SUCCESS DETERMINANTS OF SMALL AND MEDIUM ENTERPRISES: THE CASE OF PORTUGAL

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Abstract

The success determinants of Portuguese small and medium enterprises (SMEs) are examined using a sample of 207 Portuguese firms from several industries listed in the Dun & Bradstreet database that are at least five years old and with ten or more employees. The empirical study is based on the Lussier (1995) success versus failure prediction model. Our results do not fully support the international research on the determinants of SMEs' success. The determinants of Portuguese SMEs' success are: capital, record-keeping and financial control, planning, professional advice, age of owner, and marketing skills. Using logistic regression, the model adequately fits the data, and accurately predicts 43.4 percent of the failed businesses and 87.0 percent of the successful businesses for an overall accuracy rate of 73.2 percent.

Keywords: Small business, SME, success. Topic Groups: Social sciences and business

INTRODUCTION

Entrepreneurs tend to be optimistic when they start up their new ventures. Nevertheless, the probability of business success is much lower than their expectations (Dennis and Fernald, 2001). In fact, many small businesses fail at their infancy stage and within a few years after start-up (Ladzani and van Vuuren, 2002). Therefore, although the exact rate is not known, the failure rate of new small businesses is high. For instance, Dickenson (1981) and Lauzen (1985) report that about two thirds of small businesses are discontinued within their first five years of operation, while Barsley and Kleiner (1990) indicate a rate of about 80 percent. Other researchers report different small business failure rates, but all of them point out that this rate is very high within the first years of activity (for example, Boyle and Desai, 1991; Ireland and Van Auken, 1987). At the same time, the important role played by the SMEs in economic growth, job creation, innovation, and technological progress is often underlined (e.g., Ladzani and van Vuuren, 2002; Lussier and Pfeifer, 2001; Steiner and Solem, 1988). In addition, given the weight of these firms in the generality of national economies, the SMEs' health and survival rate have a strong influence on the social and economic stability of the countries.

Therefore, it is relevant to study the determinants of SMEs' success and failure, a topic that has attracted a considerable amount of researchers for the last decades, along different paths. Some researchers developed success versus failure prediction models; others studied the determinants of SMEs' success or failure; a third approach focused on the factors that influence

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the business performance; and, lastly, some researchers examined the factors associated with success or failure in small businesses. Nevertheless, although there is a significant pool of studies based on the experience of small firms operating in other countries, only one study about Portugal can be found. This study analysed the critical factors of success and failure of manufacturing firms operating in a specific region of Portugal. In fact, a study has never been conducted about the determinants of SMEs' success and failure in Portugal. Wijewardena and Cooray (1995) and Wijewardena and Tibbits (1999) pointed out that the causes of failure and factors of success may vary from country to country, depending on economic, geographical, and cultural differences; hence, nothing can be concluded about the Portuguese reality based on the results of the international studies. Thus, the present study aims to fill this gap in entrepreneurship research. More specifically, the objective of this research is to identify the determinants of SMEs' success versus failure in Portugal.

REVIEW OF THE LITERATURE

Different types of studies have been published about the determinants of small business success and failure. For instance, some studies focused on the determinants of small business success, other only on the determinants of small business failure, and other on the determinants of small business success versus failure. On the other hand, some researchers do an in-depth study of only a factor, whereas other analyse the impact of several factors. Research has shown that success and failure in small business depends on a multiplicity and diversity of factors. However, there is no generally accepted list of variables to forecast business success or failure (Lussier 1995).

Lussier and Pfeifer (2001) presented a review of the literature about nonratio-based small business success versus failure prediction models. From this review, it can be concluded that the variables most analysed are *management experience*, *capital*, *planning*, *industry experience*, and *record keeping and financial control*. Among the nonratio-based small business success versus failure prediction models, the Lussier (1995) model is the most complete (including 15 different variables), the most published (Lussier, 1996a, 1996b, 2005; Lussier and Corman, 1996; Lussier and Pfeifer, 2000, 2001) and the most influential.

Table 1 presents a description of the published studies about the determinants of performance in SMEs.

Other important streams of research have focused on the factors associated with success or failure of small businesses. Within this group, we can find two approaches: in depth analyses of only one factor (e.g., Bracker *et al.*, 1988; Chrisman and Leslie, 1989; McMahon and Davies, 1994; Perry, 2001; Rauch *et al.*, 2000; Robinson *et al.*, 1984; Schwenk and Shrader, 1993; Shrader *et al.*, 1989; Stewart, 2002; Wijewardena *et al.*, 2004); and studies covering the impact of several factors (e.g., Gadenne, 1998; Gaskill *et al.*, 1993; Honig, 1998; Steiner and Solem, 1988).

As a whole, the results of the studies are not fully consistent. The most analysed determinants of small business performance are: *industry experience*, *family experience*, *professional advice*, age of the firm, mode of acquisition, and education. Nevertheless, only the first three variables are frequently found to have a significant and positive influence on performance. Research also found a consistent positive influence of management experience and start-up experience. By contrast, most studies found a negative influence of the owner/CEO's age on small business performance.

Table 1 – Summary of published studies about the determinants of performance in SMEs

	Scope Sample			
		N	Industry	Country
Robinson (1982)	Study the impact of strategic planning based on the professional advising on the performance of SMEs	263	Several	USA
Bracker e Pearson (1985)	Study the impact of professional advising on the strategic planning of SMEs	188	Laundry	USA
Hand et al. (1987)	Identify the variables that distinguish between good and bad performance firms	112	Gas station	USA
Dyke et al. (1992)	Study the impact of several types of experience on the performance of SMEs	386	Food, furniture and informatics services	Canada
Acar (1993)	Find the distinctive competences and the strategies of product/market which are related with growth and sales of SMEs	96	Foundry and machinery	Turkey
Olson e Bokor (1995)	Study the relationship between the performance of start-up SMEs and the process and type of strategy	91	Several	USA
Wijewardena e Cooray (1995)	Study the influence of several specific variables about firms and their industry on the growth of SMEs	52	Manufacturing	Japan
Chandler (1996)	Study the relationship between experience and performance of SMEs	134	Several	USA
Sapienza e Grimm (1997)	Build and study three models of performance	70	Train	USA
Wijewardena e Tibbits (1999)	Study the influence of several specific variables about firms and their industry on the growth of SMEs	136	Manufacturing	Australia
Wiklund (1999)	Study the relationship between the orientation to the entrepreneurship and performance	132	Manufacturing and services	Sweden
Singh et al. (2001)	Study the influential factors of performance of SMEs owned by females	200	Several	Indonesia
Lerner e Almor (2002)	Study the relationship between the strategic capabilities of female owners of SMEs and the performance of firms	220	Several	Israel

METHODOLOGY

Given its widespread influence and qualities, the Lussier (1995) model was used. The dependent variable of this study is small business success or failure. A firm is considered a success if it presented at least industry-average profits. This measure of performance has been used by other researchers in studies with a similar focus (e.g., Dyke *et al.*,1992; Shrader *et al.*, 1989; Singh *et al.*, 2001). The model includes fifteen independent variables, which are described in Table 2.

Table 2
Explanation of the Independent Variables of the Model

Variables	Description
Capital (capt)	Businesses that start undercapitalized have a greater chance of failure than firms that start with adequate capital.
Record Keeping and Financial Control (rkfc)	Businesses that do not keep updated and accurate records and do not use adequate financial controls have a greater chance of failure than firms that do.
Industry Experience	Businesses managed by people without prior industry experience have a

(inex)	greater chance of failure than firms managed by people with prior industry experience.
Management Experience (maex)	Businesses managed by people without prior management experience have a greater chance of failure than firms that are managed by people with prior management experience.
Planning (plan)	Businesses that do not develop specific business plans have a greater chance of failure than firms that do.
Professional Advisors (prad)	Businesses that do not use professional advisors have a greater chance of failure than firms using professional advisors.
Education (educ)	People without any college education who start a business have a greater chance of failure than people with one or more years of college education.
Staffing (staff)	Businesses that cannot attract and retain quality employees have a greater chance of failure than firms that can.
Product/Service Timing (psti)	Businesses that select products/services that are too new or too old have a greater chance of failure than firms that select products/services that are in the growth stage.
Economic timing (ecti)	Businesses that start during a recession have a greater chance of failure than firms that start during expansion periods.
Age (age)	Younger people who start a business have a greater chance of failing than older people starting a business.
Partners (part)	A business started by one person has a greater chance of failure than a firm started by more than one person.
Parents (pent)	Business owners whose parents did not own a business have a greater chance of failure than owners whose parents did own a business.
Minority (mior)	Minorities have a greater chance of failure than non-minorities.
Marketing (mrkt)	Business owners without marketing skills have a greater chance of failure than owners with marketing skills.

Source: based on Lussier (1995)

This study was directed at the Portuguese SMEs with five or more years old and employing ten or more people. Nevertheless, within this group, the population to be enquired was restricted to enterprises presented in the Dun & Bradstreet database and with available financial information.

A sample of 1000 Portuguese SMEs was extracted from the Dun & Bradstreet database. The SMEs were selected according to the stratified sampling method by district to ensure representation of all the territory. A total of 226 questionnaires were received. Nineteen of the responses received were discarded as the responding firms did not conform to the scope of the study or were incomplete. So, the final sample includes 207 firms.

RESULTS AND DISCUSSION Sample Profile

A profile of the sample firms is shown in Table 3. The average age of these firms is 23.6 years and they employ 80 employees, on average. Almost all Portuguese districts were represented in the sample. The industries most represented in the sample were manufacturing, construction, and wholesale and retail trade. As regards to foreign activity and trade, about 41

percent of the firms had not carried out any imports or exports, whereas approximately one third of them had done both.

Table 3
Profile of the Sample Firms

Age of Firms	Percent	Number of Employees	Percent
5 – 10	13.0	10 – 50	28.5
10 - 20	32.9	50 - 100	44.5
20 - 30	29.5	100 - 150	19.3
30 - 40	13.5	150 - 200	5.3
≥ 40	11.1	200 - 250	2.4
Type of Industry	Percent	Relationship with the Foreign Market	Percent
Manufacturing	46.9	Import and export	33.8
Construction	16.9	Import only	19.3
Wholesale trade	14.5	Export only	5.8
Retail trade	8.7	None	41.1
Others	13.0		

Descriptive Analysis of the Independent Variables

Table 4 presents the mean, standard deviation and the quartiles of the independent variables. Most firms started with less capital than necessary and a satisfactory degree of record-keeping and financial control, developed a very general plan, used little professional advice, had some difficulty recruiting and retaining quality employees, the products/services were at the growth stage, the economy was stable, and the level of marketing skills of the owners/CEOs was low. When the firms were launched, the owners/CEOs had, on average, 11 years of industry experience and 7.6 years of management experience. As regards to education, the owners/CEOs had spent, on average, 10 years in school and 75 percent of them had up to two years of college education. About 74.4 percent of the sample firms started with more than one owner. On the other hand, approximately 32 percent of the owners/CEOs' parents owned their own business. Finally, only 4.8 percent of the owners/CEOs belong to a minority group.

Table 4
Descriptive Analysis of the Independent Variables

		Mean	SD	Q1	Q 2	<i>Q3</i>
1.	Capital (1 – inadequate; 7 – adequate)	3.14	1.26	2	4	4
2.	Record keeping and financial control (1 – poor; 7 – good)	3.93	1.74	2	4	6
3.	Industry experience (number of years)	11.00	9.25	4	10	15
4.	Management experience (number of years)	7.64	8.37	0	5	10
5.	Planning (1 – no plan; 7 – specific)	3.22	1.46	2	3	4

6.	Professional advisors	2.98	1.56	2	3	4
	(1 - not used; 7 - used)					
7.	Education	10.27	5.05	6	10	14
	(number of years)					
8.	Staffing	3.37	1.72	2	4	4
	(1 – easy; 7 – difficult)					
9.	Product/service timing	3.27	1.39	2	3	4
	(1 – introduction; 7 – decline)					
10.	Economic timing	3.85	1.51	3	4	5
	(1 – recession; 7 – expansion)					
11.	Age of owner	35.86	9.41	29	35	42
	(number of years)					
12.	Partners	74.4%	-	-	-	-
	(percentage with partners)					
13.	Parents	31.9%	-	-	-	-
	(percentage who owned a business)					
14.	Minority	4.8%	-	-	-	-
	(percentage of owners from a minority group)					
15.	Marketing	2.90	1.71	1	3	4
	(1 – unskilled; 7 – skilled)					

Test of Lussier (1995) Model in Portugal

A logistic regression was used to test the Lussier (1995) model in Portugal. The correlation matrix was computed to analyse the multicollinearity among the independent variables. Although some significant correlations have been obtained, they are not too strong.

The results of the logistic regression are shown in table 5. Of the fifteen independent variables, only six are significant at the five percent level, discriminating between the successful and failed firms. They are *capital*, *record keeping and financial control*, *planning*, *professional advisors*, *age of owner*, and *marketing*. Furthermore, industry experience, economic timing and minority are almost significant (p=0.06, p=0.063, and p=0.066, respectively).

Table 5
Logistic Regression Results

		В	S.E.	Wald	<i>p</i> -value	Exp (β)
1.	Capital	0.453	0.197	5.283	0.022*	1.573
2.	Record keeping and financial control	0.299	0.153	3.831	0.050*	1.349
3.	Industry experience	-0.042	0.022	3.533	0.060	0.959
4.	Management experience	0.042	0.032	1.698	0.192	1.043
5.	Planning	0.446	0.194	5.293	0.021*	1.562
6.	Professional advisors	-0.669	0.195	11.798	0.001**	0.512
7.	Education	-0.056	0.046	1.454	0.228	0.946
8.	Staffing	0.042	0.122	0.117	0.732	1.043
9.	Product/service timing	-0.147	0.163	0.812	0.368	0.863
10.	Economic timing	-0.284	0.146	3.753	0.053	0.753
11.	Age of owner	-0.126	0.033	14.361	0.000**	0.881
12.	Partners	0.291	0.504	0.333	0.564	1.337
13.	Parents	0.491	0.481	1.042	0.307	1.634

14.	Minority	2.235	1.215	3.384	0.066	9.350
15.	Marketing	-0.266	0.131	4.092	0.043*	0.766
	Constant	6.266	2.508	6.242	0.012*	526.551

^{*} *p* < .05; ** *p* < .01.

The results of this study do not fully support the findings of other published studies, which could be attributed to industry or cultural differences, or even to differences in the definition of the dependent variable. Studies based on the Lussier (1995) model obtained empirical evidence of the discriminative power for all the variables found significant in the present study, with the exception of marketing. Acar (1993) found that record keeping and financial control influence the SMEs' success, but marketing and planning do not; Hand *et al.* (1987) provided evidence that planning and owners' age when they got the management role are determinants of success, and, on the contrary, the record keeping and financial control is not determinant of SMEs' success; Robinson (1982) found that the use of professional advisors could or not be determinant of business success, depending on the measure of success; and, lastly, the results of Sapienza and Grimm (1997) indicated that capital determines the success, but planning, professional advisors, and owners' age when they got the management role do not have a significant impact.

It can be concluded from the model chi-square (p=0.000) and the Hosmer and Lemeshow goodness-of-fit test (p=0.318) that the model adequately fits the data. The Cox-and-Snell R^2 is 0.261 and the Nagelkerke R^2 is 0.366, which are reasonable values for a logistic regression model. Lastly, as can be seen in table 7, the model correctly classifies 43.4 percent of the failed businesses and 87 percent of the successful businesses for an overall rate of 73.2 percent, which is a satisfactory accuracy rate and it is similar to those obtained by other studies based on the same model.

Table 6 Model Summary

-2LL	158.624
Goodness-of-fit	
Model Chi-square	50.843
Sig	0.000
Goodness-of-fit (Hosmer and Lemeshow Test)	
Chi-square	9.293
Sig	0.318
$Cox & Snell R^2$	0.261
Nagelkerke R^2	0.366

Table 7
Classification Table

		Pred	Percentage	
		Failure	Success	correct
Observed	Failure	43.4%	56.6%	43.4%
Observeu	Success	13.0%	87.0%	87.0%
	Overall Per	centage		73.2%

Table 8 compares both groups of firms using the means of the significant variables of the model. As expected, the results appear to indicate that successful firms start operating with a more rigorous record keeping and financial control, with a greater use of professional advisors than failed firms and do a more specific plan, suggesting that these three factors are favourable to the SMEs' success. Nevertheless, and contrary to the expectations, successful firms start their businesses with less capital than necessary, their owners/CEOs have less marketing skills when the firm was started, and the owner/CEO is younger than those of failed firms; hence, the results indicate that these variables may be prejudicial to SMEs' success.

Table 8
Description of the Successful and Failed Firms

	Success (\overline{X})	Failure (\overline{X})
Capital	4.90	4.60
Record keeping and financial control	4.12	3.89
Planning	4.73	4.42
Professional advisors	4.86	5.21
Age of owner	34.97	40.30
Marketing	2.89	4.30

Regarding the impact of initial capital endowment, several researchers have argued that overcapitalization can be unfavourable to the firms, as the owners/CEOs may undertake unsuitable investments and also neglect the financial management of the firm. However, the results of many empirical studies show the opposite. For instance, Honig (1998), Lussier (1995, 1996a), and Sapienza and Grimm (1997) found that the initial capital has a positive impact on SMEs' success. Blackwood and Mowl (2000) observed that access to sufficient capital was considered by firms' owners to be the most important factor leading to business success.

As regards to record keeping and financial control, the results of this study are consistent with Acar (1993) and Lussier (1995, 1996a). Nevertheless, McMahon and Davies (1994) showed that the relationship between financial reporting and performance is not consistent, depending on the measure of performance, and Hand *et al.* (1987) provide support that comprehensiveness of financial reporting practices is unrelated to profitability relative to that of competitors.

The results of the present study also appear to indicate that the elaboration of more specific planning is favourable to SMEs' success. This result is consistent to the generality of the planning theory, which argues that this enterprise function is essential for success. Many researchers have found a positive relationship between the variables in analysis. For instance, Bracker *et al.* (1988), Lussier (1995, 1996a), and Wijewardena *et al.* (2004) provided evidence that planning has a positive effect on small business performance/success. Also, Stewart (2002) found a significant positive relationship between planning and the success of small firms with an international focus. Perry (2001) showed that planning and failure are correlated and planning can reduce the failure probability. Robinson *et al.* (1984) and Sexton and Van Auken (1985) found a positive relationship between strategic planning and small business performance. Even though Shrader *et al.* (1989) have found that strategic planning is positively correlated to performance, he was unable to demonstrate a significant association between operational planning and small business performance. Schwenk and Shrader (1993) found a positive relationship between formal planning and small business performance. Lastly, Rauch *et al.*

(2000) presented empirical evidence that cultural environment is a moderator variable between planning and small business performance. On the other hand, both Gaskill *et al.* (1993) and Hand *et al.* (1987) found contradictory results. Some researchers did not find any relationship between planning and small business performance/success (for example, Acar, 1993; Sapienza and Grimm, 1997).

Moreover, the results of the present study suggest that small firms that use more professional advice are less successful than those that do not use this kind of assistance, which is consistent to the results of Lussier (1996a), who found that the use of professional advisors has a negative impact on small business success. Nevertheless, this result contradicts many results reported in the literature (e.g., Chrisman and Leslie, 1989; Chrisman and McMullan, 2000; Gadenne, 1998; Lussier, 1995; Robinson, 1982). Sapienza and Grimm (1997) did not find any relationship between professional advisors and small business performance. Blackwood and Mowl (2000) found that small business owners do not consider the use of professional advisors as a critical success factor.

Contrary to expectations, the owners/CEOs of successful firms start their businesses younger than those of failed firms. A possible explanation of this finding is that younger people are usually more innovative, more active and are more willing to take risks and challenges, traits that seem to influence small business success more than the knowledge and experience of older people. This result is similar to Hand *et al.* (1987) and Lussier (1995, 1996a). Also, Singh *et al.* (2001) found a negative relationship between the owners' age and small business performance. Nevertheless, the result of the present study is not consistent with Sapienza and Grimm (1997) and Steiner and Solem (1988), who did not provide support that the owners' age when they start the business is related to small business performance.

Lastly, the results suggest that the owners/CEOs of successful firms have fewer marketing skills when the firm is launched than those of failed firms, which contradicts the majority of literature. However, Lussier (1995, 1996a) found a similar result, while Acar (1993) were unable to demonstrate a significant effect of owners/CEOs' marketing skills on small business performance.

CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

This study sheds new light on the crucial issue of determinants for small business success in the context of a small open economy. An extensive review of the empirical literature showed many different results with some variables positively related to success while other studies obtain negative or insignificant impact on success, underlining the need to avoid widespread generalizations and to focus more on the environmental conditions of the target firms.

Our results demonstrate that book keeping and financial control are a prerequisite for success, showing that entrepreneurs, usually more interested in technological innovation, should gather this type of knowledge before starting a new venture. Younger entrepreneurs may be even more successful than those with greater experience. Although we may not conclude that previous experience is not important, motivation and willingness to take risks, especially in a risk averse nation such as Portugal, may also be favourable for creating a successful firm.

These results have a number of managerial as well as policy making implications, by identifying the relevant skills that should be obtained by start-ups and by identifying the kind of support that governments and other institutions could provide in order to foster new company creation and economic development.

This study has some limitations. Firstly, the sample may not be fully representative of Portuguese SMEs, owning to the fact that only the firms that belong to the Dun & Bradstreet

database were inquired. A second limitation may be related to the subjectivity of the definitions of small business success and failure. It should be noted that studies of this kind can be sensitive to this definition.

Further research should be done in order to allow both the development of the literature on this subject, and to benefit the potential users of the predictive models of SMEs' success versus failure, which are, according to Lussier (1995), entrepreneurs, investors, lenders, suppliers, educators, consultants, and public policy makers. Thus, the Lussier (1995) model should be tested in Portugal and in others countries, by industries and geographic regions, in order to allow international comparisons of entrepreneurship models. Others questions should also be addressed. For example, it would be interesting to examine if the variables that discriminate the business success versus failure are the same for young and old firms. Lastly, future research could replicate the Lussier (1995) model using different measures of business success and failure, to examine whether the results of this study can be validated. Information about all of these topics would be very useful to increase the understanding of the factors that discriminate business success versus failure and for the development of economies by preventing small business failure.

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