CONNECTION BETWEEN ENTREPRENEURSHIP AND INNOVATION INTO ROMANIAN SMALL AND MEDIUM-SIZE ENTERPRISES

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The goal of this paper is to investigate the relationship between entrepreneurship-innovation - performances in SMEs based on a research conducted into Romanian small businesses. A total of 800 SMEs supply the data for the study. The results indicate a direct relationship between these three concepts. Innovation is directly related to performance and mediates in the entrepreneurship-performance link. These connections don’t differ between SMEs, thus size is not a key factor in explaining the contributions of entrepreneurship to innovation and performance of SMEs. The study's sample is limited to IT&C SMEs in Romania. Whilst the objectives of the study were met, we consider that more studies are needed in order to compare SMEs in other sectors of economy and on different contexts. The study emphasize the importance of entrepreneurship to innovation and performance in SMEs.

Keywords: change, entrepreneurship, innovation, management

1. Introduction
The last years have been characterized by an increasingly dynamic, complex and unpredictable environment for businesses (O’Regan, 2006). Intense competition in the global market is compelling SMEs to leverage their capabilities and competencies, differentiate themselves in the marketplace (Ceptureanu, 2010), and improve their competitive advantage and performance (Verboncu, 2011). Many SMEs have generated sustained competitive advantage through a continuous stream of innovation and ability to leverage other capabilities of the company. Understanding how SMEs successfully perform and what factors positively lead to better performance than competitors is of interest to researchers. The resource-based view of the company (Makadok, 2001; Newbert, 2007; Nasution, 2011) provides an extensive explanation on the theory of competitive advantage and how SMEs can attain competitive advantage through its ability to deploy its resources, but unfortunately most of these studies focus on large enterprises. SMEs (Ceptureanu, 2010) are still largely ignored, consequently there is very limited understanding of how key potential, represented by entrepreneurship and innovation affect the performance of SMEs. Entrepreneurship and innovation are capabilities that SMEs can exploit in pursuit of superior performance (Verboncu, 2011), but ironically how service-based SMEs influence performance through entrepreneurship and innovation is slightly understood. This study tries to fill this gap. We must say that during the time performance has been measured in a number of ways: (1) based on financial indicators such as return on investment (ROI), return on asset (ROA), profitability and gross margin; (2) based on market effectiveness, including rate of new product introduction, sales volume, market share, sales volume and sales growth; (3) based on strategic objectives which relates to overall performance of the company, customer satisfaction and/or commitment, environmental performance and quality performance (Barney and Clark, 2007; Sarkar, 2001). Whereas other performance indicators have been well researched, research on performance remains sickly. Yet it is well acknowledged that performance is an important source of differentiation and a desire of most SMEs (Verboncu, 2011). This research therefore argues for the facilitating roles of entrepreneurial and innovation capabilities in performance of IT-based SMEs (Nicolescu, 2009). Moreover, according to Abernathy and Utterback (1978) SMEs are likely to adopt new and emerging technological innovations faster. However, between SMEs it is unclear whether innovation and other capabilities will differ, and also whether the effect of these capabilities on performance will be different. Research has shown that the same strategy can often produce quite different results when applied to similar SMEs (Davis and Devinney, 1997; Fahy, 2002).

2. Entrepreneurship, innovation and performance into SMEs
An early definition of entrepreneurship posited by Schumpeter (1934) defines entrepreneurship as an endeavour that is centrally characterised by innovation. Schumpeter (1934)
and Vesper (1980) suggested that five categories of behaviour characterise entrepreneurship: introduction of new goods, introduction of new methods of production, opening of new markets, opening of new sources of supply and industrial organisation. According to Carland (1984), an entrepreneurial venture can be identified by such strategic behaviour. As such, a member of an organisation can be entrepreneurial and an organisation can have an entrepreneurial structure, each of which complements the other to provide synergy (Echols and Neck, 1998). Another definition looks at entrepreneurship as a combination of innovative, proactive and risk-taking behaviour that is intended to create value in organisations (McDougall and Oviatt, 2000). Miller (1983) suggests that the degree of entrepreneurial orientation could be seen as the extent to which organizations take risks, innovate and act proactively. According to Barrett (2003), an entrepreneurial organization is proactive in obtaining intelligence on customers and competitors; is innovative by reconfiguring its resources to formulate a strategic response; and implements the response, which entails some degree of risk and uncertainty. Risk taking refers to a tendency to take bold actions such as venturing into unknown new markets, committing a large portion of resources to ventures with uncertain outcomes (Lumpkin and Dess, 2001). While a number of studies on entrepreneurship have reported risk taking as a characteristic of entrepreneurs (Morris, 1998; Brockhaus 1980) presented a contrasting view. Brockhaus’s study compared risk preference patterns of entrepreneurs and managers and found no statistical difference. However, more recent studies have recognised and measured the risk taking as an entrepreneurial quality with significant effect on technology and innovation creation and diffusion (Ndubisi, 2005; Nasution, 2011). For these reasons risk taking is assumed to have a significant impact on the innovation capacities and performance of entrepreneurial IT SMEs. Moreover, Morris (1998) argues that entrepreneurs calculate their risk. Calculated risk taking is explained by Morris as an attempt on the part of the entrepreneur to find ways to mitigate, shift or share risk. Dess and Lumpkin (2005) shed light on the types of risk that entrepreneurs and entrepreneurial ventures take: business risk (i.e. venturing into the unknown, untested markets or committing to unproven technologies); financial risk taking (requires that a company borrow heavily or commit a large portion of its resources in order to grow) and personal risk (the risks that an executive assumes in taking a stand in favour of a strategic course of action). Also, innovation has been defined in many ways by authors. Cumming (1998) looks at the term as the creation of new product or process, whereas Knox (2002) refers to it as a new way of delivering better value. Innovation, to others is a form of knowledge or the creation of new idea (Ceptureanu, 2010; McAdam, 1998; Urabe, 1998). Damanpour (1991) defines organizational innovation as the adoption of an idea or behaviour new to the adopting organization, which involves all dimensions of organizational activities, such as a new product or service, a new production process technology, a new structure or administrative system and a new plan or program within the organization. Of the various classifications of innovation, three dimensions are relevant and of interest to this study, namely process innovation, product/service innovation and administrative innovation. Product/service innovation involves the introduction of new products or services, including modifications to the existing services or the process of bringing new technology into use (Łukas and Ferrel, 2000). Process innovations are those that affect the production or service delivery process. Administrative innovation involves administrative elements and their relationships to the social system of an organisation (Pennings, 1998). According to Knox (2002), it is important for organisations to adopt innovation and innovative thinking in their decision makings in order to achieve superior customer value. A number of approaches have been adopted in the measurement of business performance including financial performance, market effectiveness and strategic objectives. The first and most common performance dimension is financial performance and consists of such indicators as ROA, ROI, gross margin and profitability (Barney and Clark, 2007). The second dimension which is very popular among marketing researchers is market effectiveness. Measures of market effectiveness include market share, sales volume, sales growth and new product introduction. The least common dimension of performance is strategic objectives. Some of the indicators include achievement of overall customer satisfaction, overall performance of the organisation and achievement of the strategic objectives (Sarkar, 2001). Some of the relatively newly emerging dimensions of strategic objectives of the company include overall performance and environmental performance. The recent interest in greening of the company has seen more research being conducted on environmental performance of companies (D’Souza, 2006; Ottman, 1993), however, performance is still seldom applied by practitioners and rarely examined by researchers. This is due mainly to its lack of immediate payoff. In this study organisational performance is measured in terms of SME managerial and economical outstanding results (Verboncu, 2011). Due to the importance of innovation and SMEs in the development of the new economy and technology, innovation in the context of SMEs has
received much interest in the literature (Ceptureanu, 2011; Nasution, 2011). Although SMEs typically face considerable resource constraints, they are often successful innovators (Nooteboom, 1994; Vossen, 1998). This is mainly because entrepreneurial SMEs are agile than their larger counterparts; they can move faster and are more flexible, proactive and risk keen (Nicolescu, 2008; Ndubisi, 2005). The introduction of innovative products, services, processes or business models tailored to attractive niches is an additional opportunity for SMEs to stand out from competition (Porter, 1980). In so doing, SMEs can benefit from higher customer value and the uniqueness of the innovation (Lieberman and Montgomery, 1988). Serving attractive niches with innovative products is particularly advantageous for entrepreneurial SMEs and helps to improve their performance. Extant literature on the link between entrepreneurship and innovation suggests that entrepreneurship when matched with market-oriented culture contributes significantly to successful innovation (Slater, 1997). Nasution (2011) and Ceptureanu (2009) found that entrepreneurial qualities coupled with learning orientation, integrated market orientation and human resource practices lead to innovation. Also there are research studies which have shown that entrepreneurship can lead to better performance. For example, Dewan (2007) found that SMEs characterized by high IT risk have a higher marginal product of IT relative to companies with low IT risk. Ho (2011) showed that autonomy positively moderates the relationship between IT investment and company performance. Walsh (2009) found that rapid reactivity in conflict handling improves relational outcomes. Innovation and the capacity to implement innovations determine whether the organization will achieve superior performance (Hurley and Hult, 1998). SMEs with greater capacity to innovate when combined with resources are more successful in responding to their environments and developing new capabilities, which leads to competitive advantage (Nicolescu, 2011) and greater innovative capacity resulting in superior performance (Hurley and Hult, 1998). Innovative products may create new demand and thus, facilitate company’s growth. If the innovation in SMEs manages to set high barriers, preventing rivals from market entry, the company’s position in the industry is strengthened and the innovation can lead to persistent above-average returns (Porter, 1985). Advancement in technology assists entrepreneurs to sell differentiated products in local, regional and global markets; market intelligence plays an effective role in this distribution. Intelligence about suppliers and rivals is extremely valuable for SMEs in order to innovate in their processes, products or services (Verhees and Meulenberg, 2004). As SMEs encounter global competition, there is an emergent recognition of the focal role of technological innovations in shaping market success (Mitchell, 1990). Therefore, the effective distribution of technological resources facilitates building a sustainable competitive advantage (Nicolescu, 2011), which improves the financial performance of a company (Porter, 1985; Schroeder, 1990). The salience of innovation is underlined by an observation that innovation, in an increasingly hostile market environment, represents a means of long-term survival not just growth (Han, 1998). Studies on SME performance including both financial and non-financial (e.g. managerial, economic and environmental performance) and their drivers are many (Mavondo and Farrell, 2003). We therefore argue that through innovative products/services, processes and administration, SMEs can achieve superior performance.

3. Research methodology and data collection

Data were collected from clients of the National Agency of the Trade Registry of Romania (Oficiul National al Registrului Comertului- ONRC) by a professional cooperation conducted by me and Professor Sebastian Ceptureanu from Bucharest University of Economic Studies. We sent questionnaires to 1242 entrepreneurs and results 800 valid responses from entrepreneurs, for a total response rate of 64, 4%. To minimize prejudices in responses, the order of questions representing the dependent/independent variables were mixed (Verboncu, 2011; Nicolescu, 2011). Of course, subjects were assured that their responses would be handled confidentially. In order to obtain valuable and realistic results, our sample needed to consistent on SMEs that have the potential to experience and demonstrate significant performances in the last years, as well as innovation and synergy (Ceptureanu, 2010). Thus, we restricted our analysis to companies with at most fifty full-time-equivalent employees (micro and small companies according to Romanian law regarding SMEs), reducing the sample size to approximately 64% from original size. Such attrition rates are common in studies of SMEs (Chrisman, 2004; Schulze, 2001). With the advancement of technology, the demand for IT and IT-related products are increasing in almost every sector of Romanian economy. To fulfil their needs, SMITP play a key role in providing solutions to individuals and businesses at a cheaper cost compared to larger IT companies. IT has radically changed the face of modern business and organizations (Hasan and Harris, 2009). IT is being considered as a powerful competitive factor for organizations (Nicolescu, 2011;
Barney, 1999; Porter and Miller, 1985). There is a growing interest in the utilization of IT to perform business activities. Entrepreneurs are making a wide use of IT to innovate or create new solutions to the needs of businesses and consumers. IT industry in Romania shares a key role in providing quality services at low cost due to the presence of talented human capital. The major proportion of IT industry in Romania is dominated by software design and development. A structured questionnaire was used to gather data. The list from ONRC served as the sampling frame for the study. All the 1242 local software companies listed in the directory were invited to participate in the study. Participation was purely voluntary. Altogether about 987 SMEs accepted the invitation and were sent the survey forms. Out of this number, 843 forms were returned and 800 were usable. The companies were represented by the entrepreneur or CEO. The key informant method was used and only entrepreneurs or CEOs of the organizations were requested to respond to the questions. Key informants are viewed as appropriate respondents if appropriate selection procedures are used. Thus, using guidelines on selecting key respondents from previous research key informants were screened and chosen on the basis of their knowledge (Ceptureanu et al., 2012; Ceptureanu et al. 2012)) of the research issues, their formal role in the organisation and willingness to respond. Scale items were adapted from other prior studies conducted in other countries or Romania (Nicolescu-White Book of SMEs, 2011, 2012, 2013). The issue of content validity was tackled from the beginning of the study during the development of measurement items and instrument as recommended by Sonquist and Dunkelburg (1997).

4. Findings and discussion

Table 1: Process of innovation in SMEs by company’s age linked to performance

<table>
<thead>
<tr>
<th>No.</th>
<th>Process of innovation</th>
<th>Process of innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Less than 5 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SP</td>
</tr>
<tr>
<td>1.</td>
<td>Adapting and changing innovations developed by other firms</td>
<td>381</td>
</tr>
<tr>
<td>2.</td>
<td>R&amp;D policy</td>
<td>127</td>
</tr>
<tr>
<td>3.</td>
<td>Take over innovations developed by another organization</td>
<td>389</td>
</tr>
<tr>
<td>4.</td>
<td>Cooperation with other organizations</td>
<td>225</td>
</tr>
</tbody>
</table>

SP- superior performances  
IP- inferior performances  
Source: own research

Table 2: Process of innovation by region linked to performance

<table>
<thead>
<tr>
<th>No.</th>
<th>Process of innovation</th>
<th>SMEs by region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>North East</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SP</td>
</tr>
<tr>
<td>1.</td>
<td>Adapting and changing innovations developed by other firms</td>
<td>74</td>
</tr>
<tr>
<td>2.</td>
<td>R&amp;D policy</td>
<td>53</td>
</tr>
<tr>
<td>3.</td>
<td>Take over innovations developed by another organization</td>
<td>115</td>
</tr>
<tr>
<td>4.</td>
<td>Cooperation with other organizations</td>
<td>105</td>
</tr>
</tbody>
</table>

SP- superior performances  
IP- inferior performances  
Source: own research
Table 3: Process of innovation by region SMEs size linked to performance

<table>
<thead>
<tr>
<th>No.</th>
<th>Process of innovation</th>
<th>Enterprise size</th>
<th>Micro enterprises</th>
<th>Small companies</th>
<th>Medium companies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SP</td>
<td>IP</td>
<td>SP</td>
</tr>
<tr>
<td>1.</td>
<td>Adapting and changing innovations developed by other firms</td>
<td>183 99 39 2 15 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>R&amp;D policy</td>
<td>68 12 18 1 11 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Take over innovations developed by another organization</td>
<td>623 26 31 11 20 -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Cooperation with other organizations</td>
<td>704 32 21 21 10 10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SP - superior performances
IP - inferior performances
Source: own research

5. Implications

The paradigm developed for this research has derived from existing theories and research. The dynamic capabilities, entrepreneurship and innovation theories (Barney, 1999; Newbert, 2007; Peteraf and Barney, 2003) provide a framework for understanding the effects of entrepreneurship on innovation capabilities and performance of IT-based SMEs in Romania. The results of the study corroborates most of the earlier findings and adds value by demonstrating that both entrepreneurship and innovation capabilities are important for SMEs in search of performance. There is also no effect in the relationship between entrepreneurship and innovation. The outcome of this study indicates that entrepreneurship dimensions have significant influence on performance. In recent times, more and more organisations are using collaborative and interdependent heterogeneous teams to pursue creativity and innovation. This study has a number of important implications for entrepreneurs. From the results, it is clear that more innovative and entrepreneurial SMEs positively influence their performance and reputation; and also that this relationship is not dependent on their size. As such, entrepreneurial qualities are equally important for entrepreneurs in the sample in developing innovation capabilities and performance. Similarly, innovation capabilities are equally important for them in improving performance. SMEs entrepreneurs should recognise the fact that smaller size does not mean weaker entrepreneurial and innovation capabilities and performance, and thus should approach market competition with trust. Such positive attitudinal dispositions will eventually pay off in greater success for SMEs. Notwithstanding the size of the company, management should continue to invest in building entrepreneurial and innovation capabilities of their organisations. They should encourage fast reactiveness in serving client’s necessities, willingness to try out new ideas and strategies throughout the organisation, empower internal customer groups to find new ways to improve quality, and promote a performant culture throughout the organisation. As entrepreneurs engage the global market, they realise that majority of these markets unlike in the past are getting more sophisticated, and demanding higher quality offerings. Inevitably they must address the rising clients demand for superior quality or else they will lose them to rivals in the highly competitive IT sector. Interestingly, this can be achieved by SMEs as size is neither a significant facilitator nor inhibitor to any group of businesses, as demonstrated in the study. At the same time, SME entrepreneurs must understand the necessary resources and capabilities to develop, when and how much to invest in them, and the desired outcomes from such investments, as they track superiority in performance.

6. Conclusions

In today's competitive environment, the challenge for all enterprises is not only to innovate, survive and remain profitable in existing markets but also to innovate in new markets to gain profits and remain ahead in the race of competition. SMEs differentiate themselves in the market place based on different criteria, including reputation referred to as performance in this study. The study's aims were to investigate the direct and indirect effects of entrepreneurship and innovation on performance. Both entrepreneurship and innovation have direct impact on performance. Additionally, innovation mediates in the relationship between entrepreneurship and performance. These relationships are not different between SMEs, so size is not a moderator. In other words, there is no optimal company size for innovation activity and performance in the IT sector, because the degree of the contribution of
entrepreneurship to innovation and to performance is not different between SMEs and is not dependent on the size of the SME.

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