

Analyzing SMEs transition towards Knowledge based Economy: an investigation on the SMEs from the south region of Romania

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Abstract: SMEs are facing a new challenge, the transition to Knowledge based Economy (KBE), an economy where those who own the most knowledge have the strongest competitive advantage. In order to measure the stage of transition towards KBE we implemented a structured questionnaire on 317 SMEs from the south region of Romania focusing on the most important characteristics brought by the new economy: the importance of acquiring/obtaining, protecting and valorising the knowledge; increasing the knowledge based as a strategic direction; the importance of intangible assets; the partnership with their key stakeholders; participation in various forms of collaboration between firms; the investments in training; the characteristics of the motivational system; the flexibility of work; The following analysis will show that the Romanian SMEs started the transition process towards the new type of firm but in order to be competitive at a regional, national or global level, the efforts must be intensified.

Keywords: Knowledge based economy, SMEs, knowledge based entrepreneurship, learning organization

Introduction

This paper focuses on Romanian small and medium-sized enterprises and the impact that the new characteristics brought by knowledge-based economy had on them. In the past few years the world economies went through a series of fundamental changes driven mainly by the development of information and telecommunication technologies and globalization which lead to a new type of economy in which the main resource is knowledge. Knowledge and information are at the foundations of the new economies and the concept ‘knowledge-based economy’ has emerged due to the pivotal role that knowledge and technology plays in economic growth of a nation, as embodied in human capital, innovations and information technology (Ali et. all., 2015).

Knowledge-based economy comes along with a new type of entrepreneurship, one in which the emphasis is on the relation between data, information and knowledge and the processes of obtaining and exploiting the knowledge has a major role. Knowledge-based entrepreneurship is referring to the type of entrepreneurship in which the role of creating new knowledge is central to value creation (Keins, 2006). Having a new type of economy and a new type of entrepreneurship has led to the emergence of a new type of company – the knowledge-based organization. The main role of the new type of organization is to protect, integrate and exploit knowledge (Nicolescu, 2011), the new type of firms depend much more on the ability to convert knowledge into good currency (Chen, 2008).

The importance of Small and Medium-sized Enterprises is increasing and they are recognized as the backbone of every economy in the world, many important countries focusing their development strategies around SMEs (USA stated in 2013 that SMEs are the heart of their economic restructuring plan). There are many differences between SMEs and the big firms like their ability to create many jobs, to produce products and services at a lower cost, to innovate etc. (Nicolescu, 2001) and their importance is given by the fact that they represent more than 95% of all companies (OECD, 2004). Based on Eurostat data in Romania there are 2.7 million employees in SMEs and 21,3 SMEs per 1000 inhabitants. Most of the SMEs are micro enterprises with 88% followed by small enterprises with 10,4% and medium enterprises with 1.6%.

Literature review

There is no doubt that we are moving towards a “knowledge-based economy” and knowledge became the most important resource in all companies. The first signs of change to knowledge-based economy appeared in the mid-60s when it became clear to the economists that economic growth could no longer be explained in terms of traditional economic factors such as land, labor and capital (Cooke & Leydesdorff, 2006). Unlike in the post industrial economy, in the new type of economy there are many connections between the agents involved and knowledge is widely used and exploited in all manner of economic activity (Hidalgo & Albors, 2008).

Many authors claim that information and communications technologies (ICT) are in fact the pioneers of the new economy (Drechsler & Reinert & Kattel & Perez, 2009) but if we look at the bigger picture we can state that such a complex transition cannot be the result of only the ICT development. One of the definitions that refer to the new type of economy presents it as *the transformation of knowledge in raw material, capital, products, essential production factor for the economy, and by economic processes in which the generation, selling, acquisition, learning, stocking, developing, splitting and protection of the knowledge become predominant and decisive for long term profit gaining and sustainability assurance* (Nicolescu, 2011).

There is no methodology that ensures a successful transition to the new economy but there are some key areas that improve the chances of a successful implementation. The ability of a country to move to a knowledge-based economy is closely linked to its capacity to create competitive advantage through innovation, to train highly skilled workforce, to extensively use all its knowledge etc. There are many studies that present the transition of other countries to knowledge-based economy, for example Korea successfully moved to the new economy through big investments in education, intensive research which lead to innovation, a modern information infrastructure and a stable political environment (Suh and Chen, 2007). The same three directions were applied in Mexico: education, innovation and institutional reforms (Kuznetsov and Dahlman, 2008). Romania made

significant improvements and set a series of basic foundations towards knowledge-based economy but the gap between our country and the developed countries from EU is still huge (Popa, 2013).

These changing times come along with new characteristics to the firms too. The entrepreneurship in the new economy contains more knowledge and we can talk about a “knowledge-based entrepreneurship” that drives innovation, development and economic growth (Groen, 2005). Knowledge-based entrepreneurship, manifest through high-technology start-ups, corporate spinouts, and university spinoffs, constitutes an especially important subset of entrepreneurship (Hayter, 2013). Knowledge-based entrepreneurship is included in many sectors as manufacturing and services, existing and new industries, traditional and high-technology sectors (Kanellos, 2013).

If “traditional enterprises” were based on a heavy organizational structure, decision-making systems and incentive mechanism, in the new economy, knowledge and intelligence are the foundations of knowledge-based enterprises (Wang, 2002). Unlike last century enterprises who managed mostly only data, the new form of enterprises must continuously manage the entire data – information – knowledge system (Gudas, 2012). Although the differences between the two types of organization are fundamental and major, the transition from one type to another is smooth and is ensured by a different type of organization: the learning organization. There are many definitions of the learning organization in the existing literature most of them presenting the learning organizations as organic entities with the capacity to continuously learn and with very strong adaptive characteristics (Pokharel & Choi, 2015).

Even if we talk about knowledge-based enterprises or about learning organizations there are a set of specific characteristics that differentiate them from the “traditional enterprises”. In order to elaborate our study we selected 8 main characteristics (Nicolescu, 2011; Popa, 2006; Doghfous, 2004; Lehaney et al, 2003; Coincross, 2003; Kessels, 2001; Jones, 1999) and analysed their level of implementation in the Romanian SMEs:

- Acquiring/obtaining, protecting and valorisation of knowledge are one of the main purposes of the firms;
- The strategic development of the company relies on increasing the knowledge base;
- The physical assets of the firm are decreasing while the intangible assets are increasing;
- The collaboration with other companies is redefined, there are a series of networks of firms in which knowledge is disseminated;
- The relationship with the key stakeholders is much more tight, they are invited to participate in various activities of the company;
- The investments in training for the key employees are growing;
- The motivation systems are focused on employee performance;
- The labour flexibility is increasing, the employees can now work from everywhere and the working hours are not so strict;

Methodology

Based on the knowledge-based enterprises characteristics we developed 8 hypotheses which will be tested by implementing a structured questionnaire:

H1. Acquiring/obtaining, protecting and valorising the knowledge are not one of the main purposes of the firm;

- H2. Increasing the knowledge base is not one of the main directions in the strategic development of the SMEs;
- H3. Both physical and intangible assets increased;
- H4. The partnership with the key stakeholders is significantly improved;
- H5. Most SMEs are part of networks of firms;
- H6. The investments in training increased;
- H7. The motivation system is primarily focused on employee performance;
- H8. The labour flexibility increased.

Using data provided by Ministry of Energy, SMEs and Business Environment and by The White Paper of SMEs from Romania and correlating them with the demographics of Romania we can state that in the south and Bucharest-Ilfov regions (for future reference we will refer to this two regions as “south region”) there are 35.43% of all SMEs from Romania. In the South Zone there are 16.1 SMEs/1000 inhabitants (a total of 52.466 SMEs) and in the Bucharest-Ilfov Zone there are 50.23 SMEs/1000 inhabitants (a total of 102.581 SMEs).

In order to test the proposed hypothesis we elaborated a structured questionnaire with close-ended questions. The questionnaire was implemented in 317 SMEs from the south region via e-mail, telephone or the newsletter sent by Romania Young Entrepreneurs Patronage. This study has an error of 5.5% and a confidence level of 95%.

Analyses and results

The main objective of this article is to show the effects that the knowledge-based economy had on the analyzed Romanian SMEs. In order to perform the study we proposed 8 hypotheses and then we elaborated a questionnaire that was implemented in 317 Romanian SMEs.

The questionnaire was sent via e-mail to 2631 SMEs from the south region (region in which approximately 1/3 of SMEs in Romania are operating) and we received 311 responses, of which only 295 could be counted (16 were incomplete or moved their activity in other regions), which led us to a 11.82% rate of reply. In order to obtain an error of 5.5% we also filled 22 more questionnaires face to face or via telephone. The characteristics of the analyzed sample are presented in Table 1:

Owner's age		Domain		Number of employees		Age of the company	
18 - 25 years	28.7%	Commerce	33.1%	<10	66.6%	< 5 years	53.0%
25 - 35 years	49.8%	Services	28.7%	10 - 49	27.1%	5 - 10 years	18.6%
35 - 45 years	18.0%	Industry	4.4%	>49	6.3%	10 - 20 years	23.3%
45+ years	3.5%	IT	20.5%			> 20 years	5.0%
		Tourism	8.5%				
		Other	4.7%				

Table 1. Characteristics of the analyzed sample

H1. Acquiring/obtaining, protecting and valorising the knowledge are not one of the main purposes of the firms;

Asked if acquiring/obtaining, protecting and valorizing the knowledge is important for their company, most of them responded that they partial or total agree that the below 3 processes are part

of the most important activities of their company. We can distinguish the following important aspects: the most important activity from the above 3 is knowledge exploiting according to 53.0% of SMEs who responded that they totally agree with this statement and 22.1% that partially agree; the least important activity from the above 3 is knowledge protection where we have only 22.1% totally agree responses and the highest rate of “neither agree or disagree”- 32.5%, “partially disagree”- 11.4% and “strongly disagree” – 6.3% responses. Therefore, the hypothesis **H1** turns out to be **false**.

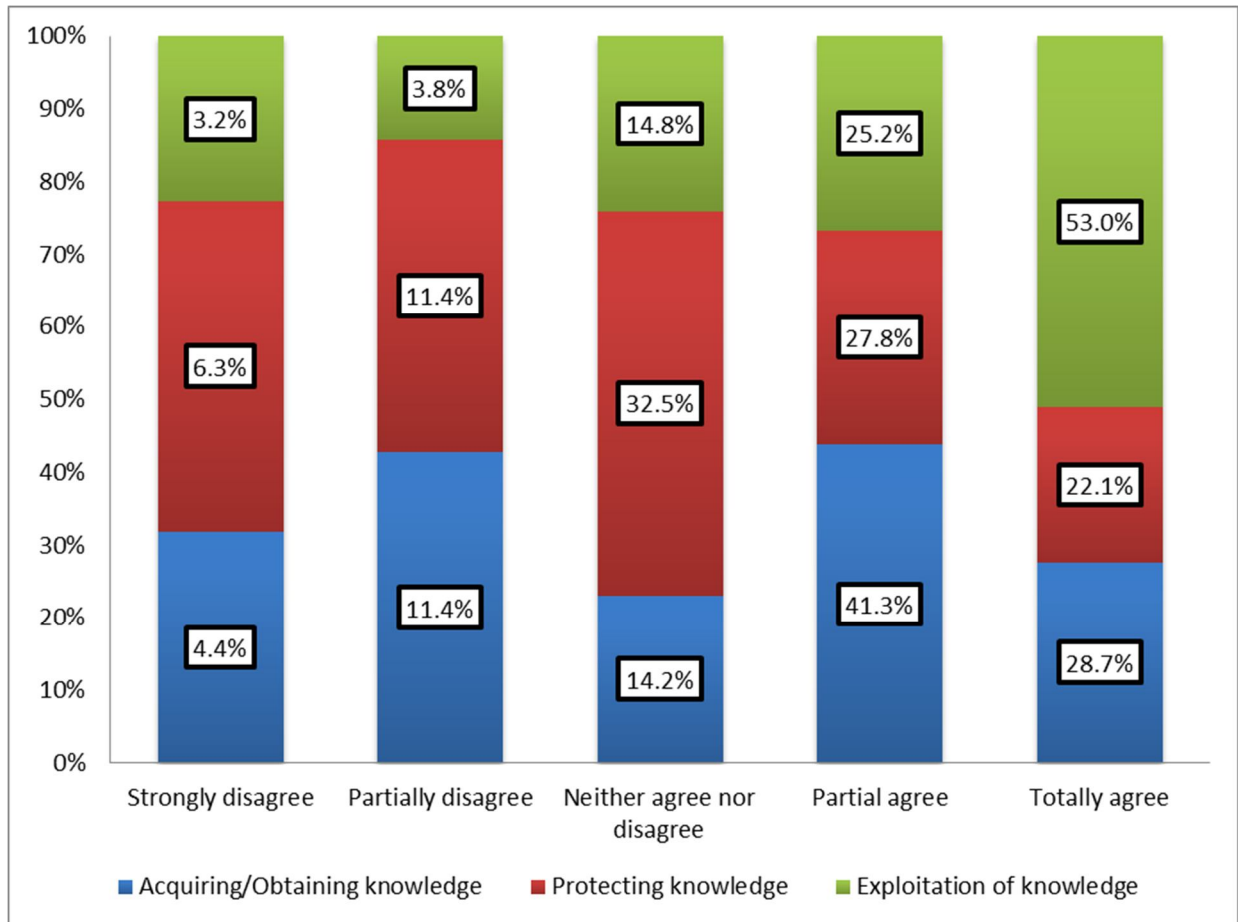


Figure 1. The importance of acquiring/obtaining, protecting and valorising knowledge

H2. Increasing the knowledge base is not one of the main directions in the strategic development of the SMEs.

When it comes to how important is widening the information and knowledge base for their business 59.97% of the entrepreneurs said that the growth of information and knowledge base is very important for their firm development and 22.41% said that it is quite important. Only 11.36% of them said that it is not important at all, not very important or neither important nor unimportant which led us to the conclusion that also **H2** is **false**.

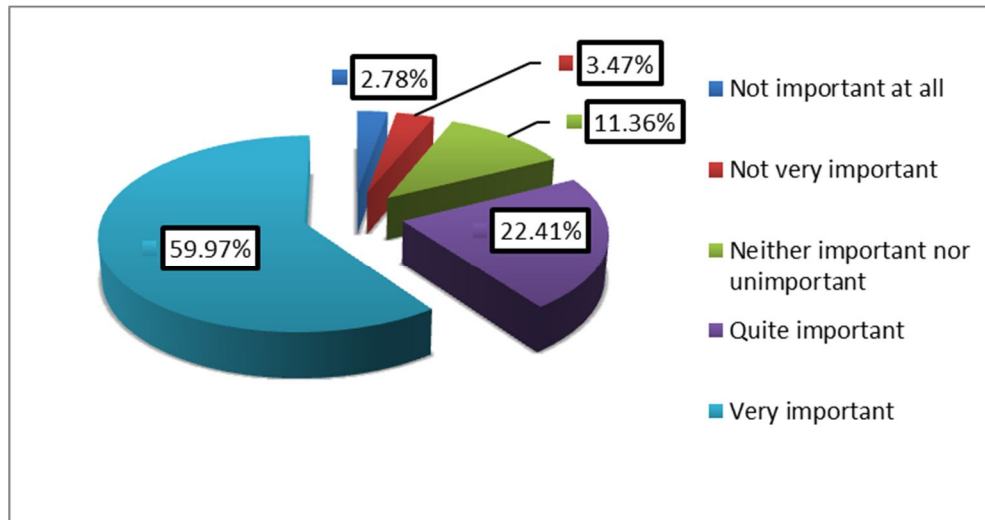


Figure 2. The importance of widening the information and knowledge base

H3. Both physical and intangible assets increased

In the knowledge-based economy context the physical assets of a firm should decrease and the intangible assets should grow, but, based on the specific characteristics of Romanian entrepreneurs (most of them believe that physical assets are very important for the company) we assumed that both physical and intangible assets increased over the time. Our assumption was true, 40.74% of the entrepreneurs stated that the physical assets increased over the time, 36% stated that the intangible assets increased and only 11.05% stated that the physical and intangible assets remained the same, 8.21% stated that the intangible assets decreased and 4% stated that the physical assets decreased which led us to the conclusion that **H3 is true**. It should be noted that contrary to the theory, Romanian entrepreneurs find the physical assets very important for their firms as we have the biggest rate of responses at the “physical assets increased” option and the lowest rate of responses at the “physical assets decreased” option.

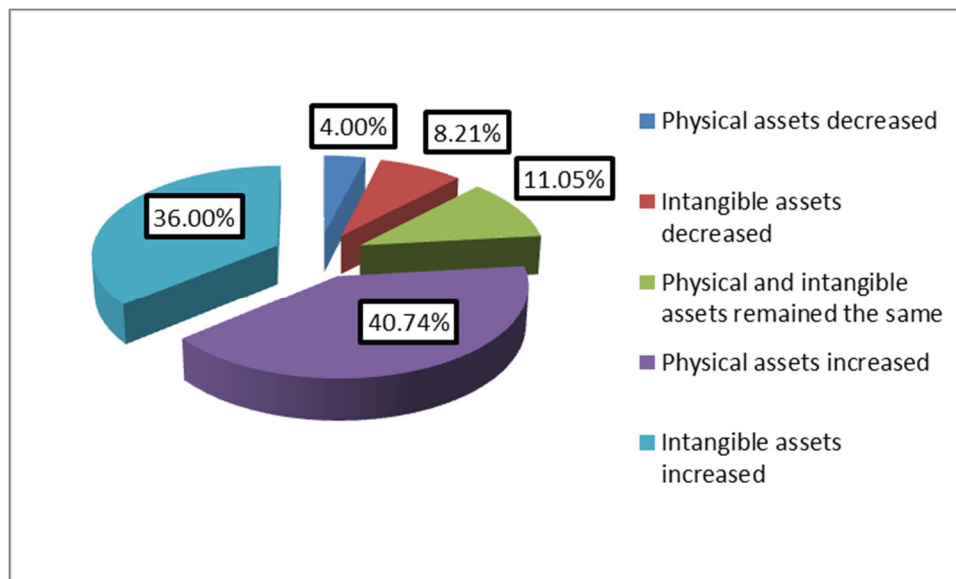


Figure 3. Physical and intangible assets in SMEs

H4. The partnership with the key stakeholders is significantly improved.

The partnership of a company with the key stakeholders is crucial to its development. Even if the company's strategic approach is to get closer to its main stakeholders, this process must be done on by both sides and this is the main reason why 57.89% of them say that the partnership with the local authorities remained the same or 42.11% said that their partnership with the civil society remained the same. Most of the surveyed firms stated that they made small improvements with all key stakeholders and it can be observed that besides the relationship with the local authorities, SMEs improved their partnership with the employees, customers, business partners or civil society, highlighting that **H4 is true**.

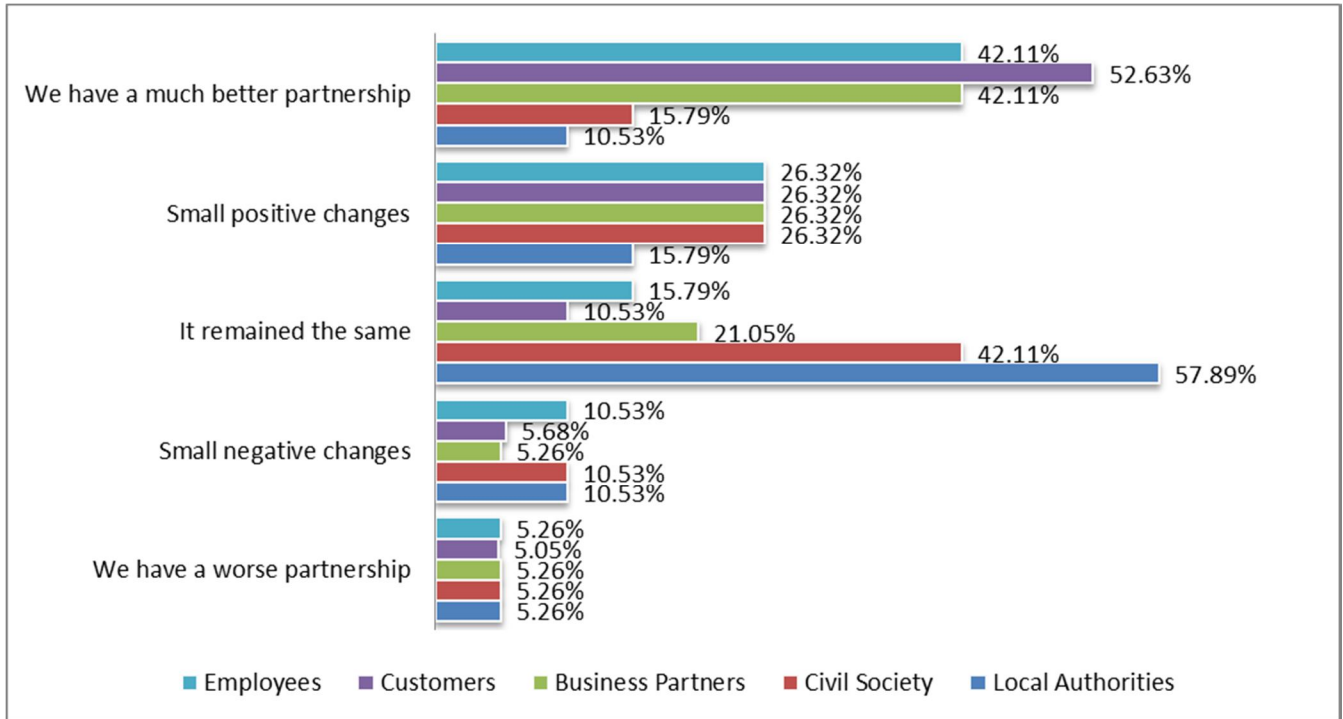


Figure 4. Aspects of the partnership with the key stakeholders

H5. Most SMEs are part of networks of firms.

Because of their limited resources, being part of a network of firms is a huge advantage for an SME as they can participate in multiple forms of collaboration with other firms in terms of better time and costs. Of the surveyed companies 74.13% of them are part of a network of firms but there is still a big percentage (25.87%) of firms that are not part of any form of collaboration between companies. Returning to our hypothesis, the study demonstrated that the majority of SMEs are part of a form of collaboration between companies so **H5 is true**.

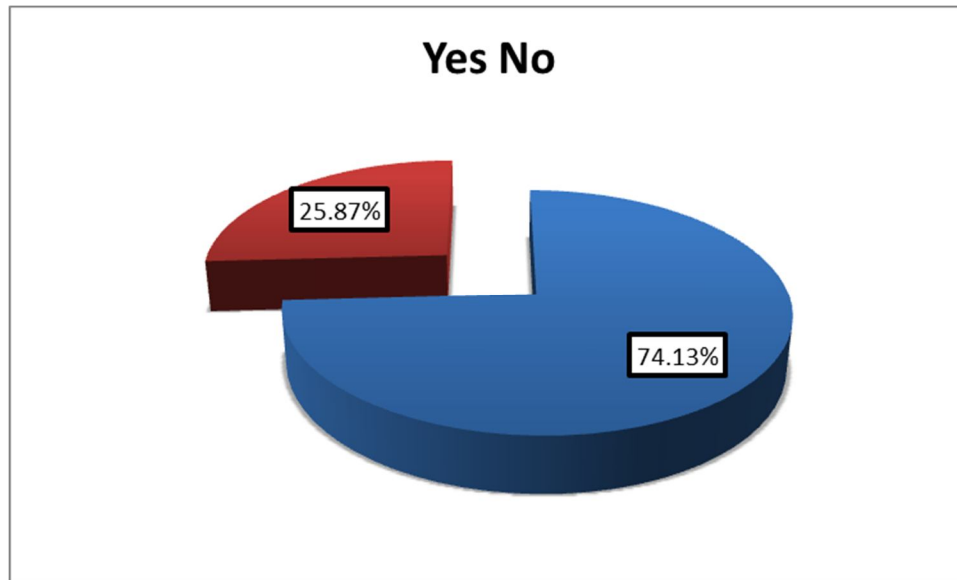


Figure 5. Percentage of SMEs part of a network of firms

H6. The investments in training increased.

In the knowledge-based economy context, continuous development is one of the most important aspects. Although many SMEs do not have big resources, in order to remain competitive they must not stop investing in trainings. Unfortunately a total of 45.86% said that there are no investments or the investments decreased or remained the same, only 11.54% of them said that the investments in training increased a lot and the majority (42.59%) said that the investments increased therefore we can assume that **H6** is **true**, but the difference between the percentages is very small.

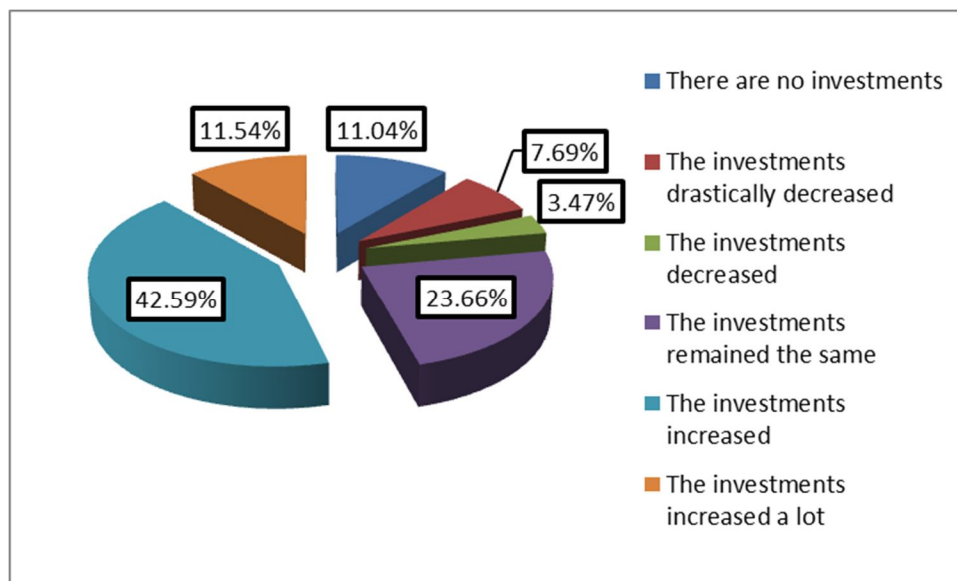


Figure 6. Investments in training

H7. The motivation system is primarily focused on employee performance;

Employee performance should be the main evaluation criteria in the knowledge-based enterprises. In the surveyed companies 52.05% stated that the performance criteria is very important but there are other criteria with at least the same importance followed by 40.69% of them who stated that the

evaluation system is based mostly on performance and by 7.26% who stated that performance is not such an important criteria. Bottom line is that 92.74% of the SMEs stated that performance is a very important criteria in their motivation system, therefore **H7 is true**.

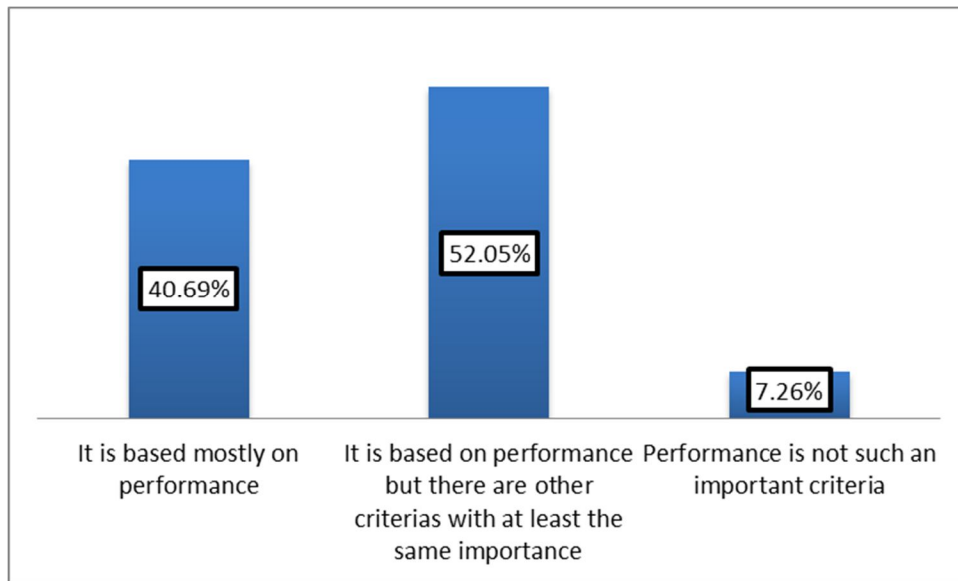


Figure 7. Performance as part of the motivation system in SMEs

H8. The labor flexibility increased.

The labour flexibility is very important for the knowledge employees and a “9 to 6” working environment with no flexibility at all cannot attract knowledge workers. Given the fact that only 4.4% of the surveyed companies are in the industry domain we can assume that the most of the companies can implement a flexible environment. The collected data shows that in 53.31% of the companies the working hours are not flexible and in 63.09% the employees can work only within the company or at clients HQ therefore in the Romanian SMEs the work environment is not so flexible and therefore **H8 is false**.

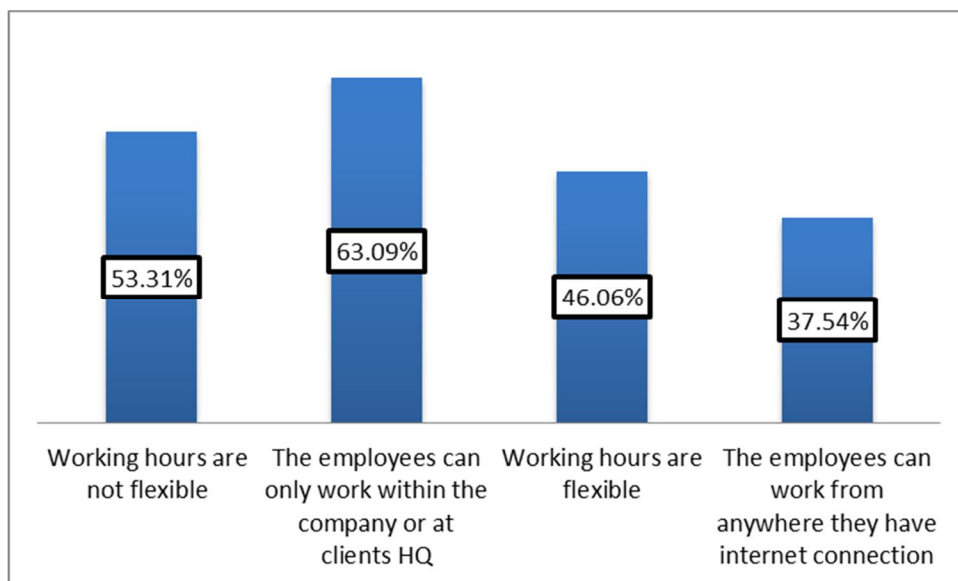


Figure 9. Labor flexibility

Conclusions

This present study examines the knowledge-based economy effects on Romanian SMEs. The study was conducted on 317 SMEs from the south region (region in which approximately 1/3 of SMEs in Romania are operating) and aims to present the main characteristics of the Romanian SMEs in the knowledge-based society context. In order to do so we elaborated 8 hypotheses and we tested them by implementing a structured questionnaire with close-ended questions.

Analyzing the results of this study we conclude that the Romanian SMEs are still in the process of transition to the “knowledge-based firm” but it should be pointed out that the transition is in an advanced stage in some directions and the efforts must be maintained. Many important characteristics of the “knowledge-based firm” are present in the Romanian SMEs, the study revealed that acquiring/obtaining, protecting and valorizing the knowledge are very important for our entrepreneurs, widening the information and knowledge base is an important aspect for the firms strategy, the intangible assets increased during the last years, they have a much better partnership with their key stakeholders, most of them are part of a form of collaboration with other firms, the biggest majority of them stated that the investments in training increased, an overwhelming majority of SMEs stated that the motivation system is focused on employee performance and nearly ½ of the surveyed firms have a flexible work environment.

Still, there are some areas that should be improved, the SMEs should concentrate more on the intangible assets and less on the physical ones, both local authorities and entrepreneurs should work together to improve their partnership, in order to remain competitive the remaining ¼ SMEs that are not part of a network of firms should join a form of collaboration with other firms and the remaining 43% that reduced the training investments or do not invest at all in training should focus more in this area and in order to attract knowledge workers the labour flexibility should increase.

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