

FACTORS INFLUENCING THE DEVELOPMENT AND GROWTH OF MICRO AND SMALL FIRMS RUN BY STUDENTS OF MANAGERIAL AND ECONOMIC MAJORS IN POLAND

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Abstract

Purpose. The main aim of the article is to present a preliminary recognition of the factors influencing the development and growth of micro and small enterprises owned and run by students of managerial and economic majors of studies in Poland.

Methodology. It was decided to specify 22 potential variables explaining the growth and development of enterprises. The data was collected using CAWI. Logistic regression was used to test the significance of factors and models of growth and development.

Findings. The results show that among students-owners of businesses that expand, there predominates the conviction that “good luck and favorable coincidence” has nothing to do with the growth. Moreover, “human resources and good relations with employees”, as well as “favorable location due to supply of workforce” are significant for the growth. Significant stimuli for growth are: risk propensity and public support for small business. In view of the development of the studied firms the following factors appear significant: untypical, innovative customer service and favorable external conditions (infrastructure, the ability to lease, build or purchase facilities).

Research limitations. The sample is not representative of the national population. It is necessary to conduct future research on a representative sample.

Practical implications. Factors connected with human resources, untypical, innovative customer service and favorable external conditions seem to play a crucial role in micro and small enterprises.

Social implications. The phenomenon of student entrepreneurship is socially important, because it fulfills the deficiency of work places, which came into existence after the collapse of many state-owned, large companies.

Originality. The paper presents authors point of view and makes contribution to the knowledge of the factors influencing the development and growth of micro and small enterprises owned and run by students in Poland.

Keywords: student-run firm, small business growth, small business development, student entrepreneurship, success of small business, business students

1. INTRODUCTION

Business activity run by students is an economically and socially important phenomenon since in many cases it makes an introduction to entrepreneurship of people, whose personalities and professional lives are fully formed. The companies such as *Microsoft*, *Yahoo*, *Google*, *Facebook* (and many others) were set up just by students who were still in campuses (Stewart 2012). Student-run business activity is an incubator of a fully-developed entrepreneurship – a stage at which business-like behaviors are sculpted as a result of the clash between practice and the knowledge gained at universities (McIntosh 2012).

In Poland, small business has an additional meaning attached to it: similarly as in many other post-communist countries, the transformations in industry have led to the fall of giant state companies, which substantially reduced the number of work places. Nowadays, small business activity, as well as extensive investment of foreign subjects have begun to fill in this deficit.

Teaching business in colleges of higher education strengthens the inclination towards taking up one's own business activity (Patir and Karahan 2010). In small business, basing on personnel who are professionally prepared to run business can, in the opinion of some researchers, have a positive effect on firms' survival and growth (Koczerga 2008).

Many students in Poland are employed themselves or run economic enterprises while pursuing

extramural courses. Business activity run by students therefore is not exclusively the activity of the youngest people, although in part of the cases this is just so. This paper deals with entrepreneurship of students of business colleges of higher education. According to the Ministry of Science and Higher Education as regards recruitment for courses of higher education in the academic year 2013/2014, the business-related majors were the third most popularly chosen major (informatics ranking the first and law the second). It appears thus that the phenomenon of entrepreneurship of the young is on a mass scale and economically and socially vital.

The inclination towards taking up and running one's own economic activity by students varies in different countries. For instance, in Singapore, 62% of the students declare the will to take up such an activity, whereas in Norway it is only 3% (Wang and Wong 2002). Latest research conducted in Croatia points to the rate of 67% (Bakotic and Kruzic, 2010). According to the data released by the Central Statistical Office, one third of the companies currently functioning in the Polish market are run by people who are still below 30 years of age. According to the research carried out by Initium Foundation, as many as 78% of the students would like to set up their own firm and 4% of them already have one (Initium 2013). Judging from the above-mentioned data, we cannot speak about a simple dependence between the degree of economic development and the motivation to take up business activity (the less people can depend on stable work places in large enterprises, the more they have to rely on themselves). Even if such a dependence does occur, it is most probably moderated by a series of factors, such as tradition of small business, the dominating mentality, and the like.

The aim of this study is to investigate the determinants of growth and development of micro and small firms run by students of managerial and economic majors. Logistic regression was used to test the significance of factors and models of growth and development.

2. FACTORS OF GROWTH AND DEVELOPMENT OF MICRO AND SMALL ENTERPRISES

There has been a long tradition of connecting the process of growth of small companies with their entrepreneurial orientation (Davidson 1989). Entrepreneurial orientation (EO) means here endeavors to implement innovative solutions which refresh and perfect the market offer, ability to take risk of introducing untested solutions (products, services, activities in new markets), and also of being more pro-active than the competition in the area of taking advantage of market-created opportunities (Zahra 1993; Zahra and Covin 1995). A general reason why EO is of great importance is shortening of the life cycle of both the very products themselves and business models (Hamel 2000).

The resource based view (RBV) can suggest a dependence of the process of growth of small enterprises on having specific resources at their disposal not only in the material or financial sense, but also in that of skills. Dynamic skills, being one of the growth factors consist in acquiring, integrating, re-configuring and using resources adequate to the situation in the market (Eisenhardt and Martin 2000). The carrier of these skills is the human factor, though. Therefore, *de facto*, one needs to incline towards the statement that such growth factors as the quality of human resources should be taken into consideration (Cressy 2006; Koeller and Lechler 2006).

The surrounding of small companies is an important growth factor in terms of localization, branch, market or mean effectiveness of enterprises functioning in the given type of business (Wilklund et al. 2009). It is also underlined that the inclination of the owners of small enterprises towards the growth and, presumably – also certain of their personality traits – play a significant role from the point of view of the effect in the form of the company's growth (Wilklund et al. 2003). In the research conducted in Spain, dealing with the growth of small enterprises within the framework of entrepreneurial incubators it was found out that the main factors of growth are the following: organization of a small enterprise, its position and innovativeness in the manner of acting (Medina and Morales 2013). Studies conducted in Bosnia-Herzegovina (Delalic and Oruc 2014) additionally

showed – in comparison with the previous settlements – that questions of the infrastructure in the surrounding can make a significant growth factor of small enterprises.

The growth factors of companies classified as small and medium enterprises (SMEs) do not have to be identical with the factors of their profitability (Foreman-Peck et al. 2006). On the basis of the probit model the following variables, being stimulants of growth, were specified: possessing a clear marketing plan, having computer equipment and informatics-related solutions at their disposal, a belief in the sense of innovatory actions, as well as a high turnover. It is interesting to note that the so-called Investors in People – owners of firms realizing the policy of human resources – do not expand to any larger degree than those that do not invest in people, in a similar way as companies which implement innovations. The last two growth factors are significant, though, and correlate positively with the growth according to the research carried out in England (Smallbone 2000). Membership of trade associations and the owner's age over 46 years correlate inversely with the growth. The variable connected with the functioning of the financial branch prove to be significant as that relating to the surrounding.

Both from the point of view of growth and development, understood as improvement of profitability, human resources, in particular their education and experience, prove to be important according to the research on small enterprises run by women and dealing in services and trade in Great Britain (Coleman 2007). Similar conclusions, indicating the paramount importance of managing human resources result from the research conducted on a sample of clients representing small business – a firm providing services in the sphere of HR (Allen et al. 2013).

A study conducted on a group of 262 Brazilian small businesses representing trade and services proved that the EO (Naman; Slevin 1993), as well as marketing capability (Vorhies; Harker 2000) play the essential role from the viewpoint of the level of obtained results – business performance (González-Benito et al. 2009) which can be associated with development of business.

It is highlighted that strictly external factors, such as public aid in the form of support programs designed for small business can be of significance as regards obtained results and development of this class of enterprises (Schayek and Dvir 2009). The research was carried out among small firms covered with a coaching program by the Ministry of Industry, Trade and Labor of Israel. Beside the already mentioned factor, also certain psychological features of the entrepreneur himself/herself can exert an influence on processes of development of small business. One of them is locus of control (LOC), that is a sense of exerting an influence on the situation and a feeling that the subject is capable – thanks to their activity – of obtaining required results, yet also an inclination towards taking risk. The significance of LOC is proved by the research conducted among owners of small firms distributing clothing in Brazil (Maciel and Camarago 2010). In turn, as regards risk, the skill of its recognizing and carefulness while taking risky decisions influence the success of the company in a more positive way than the inclination towards taking risk itself (Willebrands et al. 2012). It was also found out that decisiveness is correlated with improvement of results in small business (Leaptrott and McDonald 2008). Pursuing the current business models, e.g., e-commerce, is also a factor in the development of small enterprises in the time of dynamic changes (Rasheed 2009). The improvement in the competitive position of a small company can be brought about by proactive, anticipatory actions directed towards securing the quality of offer and activity within the competitive surrounding of the enterprise (Environment Management Practices) (Llach et al. 2013). A positive impact of incremental innovations in the area of sales and marketing upon the development of small and medium-sized firms in the branch of trading in sea-food products was pointed to as well (Bhaskaran 2006). Lastly, management practices: styles of leadership and systems of managing development are not to be neglected as regards the growth and development of small and medium-sized enterprises. The research was conducted on a sample of 5710 respondents representing small companies based in the UK (Wang and Poutziouris 2010).

A variable referring to the specificity of the study and the fact that the respondents were students of economic majors was included in the research. This variable which describes knowledge and competences attained in the course of studies is meant to recognize its significance from the point

of view of development and growth of companies. There are studies which show that small business entrepreneurs often do not hold formal education themselves, are skeptical of it or indeed have a bad opinion of it. Moreover, they are too much oriented towards everyday problems of the inside of their companies to take a trusting look at the environment in order to secure prosperity in the future (Watkins 1983). On the other hand, education systems are changing. Already in 1987, Ch. Handy argued that the systems of education designed to prepare managers in the UK were unsuited to the needs, in contrast to those in the USA, Japan or Germany (Handy 1987). He distinguished then the so-called managerial training as a shorter form, more oriented towards concrete needs and shaping skills rather than developing formal education in the form of academic studies, which was more popular in those countries. Motivation to take up training results also from the necessity of continuous completion and updating of knowledge with reference to changes in the market. Some noticeable shortcomings of the system of studies in this area in Great Britain were reported as early as in the 1990s (Kirby 1990). Today they are still present in post-socialist countries, among others, in Poland. In recent years attempts have been made to change higher education systems with respect to effects of education and qualifications (the so-called National Qualifications Framework /NQF/). Thus, educating for business will resemble manager's training to a greater extent.

3. DATA, METHOD, AND VARIABLES

This study made use of a CAWI-based survey (Computer-Assisted Web Interviewing). The research was conducted in March 2014. Logistic regression (SPSS) was used to analyze the data obtained from the study. The data file contained 92 observations from a sample of micro and small enterprises run by students of managerial and economic majors ($n=92$), mainly from Dolnośląskie /Lower Silesia/ and Opolskie Voivodships (the South-Western part of Poland).

Logistic regression is used to predict a binary variable from a set of predictor variables. The predicted dependent variable is a function of the probability (p) that a particular subject will be in one of two categories to model p , the logit transformation of p is used:

$$\ln \frac{p}{1-p} = \beta_0 + \beta_1 X_1 + \dots + \beta_k X_k$$

In terms of p , the logistic regression model can be written as:

$$p = \frac{\exp(\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k)}{1 + \exp(\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k)}$$

The logistic regression model is constructed by maximum likelihood procedure (Collett 2003; Hosmer and Lemeshow 2000). "The estimated regression coefficients in a logistic regression model give the estimated change in the log-odds corresponding to a unit change in the corresponding explanatory variable conditional on the other explanatory variables remaining constant. The parameters are usually exponentiated to give results in terms of odds." A stepwise procedure was applied with a 0.05 entry criterion.

As a result of the literature review, 22 potential explanatory variables were selected. They can be grouped into seven areas (Table 1).

Table 1

Potential explanatory variables

<i>Management</i> <ul style="list-style-type: none"> • Good organizational structure (X₆) • Knowledge of management tools attained in the college (X₇) 	<i>Knowledge</i> <ul style="list-style-type: none"> • Knowledge of legal regulations (X₈) • The owner's and employees' knowledge (X₁₄)
<i>Coincidence</i> <ul style="list-style-type: none"> • Chance, luck (X₁₈) • Hitting a good market in which one can earn (X₁) • Current economic situation in my market (X₁₅) 	<i>Market/marketing orientation</i> <ul style="list-style-type: none"> • Untypical, innovative approach to the market and customer (X₂)
<i>External support</i> <ul style="list-style-type: none"> • External support (means from the EU, support for small companies, operation and regional programs, etc.) (X₁₇) 	<i>Favorable location</i> <ul style="list-style-type: none"> • Favorable location – friendly attitude on the part of local/regional authorities (X₁₉) • Favorable location – a large market in the local/regional space (X₂₀) • Favorable location – supply of workforce (X₂₁) • Favorable location – infrastructure, land developed for investments, ability to lease/construct/purchase facilities (X₂₂)
<i>Personality traits</i> <ul style="list-style-type: none"> • The owner's traits (e.g., intelligence, cleverness, positive energy) (X₃) • The 'knack' of saving (X₁₀) • Carefulness making investment-related decisions (X₁₁) • Inclination towards taking risky decisions (X₁₂) 	<i>Material resources, non-material and human resources</i> <ul style="list-style-type: none"> • Personnel resources – employees and good relations with them (X₄) • Reputation in the market, good opinion (X₅) • Good relations with the environment, cooperators, cooperating firms, etc. (X₉) • Good equipment, property and fixed assets (X₁₃) • Possessing a strategic advantage of, e.g., location, trademark, low prices (X₁₆)

Source: author's own elaboration

The growth of companies was operationalized by the following three phenomena: (1) rise in the number of customers, (2) rise in the number of employees, (3) rise in the companies' revenues. The development of enterprises was operationalized by four phenomena: (1) rise in the company's value, (2) perfecting the management system, (3) perfecting market offer, (4) development of cooperation with other subjects in the market. The question was asked if in the last three years the respondents have had to deal with the above-mentioned phenomena. The questioned answered, using a seven-item scale: strongly disagree – 1, disagree – 2, somewhat disagree – 3, neither agree nor disagree – 4, somewhat agree – 5, agree – 6, strongly agree – 7. In the logistic regression, used in this study as the method of analyzing the empirical material, the response variables are of the binary character – zero-one (0-1). There was thus the need to make a conversion of the seven-item scale to two values: 0 and 1. The response variables were transformed into binary based on the authors' opinion. For the first variable operationalized by three phenomena it was assumed that the sum of values of the answers equal to 16 or more testifies to the fact that we come to deal with growth of the company in the last three years. For the other dependent variable operationalized by four phenomena it was accepted that a sum of responses equal to 21 or more testifies to the fact that we come to deal with development of the company. The settlement results from the fact that responses on level 5 only (somewhat agree) suggest growth or development in an ambiguous way. It is exclusively responses on level 6 in at least one case that can – in the author's opinion – testify to the growth or development in a manner that raises lesser doubts.

4. RESULTS AND DISCUSSION

The data presented in the paper were tabulated according to firm size categories: firms with 0–9 employees (micro enterprises) and 10–49 employees (small enterprises). The group of micro

companies contains 64% of enterprises surveyed, and the group of small companies contains 36% of enterprises. The group of companies operating on the market three or more years comprises quite a high percentage (71%) of enterprises. 75 subjects function in the service sector (82% of all the subjects), 13 subjects (14%) in the industrial sector, while 4 subjects in the agricultural one.

Our analyses of the data will focus on establishing relationships between:

- the growth (with “1” indicating “growth” and “0” indicating “no growth”) and enterprise characteristics that might have affected the chances of the growth.
- the development (with “1” indicating “development” and “0” indicating “no development”) and enterprise characteristics that might have affected the chances of the development.

The main questions of interest are:

- Which of the explanatory variables are predictive of the response, “growth” or “no growth”?
- Which of the explanatory variables are predictive of the response, “development” or “no development”?

The parameter estimates (log-odds) are given in the column labeled “B,” standard errors of these estimates are given in the column “S.E.,” exponentiated log-odds are given in the column headed “Exp(B)” (Table 2).

Table 2

Result of multiple logistic regression analysis (growth as the dependent variable, n=92 student-entrepreneurs).

Variable	B	S.E.	p-value	Exp(B)
X ₄	0.472	0.235	0.045	1.603
X ₁₁	-0.491	0.205	0.016	0.612
X ₁₇	0.359	0.160	0.025	1.432
X ₁₈	-0.426	0.168	0.011	0.653
X ₂₁	0.383	0.178	0.032	1.466
Intercept	-2.463	1.781	0.167	0.085
R ² _{Cox-Snell} = 0.230; R ² _{Nagelkerke} = 0.308; Hosmer-Lemeshow test p=0.400				

Source: author's own calculation (SPSS).

Growth is significantly related to X₄, X₁₁, X₁₇, X₁₈, X₂₁ (p < 0.05). The classification table shows us that this rule allows us to correctly classify 71.7% of the subjects (Table 3). In terms of p, the logistic regression model for growth can be written as:

$$p = \frac{\exp(-2.463 + 0.472X_4 - 0.491X_{11} + 0.359X_{17} - 0.426X_{18} + 0.383X_{21})}{1 + \exp(-2.463 + 0.472X_4 - 0.491X_{11} + 0.359X_{17} - 0.426X_{18} + 0.383X_{21})}$$

Among the five predictor variables, X₄, which is “Human resources – employees and good relations with them”, showed the largest point estimate of odds ratio (1.603) and was most influential. Chances of growth are predicted to generally increase with the increasing X₄. The 1.603 odds ratio for X₄ indicates that with a one-point increase on the seven-point scale being associated with the odds of growth increasing by a multiplicative factor of 1.603. The significance of human resources, from the point of view of the company's growth, is fairly commonly confirmed in studies (see, for instance Smallbone (2000), Cressy (2006) Koeller and Lechler (2006), Coleman (2007)). The significance of this variable becomes additionally strengthened by another vital factor of growth, that is X₂₁, which is “Favorable location due to supply of workforce”. So, expanding micro and small firms seem to be *investors in people*. As regards small businesses, the significance of human resources and inter-human relations is considerable and each error made in this sphere provokes relatively graver consequences than in large enterprises.

X_{11} , which is “Carefulness in taking financial decisions” shows its effect in the opposite direction (growth chances are predicted to generally decrease with the increasing X_{11}). With a one-point increase on the seven-point scale the odds of growth decrease by a multiplicative factor of 0.612. The respondents acknowledged thus that the growth of the company is also an effect of a certain dose of entrepreneurial risk. This conclusion appears to stand in contrast with the results cited in this work (Willebrands et al. 2012). It is probable that the obtained result is also influenced by the fact that the research sample consisted of young people, who – habitually – tolerate risk to a greater degree, including the financial risk (Morin and Suarez 1983). The significance of the variable describing the inclination towards taking risk and its positive influence on the growth of micro and small enterprises should therefore be treated with caution. Consequently, it needs to be taken into account that this result does not have to be universal.

The significance of X_{18} variable is worth paying attention to. Along with an increase in the significance of luck-and-chance factor, the probability that the company is growing decreases in a substantial way. Growing firms are run by persons, who “take the matters into their own hands”, are enterprising and have an internal sense of placing the control (internal locus of control). Accordingly, the result confirms the significance of the factor of the so-called entrepreneurial orientation (EO), well-known in the literature of the subject (see, e.g., Davidsson (1989)).

The importance of the factor of public support offered to small firms has become confirmed, too. Many small companies in Poland were established thanks to various means and programs provided by the EU, both operation and regional ones, regarding the latter. Studies conducted to date (Schayek and Dvir 2009) have proved, in a somehow similar way, that public aid is vital from the viewpoint of results obtained by small firms, although the notion of their growth has not been used directly.

Table 3

Classification table (growth as the dependent variable)

Observed		Predicted		
		GROWTH		Percentage Correct
		0	1	
GROWTH	0	39	11	78.0
	1	15	27	64.3
Overall Percentage				71.7

Source: author's own calculation (SPSS)

The development of micro and small firms run by students is significantly related to X_2 and X_{22} ($p < 0.05$). The classification table shows that this rule allows us to correctly classify 71.7% of the subjects (Table 5).

Table 4

Result of a multiple logistic regression analysis (development as the dependent variable, n=92 student-entrepreneurs)

Variable	B	S.E.	p-value	Exp(B)
X2	0.440	0.178	0.014	1.552
X22	0.283	0.141	0.045	1.327
Intercept	-3.621	1.259	0.004	0.027
$R^2_{\text{Cox-Snell}} = 0.115$; $R^2_{\text{Nagelkerke}} = 0.154$; Hosmer-Lemeshow test $p=0.609$				

Source: author's own calculation (SPSS)

In terms of p , the logistic regression model for development can be written as:

$$p = \frac{\exp(-3.621 + 0.440X_2 + 0.283X_{22})}{1 + \exp(-3.621 + 0.440X_2 + 0.283X_{22})}$$

Table 5

Classification table (development as the dependent variable)

Observed		Predicted		
		DEVELOPMENT		Percentage Correct
		0	1	
DEVELOPMENT	0	25	18	58.1
	1	12	37	75.5
Overall Percentage				67.4

Source: author's own calculation (SPSS)

Of the two predictor variables, X_2 , which is “Untypical, innovative customer service”, showed the largest point estimate of odds ratio (1.552) and was most influential. Chances of development are predicted to generally increase with the increasing X_2 . The 1.552 odds ratio for X_2 indicates that with a one-point increase on the seven-point scale being associated with the odds of growth increasing by a multiplicative factor of 1.552. This result is in compliance with earlier establishments relating to the significance of EO (Naman, Slevin 1993), marketing capability (Vorhies, Harker 2000), but also the necessity to either follow current business models (Rasheed 2009) or even to forestall them in the form of proactive actions and outdistance the competition (Environment management Practices) (Llach et al. 2013).

The significance of X_{22} variable, that is “Favorable external conditions due to infrastructure, the ability to lease, construct or purchase facilities” can testify to the fact that material resources and access to them are a considerable barrier to the development of small firms. If a company finds itself in a favorable economic situation in this sphere, then the owner surely finds it easier to concentrate on such areas of development as that of the product, management system or cooperation with subjects active in the surrounding, and – in consequence – it is easier to achieve the goals. It seems that infrastructural needs are a peculiar equivalent of biological needs of man – once they have been satisfied, one can realize developmental needs of a higher level.

5. CONCLUSION

The results show, that human resources and good relations with employees, as well as favorable location due to the supply of workforce, are significant for the growth of a company. Two factors are thereby connected with human resources, which seems to play a crucial role in micro and small firms in view of their growth. Luck and coincidence have nothing to do with the growth of the firms that respondents run. Students who run expanding firms do not rely on luck, but are actual entrepreneurs with an internal locus of control. Along with a growth in the values of the variable “Carefulness while taking financial decisions” the growth chances are predicted to generally decrease. A certain dose of risk and courage in taking financial decisions is – in the respondents’ opinions – necessary to make use of chances of the company’s growth. One of the reasons for such a result can be the age of the examined entrepreneurs. The study has confirmed the significance of such a factor from the point of view of the growth of micro and small firms as the public support for small enterprises.

In the present study, the most important stimulant of development turns out to be the untypical, innovative customer service, which confirms the significance of entrepreneurial orientation, marketing abilities and proactive actions from the viewpoint of success in small business. Another vital factor in the development are favorable external conditions (infrastructure, the ability to lease, construct or purchase facilities). It can be supposed that a good economic situation of companies in this respect causes entrepreneurs to be able to concentrate their activity on other problems of the firm (development of the product, management system, cooperation contacts with subjects based in the surrounding).

An alarming thing can be the comparative insignificance attached to knowledge and skills acquired in the course of economic studies, from the point of view of both the growth of a small firm and its development.

Some potential limitations in the study should be mentioned. The study was primarily limited by its small sample size. The sample consisted of only 92 micro and small enterprises run by students of managerial and economic majors. A larger sample would have benefited results. Future studies on the current topic are therefore recommended.

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