of the model (abbreviated) that predict success or failure.

Entrepreneurial characterics	
Age (age)	Young people who start a business have a higher probability of failure than older people.
Parents (Pent)	Business owners whose parents did not have a business have higher probability of failure than those whose parents were owners of a business.
Educaction (edu)	People without higher or university education that start a business have a higher probability of failure that people with one year or more of university education.
Minority or Ethnic Origin (mior)(eo)	Minorities have a higher probability of failure in comparison with those that are not part of them.
Previous experience [management (maex) or industrial (inex)]	Previous experience [management (maex) or industrial (inex)] Business people without prior experience in management, have a higher probability of failure that those that are handled by people with previous experience in management. On the other hand, businesses managed by people without prior experience in the industry, have a higher probability of failure that firms run by people with previous experience in the industry.
Marketing (mrkt)	Marketing (mrkt) The owners of the business that do not have skills in marketing, have higher probability of failure that owners who have skills in marketing.

Characteristics of the SMEs	
Capital (capt)	New businesses without the necessary capital or undercapitalized have a higher probability of failure than those starting with an adequate capital.
Record keeping and financial control (rkfc)	Businesses that do not maintain the documents or records or accounts updated and correct and that do not use adequate financial controls have a higher probability of failure than those firms that do.
Staffing (staff)	Business that cannot attract and retain quality staff are more likely to failure than businesses that do. .
Product/service timing (psti)	Businesses that selected the products/services that are too new or too old, have a higher probability of failure than those that selected products/services that are in the stage of growth. .
Planning (plan)	Businesses that do not develop a specific business plan have a greater chance of failure than those that do it.
Professional advisors (prad)	Businesses that do not use professional advisers or consultants have a greater chance of failure than those companies that do. A more recent source of professional consultants are the venture capital investors.
Partners (part)	A business started by a single person has a greater chance of failure than those started by more than one person.

Environment of the company	
Economic timing (ecti)	Businesses that begin during a recession are more likely to failure than those begin during periods of expansion.

Translated and adapted from Lussier y Halabi (2010).

Appendix B

Table 2

Logistics regression model test results Spain, (n=135; S=81, F=54).

Variables	B	Significance
Age	-0.062	0.661
Parents	-0.228	0.568
Education	-0.061	0.755
Management experience	-0.083	**0.033**
Industrial experience	-0.008	0.822
Marketing	-0.039	0.742
Capital	0.219	0.132
Record keeping and financial control	0.206	0.079
Staffing	-0.094	0.471
Product/service timing	0.029	0.788
Planning	0.046	0.670
Professional advisors	-0.010	0.944
Partners	-0.157	0.718
Economic timing	0.225	**0.027**
Constant	-0.272	0.843
Model Results		
-2 log likelihood	159.360	
Model Chi-square	19.243	
Model Significance	0.156	
R^2 Cox & Snell	0.136	
Nagelkerke	0.183	
Classifications Results		
Correct Classification		
Success	82.1	
Failure	38.9	
Total	64.4	

Appendix C

Table 3 Results Comparison for question 4

Country	Classification	Variables*
Spain	64.40	ecti/maex
PR	77.30	mior/staff/psti
USA	69.16	staff/edu/plan/prad
Croatia	72.32	Staff
Chile	63.20	None
Singapore	85.62	Psti
Israel	85.40	capt,rkfc,plan, prad, age

*Abbreviation according to table 1