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Financial Indicators for Business Surviving Success Based on PSED II

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Abstract:

Entrepreneurships are impacted by a variety of factors from the external environmental as well as the entrepreneur. These factors have an influence on the success of the founded company. Success of the founded company is defined by the personal motivation of the entrepreneur. In order to achieve the personal goals of the entrepreneur, the founded business need to survive which is referred to as the business surviving success and indicated by financial indicators. Research about the factors that influence entrepreneurship need indicators for the business surviving success to establish a relationship to the surviving success. Literature review of the study shows, that there are no generally used financial indicators. Second part of this study is the analysis of the biggest data set on entrepreneurship PSED II. The data set includes 6000 variables, underneath the revenue and expenses for each year of the founded business. Based on this information, a wide set of financial indicators can be used to relate the variables of the PSED II data set to the business surviving success. This studies identifies additional financial indicators to test variables on the business surviving success of entrepreneurships which cannot found in literature about entrepreneurship. In the study, several variables of the PSED II are suggested to test the relationship between the business surviving success and these factors that influence entrepreneurships.

Keywords: entrepreneurship, financial indicators, business surviving success, PSED II

1. Introduction

Entrepreneurship are influenced by a big variety of factors. By research the impact of the factors on the entrepreneurship, clear indicators have to be provided for success of the business. By identifications of factors that influence business surviving success, recommendations can be made for governmental institution, venture capitalists, and people thinking about starting a business. The success of the business can be defined differently by entrepreneurs. The preliminary for any kind of success that entrepreneurs defines by themselves is, that the business need to survive. In order to reach other goals associated with entrepreneurship, it is necessary for the business to survive. This business surviving success is especially important in the first 3 years after founding the business since in general, no stable situation is reached for the business at that time. The development after the 3 years and reaching goals that the entrepreneur intends to achieve with the entrepreneurship, depends on this business surviving success. In order to find relationships between factors that influence entrepreneurships and the surviving success, it is necessary to have indicators for the business surviving success.

The financial success of companies can be determined by several indicators. The indicators can be revenue, profitability, return on capital, turnover and gained market shares and indicates the change for survival of the company from a financial point of view. In the following, the term business survival success will be used instead of financial success.

The authors Li et al. calculated business survival success of founded companies in all of their studies with efficiency, sales growth and profit. (Li, Zhang, Chan, 2005) For Sarwoko et al., the indicators for business survival success are sales, profit and return on investment. Sarwoko, Surachman & Hadiwidjojo, 2013) In the studies of Sanchez and Marin, quantitative indicators for the performance of entrepreneurship is the return on investment. In addition to the quantitative indicators for the performance, the authors use the quality factors as the rate of innovation in developing new products/services, labor productivity, teamwork and environmental protection. (Sanchez, & Marin, 2005)

To evaluate the business performance of entrepreneurships, the authors Lee and Tsang use the indicators revenue growth, growth of company's capital and growth in earnings. (Lee & Tsang, 2001) For Davidsson, the measure for business surviving success is the revenue growth. (Davidsson, 1991) Delmar agrees with that in the way, that growth is important for survival of the company. The growth refers to the growth of employees and turnover. (Delmar, Davidsson & Gartner, 2003) Baum also used in his study the number of employees as an indication of business surviving success. (Baum, Locke & Smith, 2001) Beal, however, focuses in his study on the growth in turnover and profit. (Beal, 2000) For other authors, growth focuses entirely on financial key figures. Chandler and Hanks investigate the growth in market share, cash flow and sales figures. (Chandler, 1994)

Literature review shows a wide variety of different indicators to measure the financial performance of entrepreneurships. There is no financial indicator identified which is used in all studies.

1.1. Statement of Research Problem

In order to reach any other goal that the entrepreneur want to achieve with the entrepreneurship, the main goal is to survive. Surviving is the preliminary to satisfy the needs of the entrepreneur. Even if the motivation of entrepreneur is not mainly the financial success of the entrepreneurship, it need to be the main goal in any stage of the entrepreneurship. Most importantly, in the first years after the business was founded. It can be concluded that the business surviving success is the main goal of newly founded companies. In order to measure any relationship between internal and external factors of the entrepreneurship on the business surviving success, this business surviving success has to be described with financial indicators. The study suggests financial indicators for the business surviving success in order to test the relationship of different impact variables on the business survival success.

As PSED II is the biggest data set about entrepreneurship available, the financial information from this data set are taken and indicators are suggested to measure the business survival success.

1.2. Object of Study

The object of the study are financial indicators for business survival success.

1.3. Aim of Study

The aim of the study is to develop a set of indicators for business survival success, which could be used to test the significance and strength of relationship between factors from the PSED II data set on the business surviving success.

1.4. Research Question

Following research question is guiding the study:

Which financial indicators can be used to measure the business surviving success and to measure the impact on different factors on the business surviving success?

1.5. Research Hypothesis

PSED II dataset can be used to research the relationship between different factors on the business surviving success

1.6. Significance of the Study

Results of the study are relevant mainly to other researchers in order to investigate the relationship between factors that influence entrepreneurship and the business surviving success. In that way, the most significant factors for the business surviving success can be identified. These influential factors for the business surviving success should be considered by venture capitalists for the decision to invest in certain entrepreneurship and governmental institutions for create the right framework for successful entrepreneurship in countries.

1.7. Scope of the Study

The study is based on the PSED data set which involves entrepreneurs in the USA.

1.8. Limitation of the Study

Sample size of the study is solely based on entrepreneurs in the USA which limits the generalization of the results to other parts of the world.

2. Material and methods

2.1. Material

The analysis is based on the PSED II dataset which was created over a period of 5 years. PSED II data is representative for 12.6 million entrepreneurs in the USA. From 2005 to 2006, 31,845 people in the USA were called for a screening process in order to identify people which are in the process to start a new company. This screening process was performed by a commercial survey company and research was initiated by the University of Michigan. The screening only took 2 minutes. The identified people who were in the process to start a new company were interviewed for 60 minutes. In the next few years, the entrepreneur was called each year for a 60-minute interview exactly after 1 year of the last interview. Part of this questionnaire was the question about the revenue and expenses for each of the years after the company was founded. In that way, the financial data for 5 years of the entrepreneurship was recorded. 1,214 entrepreneurs were identified and the financial data was recorded each year. The data set has some financial data missing since not all entrepreneur were willing to share this data. (Reynolds & Curtin, 2007) (Reynolds et al., 2005)

2.2. Methods

Literature and studies in the field of financial success of entrepreneurship is reviewed. Based on the general review of the studies, the PSED II data set is analyzed based on the possibilities to use the financial ratios from literature review in the data set. The PSED II data set is cleaned in the way that all financial data in the first 3 years after establishing the enterprise are available. For the remaining data records, the different possible financial indicators are shown which can be used to link influential factors in order to test the relationship between these factors and the business surviving success.

2.3. Presentation of Results

Results of the study are presented in a table with the different ratios which can be used to test the relationship with other factors in the PSED II data set.

3. Results

From the literature review it can be concluded that authors use different indicators for business surviving success in their studies. These indicators can be found in the following table.

Financial indicators
Profit
Sales
Return on investment
Revenue growth,
Growth of company's capital
Growth in earnings
Turnover growth
Growth in market share
Growth of cash flow
Growth of sales

Table 1: Financial indicators from literature review to show business surviving success

The study part of the study will analyses the PSED II dataset based on the available financial information and the indicators to calculate based on this information. The available financial information in the PSED II data set are the expenses and the revenue per year for each entrepreneurship. The first result is that other factors that influence the business surviving success of entrepreneurs can be tested towards the expenses of the entrepreneurship for each year as well as the revenue for each year. With these information, the geometric mean over the timespan of 3 years can be calculated for the expenses and revenue. This gives are more stable picture about the business surviving success. In addition to that, the growth of revenue as well as the growth of expenses can be calculated from year 1 to 2 as well as from year 2 to 3.

By subtracting the expenses from the revenue, a new financial indicator for business surviving success can be calculated. This is the profit of the entrepreneurship for each year. For the profit of the entrepreneurship, the geometric mean as well as the growth of profit from year 1 to 2 and from year 2 to 3 can be calculated.

Based on the calculation of the profit of the entrepreneurship, the return on sales can be calculated by dividing the profit through the revenue. The return on sales shows the part of the profit based on the revenue. The return on sales can be calculated for each of the 3 years. In addition to that, the growth of the return on sales between the years can be calculated as well as the geometric mean of the 3 years.

Business surviving indicators (PSED II)				
	Expenses	Revenue	Profit	Return on sales
Each year	Expenses for year 1 Expenses for year 2 Expenses for year 3	Revenue for year 1 Revenue for year 2 Revenue for year 3	Profit for year 1 Profit for year 2 Profit for year 3	Return on sales year 1 Return on sales year 2 Return on sales year 3
Growth	Expenses growth from year 1 to 2 Expenses growth from year 2 to 3	Revenue growth from year 1 to 2 Revenue growth from year 2 to 3	Profit growth from year 1 to 2 Profit growth from year 2 to 3	Return on sales growth from year 1 to 2 Return on sales growth from year 2 to 3
Geometric mean	Geometric mean of expenses	Geometric mean of revenues	Geometric mean of profits	Geometric mean of return on sales

Table 2: Possible business surviving indicators in the PSED II dataset

The indicators for business surviving success from the PSED II dataset can be group by the type of indicator and the time length which is covered by the indicator.

4. Discussion

Results from literature review and calculation of PSED II financial data shows, that there is clear indicator for business survival success which can be used to investigate the relationship between factors which influence entrepreneurship and business surviving success. These financial indicators for the business surviving success can now be correlated to the 6000 variables of the PSED II dataset to identify the factors which have a positive or negative impact on the business surviving success.

Financial indicators (PSED II)	
Profit	✓
Sales	✓
Return on investment	
Growth of revenue	✓
Growth of company's capital	
Growth in earnings	
Turnover growth	
Growth in market share	
Growth of cash flow	
Growth of sales	

Table 3: Financial indicators from literature review to show business surviving success

Comparing indicators for business surviving success from literature review and the available financial indicators from the PSED II dataset, it can be concluded that there is a certain overlap, but most indicators cannot be found in the PSED II dataset. It is noticeable that a lot more financial indicators can be calculated from the available financial information from the PSED II than used commonly in the literature.

5. Conclusion

PSED II is the appropriate dataset to test the relationship between the business surviving success and a wide range of internal and external factors that influence entrepreneurship. In literature, a lot more different indicators are used to test relationships with business surviving success. It can also be concluded, that a wide set of additional indicators can be calculated by the variables from the PSED II dataset which are not used in the literature.

The advantage of the PSE II dataset is the long time that the entrepreneurship was followed by the research from the University of Michigan. In that way, the development of the business surviving success can be researched based on the influential factors. Most indicators from literature are referring to growth. This growth can be calculated by taking the financial figures from each of the years. New financial indicators found in this study are the geometric mean of the expenses, revenue and return on sales over a certain period. This indicator shows a stable picture of the development of the business surviving success. In addition to that, the expenses as well as the return on sales were not mentioned in the common literature about entrepreneurship study. Expenses and revenue should always be set in context of the industry. In order to compare companies from different industries, the return on sales could be used which includes expenses as well as revenue. Taking return on sales as the geometric mean reduces the influence of yearly outliers. It can be concluded that the PSED II dataset can be used to test the relationship between a set of 6000 variables over a time of 5 years' development of entrepreneurships to find significant and strong influential factors which have an impact on the business surviving success of entrepreneurships.

6. Recommendations

This study is the basis for research of relationship between factors that influence an entrepreneurship and the indicators for business surviving success. The factor which influence the business are also recorded by the PSED II dataset. Research should investigate the relationship between the business surviving success and the kind of business, the motivation of the entrepreneur, if the business has a business plan and the legal form the business. Further factor is, if the business idea was first or the decision to start a business and if business produces non-durable or durable products / law, accounting, computer programming or business consulting services. Another example which is recorded by the PSED II data set is if the business developed a new technology that no other business has or if the business has a patent or copyright that no other business has. Furthermore, the relationship between business surviving success and different kind of financial projection can be evaluated. Also, the influence if the business is a franchise, purchase of an existing business, new business sponsored by existing business, multi-level marketing initiative or an independent new business on the business surviving success could be an interesting research topic. The relationship between business surviving success and weather the business merge from work activity, separate business, hobby, applied research or academic scientific can be investigated.

7. References

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