

Configurations of the Manufacturing SMEs Competitiveness Factors under Globalization*

by Zhelyu Vladimirov**

The goal of this paper is to reveal the configurations of the manufacturing SMEs strategic competitiveness factors. These factors differ from the operational ones in the sense that they are innovation related and assume significant organisational changes. Such factors refer to product and process innovations, use of advanced technology, implementation of the IT and international standards, creation of own trademarks and patents, internationalisation, networking, use of marketing strategies, etc. By developing these factors SMEs could follow the low cost strategy, the differentiation strategy, or their combination.

The research is based on Porter's framework, resource based view, and configuration approach. Building on these theories, the paper aims to answer the research questions, related to the main factors, which determine the manufacturing SMEs competitiveness under globalization; factors' configurations in clusters; and characteristics of firms from the respective clusters.

The paper used the data of standardized questionnaire from a sample of 500 SMEs from 18 manufacturing activities in Bulgaria. The factors are extracted by exploratory factor analysis (EFA) and subsequently used for cluster analyses. The EFA resulted in ten factors, while the cluster analyses provided four clusters. The findings reveal that the third cluster exhibits the highest competitiveness and performance, while the fourth cluster takes the last place on all competitiveness indicators, including performance. The other two clusters occupy the second and the third place on competitiveness, and the third and the second place on performance respectively.

The main conclusion from the cluster analysis is that the SMEs, which wish to be competitive and to perform well, need to develop not an isolated competitiveness factors, but many of these factors together, e.g. they should follow the combination strategies. Particularly important is the use of a bundle of several strategic (innovation-related) factors. Namely the combination of well-developed strategic factors above a certain degree could assure a sustainable level of competitiveness and performance.

Keywords : *SMEs, Globalisation, Competitiveness Factors, Configurations*

* The author would like to thanks to Prof Allan Williams and the anonymous referees for their comprehensive comments and appropriate suggestions. The article was funded by the Marie Curie Actions (IEF within the FP7 of the EU) under GA No 327405.

** Prof Dr. Sofia University St Kliment Ohridski Faculty of Economics and Business Administration (e-mail: jeve@feb.uni-sofia.bg)

I. Introduction

The economic globalisation created a more complex environment, which impact all types of businesses independently of their size, sector, or country location. At the same time little is known about how the SMEs prosper under the new global circumstances (Din, Dolles, and Middel, 2013, p. 592).

Competitiveness has been approached at the level of firm, city, region, and nation (McFetridge, 1995; Porter, Delgado, Ketels, and Stern, 2008). While there is a discussion about the significance of competitiveness on the level of nations (Krugman, 1994), its meaning at the firm level is relatively clear. Competitiveness is a multilevel concept, which “refers to the ability of firms to compete for markets, resources and revenues, as measured by indicators such as relative market share, growth, profitability or innovation” (UN, ESCAP, 2009, p. 38).

Some authors consider that SMEs have a disadvantage position in a global environment, mainly because of the resources scarcity (Knight, 2000), use an inadequate technology (Gunasekaran, Marri, McGauahey, and Grieve, 2001), lack a modern sales techniques and markets research (Hashim and Wafa, 2002); non-adoption of the new IT (Xiong, Tor, Bhatnagar, Khoo, and Venkat, 2006); difficulties to hire qualified personnel (Ghobadian and Galliar, 1996); low specialized products (Urbonavicius, 2005), low innovation level, poor knowledge management (Singh, Garg, and Deshmukh, 2008), low productivity and low profit margin (Atristain and Rajagopal, 2010). The SMEs sector, however, is quite heterogeneous (Henrekson and Sanandaji, 2013). Along with the owners, who are satisfied with their small size, there are entrepreneurs, who undertake significant innovations and aspire to grow, although their share is relatively small (10~20% in the US) (Hurst and Pugsley, 2011).

The globalization changed competitiveness paradigms, requiring that SMEs need to compete simultaneously for lower cost,

higher quality, and shorter delivery time. Thus the globalization forced SMEs to reconsider their strategies in order to build new competencies (Blackburn and Jarvis, 2010), develop new products, adopt smart technologies, implement quicker distribution, and deploy new marketing strategies (Singh, Garg, and Deshmukh, 2010, p. 55).

There are two basic theories for the explanation of competitiveness at the firm level: SCP paradigm as a nucleus of the IO (represented mostly by the Porter’s framework), and the resource-based view (RBV) (Berger, 2008, p. 94; Lu, Shen, and Yam, 2008, p. 973), to which we could add a configuration approach. Many researchers suggested that the Porter’s framework and the RBV are complementing rather than contradicting each other in explaining the firm’s competitiveness (Ambrosini, 2003; Sheehan and Foss, 2007).

The Porter’s generic strategies (differentiation and low-cost) are two different routes to create competitive advantages. Firms should follow only one of these strategies as the application of two strategies will bring them to the “stuck in the middle” (Porter, 1998, p. 16) (the so called inconsistency hypothesis) (Peters and Zelewski, 2013, p. 149). Some researchers, however, contradicted the inconsistency hypothesis by asserting that firms could follow simultaneously two or more strategies (Miller and Dess, 1993; Ghemawat and Rivkin, 2001; Parnell, 2006; Pertusa-Ortega, Claver-Cortés, and Molina-Azorin, 2007).

The empirical surveys from the manufacturing sector revealed the SMEs operational competitiveness factors such as *cost, quality, delivery, innovation, dependability, flexibility*, and others (Flynn, Schroeder, and Sakakibara, 2004; Amoako-Gyampah and Acquah, 2008). The literature shows that often the competitiveness factors overlap with the performance criteria (Adiamo, De Vila, and Leal, 2012, p. 349, 354), although they are not equal (Phusavat and Kanchana, 2007, p. 980). Usually these factors are ranked based on the average of

their values, and the rank position shows the relative importance of a factor for the firm performance. Often the factors for achieving strategic goals are not differentiated from the goals themselves. For instance, achieving higher product quality and lower production cost implies the use of lower layer factors such as more advanced manufacturing technology and more innovative products (Lau, 2002, p. 125).

Traditionally the factors for the SMEs competitiveness are classified as internal to firm, external, and related to entrepreneur's characteristics. Based on the difference between the firm's operational and strategic performance (Porter, 1996), these factors might be regarded also as *operational* (leading to higher operational effectiveness) and *strategic* (or innovation-related), leading to sustainable competitive advantages over longer term. Many studies have investigated the effects of particular strategic factor on firm's performance, such as product and process innovations, ICT and quality standards adoption, intellectual property management, firms' internationalization, etc., but there is a lack of study on their interaction and combined effects (Singh et al., 2008, p. 536).

This paper aims to contribute to the knowledge of the factors influencing the manufacturing SMEs competitiveness with an accent on the role played by the strategic factors. It is based on data of 500 small manufacturing firms in Bulgaria. The study attempts to answer the following research questions:

1. What are the main factors, which determine the manufacturing SMEs competitiveness and performance?
2. What are the factors' configurations by clusters?
3. What are the characteristics of firms from the respective clusters?

For this purpose we run an exploratory factor analysis, followed by a cluster analysis. The structure of the paper is the following: next is the literature review, followed by research methodology, results and discussion,

and conclusion.

II. Literature Review

2.1 Competitiveness and Productivity

The EC defines competitiveness as "the 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, 2012. Competitiveness proofing). The core determinant of the competitiveness at all levels (enterprise, industry, region, country) is productivity, defined as the value added per unit of input. Achieving higher productivity implies reducing production costs, improving the quality of products and services, bettering the relationships with suppliers, and responding quickly to any changes in customer preferences (Hammer and Champy, 1993). Ultimately the productivity growth depends on the superior *combination* of firm's internal resources and external conditions, which is expressed in increased market share and long-term profitability.

2.2 Uniting the Main Competitiveness Theories

The unifying moment of the Porter's framework, the RBV, and the configuration approach is that they underline the importance of combinations (*configurations*) of firm's resources and external conditions (Lau, 2002, p. 126; Kaneko and Munechika, 2012, p. 55). Resources include physical, financial, human, technological, reputational, and organizational resources (assets and capabilities) (Grant, 1991, p. 119), while the external conditions cover the components of Porter's diamond (supply and demand conditions, related and supporting industries, industry strategy, structure and competitiveness, government effects and chance events) (Porter, 1991, p. 111), access to finance, access to information, etc.

Rostek (2012, p. 2039) stated the implementation of a competitive strategy implies the creation of a model of competitive-

ness factors, supporting the strategic decision-making. These factors can be seen also as critical success factors (Ingman and Takala, 2011; Wenderoth, 2011).

2.3 Competitiveness Strategies

If the cost determinants of competitiveness refer to the direct and indirect cost of doing business, the non-cost determinants reflect mainly the product quality and differentiation (innovativeness). These types of competitiveness factors are at the bottom of generic strategies, described by Porter (advanced product differentiation, efficient cost structures, and greater focus on a niche market) (Porter, 1998, p. 12). According to Leitner and Guldenberg (2010, p. 171, 172), the differentiation strategies usually refer to product innovation, quality (as ISO 9000), creation of own trademarks and brands, marketing, and services, while the lower costs can be achieved by modernizing production and implementing process innovations.

Most of SMEs in the emerging economies rely on low-cost production factors such as cheap labour (Zhou and Li, 2007). Under the globalization, however, the strategies based on low costs are no longer sufficient as the non-price competitiveness becomes more important. Price continues to be significant, but competition is increasingly driven by factors such as: (a) the capacity to meet a variety of global products and process standards; (b) flexibility and innovation; (c) design and differentiation; (d) reliability and timeliness; and (e) networking - the capacity to collaborate and to form strategic alliances and partnerships (UN, ESCAP, 2009, p. 40). There are studies, which indicate the changes in SMEs competitiveness priorities from cost to quality, adoption of new technology, particularly IT, innovations, knowledge of the market, human resources development, and customer responsiveness (Ritchie and Brindley, 2005; Oksanen and Rilla, 2009; Di Gregorio, Musteen, and Thomas, 2009; Crick, 2009; Najib, Kiminami, and Yagi, 2011). Thus the globalization has challenged traditional mod-

els of competitiveness and has urged the firms to create new strategies (Harrison and Kessels, 2004). These strategies have to take greater account of the new factors such as ICT, international quality standards, networking, product and process innovations, intellectual property management, internationalisation, etc. (OECD, 2000), but there is insufficient knowledge about their combined effects.

The firms can combine cost leadership and differentiation as “hybrid”, “mixed”, or “combination” strategies (Spanos, Zaralis, and Lioukas, 2004; Lubatkin, Simsek, Ling, and Veiga, 2006; Thornhill and White, 2007), which can be also successful under some conditions. For instance, implementing a total quality strategy could allow firms to produce higher quality product at a lower price (Leonard and McAdam, 2001). Developing new product (innovation differentiation) often requires process re-engineering, which can reduce product costs (Helms, Dibrell, and Wright, 1997).

The introduction of new technologies can also contribute to more cost effective and more differentiated production (Parnell et al., 2004). Parnell, O'Regan, and Ghobadian (2004, p. 146) demonstrated that hybrid strategies were more profitable to the firms than pure strategies. In contrast to Porter's proposition Leitner and Guldenberg (2010, p. 183) found that SMEs that pursue a combination strategy achieved equal or greater financial performance than SMEs with cost-efficiency or differentiation strategies.

2.4 SMEs Strategic Competitiveness Factors

Porter (1996) proposed an important difference between the firm's operational and strategic performance. If “operational effectiveness (OE) means performing similar activities better than rivals perform them...”, strategic positioning means performing *different* activities from rivals' or performing similar activities in *different ways*” (Porter, 1996, p. 62). The operational effectiveness

Table 1
Framework of SMEs Competitiveness Factors under Globalisation

	Internal	External	Entrepreneur's
Operational factors	- Tangible resources (incl. human resources)	- Factor conditions	Entrepreneur/manager characteristics: - age; education; market orientation; learning orientation; etc.
	- Intangible resources (assets)	- Demand conditions	
	- Intangible resources (capabilities; activities)	- Related and supported industries - Industry structure, strategy and rivalry - Government effects - Chance events	
Strategic factors (innovation-related)	Differentiation strategy	- Product and process innovations	
		- Quality standards - Branding (trademarks, patents) - Internationalisation, etc.	
	Low cost strategy	- Advanced technology - ICT and e-business implementation	

stressed on achieving excellence in individual activities, while the strategy concentrate on genius *combinations* of activities (Porter, 1996, p. 70). This distinction allows for regarding the competitiveness factors also as *operational* (leading to higher operational effectiveness) and *strategic* (leading to *sustainable* competitive advantages over longer term). The operational competitiveness factors are more generic ones (based on best practices), while the strategic competitiveness factors are more firm specific (based on new combinations or innovations) (Schumpeter, 1934). Strategic factors may support the differentiation or low cost strategies, or their combination Table 1.

The firms with sustainable competitive advantages are able to maintain simultaneously exploration of new products and exploitation of the existing ones (organisational ambidexterity) (Raisch, Birkinshaw, Probst, and Tushman, 2009; Birkinshaw and Gupta, 2013). From this point of view the operational competitiveness factors seem more *exploitation-related*, while strategic competitiveness factors are more *exploration or innovation-related*.

Before the globalisation the strategic factors have not been usually related to SMEs, but nowadays they are of increasing importance for their competitiveness. This is because the globalisation has questioned the survival of many small business due to the

increased policy liberalisation, accelerating mobility of capital, technological changes, and increased competition (UN, ESCAP, 2009, p. 42). The national boundaries cannot keep anymore domestic SMEs, and particularly non-efficient ones, from the penetration of products and services of the well-established foreign manufacturers and retailers. "Against this development, local SMEs find it increasingly difficult to survive or even maintain their current business position in their respective markets" (Singh et al., 2010, p. 55). As the Asian Development Bank (2003) observed in the new context the non-price competitiveness became potentially more important in the long run than price competitiveness. Under these circumstances the SMEs need to align with the new sources of competitive advantages, which means to develop their strategic competitiveness factors. These factors refer mostly to different kind of product, process, organisational and marketing innovations.

The researchers demonstrated the significant role of innovations for greater competitiveness and economic dynamics (Hult, Hurley, and Knight, 2004; Keskin, 2006). The innovative SME achieve higher growth in terms of investments, employment, turnover, and added value (Bala Subrahmanya, Mathirajan, and Krishnaswamy, 2010). Based on a meta-analysis of 42 studies Rosenbusch, Brinckmann, and Bausch (2011) revealed

that the benefits from innovations (differentiation, clients' loyalty, premium from innovative product, and barriers to new entrants) over performed the related costs.

Thus only through the development of the innovation-related (strategic) factors the SMEs can respond to the simultaneous pressures for lower cost, higher quality, shorter delivery time and wider choice. The new strategies for achieving higher SMEs competitiveness should include the adjustments in: (a) efficiency of the production process; (b) product differentiation; (c) innovative capacity, including both process and product innovation, and by developing entirely new markets for existing and new products. The performance on international markets is taken also as a key indicator of competitiveness (UN, ESCAP, 2009, p. 40). Balkytė and Tvaronavičienė (2010, p. 341) stated that "there is a need of research initiatives to develop the new concept of "Sustainable competitiveness" in the context of globalisation.

Many studies investigated the effects of *individual strategic* factors on firm's performance such as product and process innovations. For instance Baumol (2005, p. 29) noted that large companies may leave radical innovations to small entrepreneurs, and focus on "incremental innovations", which requires much more resources. The determining factors for the firm's innovations are internal, such as strategy, human capital, and intra-firm training; external, such as industry sector, regulations, access to finance (Galanakis, 2006, p. 1231); and linked to the entrepreneur's characteristics - learning and market orientation, etc. (Masurel, van Montfort, and Lentink, 2003). Particularly strong relationship exists between innovation and *networking*, as the networks allow for increasing the SMEs access to additional resources (Lee, 2007). As the benefits of the training experience are not always immediate (Patton, Marlow, and Hannon, 2000, p. 16), the investments in staff training can be regarded also as strategic ones.

Thus the product and process innovations

are major strategic competitiveness factors, which are supported by organisational learning, staff training, and networking, and through which the firms can follow the differentiation strategy (Leitner and Guldenberg, 2010, p. 178).

In the manufacturing sector the SMEs usually are suppliers of parts and components, and because of that the use of the advanced technology is an important competitiveness factors (Raymond, 2005; Mosey, 2005). The researchers have found that the SMEs financial performance is positively related with the use of ICT, more advanced technology, continuous improvement strategy, and change management (Man, Lau, and Chan, 2002; Vargas and Rangel, 2007; Guzman, Serna, Del, Torres, and Ramirez, 2012).

Thus the use of advanced technology is a strategic competitiveness factor, helping the achievement of goals mainly of the low cost strategy (Leitner and Guldenberg, 2010, p. 177).

A substantial literature was devoted to the *ICT and e-business adoption* by SMEs as a key to growth (Simpson and Docherty, 2004). O'Mahony and van Ark (2003, p. 22) underlined that IT investments had an important impact on firms' productivity. As there is a time lags between these investments and the increased productivity (Basu, Fernald, Oulton, and Srinivasan, 2003), the IT investments are regarded as strategic. As in the case of innovations, variables influencing the IT and e-business adoption are external, internal, and related to entrepreneur (OECD, 2004a; Oliveira and Martins, 2010; Lin and Lin, 2008; Bao and Sun, 2010).

Thus the IT adoption in general, and particularly the e-integration of processes is a strategic competitiveness factor, supporting mainly the low-cost strategy (Leitner and Guldenberg, 2010, p. 177).

The implementation of *international quality and technical standards* is also crucial for SMEs as it contributes to the overall firms' success (Corbett, Montes, Kirsch, and Alvarez-Gil, 2002; Jones, Knotts, and Brown, 2005). Baumol (2009) noted that today SMEs

are under a growing pressure from their major clients to certify in order to continue to work with them. "Product and process standards are increasingly shaping production, especially within the framework of global value chains" (UN, ESCAP, 2009, p. 43). Kaplinsky and Morris (2001) found that the entry into global markets is governed by a series of private "rules", which include quality, environmental, and labour standards. Under the globalisation SMEs are expected to combine global business strategies with social and environmental standards (Jorgensen and Knudsen, 2006, p. 450). Similarly to the other innovations, the adoption of the international standards is influenced by external, internal to firm, and related to the entrepreneur factors (Aggelogiannopoulos, Drossinos, and Athanasopoulos, 2007; Trienekens and Zuurbier, 2008).

Thus the adoption of international quality and technical standards are a strategic competitiveness factor, which can provide the SMEs with an access to international markets, and which falls under the differentiation strategy (Leitner and Guldenberg, 2010, p. 178).

Creation of *own trademarks and brands* is another strategic factor for SMEs to improve their performance (Leiponen and Byma, 2009). At the same time they need more technical information for patents, more capacity to manage intellectual property, and more means to defend it (Hanel, 2006; Radauer and Walter, 2010). As the creation of own trademarks and patents is a form of innovations, the factors influencing their application in SMEs are similar to those for innovation in general.

Thus the creation of own trademarks and brands is another strategic competitiveness factor, through which the firm can follow the differentiation strategy.

Many researchers have revealed the growing significance of "early internationalized" or "born global" firms (Rialp, Rialp, and Knight, 2005; Ruzzier, Antoncic, and Hisrich, 2007; Williams and Shaw, 2011).

Internationalization can be considered

also as a kind of innovation, which explains the similarity of factors influencing the two processes (Lee, 2007; Aspelund, Madsen, and Moen, 2007).

Most of the above factors have been analysed individually and there is a lack of study on their combined effects (Singh et al., 2008, p. 536). Some researchers developed relatively *complex models*, which include some of the SMEs strategic competitiveness factors. For instance, Chew, Yan, and Cheah (2008) built a framework for Chinese SMEs competitiveness, which comprise strategic alliances, innovation and differentiation. Szerb and Terjesen (2010, p. 8) proposed configurations of seven factors: five internal (physical resources, administrative routines, networking, human resources, and innovation), and two external (supply and demand conditions). Yan (2010) revealed the significance of factors such as cost reduction, differentiation, innovation, strategic alliances and the environment. Awuah and Amal (2011, p. 127) demonstrated the role of innovation, learning, and internationalization as factors for the SMEs competitiveness in less developed countries. These, and other competitiveness models, however, did not distinguish between strategic (innovation related) and operational factors.

The goal of this study is to reveal the main factors' configurations, which determine the SMEs competitiveness and performance with an accent on the role played by the strategic competitiveness factors. The main hypotheses are the following:

1. The SMEs which develop several competitiveness factors together are more competitive and perform better than the SMEs with a focus on one factor.
2. The SMEs which use of a bundle of strategic (innovation-related) factors are more competitive and perform better than the rest.
3. The SMEs which follow combination strategies perform better than firms, which follow one of the generic strategies, or have no strategy at all.

III. Research Methodology

For the purpose of this paper we use parts of a larger survey instrument, which was developed to identify the factors for the manufacturing SME competitiveness and performance in Bulgaria. The questions in the survey addressed some important competitiveness issues, including the effects of environment, internal to the firms resources, and factors related to different innovations (such as product innovations, adoption of e-business, e-integration of processes, patents and trademarks, internationalization, business planning, marketing strategies and marketing surveys, etc.). After the pre-test some questions were improved. In this paper we rely on the responses of 11 questions with 35 items, related to the above research questions. All of the individual variables were scored on two-point scale (0 - "none" and 1 - "yes"), except some demographic characteristics of firms and entrepreneurs. The ratio between cases and variables was around 13:1, which is an acceptable level (Hair, William, Barry, and Anderson, 2010, p. 102).

The sample covered 500 SMEs from 18 manufacturing activities (*Appendix A, Table A10*). The total number of SME in manufacture in 2012 was 30 038, of which 23 064(76.8%) were micro-enterprises (with up to 9 employees); 5 271(17.5%) - small (10~49 employees); and 1 703(5.7%) - medium size enterprises (50~249 employees). The simple random sampling with replacement was used in the frame of preliminary define sub-sectors quota. Thus the sample included 195 microenterprises (39% of all); 202 small (40.4%); and 103 medium size enterprises (20.6%). The share of small and medium sized enterprises in the sample was greater than their share in the population, because this types of enterprises are more likely to make use of different innovations. The field data were gathered by a professional vendor agency Noema in February and March 2013, and the data were processed on SPSS 20.

IV. Results and Discussion

4.1 Results of the Exploratory Factor Analysis

We run an exploratory factor analysis (EFA) with a Varimax rotation, and a cut point of 0.35, which was appropriate for the sample size (Hair et al., 2010, p. 117). The anti-image matrix reveals that there is only one partial correlations greater than 0.7, and the measures of sampling adequacy for individual variables range from 0.680 to 0.892, e.g. greater than minimum recommended level of 0.5 by Hair et al. (2010, p. 103). The determinant value is 9,900E-005, which implies that there is no linear dependence in the correlation matrix. The KMO measure of sampling adequacy is 0.756, DF = 378, Approx. Chi-Square = 4507,244, and Sig. = 0.000 (*Appendix A, Table A1*).

The EFA provided 10 factors. Because of low and controversial loadings 7 items were excluded. The convergent validity of the remaining items was verified by analysing the factor loadings and their significance. The communalities of all individual variables are above 0.5. All item-to-factor loadings are greater than 0.7, except five variables with values close to 0.7, which demonstrates a high items dimensionality. The total variance explained is 68.16%. The first factor does not account for the majority of the variance (19.22%), which suggests that common method bias is not of great concern (*Appendix A, Table A2*). The majority of factors have *Cronbach's alpha* values above recommended value of 0.7 (Hair et al., 2010, p. 125), two factors have alpha values respectively 0.645, 0.664, and only one has 0.551, which indicates an acceptable consistency of the measures. Survey items, measurement properties, items loadings, communalities, and *Cronbach's Alpha* are given in a *Table A3, Appendix A*. The content validity of the extracted factors is presented below.

We named the first factor LEARNING ORIENTATION, which demonstrated the

willingness of the interviewed managers for the continuous staff education, particularly in IT, management, marketing, and sales, foreign languages, and export capabilities. Mitki, Shani, and Meiri (1997) demonstrated that the organisational learning leads to continuously improvements, while Spicer and Sadler-Smith (2006) have proven the positive relationships between organisational learning and firm performance.

The second factor was ELECTRONIC INTEGRATION, manifested by the implemented electronic systems like supply chain management (SCM), customer management system (CMS), and enterprise resource planning (ERP). The investments in the firm e-integration (or backend) is particularly important as it allows for achieving an efficiency by reducing the operational costs (Kuk and Janssen, 2013, p. 449).

PRODUCT INNOVATION turned to be the third factor, which expressed in the new product development to be release soon on market; intention to develop new product in the next years; and releasing a new product or an improve version of product in the last year. The studies have shown that in a global environment the SMEs survival depends on firm innovation (Bilton and Cummings, 2010), and there is evidence that innovative SMEs have greater competitive advantages (Taki and Filipovski, 2012) and grew faster than the others (Rosenbusch, Brinckmann, and Bausch, 2011).

The forth factor combined MARKETING STRATEGY and accomplished marketing surveys in national and foreign markets. The increasing globalization of business raises the significance of strategic management (Smith and Tushman, 2005), including marketing strategies. The importance of marketing was supported by the enlarged scope of new products and the necessity for customers to make an informative choice Chen (2006). It has a significant role to assure the entry of new products, or to strengthen the positions of already existing products (Lee and O'Connor, 2003).

ACCESS TO INFORMATION was the

fifth factor, which reflected the SMEs access to information on good management practices, national and international programmes in support to business, international markets and potential partners. The importance of information for the firm's competitiveness was approached by other researchers too (Guimaraes, 2000; Marchand, 2001). The study of Sen and Taylor (2007) identified nine critical success factors for SMEs, with the information underlying all other factors. The 2014 research in the UK showed that the SMEs ranked the access to professional information as a seventh success factor (Ware, 2014).

The sixth factor was ACCESS TO FINANCE, which covered the use of bank credit for working capital, investments, and an overdraft on current account. Amongst the external factors, the SMEs access to finance attracted a greater attention (Nambirajan and Prabhu, 2010, p. 46). As the UN report underlined the access to finance is by no means the only determinant of a conducive business enabling environment (UN, ESCAP, 2009, p. 19).

STAFF TRAINING in management and sales, and for the improvement of staff qualification, formed the seventh factor. The researchers have shown that the firm innovations are intrinsically related to the enhanced staff training, and that the staff training contribute significantly to the increasing of SMEs competitiveness (Smith, 2000, p. 89; Keskin, 2006, p. 411; Wang, Wang, and Horng, 2010, p. 175).

The eight factor referred to the STRATEGIC PLANNING, e.g. the availability of midterm (3~5 years) and long term (more than 5 years) plans for the firm's development. The empirical surveys revealed that the strategic planning contribute to the SMEs growth in sales, profit, and employment (O'Regan and Ghobadian, 2004; Gibson and Casser 2005). Reboud and Mazzarol (2008, p. 12) viewed the role of strategy in small firms as a mediating variable between resources and performance, as it has to be built on the firm's existing resources. The use of strategic planning is

justified by its contribution to the improvement of the firm's performance (Wheelen and Hunger, 2010; Brinckmann, Grichnik, and Kapsa, 2010; Agha, Alrubaiee, and Jamhour, 2012).

The ninth factor reflected the use of an **ADVANCED TECHNOLOGY**, which included sharing of management experience, selling own technology abroad and implementing foreign technology. Other researchers have found that the SMEs financial performance is positively related with the use of more advanced technology (Vargas and Rangel, 2007). Malerba and Marengo (1995) found that the technology competencies are among the most important factors for the competitiveness of the Italian high technology firms. Guzman et al. (2012, p. 69) demonstrated that the use of technology is the variable with more impact, followed by costs reduction and financial performance.

The tenth factor was named **OWN TRADEMARKS AND PATENTS** as it was related to the firm's intellectual property management, measured by the registered trademarks and patents in the country and abroad. The literature suggested that the creation of own trademarks and brands can help the SMEs to move higher on the value added chain (Humphrey and Shmitz, 2002). This factor reflects the changes in the new economy, which lead to the increasing role of the intellectual property (Smith and Hansen, 2002; Leiponen and Byma, 2009).

The assessment of the factors' items shows that they correspond sufficiently to the conceptual definition of the respective factors, which attests an acceptable content validity. These factors were used in the subsequent cluster analyses, together with firm performance.

The **PERFORMANCE** represented an average of four constitutive items - changes in the last year in number of staff, revenues, profits, and market share, evaluated by managers on a three points scale: (0) "decrease"; 1 - "without change"; and (3) "increase". Because small firms' managers are often reluctant to disclose the financial information,

researchers suggested the use of subjective measures for performance (Garg, Walters, and Priem, 2003). The studies have shown that the correlations between subjective and objective performance measures are quite consistent (Wall, Michie, Patterson, Wood, Sheehan, Clegg, and West, 2004). Based on that Richard, Devinney, Yip, and Johnson (2009, p. 737) suggested that researchers should not view the choice of subjective measures as a second-best alternative. The **COMPETITIVENESS** has been calculated as the sum of the average values of all ten competitiveness factors.

For the purpose of the cluster analyses, each factor was transformed into a new single composite measure (summated scale), representing an average of the constitutive items (Hair et al., 2010, p. 124). The same procedure was applied to the **PERFORMANCE** measure, which allowed for the identification of cases with lower, middle, and higher level of performance.¹⁾ In total 50.0% of the firms were classified as lowest and rather lower level performers; about 20% were at the middle level; and the remaining 30% were at rather higher and highest level of performance (*Appendix A, Table A4*).

We used some additional variables, referring to the firm size, entrepreneur's age and education, membership in professional association (as a proxy to firm networking), firm's export intensity, value added of the export products, and amount of firm's "bad" receivables (as a proxy of the institutional environment). The **FIRM** size was measured by the logarithm of the number of employees. It is among the most studied factors in the firm's competitiveness literature, as the size reflects available resources, past experience,

1) The cases which score below 0.20 were considered to belong to the lowest level of performers; the cases between 0.20 and 0.40 - to the rather lower level; the cases with scores between 0.40 and 0.60 - to the middle level; the cases which score between 0.60 and 0.80 - to the rather higher level; and the cases above 0.80 - to the highest level of performers.

Table 2
Correlations of Competitiveness Factors
with firm Performance and Competitiveness

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	P1	C1
D1. Learning orientation	1	.184**	.258**	.182**	.036	.149**	.242**	.101*	.116**	.273**	.024	.490**
D2. E-integration		1	.181**	.281**	.138**	.214**	.305**	.252**	.191**	.271**	.102**	.577**
D3. Product innovations			1	.216**	.191**	.171**	.185**	.276**	.143**	.271**	.251**	.576**
D4. Marketing strategies				1	.265**	.139**	.258**	.347**	.241**	.306**	.184**	.617**
D5. Access to information					1	.130**	.128**	.092*	.085	.226**	.168**	.460**
D6. Access to finance						1	.178**	.199**	.044	.159**	.184**	.455**
D7. Staff training							1	.193**	.196**	.268**	.152**	.560**
D8. Strategic planning								1	.186**	.228**	.130**	.520**
D9. Advanced technology									1	.115**	.182**	.359**
D10. Trademarks & patents										1	.085	.614**
P1. Performance											1	.274**
C1. Competitiveness												1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

and decision dexterity (Din et al., 2013, p. 593). The ENTREPRENEUR'S AGE represented the logarithm of the age; the ENTREPRENEUR'S education was measured by seven-point scale (from 1 - lowest to 7 - highest). The MEMBERSHIPS in professional association was measured dichotomously (0 - "none" and 1 - "yes"); the EXPORT INTENSITY - by logarithm of the percent of production for export; VALUE ADDED of export products - by four-points scale (from 1 - entirely with low value added to 4 - entirely with high value added); and BAD RECEIVABLES - by logarithm of the percent of these receivables from the total firm's turnover.

The firm competitiveness reveals stronger correlations with all of the competitiveness variables compared to firm performance. If all ten competitiveness variables are potentially beneficial to the firm competitiveness, the actual performance depends on other conditions. These conditions could be related to the particular business environment, economic cycle (recession vs. growth), etc., which are not included here. The performance is positively and significantly correlated with the competitiveness, but not so strongly (0.274). It might be that the present competitiveness is a better predictor of future

than the actual performance (Szerb and Ulbert, 2009, p. 114) Table 2.

The correlations between firm performance and competitiveness variables shows that the highest significant correlation exist with the factor "Product innovation" (0.251), followed by "Access to finance" and "Marketing strategies" (both with coefficient 0.184), "Use of advanced technology" (0.182), "Access to information" (0.168), "Staff training" (0.152), etc. The actual firm performance does not reveal significant correlations with the firm's training needs and the availability of own trademarks and patents. In difference to that the firm competitiveness exhibits the strongest positive correlations with "Marketing strategies" (0.617) and own "Trademarks and patents" (0.614), followed by "E-integration" (0.577), "Product innovations" (0.576), and "Staff training" (0.560).

The correlations among the competitiveness, performance and some of the firms' and entrepreneurs' demographic characteristics are given in the next Table 3.

Both the competitiveness and the performance are positively correlated with the firm size, which is in line with findings of other researchers (Almus and Nerlinger, 1999; O'Mahony and van Ark, 2003). These two measures are also positively correlated with

Table 3
Correlations of firm Performance and Competitiveness
with Some firms' and Entrepreneurs' Characteristics

	P1	C1	B2a	B3	B6a	B8	A17	A6a	A16a
P1. Performance	1								
C1. Competitiveness	.274**	1							
B2a. Entrepreneur's age	-.173**	-.160**	1						
B3. Entrepreneur's education	.193**	.207**	.017	1					
B6a. Firm size	.312**	.431**	-.120**	.228**	1				
B8. Memberships in professional association	.016	.133**	-.002	-.014	-.017	1			
A17. Value added of export products	.162**	.103*	-.041	-.014	.035	-.007	1		
A6a. Percent "bad" receivables	-.134**	-.159**	.055	-.096*	-.156**	-.105*	-.092*	1	
A16a. Percent of production for export	-.082	-.133**	.046	-.075	-.123**	-.013	.208**	.079	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

the entrepreneur's education, but negatively correlated with the entrepreneur's age. In the sector of small business the entrepreneur/manager has a stronger influence on the firm development, compared to large enterprises (Brunninge, Nordqvist, and Wiklund, 2007; Andersson and Tell, 2009). The results suggest that firms with more educated and younger managers are more likely to be more competitive and to perform better. As Begley and Boyd (1985) observed, entrepreneurs tend to become less entrepreneurial with age. Variyam and Kraybill (1993) demonstrated that management education led to greater use of planning and technology. One of the distinctive characteristics of the new entrepreneurs in the transition economies is their higher than average for the population education (Smallbone and Welter, 2001, p. 254). Firm's competitiveness is positively and significantly correlated with firm's membership in professional associations (as a proxy of *networking*), while the actual performance shows no significant correlation with it. It might be that the networking influence the firm performance not directly, but through the related innovations (Dolles, 2010; Din et al., 2013). The competitiveness and the performance are positively correlated with the value added of the export products, while the two measures have negative corre-

lations with the amount of production for export. It means that not all exporters are competitive and perform well, but only those who have higher value of their export products. Finally, both the competitiveness and the performance are significantly and negatively correlated with the amount of the firm's "bad" receivables from partners. This situation can be explained by the increased inter-firms indebtedness in the crisis periods. According the Bulgarian Industrial Association, the inter-firms indebtedness in 2012 was about 56 bio euro, of which 40% were overdue.²⁾

4.2 Results of the Cluster Analysis

We accomplished two cluster analyses-hierarchical and non-hierarchical ones. The squared differences from mean for each observation were used in order to check the observations with highest average dissimilarities as potential outliers. In total there were only 4 cases with dissimilarities at a 3 standard deviations cut-off (1,958) above the mean. We decided to keep these cases, because in the subsequent hierarchical cluster analysis they did not demonstrate an unusual

2) http://econ.bg/Анализи/През-2012-г-междуфирмената-задлъжнялост-се-запазва-висока_1.a_i.53122_7_at.4.html.

Table 4
Means from Non-hierarchical Four Cluster Solution

	1	2	3	4	F	Sig.
D1. Learning orientation	0.33	0.38	0.63	0.23	23.500	.000
D2. E-integration	0.01	0.98	0.49	0.00	557.200	.000
D3. Product innovations	0.63	0.55	0.89	0.23	72.121	.000
D4. Marketing strategies	0.44	0.42	0.71	0.13	62.109	.000
D5. Access to information	0.80	0.55	0.64	0.24	106.959	.000
D6. Access to finance	0.27	0.40	0.52	0.17	20.437	.000
D7. Staff training	0.10	0.21	0.82	0.07	148.825	.000
D8. Strategic planning	0.10	0.21	0.38	0.03	29.899	.000
D9. Advanced technology	0.08	0.11	0.21	0.04	14.907	.000
D10. Trademarks & patents	0.31	0.35	0.77	0.14	56.575	.000
P1. Performance	0.49	0.44	0.58	0.26	30.827	.000
C1. Competitiveness	1.11	1.16	1.26	1.09		
Entrepreneur's age	3.84	3.85	3.75	3.78		
Entrepreneur's education	5.58	5.50	5.69	5.21		
Firm's size	2.52	2.39	2.68	3.00		
Member in associations	0.048	0.071	0.123	0.047		
Percent production for export	3.50	3.32	3.45	3.70		
Value added of export products	2.06	2.02	2.08	1.94		
Percent "bad" receivables	2.66	2.68	2.55	2.98		
Cluster sample size (%)	189 (37.8%)	56 (11.2%)	65 (13%)	190 (38%)		

behaviour.

We first run a hierarchical cluster analysis in order to determine the number of clusters. The Ward's method was used because of its tendency to generate clusters that are homogeneous and relatively equal in size. The stopping rule was based on the changes in heterogeneity among cluster solutions (Hair et al., 2010, pp. 549-551). The largest increase in the heterogeneity happened when moving from two to one clusters solution (with the proportionate increase in heterogeneity of 17%), and from three to two clusters solutions (with the proportionate increase in heterogeneity of 12.03%). As we were interested in more clusters, we look at the next large increase, which happened from four to three clusters solution (with the proportionate increase in heterogeneity of 6.25%), compared to the movement from six to five clusters solutions (with the proportionate increase in heterogeneity of 5.64%). This gave us a reason to proceed with four clusters solutions, as it was associated with proportionately less heterogeneity than is the three-cluster solution (Hair et al., 2010, p.

551).

Cluster 1 consists of 197 firms and has the lowest values on 7 of the variables, including the lowest value on performance (0.31). Cluster 2 contains 112 firms. It has the lowest values on 5 variables, but it occupies a second place on performance measure (0.47). Cluster 3 includes 84 firms and has the highest values on 10 variables, including the performance (0.57). The 4th cluster covers 107 firms. It has the lowest value on one variable, and it takes a second place on other 6 variables. In respect to the performance it occupies a third place (0.41). The results show that there are significant differences between the clusters on all eleven variables. The significant F statistics provide an evidence that each of the four clusters is distinctive. Each of these clusters exhibit different characteristics, and there are no clusters with less than 10 percent of observations (*Appendix A, Table A5*).

In difference to the hierarchical, the non-hierarchical methods can "optimize" cluster solutions by reassigning observations until maximum homogeneity within clusters is

achieved. Based on that we proceeded to the non-hierarchical cluster analysis with the 4 cluster solution. We used the random initial seed points identified by the K-means algorithm. The non-hierarchical solution resulted in different cluster sizes of 189 (37.8%), 56(11.2%), 65(13%), and 190(38%) firms respectively. The differences in the variables means across four clusters are statistically significant, which suggests that the cluster solution is adequately discriminating observations by these variables. The non-hierarchical process can also delineate clusters that are usually more distinctive than in the hierarchical clustering (Hair et al., 2010, p. 555). In this solution cluster 1 from the hierarchical analysis became cluster 4; cluster 4 became cluster 2, and cluster 2 became cluster 1.

The results show that there are great differences among manufacturing SME. Average competition points of the clusters range from 1.09 to 1.26 from the lowest to the highest values, while the individual competition points range from 0.59 to 2.29 Table 4.

The *cluster 3*, which contains 65 firms (13% of all), performs the best. It has the greatest values on eight variables, including the performance measure, and it occupies a second place on other two variables. It exhibits also the biggest competitiveness. In this case the first places on both competitiveness and performance measures coincide. This cluster differs largely from the others on competitiveness variables such as product innovation, staff training, own trademarks and patents, and marketing strategies. These competitiveness factors support mainly the differentiation strategy, although the cluster takes a first place on the use of advanced technology, and a second place on e-integration. This suggests that the whole factors configuration may be regarded as a manifestation of the combination strategy. Additionally, this cluster is characterized by the youngest managers with the highest education; strongest networking (much more active participation in the professional associations); the highest added value of its export products;

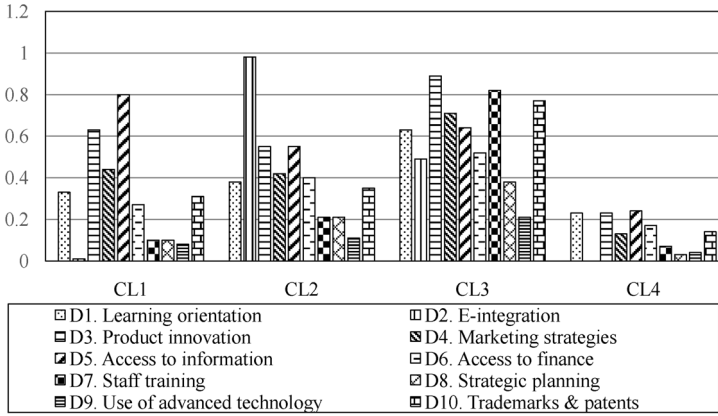
and the lowest amount of “bad” receivables from the partners.

On the opposite side is the *cluster 4*, which includes 190 firms (38%), and takes the last place on all competitiveness indicators, including performance measure. In this case too, the last places on both competitiveness and performance measures coincide. This cluster scores extremely low on the following competitiveness variables: e-integration; strategic planning; use of advanced technology; and staff training. No visible strategy emerge from this factors configuration. The firms of this cluster are the largest ones, with the biggest export, but with the lowest level of the value added of the exported products. It is characterised by the bigger amount of “bad” receivables from the partners. It includes also managers with a relatively lower education compared to managers’ education in other clusters.

The *cluster 1* covers 189 firms (37.8%), and it takes a first place on one variables (Access to information), second place on other two (Product innovation and Marketing strategy), and third place on the rest of the indicators, including competitiveness. The configuration of leading competitiveness factors shows that the cluster’s firms follow the differentiation strategy. This cluster occupies a second place on the performance, which can be explained by the combination of the differentiation strategy with the privileged access to information (particularly about national and international programmes in support to business, and international markets and potential partners). The firms of this cluster have relatively high amount of export and relatively high level of value added of their export products.

The *cluster 2* includes 56 firms (11.2%), and it holds the first place on the e-integration, the second place on other six variables (including the use of advanced technology) and competitiveness, and the third place on three remaining variables, including performance. The factors’ configuration shows that the firms of this cluster are oriented mostly to the low cost strategy. The

Figure 1
Configurations of SMEs Competitiveness Factors



discrepancy between performance and competitiveness is not surprising. It may be that these firms have invested in the e-integration of their processes, and the return of these investments are not immediate. From the competitive point of view, however, these firms are more promising than those of the cluster 1, which performs better presently, but which has a very low value on the e-integration. The firms of this cluster are the smallest ones, with the lowest level of export (oriented manly to the local market), and the highest age of their entrepreneurs.

The configurations of the competitiveness factors by clusters are shown in the next figure Figure 1.

The figure visualise well the advantages and disadvantages of clusters. For instance the first cluster excel well on the *Access to information* and to some degree on *Product innovations* and *Marketing strategy*, while the second cluster dominate on the *E-integration*. The third cluster, however, which is the best performing and with the highest value on competitiveness, exhibit quite evenly development of almost all competitiveness factors with high values on *Product innovations*, *Marketing strategies*, *Staff training*, and own *Trademarks and patents*.

This suggests that the firms, which wish

to be competitive and to perform well, need to develop not an isolated competitiveness factors, but many of these factors together (H1). Namely the combination of some strategic factors above a certain degree could assure the desire level of competitiveness and performance (H2). The third cluster occupies also a first place on *Advanced technology* and a second place on *E-integration* (which were regarded as means to achieve lower cost). This implies that the firms of this cluster follow more combination strategies than differentiation or low costs ones as are the cases with the first and the second clusters (H3). The firms of the fourth cluster with no discernable strategy perform the worst and have the lowest competitiveness values (H3).

These results are in line with findings of other researchers. Bhattacharya and Michael (2008, p. 95) revealed that successful domestic enterprises in emerging economies followed multiple strategies and executed them well, “closing the gaps in technology, capital and talent”. Akhter and Barcellos (2011, p. 518) demonstrated that given the cost advantage of Chinese and other emerging economies firms, Brazilian executives need to make both product and process innovation as a key element of their strategies. The focus on innovation helps local firms to com-

pete on non-price elements.

At the same time the obtained results contradict to some studies, which found that the pure strategies outperform the hybrid ones in terms of the firm performance (Thornhill and White, 2007; Lechner, Gudmundsson, and Vidar, 2014). The inconsistency of these results is explained by the influence of different contextual factors. For instance Manev, Manolova, Harkins, and Gyoshev (2014, p. 6) considered that the argument of the superiority of “pure” strategies over their combinations is based on the assumption that competitors are operating at the productivity frontier. The productivity frontier shows “the maximum value that a company delivering a particular product or service can create at a given cost, using the best available technologies, skills, management techniques, and purchased inputs” (Porter, 1996, 62). Operationally effective firms are located on the productivity frontier as they use the best practices and technologies. The SMEs from the transition economies, however, work below the productivity frontier due to significant cost and institutional disadvantages (Deliktas and Balcilar, 2005). Thus under the conditions of suboptimal efficiency it is appropriate for the SMEs to pursue simultaneously cost leadership and differentiation as they try to catch up on the frontier. Manev et al. (2014, p. 15) found that the majority of small and new firms in the transitional economy context adopt hybrid strategies and these strategies are associated with superior performance. Other researchers also demonstrated that when firms in emerging markets move towards the productivity frontier, they adopt hybrid strategies, which allow them to outperform firms with pure strategies (Kim and Choi, 1994; Spanos et al., 2004; Parnell, 2006).

4.3 Cluster Stability and Validity

To examine the stability of the four-group non-hierarchical cluster solution, we reordered the observations by a first competitiveness variable from the data set (D1. Learning orientation), and the K-means algorithm was

repeated. After that a cross-classification was performed between two four non-hierarchical cluster solutions. The results shows that most cases are grouped with the same observations they clustered with in the first K-means solution (Appendix A, Table A6). All but 49 observations have retained the same cluster membership across solutions. Thus the four-cluster solution appears relatively stable with less than 10% of the cases switching clusters between solutions.

To assess predictive validity, we choose variables that have a theoretically based relationship to the clustering variables, but were not included in the cluster solution. For this purpose, we consider two compound (sum-mated) measures from the dataset: K1 - E-business development, and K2 - Export. E-business development is related to the availability of online ordering and payments, and managers’ e-signatures, while the Export was measured by the logarithm of export in the firm’s turnover and the logarithm of the production for export. The results of the ANOVA model demonstrate that the cluster solution can predict other key antecedents, which provides evidence of criterion validity. For example, cluster 1 displays the highest score on the first variable, while cluster 2 scores highest on the export. This suggests that the cluster solution is useful in predicting other key firm’s performance and competitiveness antecedents (Appendix A, Table A7).

The final cluster solution requires to profile the clusters on a set of additional variables not included in the clustering variate or used to assess predictive validity. In our case four characteristics of firms and entrepreneurs were used: (1) Entrepreneur’s age; (2) Entrepreneur’s education; (3) Firm’s size; and (4) Firm’s “bad” receivables. Each of these variables is nonmetric, and a cross-classification was used to test the relationships (Appendix A, Table A8). Significant chi-square values are observed for all of profile variables, and several patterns emerge. For instance, in cluster 4 prevail entrepreneurs aged

more than 50 years, with secondary education, microenterprises, and firms with higher percent of “bad” receivables. In contrast, cluster 1 include mainly entrepreneurs aged between 41~50, with master degree, small and medium size enterprises, and with the lowest share of “bad” receivables. These profiles support the distinctiveness of the clusters on variables not used previously.

Particularly useful was the distribution of firms from the identified clusters by core activities (sub-sectors). This allows to evaluate the SME competitiveness of these sub-sectors (*Appendix A, Table A9*), which goes however out of the scope of this paper.

V. Conclusion

The goal of this paper was to reveal the main factors and their configurations, which determine the SMEs competitiveness and performance with an accent on the role played by the strategic competitiveness factors. These factors differ from the operational ones in the sense that they are innovations related and assume significant organisational changes. Such factors refer to product and process innovations, use of advanced technology, adoption of IT and international standards, creation of own trademarks and patents, internationalisation, networking, marketing strategies, etc. The importance of strategic competitiveness factors derived from the increasing globalisation and technological pressures on small businesses to align their strategies with the new environment.

The research was based on the Porter’s framework, RBV, and configuration approach. Building on these theories, the paper tried to answer the research questions, related to the main strategic factors, which determine the manufacturing SMEs competitiveness under globalization; factors’ configurations by clusters; and the characteristics of firms from the respective clusters. The factors were extracted by exploratory factor analysis (EFA), and subsequently used for cluster analyses.

The findings reveal that the configurations of competitiveness factors, which support

combination strategies, provide the respective firms with both the highest competitiveness and performance. The cluster of SMEs without any visible strategy exhibited both the worst competitiveness and performance. The data demonstrated that the firms, which are oriented mainly to differentiation strategy, perform better than those, which are oriented mostly to the low cost strategy. These results confirmed the three hypotheses that the SMEs, which develop several competitiveness factors together are more competitive and perform better than the SMEs with a focus on one factor; the SMEs, which use of a bundle of strategic (innovation-related) factors are more competitive and perform better than the rest; and the SMEs, which follow combination strategies perform better than firms, which follow one of the generic strategies, or have no strategy at all.

The obtained configurations of SMEs competitiveness factors may serve to inform the entrepreneurs and SME policy makers. The main conclusion from the cluster analysis is that the SMEs, which wish to be competitive and to perform well, need to develop not an isolated competitiveness factors, but many of these factors together, e.g. they should follow the combination strategies. Particularly important is the use of a bundle of several strategic (innovation-related) factors. The synergetic effect of different innovations (product innovation, own trademarks, ICT use, etc.) can enhance the position of the small firms on domestic market and prepare them to expand internationally. The EU report (EC, 2010, pp. 7-9) showed that there is a strong link between activities on international markets and different forms of innovation. Internationally active SMEs are more active in innovations, in the e-commerce use, and report higher turnover and employment growth. Based on that the report even proposed that “it is a good thing to design and present policy support measures aimed at stimulating innovation and internationalisation in conjunction” (EC, 2010, p. 9).

The SMEs sector, however, is not homogeneous. For instance in Asia and the Pacific region the SMEs sector is *dualistic* with a small relatively dynamic and competitive SMEs co-existing with a much bigger number of under-performing SMEs (UN, ESCAP, 2009, p. 34). This dualistic pattern of SME development is typical for other emergent and transition economies, including many East European countries. In this model only a small number of (entrepreneurial-driven) SMEs are capable to take advantage of the opportunities offered by globalization (OECD, 2004b, p. 5), while the great majority of SMEs are more traditional and not so entrepreneurial. Because of that the policies of SMEs development should be oriented towards the creation not simply of more firms, but firms with competitive potential and aspiration to growth.

The paper has its limitations, which restrict the generalisation of the results. First, the data are based on managers' subjective evaluations, including their perceptions on performance, which may be biased for different reasons. Yet it has been found that the subjective evaluations of performance are quite reliable and consistent with objective data (Lau, 2002, p. 129; Leitner and Guldenberg, 2010, p. 179). Second, the obtained results for the manufacturing SMEs competitiveness can't be extrapolate to other SMEs sectors, and particularly to the service one (Aragón-Sánchez and Sánchez-Marín, 2005, p. 304). For instance in the service sector the efforts for the development of both innovations and human capital often are the same (Johnson, Baldwin, and Diverty, 1996, pp. 113-114). Third, the data are representative only for a single country in transition with its specific institutional setting. Ideally, the comparative researches on SMEs competitiveness are preferable in the context of both transition and emergent economies and more developed ones.

Received 10 Nov. 2014

Accepted 10 Dec. 2014

References

- Adiamo, A. A., De C. R. Vila, and G. G. Leal (2012). *Measuring Competitive Factors: A perspective of Spanish manufacturing firms*, 6th International Conference on Industrial Engineering and Industrial Management, XVI Congreso de Ingeniería de Organizaciyn. Vigo, July 18-20, 2012, 348-355.
- Aggelogiannopoulos, D., H. Drossinos, and P. Athanasopoulos (2007). "Implementation of a quality management system according to the ISO 9000 family in a Greek small-sized winery: a case study," *Food Control*, 18(9), 1077-85.
- Agha, S., L. Alrubaiee, and M. Jamhour (2012). "Effect of Core Competence on Competitive Advantage and Organizational Performance," *International Journal of Business and Management*, 7(1), 192-204.
- Akhter, S. H. and P. F. P. Barcellos (2011). "Can Brazilian firms survive the Chinese challenge? Effects of globalization on markets, strategies, and performance," *European Business Review*, 23(5), 502-523.
- Almus, M. and E. A. Nerlinger (1999). "Growth of new technology-based firms: Which factors matter," *Small Business Economics*, 13(2), 141-154.
- Ambrosini, V. (2003). *Tacit and ambiguous resources as source of competitive advantage*, Palgrave Macmillan, New York.
- Amoako-Gyampah K. and M. Acquah (2008). "Manufacturing strategy, competitive strategy and firm performance: An empirical study in a developing economy environment," *International Journal of Production Economics*, 111, 575-592.
- Andersson, S. and J. Tell (2009). "The relationship between the manager and growth in small firms," *Journal of Small Business and Enterprise Development*, 16(4), 586-598.
- Aragón-Sánchez, A. and G. Sánchez-Marín (2005). "Strategic Orientation, Management Characteristics, and Performance:

- A Study of Spanish SMEs,” *Journal of Small Business Management*, 43(3), 287-308.
- Asian Development Bank (2003). *Asian Development Outlook 2003* (Manila).
- Aspelund, A., T. K. Madsen, and O. Moen (2007). “A review of the foundation, international marketing strategies, and performance of international new ventures,” *European Journal of Marketing*, 41(11/12), 1423-1448.
- Atristain, C. and Rajagopal (2010). “Conceptual Perspectives on Organizational Performance and Competitiveness of SMEs in Mexico,” *Journal of Transnational Management*, 15(4), 322-349, doi:10.1080/15475778.2010.525490.
- Awuah, G. B. and M. Amal (2011). “Impact of globalization. The ability of less developed countries’ (LDCs’) firms to cope with opportunities and challenges,” *European Business Review*, 23(1), 120-132.
- Bala, Subrahmanya, M. H., M. Mathirajan, and K. N. Krishnaswamy (2010). *Importance of Technological Innovation for SME Growth*, Evidence from India, Working Paper No. 2010/03, January 2010, UNI-WIDER.
- Balkytė, A. and M. Tvaronavičienė (2010). “Perception of competitiveness in the context of sustainable development: facets of ‘Sustainable competitiveness’,” *Journal of Business Economics and Management*, 11(2), 341-365.
- Bao, J. and X. Sun (2010). “A Conceptual Model of Factors Affecting e-Commerce Adoption by SMEs in China,” IEEE DOI 10.1109/ICMeCG.2010.43, *Computer society*.
- Basu, S., J. G. Fernald, N. Oulton, and S. Srinivasan (2003). The Case of the Missing Productivity Growth: Or, Does Information Technology Explain Why Productivity Accelerated in the United States but not the United Kingdom? In M. Gertler and K. Rogoff (eds.) *NBER Macroeconomics Annual 2003*, 18, MIT Press, 9-82.
- Baumol, W. J. (2005). “Return of the Invisible Men: The Microeconomic Value of Inventors and Entrepreneurs. EntInvisibleMen2 sw.doc, pp. 1-37. Retrieved on March 14, 2012 from: https://www.aeaweb.org/asa/2006/0107_1015_0301.pdf.
- Baumol, W. J. (2009). “Small Enterprises, Large Firms and Growth. In Lundström, A. (ed). *The Role of SMEs and Entrepreneurship in a Globalised Economy*,” Expert report 34 to Sweden’s Globalisation Council, 59-72.
- Begley, T. M. and D. P. Boyd (1985). *Company and Chief Executive Officer Characteristics Related to Financial Performance in Smaller Business*. In *Frontiers of Entrepreneurship Research*. Wellesley, MA: Center for Entrepreneurial Studies, Babson College, 146-165.
- Berger, T. (2008). “Concepts of National Competitiveness,” *Journal of International Business and Economy*, 9 (1) 91-111
- Birkinshaw, J. and K. Gupta (2013). “Clarifying the distinctive contribution of ambidexterity to the field of organization studies,” *Academy of Management Perspectives*, 27(4), 287-298.
- Bhattacharya, A. K. and D. C. Michael (2008). “How local companies keep multinationals at bay,” *Harvard Business Review*, March, pp. 33-44.
- Bilton, C. and S. Cummings (2010). *Creative Strategy: Reconnecting Business and Innovation*, John Wiley & Sons, Chichester.
- Blackburn, R. and R. Jarvis (2010). The role of small and medium practices in providing business support to small and medium-sized enterprises. International Federation of Accountants [IFAC] Small and Medium Practices [SMP] Committee, Information Paper, Retrieved on May 10, 2013 from: <http://www.ifac.org/sites/default/files/publications/files/the-role-of-small-and-medium.pdf>.
- Brinckmann, J., D. Grichnik, and D. Kapsa (2010). “Should entrepreneurs plan or just storm the castle? A metaanalysis on contextual factors impacting the business planning - performance relationship in small firms,” *Journal of Business Venturing*, 25(1), 24-40.
- Brunninge, O., M. Nordqvist, and J. Wiklund

- (2007). "Corporate Governance and Strategic Change in SMEs: The Effects of Ownership, Board Composition and Top Management Teams," *Small Business Economics*, 29, 295-308.
- Chen, J. (2006). "Development of Chinese small and medium-sized enterprises," *Journal of Small Business and Enterprise Development*, 13(2), 140-147.
- Chew, D. A. S., S. Yan, and C. Y. J. Cheah (2008). "Core Capability and Competitive Strategy for Construction SMEs in China," *Chinese Management Studies*, 2(3), 203-214.
- Corbett, C., M. J. Montes, D. A. Kirsch, and M. J. Alvarez-Gil (2002). "Does ISO 9000 certification pay?," *ISO Management Systems*, July-August, Special report.
- Crick, D. (2009). "Managers of UK based SMEs' perception of their overseas performance and competitiveness: a study of regular and sporadic internationalizing firms," *Journal of Strategic Marketing*, 17(5), 397-410.
- Deliktas, E. and M. Balcilar (2005). "A comparative analysis of productivity growth, catch-up, and convergence in transition economies," *Emerging Markets Finance and Trade*, 41(1), 6-28.
- Di Gregorio, D., M. Musteen, and D. E. Thomas (2009). "Offshore outsourcing as a source of international competitiveness for SMEs," *Journal of International Business Studies*, 40, 969-988.
- Din, F.-Ud, H. Dolles, and R. Middel (2013). "Strategies for small and medium-sized enterprises to compete successfully on the world market: Cases of Swedish hidden champions," *Asian Business and Management*, 12(5), 5910612; doi:10.1057/abm.2013.19.
- Dolles, H. (2010). "Developing world market-leading companies: Innovation governance in German small and medium-sized enterprises," *International Journal of Business Environment*, 3(2), 139-158.
- EC (2010). *Internationalisation of European SMEs. Final Report*. Retrieved on March 27, 2014 from: http://ec.europa.eu/enterprise/policies/sme/files/support_measures/internationalisation/internationalisation_sme_final_en.pdf.
- EC (2012). *Competitiveness proofing*. Available at: http://ec.europa.eu/enterprise/policies/smart-regulation/impact-assessment/competitiveness-proofing/index_en.htm. Accessed on November 20, 2013.
- Flynn, B. B., R. G. Schroeder, and S. Sakakibara (2004). "A framework for quality management research and an associated instrument," *Journal of Operations Management*, 11(4), 339-366.
- Galanakis K. (2006). "Innovation process. Make sense using systems thinking," *Technovation*, 26, 1222-1232.
- Garg, V. K., B. A. Walters, and R. L. Priem (2003). "Chief executive scanning emphases, environmental dynamism and manufacturing firm performance," *Strategic Management Journal*, 24(8), 725-744.
- Ghemawat, P. and J. Rivkin, (2001). *Creating competitive advantage*. In P. Ghemawat (Ed.). *Strategy and the business landscape: Core concepts*, 49-74, Upper Saddle River, NJ: Prentice Hall.
- Ghobadian, A. and D. N. Gallager (1996). "Total quality management in SMEs," *International Journal of Management Science*, 24(1), 83-106.
- Gibson, B. and G. Casser (2005). "Longitudinal Analysis of Relationships between Planning and Performance in Small Firms," *Small Business Economics*, 25(3), 207-222.
- Grant, R. M. (1991). "The resource-based theory of competitive advantage," *California Management Review*, 33(3), 114-135.
- Guimaraes, T. (2000). "The impact of competitive intelligence and IS support in changing small business organizations," *Logistic Information Management*, 13(3), 117-125.
- Gunasekaran, A., H. B. Marri, R. McGauahey, and R. J. Grieve (2001). "Implications of organisation and human behavior on the implementation of CIM in SMEs: an empirical analysis," *International Journal of CIM*, 14(2), 175-185.

- Guzman, G. M., M. Serna, C. M. Del, G. C. L. Torres, and R. G. Ramirez (2012). "Competitiveness in Manufacturing SMEs: A Perspective of Mexico," *International Journal of Arts and Commerce*, 1(4), 60-75.
- Hair, J. F. Jr., C. B. William, J. B. Barry, and R. E. Anderson (2010). *Multivariate data analysis. A Global Perspective* (7th Ed.). Upper Saddle River, NJ: Pearson Prentice Hall™.
- Hammer, M. and J. Champy (1993). *Reengineering the Corporation*, Harper Business, New York, NY.
- Hanel, P. (2006). "Intellectual property rights business management practices: A survey of the literature," *Technovation*, 26, 895-931.
- Harrison, R. and J. W. M. Kessels (2004). *Human Resource Development in a knowledge economy. An organizational view*. Hampshire - New York: Palgrave Macmillan (p. 301) (ISBN: 0-333-99015-3).
- Hashim, M. K. and S. A. Wafa (2002). *Small and Medium Sized Enterprises in Malaysia*. Development Issue. Prentice-Hall, Englewood Cliffs, NJ.
- Helms, M. M., Dibrell, C., and P. Wright (1997). Competitive strategies and business performance: Evidence from the adhesives and sealants industry. *Management Decision*, 35(9), 689-703.
- Henrekson, M. and T. Sanandaji (2013). Small business activity does not measure entrepreneurship. In PNAS, 111(5), 1760-1765. Retrieved on September 20, 2014 from: www.pnas.org/cgi/doi/10.1073/pnas.13072_04111.
- Hult, G. T. M., R. F. Hurley, and G. A. Knight (2004). "Innovativeness: Its antecedents and impact on business performance," *Industrial Marketing Management*, 33, 429-438.
- Humphrey, J. and H. Schmitz (2002). *Developing country firms in the world economy. Governance and upgrading in global value chains*, INEF Report, Heft 61. Available at: <http://inef.uni-due.de/page/documents/Report61.pdf>, Accessed on April 11, 2012.
- Hurst, E. and B. Pugsley (2011). "What do small businesses do?" *Brookings Papers on Economic Activity*, Fall, 73-118, Available at: http://www.brookings.edu/~media/files/programs/es/bpea/2011_fall_bpea_papers/2011_fall_bpea_conference_hurst.pdf, Accessed on July 3, 2014.
- Ingman, L. and J. Takala (2011). "Measuring CS by critical factor index in pricing process," *Journal on Innovation and Sustainability*, 2(3), 10-16, São Paulo.
- Johnson, J., J. Baldwin, and B. Diverty (1996). "The implications of innovation for human resource strategies," *Futures*, 28, 103-119.
- Jones, S., T. Knotts, and K. Brown (2005). "Selected quality practices of small manufacturers," *Quality Management Journal*, 12(1), 41-53.
- Jorgensen, A. L. and J. S. Knudsen (2006). "Sustainable competitiveness in global value chains: how do small Danish firms behave?," *Corporate governance*, 6(4), 449-462
- Kaneko, M. and M. Munechika (2012). "Extraction procedure of competitive advantage factors in a target business area for conducting self-assessment and re-design of quality management system," *Asian Journal on Quality*, 13(1), 53-66; Retrieved on January 24, 2013 from: <http://dx.doi.org/10.1108/15982681211237824>.
- Kaplinsky, R. and M. Morris (2001). *A Handbook for Value Chain Research*. Institute of Development Studies, University of Sussex, Brighton.
- Keskin, H. (2006). "Market orientation, learning orientation, and innovation capabilities in SMEs. An extended model," *European Journal of Innovation Management*, 9(4), 396-417.
- Kim, Y. and Y. Choi (1994). "Strategic types and performances of small firms in Korea," *International Small Business Journal*, 13(1), 13-25.
- Knight, G. (2000). "Entrepreneurship and marketing strategy: The SME under globalization," *Journal of International Market-*

- ing, 8(2), 12-32.
- Krugman, P. (1994). "Competitiveness - a Dangerous Obsession," *Foreign Affairs* 73(2), 28-44.
- Kuk, G. and M. Janssen (2013). "Assembling infrastructure and business models for service design and innovation," *Info System Journal*, 23, 445-469.
- Lau, R. S. M. (2002). "Competitive Factors and Their Relative Importance in the U.S. Electronics and Computer Industries," *International Journal of Operations and Production Management*, 22(1), 125-135.
- Lechner, C., S. V. Gudmundsson, and S. Vidar (2014). "Entrepreneurial orientation, firm strategy and small firm performance," *International Small Business Journal*, 32(1), 36-60.
- Lee, C. (2007). "Strategic alliances influence on small and medium firm performance," *Journal of Business Research*, 60, 731-741.
- Lee, Y. and G. C. O'Connor (2003). "New Product Launch Strategy for Network Effects Products," *Academy of Marketing Science Journal*, 31(3), 241-55.
- Leiponen, A. and J. Byma (2009). "If you cannot block, you better run: small firms, cooperative innovation and appropriation strategies," *Research Policy*, 38(9), 1478-1488.
- Leitner, K.-H. and S. Güldenbergl (2010). "Generic strategies and firm performance in SMEs: a longitudinal study of Austrian SMEs," *Small Business Economics*, 35, 169-189, DOI 10.1007/s11187-009-9239-x.
- Leonard, D. and R. McAdam (2001). "The relationship between total quality management (TQM) and corporate strategy: The strategic impact of TQM," *Strategic Change*, 10(8), 439-448.
- Lin, H. F. and S. M. Lin (2008). "Determinants of e-business diffusion: a test of the technology diffusion perspective," *Technovation*, 28, 135-145.
- Lu, W., L. Shen, and M. C. H. Yam (2008). "Critical Success Factors for Competitiveness of Contractors: China Study," *Journal of Construction Engineering and Management*, 134, 972-982.
- Lubatkin, M. H., Z. Simsek, Y. Ling, and J. F. Veiga (2006). "Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioural integration," *Journal of Management*, 32, 646-672.
- Malerba, F. and L. Marengo (1995). "Competence, innovative activities and economic performance in Italian high-technology firms," *International Journal of Technology Management*, 10(4), 461-77.
- Man, T. W. Y., T. Lau, and K. F. Chan (2002). "The competitiveness of small and medium enterprises: a conceptualization with focus on entrepreneurial competencies," *Journal of Business Venturing*, 17(2), 123-142.
- Manev, I. M., T. S. Manolova, J. A. Harkins, and B. S. Gyoshev (2014). "Are pure or hybrid strategies right for new ventures in transition economies?," *International Small Business Journal*, online version, 1-23, DOI: 10.1177/0266242614550322.
- Marchand, D. A. (2001). *Information orientation: the link to business performance*, Oxford: Oxford University Press.
- Masurel, E. K., K. van Montfort, and R. Lentink (2003). *SME: Innovation and the Crucial Role of the Entrepreneur*, Retrieved on April 6, 2013 from: ftp://zappa.ubv.uu.nl/20030001.pdf.
- McFetridge, D. G. (1995). "Competitiveness: concepts and measures," *Occasional Paper* No. 5. Industry Canada, Ottawa, Ontario.
- Miller, A. and G. G. Dess (1993). "Assessing Porter's (1980) model in terms of its generalizability, accuracy and simplicity," *Journal of Management Studies*, 30(4), 553-585.
- Mitki, Y., A. B. Shani, and Z. Meiri (1997). "Organizational learning mechanisms and continuous improvement," *Journal of Organizational Change Management*, 10 (5), 426-46.
- Mosey, S. (2005). "Understanding new to market product development in SMEs," *International Journal of Operations and Production Management*, 25(2), 114-130.

- Najib, M., A. Kiminami, and H. Yagi (2011). "Competitiveness of Indonesian small and medium food processing industry: does the location matter?," *International Journal of Business and Management*, 6(9), 57-67.
- Nambirajan, T. and M. Prabhu (2010). "Case Study: Determinants of Competitiveness of Small-Scale Industries in Union Territory of Puducherry," *Advances in Management*, 3(5), 46-49.
- O'Mahony, M. and B. van Ark, eds. (2003). *EU Productivity and Competitiveness: An Industry Perspective Can Europe Resume the Catching-up Process?* Office for Official Publications of the European Communities: Luxembourg.
- OECD (2000). *Enhancing the competitiveness of SMEs in the global economy: strategies and policies*. Available at: <http://www.oecd.org/dataoecd/20/1/2010176.pdf>, Accessed on February 10, 2013.
- OECD (2004a). *ICT, e-business and SMEs*. OECD, Paris.
- OECD (2004b). Promoting Entrepreneurship and Innovative SMEs in a Global Economy: Towards a More Responsible and Inclusive Globalisation. 2nd OECD Conference of minister responsible for small and medium-sized enterprises (SMEs), Istanbul, Turkey 3-5 June 2004, Available at: <http://www.oecd.org/cfe/smes/31919278.pdf>, Accessed on December 18, 2014.
- Oksanen, J. and N. Rilla (2009). "Innovation and entrepreneurship: new innovations as source for competitiveness in Finnish SMEs," *International Journal of Entrepreneurship*, 13, special issues, 35-48.
- Oliveira, T. and F. M. Martins (2010). "Firms patterns of e-business adoption: evidence for the European Union-27," *The Electronic Journal Information Systems Evaluation*, 13, 47-56.
- O'Regan, N. and A. Ghobadian (2004). "Revisiting the Strategy-Performance Question: An Empirical Analysis," *International Journal of Management and Decision Making*, 5(2/3), 144-170.
- Parnell, J. A. (2006). "Generic strategies after two decades: a reconceptualization of competitive strategy," *Management Decision*, 44(8), 1139-1154. Available at: <http://dx.doi.org/10.1108/00251740610690667>, Accessed on July 1, 2014.
- Parnell, J. A., N. O'Regan, and A. Ghobadian (2004). Combination strategies reassessed: Evidence from UK Engineering and Electronic Firms. Retrieved on June 11, 2014 from: http://www.researchgate.net/publication/228336644_Combination_Strategies_Reassessed_Evidence_from_UK_Engineering_and_Electronics_Firms.
- Patton, D., S. Marlow, and P. Hannon (2000). "The Relationship between Training and Small Firm Performance; Research Frameworks and Lost Quests," *International Small Business Journal*, 19, 11-27, DOI: 10.1177/0266242600191001.
- Pertusa-Ortega, E., E. Claver-Cortés, and J. F. Molina-Azorin (2007). Pure, hybrid or "stuck-in-the-middle" strategies? A revision and analysis of their effects on firm performance. Research Paper, EURAM (European Academy of Management), Paris (France). Retrieved on January 15, 2014 from: <http://rua.ua.es/dspace/bitstream/10045/12663/1/Pure,%20hybrid,%20stuck%20in%20the%20middle%20strategies.pdf>.
- Peters, M. L. and S. Zelewski (2013). "Competitive Strategies. Their Relevance for Sustainable Development in the Food Industry," *Journal of Management and Sustainability*, 3(3), 148-157.
- Phusavat, K. and R. Kanchana (2007). "Competitive priorities of manufacturing firms in Thailand," *Industrial Management and Data Systems*, 107(7), 979-996.
- Porter, M. E. (1991). "Towards a dynamic theory of strategy," *Strategic Management Journal*, 12, 95-117.
- Porter, M. E. (1996). "What is strategy?," *Harvard Business Review*, 74(6), 61-78. Available at: <http://hbr.org/product/what-is-strategy/an/96608-PDF-ENG>, Accessed on: February 1, 2013.
- Porter, M. E. (1998). *Competitive Strategy: Techniques for Analyzing Industries and Competitors: With a New Introduction*.

- New York: The Free Press.
- Porter, M. E., M. Delgado, C. Ketels, and S. Stern (2008). Moving to a new global competitiveness index. In: Porter, M. E., Schwab, K. (Eds.), *The Global Competitiveness Report 2008~2009*, 2008 World Economic Forum, Geneva, 43-63.
- Radauer, A. and L. Walter (2010). "Elements of good practice for providers of publicly funded patent information services for SMEs - selected and amended results of a benchmarking exercise," *World Patent Information*, 32, 237-245.
- Raisch, S., J. Birkinshaw, G. Probst, and M. L. Tushman (2009). "Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance," *Organization Science*, 20(4), 685-695.
- Raymond, L. (2005). "Operations management and advanced manufacturing technologies in SMEs: a contingency approach," *Journal of Manufacturing Technology Management*, 16(8), 936-955.
- Reboud, S. and T. Mazzarol (2008). Strategic planning in SMEs, a Review of the English and French Literature, Paper presented at ANZAM Annual Conference, 2-5 December 2008 Auckland New Zealand, Available at: <http://www.cemi.com.au/sites/all/publications/Mazzarol%20Reboud%20ANZAM%202008.pdf>, Accessed on September 9, 2014.
- Rialp, A., J. Rialp, and G. A. Knight (2005). The phenomenon of early internationalizing firms: what do we know after a decade (1993~2003) of scientific enquiry? *International Business Review*, 14(2), 147-166.
- Richard, P. J., T. M. Devinney, G. S. Yip, and G. Johnson (2009). "Measuring Organizational Performance: Towards Methodological Best Practice," *Journal of Management*, 35(3), 718-804, DOI: 10.1177/014920 6308330560.
- Ritchie, B. and C. Brindley (2005). "Cultural determinants of competitiveness within SMEs," *Journal of Small Business and Enterprise Development*, 12(1), 104-119.
- Rosenbusch, N., J. Brinckmann, and A. Bausch (2011). "Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs," *Journal of Business Venturing*, 26(4), pp. 441-457; doi:10.1016/j.jbusvent.2009.12.002.
- Rostek, K. (2012). "The reference model of competitiveness factors for SME medical sector," *Economic Modelling*, 29, 2039-2048
- Ruzzier, M., B. Antoncic, and R. D. Hisrich (2007). "The internationalization of SMEs: developing and testing a multi-dimensional measure on Slovenian firms," *Entrepreneurship and regional development*, 19, 161-183.
- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Harvard University Press, Cambridge, MA.
- Sen, B. A. and R. Taylor (2007). "Determining the information needs of small and medium-sized enterprises: a critical success factor analysis," *Information Research*, 12(4), 329, Available at: <http://Information R.net/ir/12-4/paper 329.html>, Accessed on August 4, 2014.
- Sheehan, N. T. and N. J. Foss (2007). "Enhancing the prescriptiveness of the resource-based view through Porterian activity analysis," *Management Decision*, 45(3), 450-461.
- Simpson, M. and A. Docherty (2004). "E-Commerce Adoption Support and Advice for UK SMEs," *Journal of Small Business and Enterprise Development*, 11(13), 315-328.
- Singh, R. K., S. K. Garg, and S. G. Deshmukh (2008). "Strategic development by SMEs for competitiveness: a review," *Benchmarking: An International Journal*, 15(5), 525-547.
- Singh, R. K., S. K. Garg, and S. G. Deshmukh (2010). "The competitiveness of SMEs in a globalized economy: Observations from China and India," *Management Research Review*, 33(1), 54-65.
- Smallbone, D. and F. Welter (2001). "The Distinctiveness of Entrepreneurship in Transition Economies," *Small Business*

- Economics*, 16, 249-262.
- Smith, K. (2000). "Innovation as a systemic phenomenon: rethinking the role of policy," *Enterprise and Innovation Management Studies*, 1, 73-102.
- Smith, M. and F. Hansen (2002). "Managing intellectual property: a strategic point of view," *Journal of Intellectual Capital*, 3(4), 366-374.
- Smith, W. K. and M. L. Tushman (2005). "Managing strategic contradictions: A top management model for managing innovation streams," *Organization Science*, 16, 522-536.
- Spanos, Y. E., G. Zaralis, and S. Lioukas (2004). "Strategy and industry effects on profitability: Evidence from Greece," *Strategic Management Journal*, 25(2), 139-165.
- Spicer, D. P. and E. Sadler-Smith (2006). "Organizational learning in smaller manufacturing firms," *International Small Business Journal*, 24(2), 133-158, doi:10.1177/0266242606061836.
- Szerb, L. and S. Terjesen (2010). Measuring the Competitiveness of Small Businesses, Available at: http://www.kmu.unisg.ch/rencontres/Renc2010/Topics_2010/C/Rencontres_2010_Topic_C_Szerb_Terjesen_f.pdf. Accessed on: May 30, 2012.
- Szerb, L. and J. Ulbert (2009). "The Examination of the Competitiveness in the Hungarian SME Sector: A Firm Level Analysis," *Acta Polytechnica Hungarica*, 6(3), 105-123.
- Taki, F. and V. Filipovski (2012). "The Microeconomic Foundations of Entrepreneurship," In: Tipurić, D and Dabić, M. Management, Governance, and Entrepreneurship. New Perspectives and Challenges. Access Press UK, 508-521.
- Thornhill, S. and R. E. White (2007). "Strategic purity: A multi-industry evaluation of pure vs. hybrid business strategies," *Strategic Management Journal*, 28(5), 553-561.
- Trienekens, J. and P. Zuurbier (2008). "Quality and safety standards in the food industry, developments and challenges," *International Journal of Production Economics*, 113(1), 107-122.
- UN (ESCAP) (2009). Globalization of Production and the Competitiveness of Small and Medium-sized Enterprises in Asia and the Pacific: Trends and Prospects. Studies in Trade and Investment, 65. United Nation, New York.
- Urbonavicius, S. (2005). "ISO system implementation in small and medium companies from new EU member countries: a tool of managerial and marketing benefits development," *Research in International Business and Finance*, 19(3), 412-426.
- Vargas, D. M. and R. G. T. Rangel (2007). "Development of internal resources and capabilities as sources of differentiation of SME under increased global competition: a field study in Mexico," *Technological Forecasting and Social Change*, 74(1), 90-99.
- Variyam, J. N. and D. S. Kraybill (1993). "Small Firms' Choice of Business Strategies," *Southern Economic Journal*, 60(1), 136-146.
- Wall, T., J. Michie, M. Patterson, S. Wood, M. Sheehan, C. Clegg, and M. West (2004). "On the validity of subjective measures of company performance," *Personnel Psychology*, 57, 95-118.
- Wang, Y.-L., Y.-D. Wang, and R.-Y. Horng (2010). "Learning and innovation in small and medium enterprises," *Industrial Management and Data Systems*, 110(2), 175-192.
- Ware, M. (2014). "Access by UK SMEs to professional and academic information," *Publishing Research Consortium*, Retrieved on September 20, 2014 from <http://www.slideshare.net/mrkwr/prc-sme-access-talk>.
- Wenderoth, M. (2011). "Critical success factors of shared service projects-results of an empirical study," *Advances in Management*, 4(5), 21-26.
- Wheelen, T. L. and J. D. Hunger (2012). *Strategic management and business policy: Toward global sustainability, 13th edition*, Pearson Prentice Hall: Upper Saddle River, N.J.
- Williams, A. and G. Shaw (2011). "Internationalization and innovation in tourism,"

- Annals of tourism research*, 38(1), 27-51.
- Xiong, M. H., S. B. Tor, R. Bhatnagar, L. P. Khoo, and S. Venkat (2006). "A DSS approach to managing customer enquiry stage," *International Journal of Production Economics*, 103(1), 332-346.
- Yan, S. (2010). "Competitive Strategy and Business Environment: The Case of Small Enterprises in China," *Asian Social Science*, 6(11), 64-71.
- Zhou, K. Z. and C. B. Li (2007). "How does strategic orientation matter in Chinese firms?," *Asia Pacific Journal of Management*, 24(4), 447-466.

Appendix A

Table A1
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.756
	Approx. Chi-Square
	4507.244
Bartlett's Test of Sphericity	df
	378
	Sig.
	.000

Table A2
Total Variance Explained

Comp onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,382	19,220	19,220	5,382	19,220	19,220	2,456	8,772	8,772
2	2,197	7,845	27,065	2,197	7,845	27,065	2,303	8,226	16,998
3	1,893	6,762	33,828	1,893	6,762	33,828	2,137	7,631	24,628
4	1,693	6,047	39,875	1,693	6,047	39,875	2,010	7,180	31,808
5	1,677	5,991	45,865	1,677	5,991	45,865	1,933	6,904	38,712
6	1,507	5,383	51,249	1,507	5,383	51,249	1,838	6,564	45,277
7	1,290	4,609	55,858	1,290	4,609	55,858	1,686	6,020	51,297
8	1,269	4,532	60,390	1,269	4,532	60,390	1,642	5,865	57,162
9	1,117	3,989	64,379	1,117	3,989	64,379	1,586	5,666	62,828
10	1,057	3,776	68,155	1,057	3,776	68,155	1,492	5,327	68,155

Note: Extraction Method: Principal Component Analysis.

Table A3
Survey Items, Measurement Properties, Items Loadings, Communalities, and Cronbach's Alpha

Constructs and Items	Mean	S.D.	Items Loadings	Communalities	Cronbach's Alpha
D1. Learning orientation^a	.34	.358			.764
A30_4. The firm's employees need trainings in IT	.30	.460	.781	.662	
A30_5. The firm's employees need trainings in foreign languages	.44	.497	.752	.610	
A30_2. The firm's employees need trainings in management, marketing and sales	.33	.471	.737	.610	
A30_3. The firm's employees need trainings in export	.26	.439	.711	.572	
D5. E-integration^a	.18	.374			.832
A26_2. The firm has a SCM	.18	.385	.905	.886	
A26_1. The firm has a CMS	.18	.383	.904	.886	
A26_3. The firm has an ERP	.17	.376	.661	.544	
D2. Product innovations^a	.51	.418			.785
A8_2. The firm is developing a new product to be released soon on the market	.51	.50	.840	.753	
A8_1. The firm released a new product or an improve version of product in the last year	.53	.499	.789	.693	
A8_3. The firm intends to develop a new product/to implement an innovation in next years	.48	.50	.785	.693	

D3. Marketing strategies^a		.35	.378		.727
A31_5.	The firm has conducted a marketing survey in the last year	.42	.493	.814	.735
A31_4.	The firm has a developed marketing strategy	.42	.494	.753	.687
A31_6.	The firm has investigated foreign markets for eventual positioning	.22	.417	.674	.587
D4. Access to information^a		.54	.392		.706
A2_4.	We have an access to information about good management practices	.54	.499	.826	.713
A2_3.	We have an access to information about national and international programmes in support to business	.63	.484	.797	.654
A2_5.	We have access to information about international markets and potential partners	.45	.498	.691	.599
D6. Access to finance^a		.28	.348		.664
L12M_2.	The firm has an access to bank credit for working capital	.29	.456	.808	.696
L12M_4.	The firm has been allowed an overdraft on current account	.29	.453	.737	.587
L12M_1.	The firm has an access to the bank credit for investments	.26	.439	.726	.591
D7. Staff training^a		.19	.360		.799
A29_3.	Our managers and employees took part in external trainings for the qualification improvement	.22	.412	.868	.815
A29_2.	Our managers and employees took part in external trainings in management and sales last year	.17	.376	.862	.825
D8. Strategic planning^a		.13	.293		.750
A31_3.	The firm has a long term plan (more than 5 years)	.08	.272	.854	.800
A31_2.	The firm has a midterm plan (for 3-5 years)	.17	.376	.837	.792
D9. Use of advanced technology^a		.08	.186		.551
A22.	The firm provided experience in the field of management and commerce abroad	.04	.205	.715	.578
A20.	The firm sold an own technology abroad	.03	.181	.683	.507
A19.	The firm implemented foreign technology	.17	.379	.666	.558
D10. Trademarks and patents a		.31	.386		.645
A10_2.	The firm has a registered patent (s) in the country or abroad	.20	.400	.806	.723
A10_1.	The firm has a registered trademark in the country or abroad	.42	.494	.774	.729
P1. Performance^b		.41	.307		.834
A34_1.	Number of staff	.79	.702	-	-
A34_3.	Revenues	.84	.810	-	-
A34_4.	Profits	.75	.799	-	-
A34_6.	Market share	.09	.692	-	-
C1.	Competitiveness				
B2a.	Entrepreneur's age ^c	3.81	.304	-	-
B3.	Entrepreneur's education ^d	5.45	.856	-	-
B6a.	Firm size (number employees) ^c	2.71	1.351	-	-
B7.	Registration according to the Craft law ^a	.05	.218	-	-
B8.	Memberships in professional association ^a	.06	.238	-	-
A17.	Value added (VA) of export products ^c	2.01	.508	-	-
A16a.	Percent of production for export ^c	3.66	.869	-	-
A6a.	Percent of "bad" receivables ^c	2.77	.842	-	-

Measures: a (0 - "none"; 1 - "yes"); b (0 - "decrease"; 1 - "without change"; 2 - "increase"); c (Ln); d (from 1 - elementary to 7 - doctor); e (from 1 - entirely with low VA to 4 - entirely with high VA).

Table A4
Distribution of Firms by the Level of Performance

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	162	32.4	32.4
	2	88	17.6	50.0
	3	99	19.8	69.8
	4	81	16.2	86.0
	5	70	14.0	100.0
Total	500	100.0	100.0	

Phi = .406; Approx. Sig. = .000; Cramer's V = .234; Approx. Sig. = .000

Table A5
Means from Hierarchical Four Cluster Solution

	1	2	3	4	F	Sig.
D1. Learning orientation	0.18	0.39	0.50	0.43	25,032	.000
D2. E-integration	0.01	0.00	0.57	0.37	100,568	.000
D3. Product innovations	0.11	0.79	0.81	0.69	230,804	.000
D4. Marketing strategies	0.21	0.18	0.63	0.58	59,957	.000
D5. Access to information	0.42	0.50	0.66	0.71	17,177	.000
D6. Access to finance	0.23	0.09	0.50	0.40	32,494	.000
D7. Staff training	0.09	0.08	0.79	0.03	214,398	.000
D8. Strategic planning	0.03	0.03	0.42	0.18	52,702	.000
D9. Advanced technology	0.06	0.07	0.18	0.07	9,310	.000
D10. Trademarks & patents	0.15	0.21	0.60	0.49	46,458	.000
P1. Performance	0.31	0.47	0.57	0.41	18,034	.000
C1. Competitiveness	1.49	2.33	5.65	3.94		
Cluster sample size (number and %)	197 (39.4%)	112 (22.4%)	84 (16.8%)	107 (21.4%)		

Table A6
Cross-classification to Assess Cluster Stability

Cluster number from the first K-means	Cluster number from the second K-means				Total
	1	2	3	4	
1	0	27	0	162	189
2	54	0	2	0	56
3	0	0	55	10	65
4	0	180	0	10	190
Total	54	207	57	182	500

Table A7
ANOVA Model of two Criterion Validity Variables and Cluster Membership

	Cluster number	Mean	F	Sig.
K1. E-business	1	.7130	8.925	.000
	2	.5024		
	3	.7018		
	4	.6126		
K2. Export	1	3.3581	6.334	.000
	2	3.7932		
	3	3.4545		
	4	3.5177		

Table A8
Cross-Classification of Additional Variables and Four Clusters

Firms characteristics		Number of cases per cluster				Total
		1	2	3	4	
1. Entrepreneur's age	Up to 30 years	22	4	13	8	47
	31~40	35	18	11	44	108
	41~50	72	18	23	49	162
	51~60	47	13	14	58	132
	More than 60	13	3	4	31	51
Total ($\chi^2 = 37.3$; $p = .000$)		189	56	65	190	500
2. Entrepreneur's education	Elementary	0	0	1	0	1
	Secondary	28	10	1	64	103
	Bachelor	28	8	14	29	79
	Master	128	38	49	90	305
	Dr	5	0	0	7	12
Total ($\chi^2 = 52.9$; $p = .000$)		189	56	65	190	500
3. Firm's size	Micro (1~9 employees)	56	12	13	114	195
	Small (10~49 employees)	89	27	26	60	202
	Medium (50~250)	44	17	26	16	103
	Total ($\chi^2 = 71.0$; $p = .000$)	189	56	65	190	500
4. Firm's "bad" receivables	Up to 10% of the turnover	0	0	0	0	0
	11~20%	103	29	34	62	228
	21~30%	72	19	25	102	218
	More than 30%	13	8	6	24	51
	Total ($\chi^2 = 22.9$; $p = .001$)	188	56	65	188	497

Table A9
Share (%) of Firms from Sub-Sectors (Core Activities) by Clusters

Clusters	Sub-sectors																		Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	18.8	55.0	47.6	45.5	40.0	28.6	43.3	36.0	50.0	34.8	14.3	40.9	30.8	23.7	45.2	81.8	34.4	47.6	37.8
2	21.9	10.0	4.8	4.5	6.7	17.9	23.3	24.0	-	8.7	28.6	-	3.8	5.1	9.7	-	25.0	14.3	11.2
3	37.5	25.0	19.0	4.5	16.7	14.3	23.3	20.0	37.5	4.3	28.6	9.1	-	6.8	6.5	9.1	3.1	-	13.0
4	21.9	10.0	28.6	45.5	36.7	39.3	10.0	20.0	12.5	52.2	28.6	50.0	65.4	64.4	38.7	9.1	37.5	38.1	38.0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Phi = .558, Approx. Sig. = .000; Cramer's V = .322, Approx. Sig. = .000

Table A10
Sample Distribution of Firms by Sub-Sectors

Subsectors (core activity)	Number of SMEs	%
1. Food production	32	6.4
2. Beverages	20	4.0
3. Chemical and pharmaceutical products	21	4.2
4. Textile and textile products	22	4.4
5. Wearing, leather and leather tanning	30	6.0
6. Furniture	28	5.6
7. Machines, equipment and home devices	30	6.0
8. Electrical machines and apparatus	25	5.0
9. Transport equipment and other than motor vehicles	16	3.2
10. Rubber and plastics	23	4.6
11. Medical, precision and optical apparatus and instruments	14	2.8
12. Office machinery and computers	22	4.4
13. Wood and wood products, except furniture	52	10.4
14. Pulp, paper, and paper products	59	11.8
15. Publishing, printing and reproduction	31	6.2
16. Non-metallic and mineral products	22	4.4
17. Metal products, except machinery and equipment	32	6.4
18. Radio, television and communication technics	21	4.2
Total	500	100