INNOVATION IN SMALL AND MEDIUM ENTERPRISES IN THE CZECH REPUBLIC

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The success of small and medium enterprises (SMEs) is crucial for the development of the Czech economy. Czech SMEs contribute to innovation and economic growth; they provide employment opportunities and stimulate economic growth. The aim of this research is to determine the key elements of growth and innovation in Czech SMEs. A questionnaire survey of innovation in SMEs in the Czech Republic was used; the research was held in the second quarter of 2013. The research results show that innovation has a positive impact on the growth of Czech SMEs and hence it should become a top priority for the Government strategies and policies that aim to promote economic growth and business development in the Czech Republic.

Introduction

Business growth of SMEs has become a subject of many economic studies. Extensive research of growth in SMEs goes back to the 90s when the business growth of various SMEs was analysed by case studies. The scientists responded to a niche in the scientific field and created a theoretical model of growth and expansion of SMEs (Barringer and Greening, 1989; Strielkowski, 2012b).

In the Czech Republic, the „boom" in the establishment of SMEs began after 1989 (Cahlíková and Strielkowski, 2013, Dasan, 2013); however, in Western countries, SMEs started to expand 15 to 20 years earlier (please refer to Dobbs and Hamilton, 2006; Headdy and Kirchhoff, 2009; Strielkowski, 2013).

Successful long-term business growth is usually a top goal for the majority of SMEs and it is often praised in the media (Brush et al., 2009). There are many factors that influence business growth and there are also various ways how to improve growth in SMEs (Dobbs and Hamilton, 2006; Strielkowski, 2012a; Janda et al., 2013). According to existing research, it can be argued that the entrepreneurs' main goal or perhaps even obligation is to accumulate capital and increase business growth (see Carland et al., 1984). A successful entrepreneur should also introduce new innovations to the market in order to create suitable conditions for healthy competition. On one hand, innovation puts under pressure small companies that cannot be competitive. However, on the other side, innovation creates a strong foundation for business growth of bigger and more competitive enterprises (Hashi and Krasniqi, 2010).

Different conditions in business environment affect the formation and existence of many types of companies (Begley et al., 2005; Mlinarić et al., 2012; Strielkowski, 2013). Businesses could adopt either „casual management" or the „necessity-driven" approach as Estrin et al. (2006) or Talik et al. (2012) point out in their studies. These two approaches have a different impact on business growth. Although the business growth is not the priority of the company, the necessity-driven approach contributes significantly to its growth. However, it should be noted that some authors do not agree with this business classification (Hashi and Krasniqi, 2010).

In 1982, Nelson and Winter (1982) highlighted that the success and growth of SMEs is closely linked to business innovation. According to Goffin and Mitchell (2005), the economic theory identifies that there is a relationship between innovation and economic growth. It is, therefore, necessary that Governments take steps to stimulate technological development and innovation in their countries. According to the World Economic Forum, an innovative organization contributes to the sustainable business growth, both in the medium and longer term (Bondareva, 2012).

Figure 1 Number of SMEs in the Czech Republic (2001 – 2012)
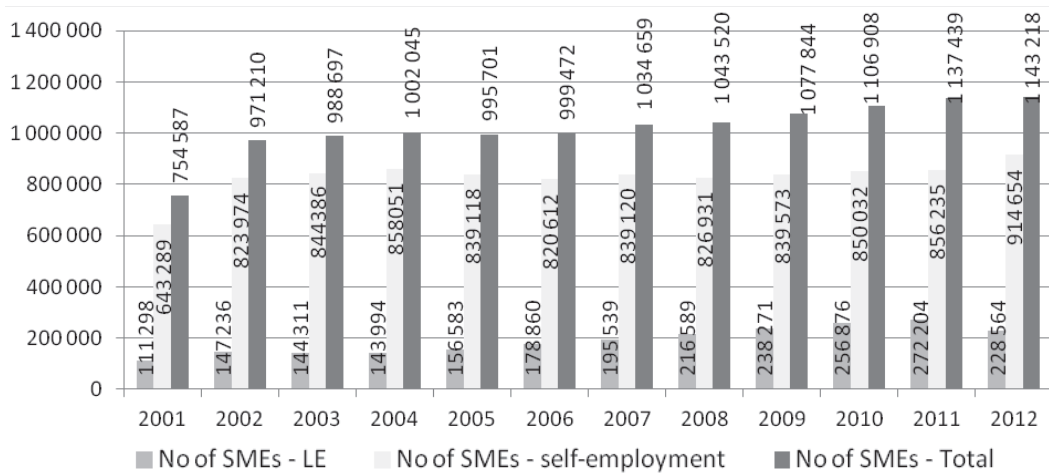
Source: The SMEs Growth Report (MIT, 2012; MIT, 2011)

Figure 2 Number of Employees in Czech SMEs between 2001 and 2012
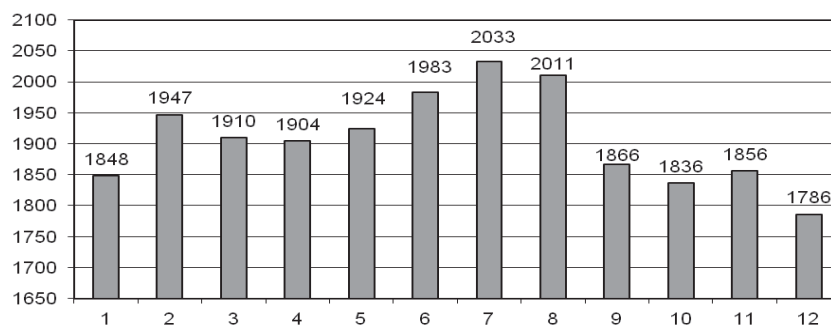
Source: Author

SMEs in the Czech Republic

There is an interaction between SMEs and the business environment. Therefore, it is necessary that the company's management has a full understanding of the business environment and its development in a long-term view.

In the Czech Republic, the average age of a businessman is between 18 and 35 years. Most of the companies operate in Prague and it has been estimated that approximately 554,000 people are business owners. The results of our own survey showed that 14% of the Czech population, with ages between 18 and 64 years, plan to start their own business in three years' time. The data also shows that approximately 70% of entrepreneurs decided to start their own business due to market opportunity (Očko, 2012). This means that 30% of the entrepreneurs started their business because they could not find permanent employment. This number is quite high when compared to other countries.

The SMEs represented 99.84% of the Czech market in 2011 (MIT, 2012). In 2012, the SMEs' share increased to 99.86% (MIT, 2013).

The chart below illustrates growth of Czech SMEs between 2001 and 2012.

As of 21 December 2011, there were 1,066,787 businesses (with 0-249 employees) in the Czech Republic. Of those 814,897 were sole traders and the remaining 251,890 represented a number of companies. As can be seen in Chart 1, the number of businesses has reduced by 25,598 in 2010.

According to CZSO, there were 1,122,511 business entities (with 0-249 employees) as of 31 December 2012. Of those, 851,178 were sole traders and the remaining 271,333 represented a number of companies (MIT, 2013). Figure 2 shows changes in the number of employees in Czech SMEs between 2001 and 2011. Due to the

Figure 3 Investments in Czech SMEs between 2001 and 2012 (in CZK)
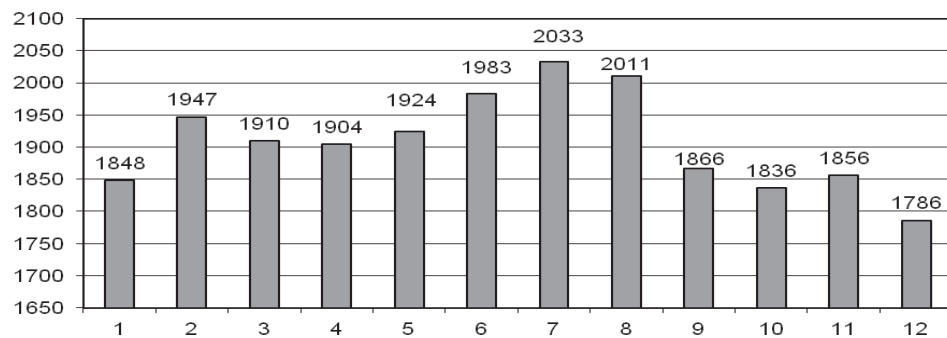
Source: Author

financial crisis, there was a substantial fall in the number of employees between 2007 and 2010. The first positive trend can be seen in 2011, when the number of employees increased by 20,000. However, in 2012, the number of employees started to decline again.

Figure 3 illustrates how much SMEs invested (in CZK) in land and tangible & intangible assets. The maximum investments of 468,141m CZK were made in 2008; however, since then there has been a negative trend and in 2012 SMEs made investments of only 370,483m CZK. The cutback is more than 20% and this result is worrying as new investments are important for business growth.

It has been estimated that SMEs represent one third of the Gross Domestic Product (GDP). Generally, the share of SMEs in GDP increases in the periods of economic boom (MIT, 2012).

Determinants of Business Growth

The fact that the external business environment is crucial for the business growth is well-known. Business environment is a multidimensional concept that embodies the prevailing institutional framework and regulations. It also stipulates macroeconomic stability, price stability, technological opportunities and growth of the industry, including the growing demand for new products (Tsai et al, 1991; Hashi, 2001; or Clement et al, 2004).

Based on the Dobbs and Hamilton study (2006), an increasing number of employees, profits, sales volume, size, turnover and assets are key elements for the successful business growth. Dobbs and Hamilton's findings are based on the research of business growth of global small companies. The authors created a list of 34 studies and more than 30 independent variables.

A summary of the most important and most frequent factors that affect business growth is listed in studies that were written by well-known economic researchers and experts. The first survey was based on Dobbs and Hamilton's study (2006).

A well-known economic expert Storey dealt with the business growth, SME's success and development in his study from 1994. Some factors are identical and signs of successful business growth have been analyzed in several research studies over different periods of time. Comparison of these studies can be found in the article „Small Business Growth," which mentions the major experts in the field such as Smallborne, D., North, D., Kirchkoff, Davidsson and others (Dobbs and Hamilton, 2006). However, there is also a view that the key element for business growth is innovation and this idea is supported by the followers of Schumpeter's Theory (Hashi and Krasniqi, 2010).

Some researchers also believe that business growth is determined by Gibrat's law, "the law of proportional effect". This says that there is a relationship between the growth of a company and its age; however, there is no relationship between businesses growth and company size. This approach is supported by studies based on more than 500 US companies from the 60s and 70s. Such research illustrates that business growth is not dependent on the size of a company (Simon and Bonini, 1958). There is even an argument that the relationship between the growth rate and the size of the company is negative (Evans, 1987).

In the economic literature, there are more than thirty models of growth or business cycles (Veber and Srpová, 2012) which focus on the growth and bankruptcy of companies. In recent years, the role of business has become a frequently discussed topic due to new growth theories that put emphasis on knowledge as a key factor that affects economic and business growth. Knowledge is usually transferred by capital ventures or the ability

to coordinate and solve business activities successfully (Romer, 1994; Koudelkova and Svobodova 2011).

According to one of the recent growth theories, knowledge is essential for economic growth in the current economy. This theory is not directly related to entrepreneurship and small firms; however, some experts believe that knowledge helps to create new jobs and it supports economic and business growth (Shuhe and Triest, 2000).

Research Methodology

Research for this study was focused on SMEs in the Czech Republic. The aim of the research was to identify positive correlation between innovation and business growth of SMEs. According to NACE, the following sectors have been selected:

- 15 - Leather and leather products manufacturing
- 26 - Computer, electronic and optical equipment manufacturing
- 31 - Furniture manufacturing
- 62 - Activities in the field of information technology
- 47.4 - Retail sale of information and communication equipment in specialized stores

Table 1 The share (in %) of the SMEs in the survey

Size	No of SMEs	Percentage share of SMEs
50 - 249	6	1.74
10 - 49	17	5.25
1 - 9	299	93.01
Total	**322**	**100**

Source: Author

The Czech Statistical Office provided a list of companies operating in the above sectors. There were about 3,389 micro, small, and medium-sized enterprises forming the core sample. The companies were asked to complete a questionnaire. The questionnaire was available online, it was sent by email or a paper copy was left at the business premises. The questionnaire was distributed to 1,500 businesses, including 59 medium-sized enterprises, 151 small companies and 1,290 micro enterprises.

Data collection was carried out in the second quarter of 2013 and it lasted two months. This research was extensive and comprehensive. There were two kinds of questionnaires; first, one for the employers and a second one for employees who are taking care of innovation in

Table 2 Respondents' answers

	Absolute Return	Relative Return (%)	Valid percentage share	Cumulative Return
Micro (1-9)	231	72	72	72
Small (10-49)	70	21.8	21.8	93.8
Medium	20	6.2	6.2	100
Total	**321**	**100**	**100**	

Source: Author

Table 3 Hypothesis testing

	Absolute frequency	Relative frequency (%)	Valid percentage share	Cumulative frequency
Definitely yes	137	42.7	42.7	42.7
More likely yes	137	42.7	42.7	85.4
More likely no	41	12.8	12.8	98.1
Definitely no	6	1.8	1.8	100
Total	**321**	**100**	**100**	

Source: Own research

Table 4 Matrix of Responses

	Absolute frequency	Relative frequency (%)	Valid percentage share	Cumulative sum of relative frequencies
1	274	85.4	85.4	85.4
2	47	14.6	14.6	100
Total	**321**	**100**	**100**	

Source: Author

business. The questionnaire for employers contained 33 questions and should provide a view of the situation in the innovation process in the SMEs in the Czech Republic. The questionnaire for employees contained 17 questions and should complement information that we received from the employers.

In total, 321 responses from business owners (including 231 micro enterprises, 70 small companies and 20 medium-sized enterprises) and 322 responses from their employees were received. The size of the company was based on the number of employees in the company. The number of received questionnaires is documented in Table 2.

The research hypotheses and research questions were tested by the IBM SPSS Statistics software package.

Results of the Research

It has been suggested that innovation contributes to the growth of SMEs. Responses from the survey were used to verify this assumption. The number of answers is shown in the following table:

The first column shows the absolute frequency (frequency of occurrence); the relative frequency (in percentage terms) is shown in the second column and the fourth column illustrates the cumulative frequency. The third column is the same as the fourth column. The data in the third column would be different if some data was missing.

The following question was selected for the purpose of the research:

Q1: "Does innovation contribute to the growth of your business?"

For a better overview and analysis (using IBM SPSS Statistics), responses had to be transferred into a matrix that indicated the frequency of option 1 (innovation has a positive impact on business growth) and option 2 (innovation has no positive impact on business growth). For further details, please refer to Table 4.

If there is no significant difference in frequencies; innovation does contribute to the growth of SMEs. The following two hypotheses were set out to identify if there was a significant difference.

H_0: There is no significant difference between frequencies

H_1 (alternative hypothesis): There is a significant difference between frequencies

The statistical $\chi 2$ test was used to evaluate the hypotheses and the results are shown in Table 5.

Table 5 χ2(chi-square test) for hypothesis H

	Actual frequency	Expected frequency	Difference
Most likely no	137	80.25	56.8
Most likely yes	137	80.25	56.8
Definitely Yes	41	80.25	-39.3
Definitely No	6	80.25	-74.3
Total	**321**		

Source: Author

The significance level was set out at 0.01 (1%). Table 6 illustrates results for H1. The first row indicates the calculated value of the chi-square test, df expresses a degree of freedom and the minimum value is calculated in the third row (asymp. sig = α'). The null hypothesis is ignored and the alternative hypothesis is accepted.

Table 6 χ2 test for hypothesis H1

	Innovations and the growth of SMEs
Chi-square	168.159a
Df	3
Asymp. Sig.	.000

Source: Author

It holds that: $\alpha' <= \alpha$ H_0 is rejected
                    $\alpha' > \alpha$ H_0 is accepted

Based on the results of the research, we can say that at the 1% significance level we can ignore the null hypothesis (there is no significant difference between frequencies).

This means that the alternative hypothesis is accepted (there is a significant difference between frequencies). It is, therefore, established that innovation contributes to the growth of SMEs.

Conclusion

The outcome of the research shows that business growth is dependent on successful innovation in Czech SMEs. However, it seems that there is no relationship between company size and successful innovation. This finding corresponds with the results of other studies.

Based on the results of this study, new methodological steps should be formulated to help SMEs to increase their business growth. We believe that this study is beneficial from the scientific, research and educational point of view.

SMEs play a significant role in the national economy and their importance could grow due to the support provided by the national Governments and the European Union (EU). In this way, SMEs should be able to establish a privileged position in the economy.

Research in business cycles and business growth of SMEs should continue and the results of future studies should not only form part of the theoretical knowledge base for the scientific community, but they should also be useful for the professional public and individual entrepreneurs.

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