Significance of globalization-specific factors for SME competitiveness: a conceptual model and an empirical test

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Significance of *globalization-specific* factors for SME competitiveness: a conceptual model and an empirical test

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Abstract

On the basis of existing theory we suggest two main types of factors for SME competitiveness. The first type is comprised of the *basic* factors, including internal, external and entrepreneur-related factors, all well-defined and discussed in the IO and RBV approach and the configuration theory as well. The second type consists of *globalization-specific* factors, referring to the innovation related processes as a response to the globalization challenges (innovation, internationalization, ICT and quality standards adoption, etc.). Our main research question is: Do *globalization-specific* factors have a significant impact on SME performance in times of crisis and post-crisis recovery? Using the two types of factors, we develop a conceptual model explaining their role for SME performance. We suggest that *globalization-specific* factors determine SME performance, and that the configurations of the two types of factors differ in times of crisis and post-crisis recovery. Research hypotheses are tested through construction of indexes for competitiveness and *logit* models using data on Bulgarian SMEs for two periods – one of economic crisis, and another of post-crisis recovery. Empirical evidence confirms significant impact of *globalization-specific* factors in period of post-crisis recovery only. Our findings show that the configuration of *basic* and *globalization-specific* factors with respect to business success is dynamic: in times of crises g*lobalization-specific* factors have no significant impact while *basic* factors have dominant role. In times of post-crises recovery both factors seem to be equally important for SME performance.

Keywords

SMEs, competitiveness, basic factors, globalization-specific factors, configuration, crisis, post-crisis recovery

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1. Introduction

Research on competitiveness in the microeconomic setting focuses predominantly on large firms. At the same time, research on small and medium-sized enterprise (SME) competitiveness tends to be limited, particularly in the context of globalization[4]. This research gap widened as economic globalization created new challenges affecting the validity of the traditional models of firm competitiveness at the SME level[5]. Also, the relative importance of some SME competitiveness factors increased substantially (OECD, 2000), thus the need for alternative modelling approaches emerged. In a globalizing economy, there is a new role for information and communication technologies (ICT), quality standards, networking and clustering, innovations, intellectual property management, and internationalization, therefore strategies to enhance small business development have to take greater account of them. Despite the fact that those factors became critical for SME competitiveness in the global environment, there is still insufficient knowledge how their effects differ depending on the phase of the business cycle.

Advancing the understanding of those factors will help entrepreneurs and policy makers to take context-specific measures to improve SMEs performance. This is particularly important for the competitiveness of European SMEs, which account for 98.8% of all enterprises, two-thirds of employment, and 58.4% of gross value added (GVA) in the private sector (EC 2011, pp. 2-3). The modest recovery in 2010 showed that the export performance and the innovative capacity of an economy are intrinsically linked to a Member State's SME sector performance (EC 2011, pp. 39-40). At the same time, the competitive potential of many European SMEs continues to suffer from insufficient access to finance for risky projects, expensive procedures for intellectual property protection, small share of attracted public means for staff training, etc. (Blackburn and Wainwright, 2010).

Competitiveness is a multidimensional construct, which includes a combination of factors that determine the firm's performance. A framework of different competitiveness models in terms of assets and processes was presented by Ambastha & Momaya (2004, p. 57) but, because of its complexity, it is difficult to utilise a common definition of competitiveness. Additionally, the existing global competitiveness indices refer to the national and not to the firm level. The European Commission (EC) defines firm competitiveness as an "ability of firms to sustain and gain in market share through their cost and pricing policy, innovative use of production factors and novelties in product characteristics" (EC, Competitiveness). At the firm level, "technology development and innovation (of business products and/or processes) are of primary importance for both the cost and quality competitiveness of products" (EC, Competitiveness). The finding of the European SMEs report for 2011/2012 underlined the importance of hi- and medium-tech manufacturing as well as of knowledge-intensive sectors industries (Ecorys 2012, p. 11).

The major theories which seek to explain firm-level competitiveness are the structure, conduct and performance (SCP) paradigm (being at the nucleus of industrial organization theory, IO), the resource-based view (RBV), and the configuration theory (CT). Building on these theories, our

[4] According to an OECD cross-country survey, globalization affects SMEs in three ways: (1) it opens new opportunities to access international markets for about 5-10% of the SMEs; (2) about 25-50% of the SMEs could react to incentives and become export-oriented; (3) the remaining SMEs are expected to experience its pressure in the future (OECD 2007).

[5] There are many unresolved issues related to SMEs development which concern both researchers and policy makers (O'Neill 2010).

research aims to further develop the understanding of SME competitiveness factors while paying particular attention to key globalization-specific factors.

The paper is structured as follows: literature review, followed by research methodology, results, and conclusion. The Appendix provides further technical explanations of indexes and econometric models used.

2. Review of literature and outline of basic and globalization-specific factors for SME competitiveness

Within the framework of IO theory, M. Porter (1998) developed the concept of *five market forces* influencing firm competitiveness: 1) bargaining power of buyers; 2) bargaining power of suppliers; 3) threat of new entrants; 4) threat of substitute products; 5) competitive rivalry within an industry. Firms' objectives are to achieve advanced product differentiation and efficient cost structures as two key competitive advantages.

In a sense, RBV is opposite to the IO paradigm by focusing upon the firms' *tangible and intangible resources* as the most important sources of competitiveness (Wernerfelt, 1995). Firms have advantages if their resources are valuable, rare, immobile, and non-substitutable (Barney, 2001); if they have *capabilities* to combine resources in a unique way; and if they continuously improve their resources and capabilities base (Peteraf, 1993). According to some authors, intangible resources affect more significantly firm success (Mathur *et al*., 2007). In the new global environment, the employment of skilled workforce, and the possession of unique know-how, patents, trade-mark, brands, customer focus, etc. seems to be more important (Lev, 2004, p. 109). Prahalad and Hamel (1990, p. 81) introduced the term "*core competencies*" to describe the key strategic capabilities of "how to coordinate diverse production skills and integrate multiple streams of technology". RBV developed a more dynamic perspective named "*dynamic capabilities*" (Eisenhardt and Martin, 2000).

If Porter's framework reveals mainly the *external* (*industry-level*) *characteristics*, RBV underlines the role of the firms' *internal resources*. For the emerging and transition economies, the *institutional factors* (as part of the external factors) grew in importance, too (Welter and Smallbone, 2011). Based on the complexity of the competitiveness drivers, many authors adopted *combinations* of the two theories. As Sarasvathy (2004) pointed out, there is a need to overcome the separation of analysis of internal and external factors on performance, and work towards their integration. Others proposed to combine Porter's model, RBV, and core competencies into the theory of competences-based strategic management (Sanchez and Heene, 2004). The need to combine external and internal factors led some authors to the *configuration theories*. Miller (1996, pp. 508, 509) stated that both the competitive analysis framework and RBV can be extended by searching for the most successful configurations of organizational elements. The comparison of different approaches led Michor *et al*. (2010, p. 2) to conclude that "the configuration approach is best suited to analyze and model the performance of new ventures and SMEs" because it reflects the *holistic nature* of enterprises (Harms *et al*., 2009). A major disadvantage of the configuration approach, however, is the limited number of the variables which can be selected for each combination (Szerb and Ulbert, 2009, p. 110). The simultaneous use of these paradigms can be justified by the fact that both the SCP approach and RBV agree in their recommendations that companies should be innovative by creating unique combinations of resources and capabilities (Grant, 2002, p. 139; Porter, 2004, p. 123).

Many researchers focus on a selected competitiveness factor such as: *ICT adoption* (Simpson and Docherty, 2004); *networking* (Álvarez *et al*., 2009); *innovation* (Rosenbusch *et al*., 2010);

internationalization (Williams and Shaw, 2011) etc., and only a limited number consider several factors at once. Relatively *complex models* of SME competitiveness factors were developed by Man *et al*. (2002), Sirikrai and Tang (2006), and others. The model of Man *et al*. (2002, p. 131) covers four constructs of SME competitiveness (external factors, internal factors, entrepreneur profile, and firm performance); three competitiveness dimensions (potential, performance, process), and four competitiveness characteristics (durability, controllability, relativity, and dynamism), but it has not been tested empirically. Sirikrai and Tang (2006, pp. 74, 78) proposed a framework of competitiveness which combines *external drivers* (IO-based factors), *internal drivers* (RBV-based), and financial and non-financial *firm's performance indicators*. The external factors were divided into industry conditions and governmental roles, while the internal factors were mainly operational. The model of Toppinen *et al*. (2007, pp. 386-387) considered: resources and capabilities, marketing strategies and industry key factors. Szerb and Terjesen (2010, p. 8) proposed configurations of seven factors, five of which were internal (physical resources, administrative routines, networking, human resources, and innovation), and two were external (supply and demand conditions). Chew *et al.* (2008) built up a framework for the Chinese SMEs' competitive strategies, which included strategic alliances, innovation and differentiation. Yan (2010) showed the significance of cost reduction, differentiation, innovation, strategic alliances and the environment. Awuah and Amal (2011, p. 127) considered the drivers for SME competitiveness in less developed countries such as *innovation, learning, and internationalization*.

All suggested models combine different factors of SME competitiveness without differentiating the effects of *globalization-specific factors* reflecting major changes in the operating environment. As Singh et al. (2008, p. 536) observed, the "holistic approach has not been adopted to analyse the competitiveness. Researchers analysed certain aspects of competitiveness in isolation".

Following the above, the factors for the small firm competitiveness can generally be classified as external, internal, and ones specific to the entrepreneur profile. The first group includes the market forces of the IO-based theory combined with institutional factors. The second group encompasses internal resources and capabilities of the RBV approach. The third group covers the abilities of entrepreneurs. These factors are indispensable for the functioning of each enterprise. Their basic combinations assure the firm's everyday activities, its ordinary reproduction and its equilibrium in the everyday business. Here, we will generally refer to those three groups of factors as ***basic factors***.

Unlike them, a second group of factors, addressed here as ***globalization-specific factors*** for SME competitiveness, can be regarded as *innovation-related* processes with a global impact upon a broad range of businesses. As such *globalisation-specific* factors depend on specific combinations of firms' internal, external, and entrepreneurial resources and capabilities. They reveal not the primary combination of resources as in the classical production function, nor small gradual improvements. They belong rather to the "residual element" of this function, where economists left technological progress, innovations, and other important firm's capabilities. The significance of these factors stems from the fact that they indicate the new *opportunities to combine and recombine further* the firms' resources and capabilities in response to environment changes. Their distinguishing feature is that they are related to organizational change, and as such they are close to the concept of *dynamic capabilities*. "Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die" (Eisenhardt and Martin, 2000, p. 1107). Zahra *et al*. (2003, p. 166) noted also that: "… resources *per se* are not as strategically important as what the firm does with these resources… The leveraging of tangible resources with intangible resources allows for unique combinations that are not only rare because they incorporate the

firm's specific assets but also because the inclusion of intangible resources creates an invisible dimension to the bundle of resources that makes it inimitable and non-substitutable…." Here the concept of dynamic capabilities approximates the configuration approach as both paradigms underline the importance of configurations of firm's resources and capabilities. These configurations may be seen as particular organisational genomes.

Entrepreneurs introduce new combinations of production factors in the form of: new product, higher quality of an existing product, new production method, new market, new sources of raw materials, or new organization in the sector (Schumpeter, 1934). Today, we might add to these the adoption of ICT, international quality standards, internationalization (as new foreign markets, Jansson and Sandberg, 2008), etc. Although there are some common determinants of most of the *globalisation-specific factors*, the latter are distinctive due to their own specific determinants.

Each innovation depends on *internal* factors such as strategy, organizational routines, human capital, etc. (Wang *et al*., 2010); *external* factors such as industry sector, regulations, access to finance (Galankis, 2006, p. 1231); and factors linked to the *entrepreneur's characteristics*: learning, market orientation, etc. (Masurel *et al*., 2003). Therefore, the *basic factors* are fundamental for the development of *globalisation-specific* factors. If we consider SME development over consecutive periods of time, we may find an interrelationship between *basic* and *globalization-specific* factors consisting of the following: On the one hand, *basic* factors determine success or failure of any innovation. On the other hand, once an innovation is accomplished, it leads inevitably to a subsequent change in *basic* factors (re-organization of technological process, development of new skills related to the innovation through staff training or hiring, etc.). Therefore, it could be considered that present structure and contents of *basic* factors are result of previous efforts, including efforts in innovations. In the same time, *basic* factors determine present attempts to innovate, which again, following a chain re-action, re-shape SME *basic* factors in future periods. Further analysis on their causality could lead to a conclusion that in the present period *basic and globalisation-specific factors* might be referred to as *first-order* and *second-order* factors for SME competitiveness[6].

3. Research question, conceptual model and hypothesis

Although most of the *globalization-specific factors* are viewed as adequate responses of the SMEs to the new environment, the above models do not account for their relative importance. Besides, these models are applied to periods of economic growth and do not consider changes in factors' configurations pertaining to periods of economic crises or post-crisis recovery.

The present article's aim is to contribute to filling these gaps by offering an answer to the following question: Do *globalization-specific* factors have a significant impact on SME performance in times of crisis and post-crisis recovery?

[6] In previous research, we have tried to identify a causal relationship between the factors, which here are addressed to as *basic* and *globalization-specific* (Vladimirov *et al.*, 2011 and Simeonova-Ganeva *et al.*, 2011, 2012). The data confirms a tendency for *basic* factors to determine *globalization-specific* ones, but there are cases which indicate the presence of some reverse causality. However, data limitations do not allow for a robust statistical estimation of a thorough structural model, and we have no sufficient evidence to assume a formal reference of *first-order* and *second-order* factors.

On the basis of the SCP/ IO and RBV approaches, as well as the configuration theory, we suggest a conceptual model depicting the configuration of the *basic* and *globalization-specific* factors for SME competitiveness (Fig. 1).

The role of the *basic* factors in the model is as follows: they are fundamental for the successful SME performance, and they also determine *globalization-specific* factors within the firm. The nature of the relationship between *basic* and *globalization-specific* factors is suggested on the basis of previous research findings as discussed above.

Similarly to the situation in the large enterprises, the *globalization-specific* (or innovations-based) factors, are crucial for obtaining *sustainable* competitive advantages, which have not been usually related to SMEs before the globalization, but nowadays are of significant importance for SMEs competitiveness. Thus, business results of SMEs depend on both *basic* and *globalization-specific* factors. Here, we attempt to find evidence for the configuration of the two types of factors with respect to their impact on SME performance during the recent global economic crisis, as well as to track the changes emerging during the observed economic recovery. The hypotheses, which are tested with data sets on SMEs and their performance for each of the two periods, are as follows:

H1. *Globalization-specific* factors have a significant impact on SME performance;

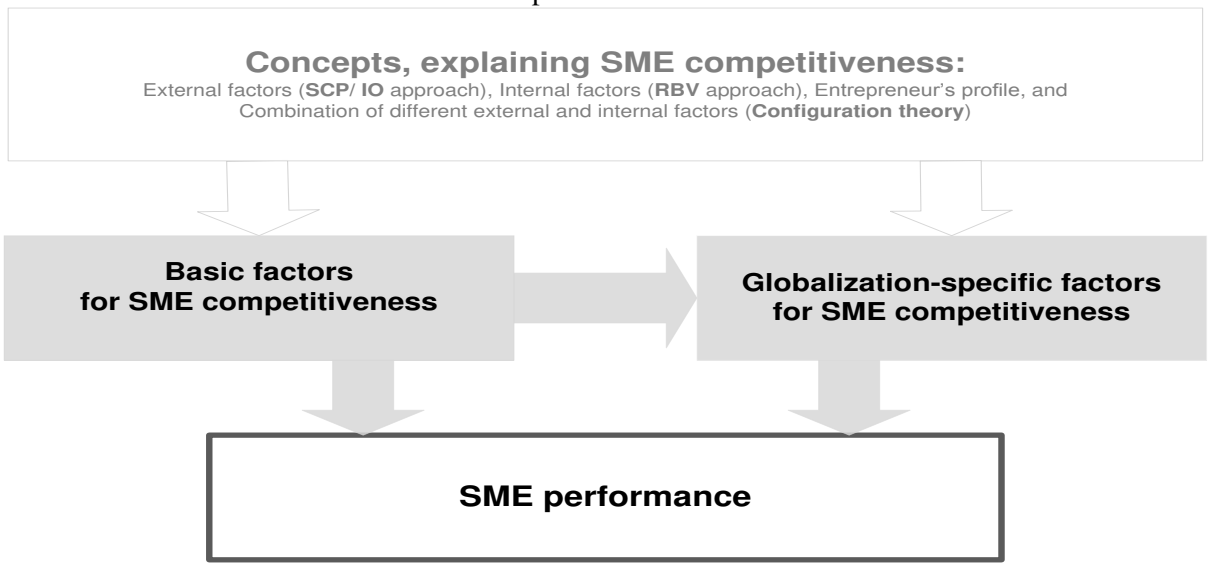
H2. The *configurations of the two types of factors* with respect to business performance *differ* in times of crisis and post-crisis recovery.

Previous research has shown that *globalization-specific* factors are crucial for large companies; therefore we assume they have a significant impact on SME performance as well.

Since theory and empirics have not prescribed which of the two types of factors has a leading role, we assume they are of equal importance.

We assume that there may be variations in the configurations of the two types of factors regarding SME performance in the different phases of the business cycle, but existing research does indicate neither such variations, nor what the nature of such variations might be in periods of prosperity or recession, etc. Hypothesis testing for the two periods takes this restrictive assumption into account.

Figure 1. Configuration of basic and globalization-specific factors in determining business performance



4. Data and empirical methodology

Data from the annual SMEs surveys conducted in the beginning of 2011 and 2012 for the *Bulgarian Small and Medium Enterprises Promotion Agency* are used[7]. The 2011 survey was focused on the competitiveness and performance of the Bulgarian SMEs in 2010 - a year of economic crisis[8]. The 2012 survey kept the same focus but the reference period was 2011, when a modest economic recovery was observed[9]. The sample description for the two waves is provided in Table 1 below.

Table 1. Sample description

Year	Sample size	Firms' size			Field of economic activity			
		Micro	Small	Medium	Manufacturing	Construction	Services	Trade
2011	300	89%	9%	2%	13%	6%	40%	41%
2012					300			
Core sample	250	89%	9%	2%	19%	6%	45%	30%
Booster on bigger SMEs	50	-	53%	47%	47%	8%	21%	24%

Source: 2011 and 2012 Annual SMEs Survey, Bulgarian Small and Medium Enterprises Promotion Agency

Based on the conceptual model presented above, questions about business performance and activities related to SME competitiveness were formulated and used in both survey waves.

Business success can be measured through various financial and non-financial indicators, though the literature does not identify a generally accepted list of variables[10]. Here, SME performance is measured through the usage of dummy variables.

Questions on the implementation of activities related to SME competitiveness were used to construct indexes for seven factors for SME competitiveness[11]: (1) innovations; (2) internationalization; (3) trademarks and patents; (4) information and communication technologies; (5) business and marketing strategies; (6) human resources development; (7) access to finance[12]. The standard questionnaire also included questions on other factors like quality standards, networking, export orientation, company size, and entrepreneur profile[13]. The empirical testing of the formulated model is done using a limited number of *basic* and *globalisation-specific* factors, namely:

- *Basic* factors: human resource development, implementation of business and marketing strategies, and size of company (internal factors); access to finance (external factor); age, education and gender of the entrepreneur (entrepreneur profile);
- *Globalization-specific* factors: innovation activities, internationalization, ownership of trademarks and patents, and usage of information and communication technologies.

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[7] Each of the survey waves covered 300 SMEs managers through face-to-face interviews held by a professional vendor company (Noema) in February, 2011 and February, 2012. In 2011, a stratified random sample was used to elect 300 SMEs, representative in terms of economic activity, regions and size of firms (number of employees). In 2012, the sample was repeated using the same method to acquire a core sample of 250 SMEs but an additional booster of 50 relatively bigger SMEs (firms with over 10 employees) was introduced. Hence, for 2012, the empirical analysis was based on both the weighted data set (representative of the whole sector) and the raw data set (providing for a better presentation of the distribution of factors for SME competitiveness with respect to firm size).

[8] In 2008 and 2009 only a few macroeconomic indicators aggravated including the GDP drop by 5.5%; in 2010 almost all indicators showed negative effects from the global financial and economic crisis: unemployment in Bulgaria reached 11.2%, foreign direct investments shrank more than two times, credit activity stagnated, etc.

[9] In 2011 the growth rate of the Bulgarian GDP accelerated to 1.7%, mainly due to the rise of export by 12.8%. This recovery was modest as the stagnation on the labour market remained, and investments continued falling.

[10] For more information please see for example Halabi and Lussier (2010).

[11] Measures of competitiveness range from simple indicators to complex indexes (Buzzigoli and Viviani, 2009).

[12] See the Appendix for the technical details regarding the index formulas and calculations.

[13] Information about these questions is provided in the Appendix.

The impact of the factors for competitiveness on business performance was estimated through *logit* models explaining the lack of decrease in sales. The acceptance or rejection of **H1** was based on the following relationship:

$$D_i = c_1 + \alpha_1 G_{1,i} + \alpha_2 G_{2,i} + \alpha_3 G_{3,i} + \alpha_4 G_{4,i} + u_{1,i} \qquad (1),$$

where D_i is a dummy variable, with a value of one indicating no decrease in sales of the i^{th} firm, and a value of zero indicating the firm suffered a decrease in sales. $G_j, j = 1,...,4$ denotes the four *globalisation-specific* factors under consideration, c_1 is the intercept term, and $u_{1,i}$ represents the stochastic error. The acceptance of the hypothesis is done through a likelihood ratio (LR) test checking whether $H_0 : \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = 0$, and through the Hosmer-Lemeshow test (H-L test) which provides evidence whether there is a difference between observed and predicted values. Model (1) was estimated for the two periods considered. In addition, a similar specification for the *basic* factors was used:

$$D_i = c_2 + \beta_1 B_{1,i} + \beta_2 B_{2,i} + ... + \beta_7 B_{7,i} + u_{2,i} \qquad (2),$$

Where $B_j, j = 1,...,7$ denotes the seven *basic* factors under consideration, c_2 is the intercept term, and $u_{2,i}$ is the stochastic error. Model (2) was also estimated for the periods of economic crisis and post-crisis recovery. The acceptance or rejection of **H2** was supported by standard measures of goodness-of-fit for *logit* models like specificity, sensitivity and percentage of correct predictions of the two specified equations. Using these goodness-of-fit measures, we try to identify whether one of the two types of factors has a dominant influence on SME performance, or both of them are of equal importance for the firm. Thus, we provide evidence for the configuration of *basic* and *globalisation-specific* factors regarding sustaining the levels of firm's sales. The estimation output is presented in the Appendix.

5. Results and Discussion

5.1 Competitiveness of the Bulgarian SMEs

Using the survey data we have computed indices for competitiveness factors of the Bulgarian SMEs for the two periods of investigation. Indexes take values between 0 and 100. A low value of an index stands for a low level of development of the respective factor of competitiveness, and a value closer to 100 shows a high level of development. We have grouped the index values into five intervals: low level [0, 20], rather low level (20, 40], average level (40, 60], rather high level (60, 80], high level (80, 100]. The distribution of index values is provided below (Table 2). Each table cell shows the percentage of firms having the respective level of factor development.

Table 2. SME factors for competitiveness: share of SMEs by grouped index values (%)

Factors for competitiveness		2011					2012				
Type	**Factors**	**Low**	**Rather low**	**Average**	**Rather high**	**High**	**Low**	**Rather low**	**Average**	**Rather high**	**High**
1. G	Innovations	80	11	5	3	1	57	25	10	6	2
2. G	Internationalisation	95	3	2	0	0	78	5	11	2	4
3. G	Trademarks and patents	94	4	2	0	0	73	16	0	9	2
4. G	Information and communication technologies	74	15	8	2	1	42	31	14	9	4
5. B	Access to finance	93	6	1	0	0	69	23	6	2	0
6. B	Human resources development	10	53	31	5	1	12	47	24	8	9
7. B	Business and marketing strategies	63	26	8	3	0	41	20	20	8	11

Notes: G – *Globalisation-specific* factor; B – *Basic* factor
Source: 2011 and 2012 Annual SMEs Survey, Bulgarian Small and Medium Enterprises Promotion Agency, own calculations

The data show that there was an overall improvement in the level of development of the *globalisation-specific* factors for competitiveness in 2011. In the beginning of 2012, index values shifted significantly to the right section of the distribution which accounts for higher level of competitiveness.

The factor-specific data show that there was an intensification of innovation activity. This could be explained mainly with the adoption of new organisation of production targeting cost optimization. Nevertheless, in about 82% of SMEs in 2012 the innovation activity remained at low or rather low levels. The most innovative companies were medium-sized and small firms, most of them in manufacturing, while the least innovative ones were micro enterprises, most of them in trade. As other researchers have shown, the SMEs sector experienced an innovation management deficit (O'Regan *et al*., 2005).

Increased values of the internationalisation index corresponded to the improvements in the export position of the country in 2011-2012. According to the index values, 95% of the SMEs in 2011 and 78% in 2012 had a low level of internationalisation, while the rest had rather low or average levels. Companies with rather high or high levels of internationalization were observed only occasionally. The most internationalized were medium-sized and small firms, most of them in manufacturing[14].

The higher index value for trademarks and patents could be explained by the partial improvement of the institutional environment and by the slight simplification of the index methodology in 2012. Humphrey and Schmitz (2002) demonstrated that SMEs could be more successful by developing higher quality or creating their own brands and trademarks. However, this is a difficult task in extremely competitive international markets. Index values indicate that 94% of the

[14] Other studies on the SMEs internationalization also suggested that manufacturing firms were the more internationalized ones in comparison with trade firms (Matlay and Fletcher, 2000, p. 442).

Bulgarian SMEs in 2011, and 73% in 2012, had low level of these activities. There were only isolated cases of high levels of such activities which could be explained with insufficient financial resources.

The higher level of usage of information and communication technologies followed the general trends of digitalisation of government and households. The role of the sector in ICT implementation corresponds to the data from other studies (e.g. Oliveira and Martins, 2010). However, their introduction to smaller businesses is hindered by various difficulties (Fabiani *et al*., 2005, Ramdani & Kawalek, 2007, p. 49). These practices were more developed in SMEs in bigger cities and less developed in smaller settlements, which data are in line with other findings (Forman *et al*, 2008).

Similarly to the *globalisation-specific* factors, in early 2012 the index values of the *basic* factors indicated a considerable progress in SME competitiveness.

Access to finance improved since an increased number of SMEs benefited from bank credits in addition to in-house cash and unincorporated sources of funding. In early 2011, financing was at low access levels for 93% of the SMEs, while in 2012 this share dropped to 69%. These findings correspond to the European Central Bank (ECB) data for 2010 and 2011, which showed difficulties in SMEs access to finance in the European Union (ECB, 2010, 2011). The biggest difficulties in financing were observed in micro enterprises, where the average index values were two times lower than in the medium-sized enterprises. Usually, banks grant credits to smaller firms under a higher interest rate and larger collateral because of higher information asymmetry, which makes small businesses prefer using internal funds (Klapper *et al*., 2006).

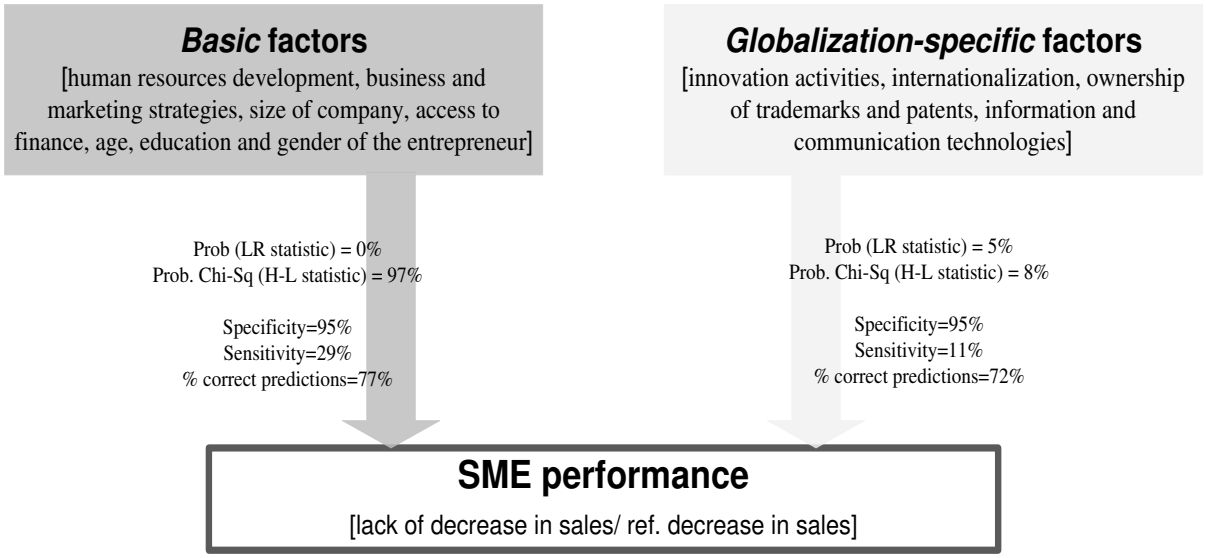
In general, SMEs offer less staff training, because they find costs to be higher than the expected return to training (Westhead and Storey, 1997, p. 63). Index values confirm a positive development in human resources. Two thirds of the SMEs provided some training for one or more of their employees, while 17% of them had various types of trainings for their management and staff. Other studies have also revealed the importance of human capital (Johnson et al., 1996). According to Warner (1996), “learning and innovation in modern economies are inextricably linked" (Warner, 1996, p. 348). Therefore, companies with limited resources (as SMEs) or countries with limited natural endowments should invest in human capital as a strategy for competitive advantage (Chen et al., 2005).

Good practices in developing business and marketing strategies became implemented more often in the post-crisis period. While in the period of economic crisis 3% of the SMEs implemented such practices at a high level, in the post-crisis year 19% of them started using such intensively.

5.2 Empirical evidence on the configuration of *basic* and *globalization-specific* factors in the determination of business performance

The econometric results for the period of economic crisis do not provide sufficient evidence to accept **H1**. The LR test shows that there is joint significance of the coefficients in front of the *globalization-specific* factors but the probability of the H-L statistic is rather low and we cannot be sure whether actual and fitted values differ. In other words, there is some evidence that these factors affect business performance, but it is not sufficiently convincing to make a strong conclusion (Fig 2).

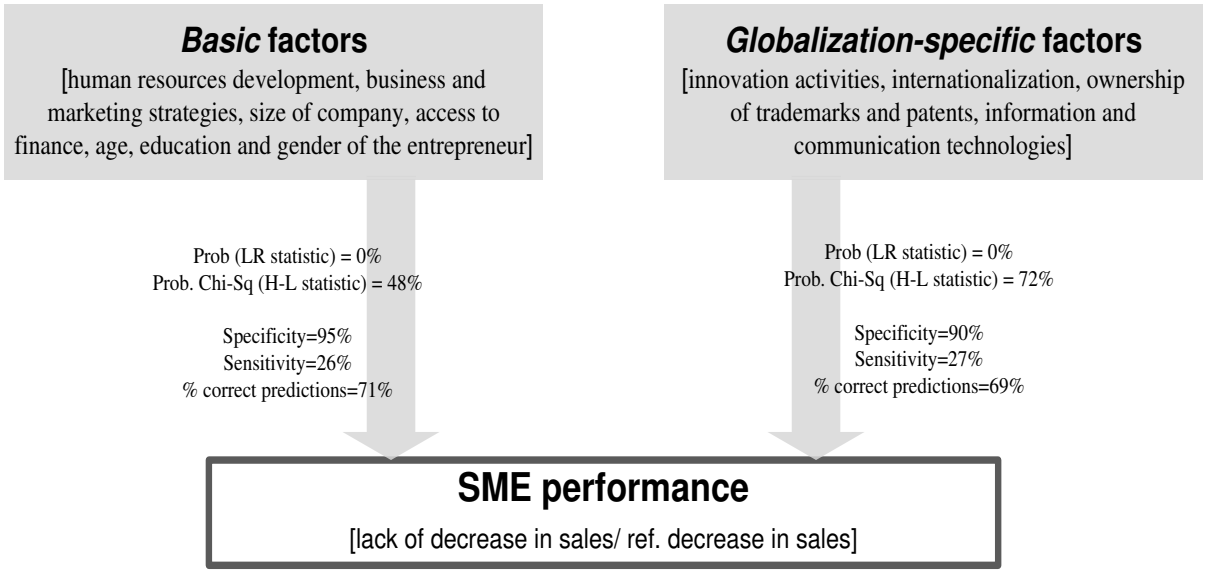
Figure 2. Evidence on the configuration of basic and globalization-specific factors during the period of economic crisis



The individual significance of included factors is checked using the z-statistic (see the estimation output in the Appendix), though it has no direct relation to the research hypothesis. The only significant factor is innovation though its impact on business performance could be limited: the products and services of innovative firms are more expensive, and when incomes in the economy drop, the demand for and the sales of products of innovative firms may decrease (Esposito and Vicarelli, 2011). However, innovative firms experience stronger growth during periods of economic recovery and growth (see also Ecorys, 2012, p. 44).

Unlike in the above case, there is sufficient evidence to accept **H1** for the period of post-crisis recovery: both the LR and the H-L tests show the joint significance of the *globalization-specific* factors (Fig. 3).

Figure 3. Evidence on the configuration of basic and globalization-specific factors during the period of post-crisis recovery



Here, the significant individual factors are internationalization and ownership of trademarks and patents. The lack of individual significance of internationalization in the previous year, and its presence in the post-crisis period could be explained by the fact that the economic crisis was global and affected both export-oriented SMEs, and those focused on domestic markets (Berthou and Emlinger, 2010). In a year of international markets recovery, internationalisation matters once again. The case of the factor related to trademarks and patents ownership is analogical – in a period of post-crisis recovery, intellectual property becomes more important for sales.

The estimation of *logit* models for both periods let to the confirmation of the joint significance of the regression coefficients in front of the *basic* factors for SME competitiveness. During the period of economic crisis, only the implementation of business and marketing strategies had a significant individual impact on business performance. This finding is consistent with recent research: according to Bloom *et al*. (2012, p. 617), "the quality of management practices appears to become *more important during the crisis period*". In the period of post-crisis recovery only the development of human resources and the size of the company had a significant influence.

Prediction classification of the estimated models is used to accept or reject **H2**.

For the period of economic crisis, evidence shows rather low levels of sensitivity of the model with *globalization-specific* factors compared to the model with *basic* factors. The percentage of the correct predictions is also smaller in the case of the *globalization-specific* factors (Fig. 2). In addition, as discussed above, the econometric results do not indicate a robust relationship between *globalization-specific* factors and business performance. The empirical data indicate that the basic factors have a dominant role in determining business performance in a period of economic crisis.

For the period of post-crisis recovery, only slight differences between the *basic* and the *globalization-specific* factors are observed in the values of specificities, sensitivities[15] and share of correct predictions (Fig. 3). Econometric results show that both factors seem to be equally important and none of them has a dominant role for the business performance.

[15] Sensitivity and specificity measure respectively the rates of successfully predicted values of ones and zeros of the dependent dummy variables.

Therefore, the empirical analysis allows us to accept **H2** – the configurations of the two types of factors with respect to SME performance differ in the two periods.

6. Conclusion

A major finding of the research is that the assumed joint significance of *globalization-specific* factors for achieving better business performance may not be valid for all of the business cycle phases. In times of economic slowdown, the *globalization-specific* factors may not have a significant impact on SME performance, unlike the more traditional *basic* factors. Although considered as fundamental for mid-term business success, innovations, internationalization, etc. may not contribute for present business performance in a period of crisis. Once the economy starts recovering, *globalization-specific* factors may become of significant importance for SME better performance.

The *basic* factors for SME performance remain crucial both in times of economic crisis and recovery. In times of crisis when the access to finance was aggravated and accompanied by a high level of inter-company indebtedness and decreased sales, the short run business success required more efficient use of available tangible and intangible resources like human resource, business and marketing strategies, etc.

A possible explanation of the obtained results concerning the configuration of the factors could be related to the country or SME sector stage of development. It might be that these configurations are typical for the efficiency-driven economies, and not for innovation- or factors-driven ones (Porter et al., 2002), but this hypothesis needs further testing.

Our proposition of two types of factors for SME competitiveness (*globalization-specific* and *basic*) does not imply the introduction of entirely new factors, but a new perspective on the traditional division of internal, external, and entrepreneur-specific factors. These factors have not previously been studied together in terms of their joint effects on SME performance. Our research findings provide empirical evidence on the role of *globalization-specific* factors for SME competitiveness. The proposed conceptual model allows a further analysis of the configuration regarding SME performance in different economic contexts (growth, economic crisis, and post-crisis recovery), in different sectors and countries, etc. Thus, in our opinion, the research findings contribute to the better understanding of the factors of SME competitiveness. The simultaneous usage of the SCP/IO concept, the RBV approach (particularly, the dynamic capabilities paradigm), and the configuration theory allows the development of a more complex configuration of significant organizational elements, on the one hand, and the integration of components from the external environment, on the other.

The empirical evidence on the factor configurations can serve both businesses and SMEs policy makers, as they suggest context-specific measures and policies. There are at least three practical implications of this research. The first relates to the possibility that the economic crisis continues. In such an environment, the competent SME management should strive to develop new combinations of assets and skills which guarantee the efficient working of the key competitiveness factors. The second implication concerns the improvement of the SMEs positioning in the global economy as globalization opens new opportunities to access international markets. The third implication concerns the opportunities to improve public policies for SME development. In this respect the obtained results could enhance the deployment of innovative approaches toward the improvement SMEs competitiveness.

The interpretation of results should be performed with caution due to the small sample sizes for the two periods. Other limitations stem from the prevalence of micro enterprises in the 2011

sample (the period of economic crisis) since micro firms are typically less developed with respect to *globalization*-specific factors. Another limitation comes from the fact that SME behaviour was tracked only in two consecutive years, which happened to represent a period of crisis and post-crisis recovery. Observations over longer periods could contribute to the better understanding of the roles of these two types of factors in the different phases of the business cycle. As it is evident from Table 4 in the Appendix, Cronbach's α of indexes for SME competitiveness in some of the cases are not sufficiently high, which limits the scope for making inferences. A limited number of variables were used to test the significance of *basic* and *globalization-specific* factors. Finally, the distribution of the index values indicates significant dynamics over a period of one-two years. Those dynamics could be explained by the relative underdevelopment of the SME sector accompanied by the higher rate of convergence to the average levels of competitiveness in the EU. If there is a significant progress in the factors for competitiveness over the short run, their impact on SME performance may become more sizable.

In spite of the listed data limitations, the empirical analysis reveals informative evidence on the role of factors for SME competitiveness during periods of crisis and post-crisis recovery.

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Appendix

Table 3. Questions on SME competitiveness included in the survey questionnaire and index formulae

No	Type of factor	Factors for competitiveness	Questions	Index formula
1	G	Innovations	Research and development indicators (R&D): SME establishment of innovation infrastructure (yes or no): 1. availability of R&D unit; 2. availability of specialized staff for R&D; 3. application of research findings of research institutes/fellows; 4. professional training of R&D specialized staff; 5. keeping and updating a professional library; 6. cooperation with institutions in education and science; SME development of new products (yes or no): 7. issuing of new products on the market; 8. improvement of existing products; 9. development of new products to be launch on the market soon.	Index Innovation Activities (IRD) = $=100\cdot\frac{1}{2}\cdot\left(\frac{\sum_n R\,\&\,D\ Infrastrucutre_{n,i}}{\max\left(\sum_n R\,\&\,D\ Infrastructure_n\right)}+\frac{\sum_n R\,\&\,D\ \mathrm{Pr}oducts_{n,i}}{\max\left(\sum_n R\,\&\,D\ \mathrm{Pr}oducts_n\right)}\right)$ $R\,\&\,D\ Infrastructure_{n,i}$ is an indicator taking values of "0" or "1" with respect to the availability of infrastructural component *n* in company *i*. $\max\left(\sum_n R\,\&\,D\ Infrastructure_n\right)$ is the maximum possible value for the sum of all indicators for the various infrastructural components (it is equal to the number of the R&D infrastructural components used). The notation for *R&D Product* is analogical.
2	G	Inter-nationalization	SME participation in specialized international trade events (yes or no): 1. exhibition/fairs in Bulgaria; 2. exhibition/fairs abroad; 3. cooperative stock exchange; 4. international business forums; 5. business delegations. SME international trade activity: 6. availability of exports and imports (yes or no); 7. share of exports in the total output (%); 8. share of export sales in the total turnover (%).	Index Internationalization Activities (INT) = $100\cdot\frac{1}{2}\cdot\left(PR_i+EX_i\right)$ *PR* is indicating for the level of participation of the firm in international trade events (promotion activities) so that: $PR_i=\frac{\sum_n PR_{n,i}}{\max\left(\sum_n PR_n\right)}$, where $PR_{n,i}$ is an indicator taking values of "0" or "1" with respect to the participation in promotion activity *n* in company *I*, and $\max\left(\sum_n PR_n\right)$ is the maximum possible value for the sum of all indicators for the various promotional activities (it is equal to the number of promotional activities). *EX* is indicating for the level of exporting activities in the firm so that: $EX_i=w_1\cdot\frac{I_i+E_i}{2}+w_2\cdot\frac{Eo_i+Et_i}{2}$ Where w_1 and w_2 are weights whose sum equals 1 (here we assign them values of respectively 0.4 and 0.6). I_i and E_i indicate for import and export activities in the

				previous year in firm *i*. Eo_i is the share of export in total output in firm *i*, and Et_i is the share of turnover that comes from exports.
3	G	Trademarks and patents	SME ownership of trademarks and patents (yes or no): 1. in home country; 2. abroad, 3. forthcoming registrations in home country; 4. forthcoming registrations abroad. 5. SME availability of sufficient financial resources (yes or no) 6. for registration of trademark, 7. patent; 8. other intellectual property. SME awareness with respect to (yes or no)*: 1. value and opportunities of the brand, 2. procedures for registration of intellectual property in the EU.	Index Trademarks and Patents (ITP) = $=100*\left(\begin{array}{l} w_1 \cdot \frac{\sum_n TP_{n,i}}{\max\left(\sum_n TP_n\right)} + \\ w_2 \cdot \frac{\sum_n Fin_{n,i}}{\max\left(\sum_n Fin_n\right)} \end{array}\right)$ $TP_{n,i}$ is an indicator taking values of "0" or "1" with respect to availability of registered intellectual property *n* in firm *i*. *Fin* is analogical indicator which measures the extent to which the SME can finance the registration of trademarks and patents. w_1 and w_2 are weights, which sum equals 1 (here we assign them values of respectively 0.6 and 0.4).
4	G	Information and communication technologies	SME application of ICT (yes or no): 1. implementation of management information systems – CMS type; 2. implementation of management information systems – SCM type; 3. implementation of management information systems – ERP type; 4. implementation of management information systems – other type; 5. availability of company's website; 6. availability of online sales of company's products; 7. availability of online payments; 8. availability of electronic signature of the managers of the company.	Index Information and Communication Technologies (ICT) = $100 \cdot \frac{1}{2} \cdot \left(\frac{\sum_n e_{n,i}}{\max\left(\sum_n e_n\right)} + \frac{\sum_n sys_{n,i}}{\max\left(\sum_n sys_n\right)} \right)$ $e_{n,i}$ is an indicator taking values of "0" or "1" with respect to the usage of internet technology *n* in company *i*. $\max\left(\sum_n e_n\right)$ is the maximum possible value for the sum of all indicators for the various internet technologies (it is equal to the number of technologies in the questionnaire). The notation of *sys* stands for the implementation of management information systems and is analogical.
5	B	Access to finance	SME usage of the following financial instruments (yes or no): 1. investment bank loan; 2. bank loan for working capital; 3. bank loan for special purpose; 4. overdraft; 5. credit card; 6. financial leasing (for purchase of equipment, automobiles, etc.); 7. venture capital; 8. loan from family and friends; 9. means of the owner(s) of the company; 10. other financial instruments*; 11. EU pre-accession funding;	Index Access to Finance (IAF) = $100 \cdot \frac{\sum_n Financial\ instrument_{n,i}}{\max\left(\sum_n Financial\ instrument_n\right)}$ $Financial\ instrument_{n,i}$ is an indicator taking values of "0" or "1" with respect to the availability of financial instrument *n* in company *i*. $\max\left(\sum_n Financial\ instrument_n\right)$ is the maximum possible value for the sum of all indicators for the various financial

			12. EU structural funding**; 13. government funded programs; 14. third party government programs**; 15. other support received*.	instruments (it is equal to the number of the financial instruments).
6	B	Human resources development	SME implementation of policies to improve staff qualifications (yes or no): 1. manager's confirmation that staff qualifications is high; 2. provided trainings within the firm; 3. provided external trainings in management and sales; 4. provided external trainings in the main professional field of the company; 5. foreign languages courses*; 6. provided trainings in ICT usage; 7. other trainings*.	Index Human Resources Development (HRD) = $100 * \left(\begin{array}{l} w_1 \cdot HR_i + \\ w_2 \cdot \dfrac{\sum_n Training_{n,i}}{\max\left(\sum_n Training_n\right)} \end{array} \right)$ *HR* is an indicator for highly qualified staff within the firm (as assessed by the manager). $Training_{n,i}$ is an indicator taking values of "0" or "1" with respect to training activity *n* in company *i*. $\max\left(\sum_n Training_n\right)$ is the maximum possible value for the sum of all indicators for the training various activities. w_1 and w_2 are weights, which sum equals 1 (here we assign them values of respectively 0.4 and 0.6).
7	B	Business and marketing strategies	SME availability of business and marketing strategies (yes or no): 1. Short term business plan (1-2 years horizon); 2. Medium term business plan (3-5 years horizon); 3. Long term business plan(over 5 years horizon)*; 4. Developed marketing strategy; 5. Conducted marketing research in the last year; 6. Conducted marketing research for domestic market in the last five years*; 7. Conducted marketing research for foreign markets in the last five years*.	Index Business and Marketing Strategies (BMS) = $= 100 \cdot \frac{1}{2} \cdot \left(\frac{\sum_n Plan_{n,i}}{\max\left(\sum_n Plan_n\right)} + \frac{\sum_n M_{n,i}}{\max\left(\sum_n M_n\right)} \right)$ $Plan_{n,i}$ is an indicator taking values of "0" or "1" with respect to the planning activity *n* in company *i*. $\max\left(\sum_n Plan_n\right)$ is the maximum possible value for the sum of all indicators for the various planning activities. The notation of *M* stands for the implementation of marketing activities and is analogical.

Notes: G – *Globalisation-specific* factor; B – *Basic* factor

* Included in the 2011 survey wave but were dropped out from the 2012 wave due to very low rates of positive replies; ** This option was included in the 2012 survey wave in addition to the previous option.

Table 4. Cronbach's α, number of items, means and standard deviation of indexes values

No	Type of factor	Factor for competitiveness	2011			2012		
			Cronbach's α	Mean	SD	Cronbach's α	Mean	SD
1	G	Innovations	0.61	12	19	0.77	20	23
2	G	Internationalisation	0.57	4	11	0.61	14	25
3	G	Trademarks and patents	0.67	4	10	0.56	13	24
4	G	Information and communication technologies	0.64	15	19	0.74	28	25
5	B	Access to finance	0.46	8	9	0.54	18	15
6	B	Human resources development	0.45	41	15	0.63	45	22
7	B	Business and marketing strategies	0.65	20	18	0.72	31	31
Overall total (index 1,2,3,4,5,6 and 7)			0.71	-	-	0.78	-	-

Notes: G – *Globalisation-specific* factor; B – *Basic* factor

Source: Own calculations based on 2011 and 2012 Annual SMEs Survey, Bulgarian Small and Medium Enterprises Promotion Agency

Table 5. Estimation output

Dependant variable: Sales/ ref. decrease in sales	**2011**				**2012**			
Specified model	**Model 1**		**Model 2**		**Model 1**		**Model 2**	
Independent variables	coefficient	Prob (z-stat)	coefficient	Prob (z-stat)	coefficient	Prob (z-stat)	coefficient	Prob (z-stat)
Basic factors								
Business and marketing strategies	-	-	4.5252	0.0001	-	-	0.0026	0.6143
Size of company	-	-	-0.0172	0.1960	-	-	0.0152	0.0001
Human resources development	-	-	1.3311	0.3934	-	-	0.0172	0.0176
Access to finance	-	-	-0.0333	0.1699	-	-	-0.0116	0.2839
Gender of entrepreneur	-	-	0.0817	0.8411	-	-	-0.1321	0.6416
Education of entrepreneur	-	-	0.4311	0.0376	-	-	-0.1506	0.2764
Age of entrepreneur	-	-	0.0051	0.4053	-	-	-0.0145	0.2652
Intercept	-	-	-4.6234	0.0003	-	-	-0.1538	0.8743
Globalisation-specific factors								
Information and communication technologies	-0.5051	0.6269	-	-	0.0009	0.8818	-	-
Internationalisation	-0.0061	0.6829	-	-	0.0094	0.0979	-	-
Innovation activities	0.0215	0.0250	-	-	0.0054	0.4662	-	-
Ownership of trademarks and patents	0.0230	0.2689	-	-	0.0184	0.0021	-	-
Intercept	-1.2809	0.0000	-	-	-1.1942	0.0000	-	-
Estimation method	*Logit*		*Logit*		*Logit*		*Logit*	
Observations	199		173		287		283	
McFadden R-squared	0.0417		0.1599		0.0720		0.1187	
LR statistic	9.6964		32.6730		26.5507		43.3420	
Prob (LR statistic)	0.0459		0.0000		0.0000		0.0000	
H-L statistic	14.0015		2.2648		5.3573		7.4871	
Prob. Chi-Sq (H-L statistic)	0.0817		0.9718		0.7188		0.4851	
Specificity	95%		95%		90%		95%	
Sensitivity	11%		29%		27%		26%	
% correct predictions	72%		77%		69%		71%	

Source: Own calculations based on 2011 and 2012 Annual SMEs Survey, Bulgarian Small and Medium Enterprises Promotion Agency

Table 6. Categorical Descriptive Statistics for Explanatory Variables (2011)

Model 1

Variable	Dep=0	Mean Dep=1	All
Information and communication technologies	0.1542	0.2031	0.1675
Internationalisation	3.4000	5.2593	3.9045
Innovation activities	10.5379	20.1482	13.1457
Ownership of trademarks and patents	2.5724	5.6667	3.4121
Intercept	1.0000	1.0000	1.0000
Variable	Dep=0	Standard Deviation Dep=1	All
Information and communication technologies	0.2170	0.1520	0.2023
Internationalisation	10.9306	14.3135	11.9340
Innovation activities	17.5926	24.2451	20.0198
Ownership of trademarks and patents	7.7887	10.6204	8.7300
Intercept	0.0000	0.0000	0.0000
Observations	145	54	199

Model 2

Variable	Dep=0	Mean Dep=1	All
Business and marketing strategies	0.1570	0.3048	0.1980
Size of company	8.2000	7.0000	7.8671
Human resources development	0.4034	0.4642	0.4203
Access to finance	7.7920	7.0000	7.5723
Gender of entrepreneur	0.5360	0.4375	0.5087
Education of entrepreneur	4.8000	5.2708	4.9306
Age of entrepreneur	44.4800	53.2083	46.9017
Intercept	1.0000	1.0000	1.0000
Variable	Dep=0	Standard Deviation Dep=1	All
Business and marketing strategies	0.1620	0.1965	0.1841
Size of company	24.7621	10.2397	21.7023
Human resources development	0.1560	0.1363	0.1529
Access to finance	8.7541	7.5850	8.4318
Gender of entrepreneur	0.5007	0.5013	0.5014
Education of entrepreneur	0.9588	1.0466	1.0034
Age of entrepreneur	10.0021	78.4808	42.0777
Intercept	0.0000	0.0000	0.0000
Observations	125	48	173

Source: Own calculations based on 2011 and 2012 Annual SMEs Survey, Bulgarian Small and Medium Enterprises Promotion Agency

Table 7. Categorical Descriptive Statistics for Explanatory Variables (2012)

Model 1

		Mean	
Variable	Dep=0	Dep=1	All
Information and communication technologies	26.1164	33.3674	28.5923
Internationalisation	10.3122	21.6429	14.1812
Innovation activities	16.8571	26.8163	20.2578
Ownership of trademarks and patents	8.0159	21.8878	12.7526
Intercept	1.0000	1.0000	1.0000
		Standard Deviation	
Variable	Dep=0	Dep=1	All
Information and communication technologies	24.5554	24.8602	24.8562
Internationalisation	19.7124	32.6838	25.4303
Innovation activities	20.3197	25.5296	22.6901
Ownership of trademarks and patents	18.9387	29.3180	23.8897
Intercept	0.0000	0.0000	0.0000
Observations	189	98	287

Model 2

		Mean	
Variable	Dep=0	Dep=1	All
Business and marketing strategies	29.7189	37.3061	32.3463
Size of company	11.5243	46.9490	23.7915
Human resources development	41.8378	51.1225	45.0530
Access to finance	17.4541	18.2245	17.7209
Gender of entrepreneur	0.5135	0.3673	0.4629
Education of entrepreneur	5.2541	5.2857	5.2650
Age of entrepreneur	47.0865	44.2041	46.0883
Intercept	1.0000	1.0000	1.0000
		Standard Deviation	
Variable	Dep=0	Dep=1	All
Business and marketing strategies	28.0784	34.4127	30.5751
Size of company	24.9428	74.8001	51.1426
Human resources development	21.8226	19.8776	21.5921
Access to finance	14.3273	14.9656	14.5296
Gender of entrepreneur	0.5012	0.4846	0.4995
Education of entrepreneur	1.1681	0.8616	1.0704
Age of entrepreneur	10.6257	10.4378	10.6316
Intercept	0.0000	0.0000	0.0000
Observations	185	98	283

Source: Own calculations based on 2011 and 2012 Annual SMEs Survey, Bulgarian Small and Medium Enterprises Promotion Agency