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Article

Sustainable knowledge based organization from an international perspective

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Sustainable knowledge based organization from an international perspective

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Abstract

The research focused on identifying the characteristics of a sustainable knowledge based organization from both theoretical and specialized perspective. In order to achieve this goal, an exploratory research was developed. This involved a survey that included 268 knowledge management specialists from Romania and Spain. The main findings showed that this type of firm is a structure in which sharing knowledge among employees is the key to gain competitive advantages. As a result, it focuses on adapting to the economic environment challenges in a timely manner, on planning on short-, medium- and long-term and on adopting an ethical attitude towards all the stakeholders. This article reflects the need to continue the development of the theory of the firm since the post-bureaucratic organizations that have been developed until now cannot answer the market's demands. In other words, it introduces a new construct – the sustainable knowledge based organization – and it brings to forefront the need to combine the sustainability and knowledge in order to adapt to a dynamic, uncertain and complex environment.

Key words: economic, social and environmental objectives, knowledge, organizational culture, sustainability.

1. INTRODUCTION

As an answer to the challenges that appeared in the macro-economic environment, the organizational theories evolved. As a result, in the context of globalization, when the interest for environmental protection had increased, concepts like “sustainability”, “sustainable development” and “corporate social responsibility” started to be used in organizational theories (Dodd, 1932; Friedman, 1970; Lozano, 2008). In other words, companies begin to be oriented not only to obtaining profit but also to using its resources in a rational way. In addition, managers started to be concerned with developing strong relationships with members of the communities in which their companies are operating.

Besides, the transition from the post-industrial economy to the knowledge based one had also modified the organizational theories which began to focus on describing a new type of firm, namely “knowledge based organization” (Davies and Botkin, 1994; Drucker, 1988; Nonaka, 1994). This presented knowledge as the new source of competitive advantages (Bennet, A. and Bennet, D., 2003) and highlighted managers' increased interest in developing activities that facilitate the creation, dissemination and use of knowledge (Nonaka, 1994).

Nowadays, the business environment is becoming more and more complex, uncertain and dynamic (Ashill and Jobber, 2010; Audia et al., 2000; Kotler and Caslione, 2009; Millar and Choi, 2010): information is travelling from one continent to another in a couple of milliseconds; technological progress occurs in a faster pace; obsolescence appears earlier; customers' preferences are changing faster and investors' behaviour is more protective. In this context, both the sustainable and the knowledge based organization seem to be vulnerable. The first one focuses on developing its

relationships with the stakeholders in order to obtain an earlier identification of what may happen outside its boundaries. In other words, it is capable of determining the opportunities and threats that may appear but it does not have a very good inside perspective. Therefore, it won't be capable of adapting in a timely manner to the challenges.

On the other hand, the second one focuses on creating, disseminating and using knowledge – processes that occur mainly in the internal environment of the firm. It is gathering information from inside and outside company's boundaries (Bennett, A. and Bennett, D., 2003; Nonaka, 1994); it is processing it and then it incorporating it in its products and services (Drucker, 1988). As a result, it is developing the necessary instruments in order to adapt but is neglecting the fact that it needs time to transform knowledge into action.

Therefore, we ask ourselves if a company couldn't combine those two perspectives in order to adapt to the challenges induced by such an unpredictable environment and reunite them by the name of "sustainable knowledge based organization". And if this would be possible then which will be the main characteristics of this kind of company? Will it be just a merger between sustainable organizations and the knowledge based ones or it will have some specific elements?

These are the main questions to which the current article will try to offer an answer. In the next section, the researcher makes a review of the literature regarding sustainable organizations and the knowledge based ones in order to describe the construct of sustainable knowledge based organization from a theoretical point of view and then presents some methodological aspects of the current research. In the fourth part, the paper focuses on the results that had been obtained after analyzing the questionnaires collected from 268 specialists in knowledge management. This paper ends with a couple of conclusions regarding the characteristics of the sustainable knowledge based organizations – analyzed from both theoretical and practical point of view – and with a short presentation on how the obtained results will be used in a future research.

2. A theoretical perspective on the sustainable knowledge based organization

At the organizational level, globalization brought to the forefront the need for developing a close relationship with the community in which companies are operating (Anderson, 1991; Dodd, 1932; Friedman, 1970) and the need for gaining competitive advantages by using the internal knowledge base (Drucker, 1988, Nonaka, 1994). Some firms – namely, *sustainable organizations* – preferred to focus on the first need and started to establish economic, environmental and social objectives and to implement strategies that will bring benefits to all the stakeholders (Friedman, 1970; Lozano, 2008). Other ones – called, *knowledge based organizations* – concentrate on the second need and developed activities that aimed to generate and to facilitate the share and use of knowledge between the employees (Bennet, A. and Bennet, D., 2003; Grant, 1996; Nonaka, 1994).

First of all, we have to mention that sustainability is not a fundamental characteristic of the firm like knowledge is. It is not a resource waiting to be exploited properly; is more an ability determined by company's attitude towards market and competitive forces (Hart, 1995; Fiksel, 2006; Nehrt, 1996; Russo and Fouts, 1997), the organizational design (Ramus and Steger, 2000; Sharma, 2000) and the level in which the organizational learning is encouraged (Ketola, 2010; Marcus and Nichols, 1999). Starting from these three coordinates, we may sustain that a company may be:

- *traditional* – it concentrates on the market and the competitive forces;
- *oriented towards sustainability* – it adapts its structure and culture in order to be able to react to market demands;
- *sustainable* – it focuses on obtaining economic, social and environmental performances using a proper organizational structure and culture.

Although the sustainable organization has been approached from different perspectives during the time – in the 90's, was perceived as a firm that gains benefits without harming the environment (Hart, 1995; Jennings and Zandbergen, 1995); between 2000 and 2006, it was described as a company that is capable of dealing, at the same time, with economic, environmental and social issues (Dunphy et al, 2003; Maddox, 2000); after 2007, the focus was on the ethical dimension and the company was presented as being based on four elements: profitability, stakeholders relationships, environment and ethic (Ketola, 2010; Lozano, 2008) –, it is generally described as an economic entity that focuses in developing its relationships with the stakeholders in order to achieve its main objectives and to maintain its development.

On the other hand, knowledge is a resource to which any company may have access through its employees; the secret is to know how to make them offer and use what they already know. But not all the researches had focused on the resources that these companies are using; some of them concentrated on the instruments that are used in order to collect and process the information. As a result, the concept of “knowledge organization” has been approached from two perspectives: a technological one (Calabrese, 2006; Liebowitz and Beckman, 1998; Rich, 1998) and a managerial one (Bennet, A. and Bennet, D., 2003; Grant, 1996; Hess and Bacigalupo, 2010; Nonaka, 1994). From the technological perspective, the knowledge based organization is an economic entity from the public or private sector that uses informational and communicational technologies in the process of decision making. On the other hand, the managerial approach is presenting it like a firm in which the organizational processes and structures had been adapted for allowing the creation of an environment favorable for knowledge creation, acquisition, dissemination and use.

TABLE 1: Characteristics of the sustainable and the knowledge based organizations

	Sustainable organization	Knowledge based organization
Definition	<ul style="list-style-type: none"> is a formal entity that operates through earned income and is capable of sustaining its own activities while contributing to the development of the socio-ecological system of which it is part of (Parrish, 2010). 	<ul style="list-style-type: none"> is a structure in which sharing knowledge is essential for maintaining effectiveness while problems are solved by a special type of employees, called knowledge workers (Mahesh and Suresh, 2009).
Similarities	<ul style="list-style-type: none"> establishing short, medium and long term objectives (Cândea, 2006; Lozano, 2008); developing an open organizational culture (Kollmus and Agyeman, 2002; Nicolescu, L. and Nicolescu, O., 2005); encouraging the collaboration with all the stakeholders (Kotler and Caslione, 2009) ensuring a favourable working environment for employees' development (Cândea, 2006); promoting employees empowerment (Gottschalk et al., 2009; Lozano, 2008); reacting in a timely manner to the changes that appear in the internal and external environment (Gottschalk et al., 2009; Kotler and Caslione, 2009); adopting an ethical and authentic behaviour towards employees, customers, suppliers, business partners, local institutions, non-governmental organizations and other stakeholders (Kotler and Caslione, 2009). 	
Differences	<ul style="list-style-type: none"> the objectives focus on the economic, social and environmental issues (Cândea, 2006; Lozano, 2008); promoting transactional leadership (Lozano, 2008); the organizational culture includes values, norms and principles that aim to increase stakeholders awareness to social and environmental issues (Kollmus and Agyeman, 2002). 	<ul style="list-style-type: none"> focusing on developing an internal knowledge base (Nicolescu, L. and Nicolescu, O., 2005); promoting transformational and charismatic leadership (Gottschalk et al., 2009); reducing the numbers and roles of the middle and first line managers (Nicolescu, L. and Nicolescu, O., 2005); outsourcing the activities that are not essential for the company (Nicolescu, L. and Nicolescu, O., 2005).

Source: Leon, R.D. (2012a). Strategic factors for developing sustainable knowledge based organization. In J.G. Cegarra (Ed.). Proceedings of the 13th European Conference on Knowledge Management, (vol. 1). Reading: Academic Publishing International Limited, p. 619.

If we compare these two types of companies (Table 1), we notice that they aren't as different as it seems. Although they are focusing on satisfying different needs – facilitating the development of the socio-ecological system of which it is part (*sustainable organizations*) or using knowledge for gaining competitive advantages (*knowledge based organizations*) –, they have a lot of things in common. The similarities that exist between these two are generated by the fact that both of them are post-bureaucratic organizations and include: establishing short, medium and long term objectives; developing an open organizational culture; encouraging the collaboration with all the stakeholders; promoting employees development and empowerment; adopting an ethical and authentic behaviour

towards employees, customers, suppliers, business partners, local institutions, non/governmental organizations and other stakeholders.

Therefore, why should a company choose between those two types of needs and not satisfy both of them? Could we talk about a sustainable knowledge based organization in which development includes knowledge, economic, environmental and social issues?

As an answer to these questions the author has developed the construct of sustainable knowledge based organization. This may be described as an economic entity that manages its knowledge and other resources so that it generates, for a long time, efficiency and recognized performance at the economic, environmental and social level.

If we assume that this company is a merger between the sustainable firm and the knowledge based one, just like Nicolescu O. and Nicolescu L. (2005) and Zollinger (2004) sustain, then this kind of firm will aim to combine the most important characteristics of the sustainable organization with the ones of the knowledge based organization. Therefore, if we put together the specific elements of these two types of companies – which had been presented earlier – then we obtain a theoretical portrait of the sustainable knowledge based organization which includes:

- developing organizational structures and practices that encourage the creation, dissemination and use of knowledge;
- collaborating with employees, customers, suppliers, other companies, institutions and members of the community;
- developing programs that bring benefits to all the stakeholders;
- establishing objectives at the economic, environmental and social level on short, medium and long term.

Therefore, we may consider that a sustainable knowledge based organization is an economic entity oriented towards creating, disseminating and using knowledge inside and outside its boundaries, which establishes economic, environmental and social objectives for a short, medium and long term period.

3. Research methodology

The purpose of this research was to identify what a sustainable knowledge based organization is from both theoretical and knowledge management specialists' perspective.

From a methodological point of view, the research used an ethic approach and combined a documentary study – represented by a review of the literature in the field knowledge management – with an exploratory research for knowledge management specialists.

The documentary study focused on identifying the potential characteristics of the sustainable knowledge based organization.

The goal of the exploratory research was to identify the elements that characterize a sustainable knowledge based organization from knowledge management specialists' point of view. Therefore, this research aimed to define what a sustainable knowledge based organization is and to determine its main characteristics.

In order to achieve these objectives, during February 2011 – March 2012, a survey in which questionnaire was the main research instrument was conducted. This included 24 items that were focusing on four major aspects: defining the sustainable knowledge based organization, identifying its characteristics and influence factors and determining the most important elements that can guarantee the sustainability of a company in the current economic environment. For the first and last aspects, items were designed using a multiple choice scale. A five point Likert scale was used for identifying the main characteristics of the sustainable knowledge based organization. In this case, 1 represented "little

important” and 5 “extremely important”. The questionnaire reliability was proven using Alpha Cronbach coefficient which had a value of 0,873.

The investigated population was represented by the knowledge management specialists from Romania and Spain, countries that share almost the same cultural profile according to Hostefede’s dimensions. A starting point in selecting the Romanian subjects was represented by Romanian Knowledge Management Community databases. According to these, from 2009 until present, 170 persons had obtained a certificate of knowledge management specialists.

In the case of Spain, since there was no official knowledge management community, the researcher focused on the persons that, in the last five years, had investigated knowledge management issues or had managed knowledge management activities / departments. As a result, 548 specialists were identified that were members of the Rearch Center of Knowledge Society (*Centro de Investigación sobre la Sociedad del Conocimiento*), the University Institute of Business Administration (*Instituto Universitario de Administración de Empresas*), the Spanish Association of Contabilidad and Business Administration (*Asociación Española de Contabilidad y Administración de Empresas*), the Scientific Association of Economy and Management (*Asociación Científica de Economía y Dirección de la Empresa*).

In the end, the research population was represented by 718 knowledge management specialists. Each of them was invited to submit the questionnaire – that was distributed using Google Docs application – and to offer the contact details of another person that could be interested in participating to this research. Snowball sampling was used and data were collected from 268 persons: 134 Romanian specialists and 134 Spanish specialists. The sample is statistically representative for a confidence level of 95% and a confidence interval of + / - 5%.

The distribution of Romanian and Spanish samples by occupation, age and type of formation were similar and is presented in Figure 1. Data were processed using SPSS Program and techniques like systematization, tabling and graphics were applied.

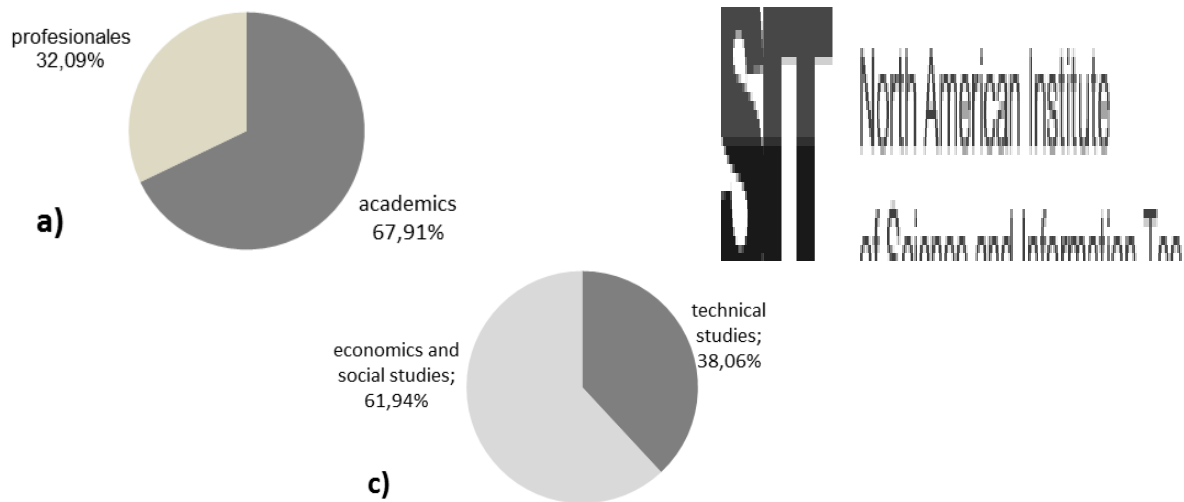


FIGURE 1: Romanian and Spanish sample distribution by occupation (a), age (b) and type of formation (c)
Source: Bueno, E., & Leon, R.D. (2012). Dynamic capabilities – present or absent in a sustainable knowledge based organization. Paper presented at Conferencias y Comunicaciones del II Congreso Internacional de Conocimiento e Innovación – CIKI 2012, Madrid, Spain, 27 September – 2 October 2012.

4. A specialized perspective on the sustainable knowledge based organization

Analyzing the responses' distribution regarding the way in which a sustainable knowledge based organization may be defined (Figure 2), results show that most of the knowledge management specialists (46.80%) presented it like a structure in which sharing knowledge between the employees is the key to gain competitive advantages at the economic, environmental and social level. Meanwhile, 20.80% of the respondents described it as a complex and adaptive system based on self – organized teams while 15.00% sustained that this is a way of adapting to the current economic environment.

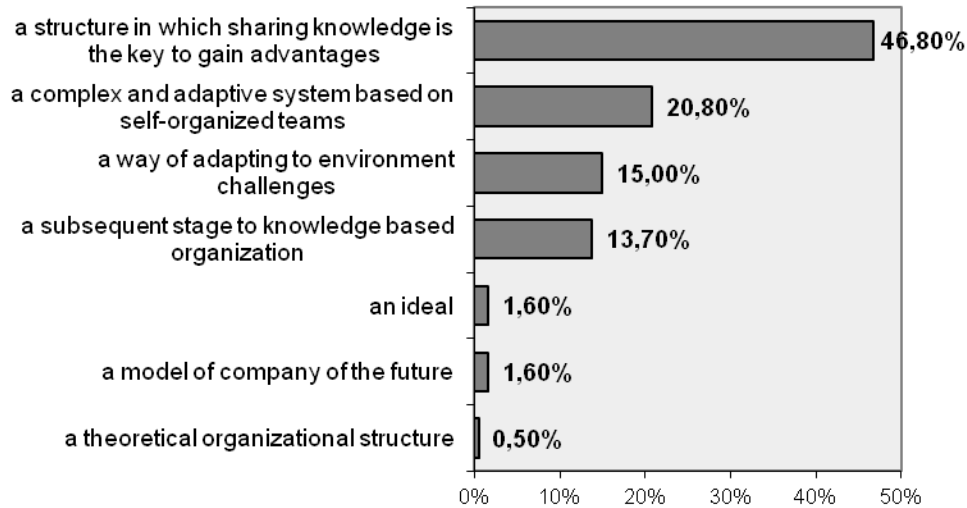


FIGURE 2: The responses' distribution regarding the way in which a sustainable knowledge based organization may be defined

Source: Leon, R.D. (2012b). Sustainable knowledge based organization from a Romanian and Spanish perspective. In Brătianu, C., Lixăndroiu, D., & Pop, N.A. (Eds.) Business Excellence Challenges during the Economic Crisis. Proceedings of the 7th International Conference on Business Excellence (vol. I), Braşov: Editura Universităţii Transilvania, pp. 276.

Cumulatively, these answers reflect the knowledge management specialists' point of view regarding the sustainable knowledge based organization. They tend to focus on three major coordinates: competitiveness, knowledge, internal processes.

According to the knowledge management specialists, competitiveness is the result of satisfying stakeholders' needs (in terms of addressing to economic, environmental and social issues) in a timely manner. First of all, a company must show its interest in dealing with firm's problems (especially, economic issues – namely, profitability, earnings, costs, production / delivery time, quality of the raw materials etc.) and the ones that occur in the community in which it operates (environmental and social issues – like, level of pollution, standard of living, level of development, quality of the transportation / communication infrastructure etc.). Besides, getting the information about what stakeholders need and satisfying their demands must happen as fast as possible. In order to do so, the employees must be very well prepared and capable of transforming the information that they gather from the internal and external environment into knowledge. These may happen only if the firm has developed its activity around self-organized teams and the internal processes and structures are encouraging knowledge creation, acquisition, dissemination and use.

Taking all these aspects into account, it can be argue that a sustainable knowledge based organization is a formal economic entity that uses knowledge in order to adapt to the economic, social and ecological challenges that are coming from the micro- and macro-environment.

On the other hand, the knowledge management specialists sustained that these companies become sustainable if they adapt to the challenges induced by the economic environment in a timely manner, they plan their activity for short, medium and long term and if they adopt an ethic attitude towards all the stakeholders (Figure 3). But these three elements influence one another. As we may notice from Table 2, there is a positive correlation between adaptability, planning and ethical attitude which is statistically significant.

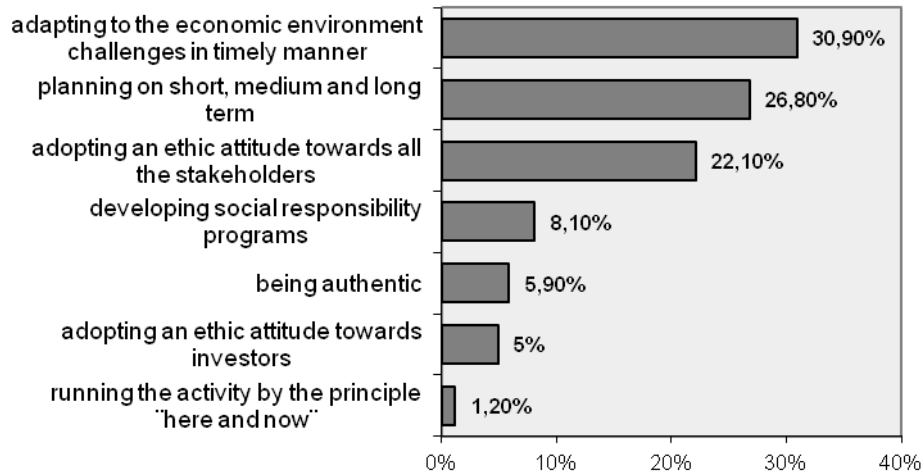


FIGURE 3: Responses' distribution regarding the elements that ensure the sustainability

Source: Leon, R.D. (2012b). Sustainable knowledge based organization from a Romanian and Spanish perspective. In Brătianu, C., Lixăndroiu, D., & Pop, N.A. (Eds.) Business Excellence Challenges during the Economic Crisis. Proceedings of the 7th International Conference on Business Excellence (vol. I), Braşov: Editura Universităţii Transilvania, pp. 276.

The most important element of the sustainability seems to be the adaption in a timely manner to the economic environment challenges (30.90%). This result is generated by the fact that in the last years, the business environment became more dynamic – the technological progress produced faster (obsolescence started to appear rapidly) and the time in which clients' preferences changed became shorter. In other words, company's success depends by its ability to shorten the time between identifying and satisfying stakeholders' needs.

This goal of company's activity may be achieved by planning on short, medium and long term (26.80%). In other words, if a company wants to be sustainable and capable of valuing the opportunities that may appear on the market, it has to be interested and prepared for what is happening now and what may happen in both close and distant future. In fact, there is a weak positive correlation between these two components ($r = 0.163; Sig = 0.008$)

Despite all these, anticipating and reacting does not seem to be enough. Therefore, 22.10% of the knowledge management specialists who participated in this research highlighted the importance of adopting an ethical attitude towards all the stakeholders. In other words, if the company wants to pass the test of time and wants to be capable of anticipating the changes that may occur in demand then it has to assume its responsibility for employment, customers, suppliers and community. But the direct correlation between these components is weak. Only, 1.21% of the variability in adapting in a timely manner to market demands can be explained by differences in ethical attitude ($r = 0.110; Sig = 0.072$) while 2.16% of the variability in planning on short, medium and long term can be attributable to the ones in ethical attitude ($r = 0.147; Sig = 0.016$).

Therefore, it can be concluded that adopting an ethical attitude towards all the stakeholders has an indirect influence on the processes of planning and adapting to environment's challenges. In other words, what a company does affects its image, its reputation in the market. If this is favorable, then the

stakeholders will be more receptive to firm’s actions. They will understand that the organization is not focusing on increasing its gains but it pursues the well-being of all its stakeholders (employees, providers, customers, partners, shareholders, governmental and non-governmental institutions etc.). They will perceive themselves as part of a system and will try to contribute to company’s success by being more open to collaborate with it and share the information that they own. As a result, the organization will be able to identify the weak signals faster, to anticipate the changes that may occur, to develop a proper strategy and to plan its activity.

On the other hand, only 8.10% of the respondents believed that developing social responsibility programs may contribute to ensuring the sustainability of a knowledge based organization. In other words, the company’s activity must bring benefits to the community but that does not mean that social responsibility programs have to be developed. The benefits may be represented by investments in improving community life, increasing the employment rate and the standard of living etc. Besides that, although in the current economy being different may facilitate the achievement of competitive advantages, the impact of authenticity on the organization sustainability was identified only by 7.47% of the respondents.

TABLE 2: The correlations that exist between the factors which determine company’s sustainability

		1	2	3
1. adapting to the economic environment challenges in timely manner	Pearson Correlation	1	.163**	.110
	Sig. (2-tailed)		.008	.072
	N	268	268	268
2. planning on short, medium and long term	Pearson Correlation	.163**	1	.147*
	Sig. (2-tailed)	.008		.016
	N	268	268	268
3. adopting an ethic attitude towards all the stakeholders	Pearson Correlation	.110	.147*	1
	Sig. (2-tailed)	.072	.016	
	N	268	268	268

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

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

Based on the responses given by the knowledge management specialists it can be argued that any company – and even a knowledge based one – may become sustainable not only by developing on three levels: economic, environmental and social as theory sustains, but mainly by being oriented to future and having an ethical behaviour. In other words, the sustainability is dependent on company’s behaviour towards stakeholders and managers’ attitude to future. If the company has an ethical behaviour on the market and managers focus on the current problems by satisfying the demand in a timely manner and, at the same time, they are making scenarios regarding what could happen on medium and long term then the company may successfully pass the test of time. If those two conditions are not met simultaneously then the company will never be sustainable.

As it may be observed from Figure 4, the main characteristics of a sustainable knowledge based organization are combining the interests in creating, disseminating and using knowledge with the ones in developing a partnership with the community in which the company operates.

According to the knowledge management specialists, the managers of these kinds of firms are preoccupied with establishing objectives regarding economic, social, environmental and knowledge

issues (13.00%) and creating an open organizational culture (11.00%). These two are influencing one another and are enabling companies to develop continuously.

First of all, managers have to adopt a systemic perspective over the company. They have to take into account that firm's actions have influence on the employees, providers, customers, competition, local and / or national economy. As a result, they have to permanently address four types of issues: economic (their profitability and the influence that their gains will have on the local / national economy), environmental (how is the firm using the natural resource and how is this affecting the access to it of the future generations?), social (how is the company increasing the standard of living of its employees?) and knowledge (how is the firm participating to employees' development, to technological progress and to research and development?). If the managers have to solve these issues, then they have to be continuously informed about what is happening inside and outside company's boundaries. They have to keep in touch with the latest changes that appeared at the economic, technological, socio-demographic and legal level. In order to do so, they have to employ specialized workers, capable of collecting, analyzing, synthesizing and interpreting complex information. In other words, they have to be able to develop and use an internal knowledge base (aspect that had been considered essential by 10.70% of the employees).

But, in order to achieve all these objectives, the organizational culture must be oriented towards promoting them around employees, providers, customers and other stakeholders. Therefore, the organizational values must increase stakeholders' awareness to economic, environmental, social and knowledge aspects. Even from the start, the firm must declare how is going to do business and it has to follow that path. Besides, things must go beyond the declaration stage and each and every value must be incorporated in products / services, internal processes, relationships with the stakeholders etc. Managers have to define what kind of behaviour is valuable in the firm and which not. They have to inform the employees about it and they have to take it into account when they are developing the corporate strategy and also when they are evaluating the personnel.

In general terms, the organizational culture must be open. The values, the norms, the principles, the symbols, the logo, the heroes and the ceremonies must be developed towards encouraging independency, initiative, engagement, tolerance, self-determination and prestige. In other words, it has to create a trustful work environment in which cooperation and collaboration is important. As a result, the employees will contribute to company's success by expressing their ideas, sharing their knowledge and using their skills and competences.



FIGURE 4: Responses' distribution regarding the main characteristics of the sustainable knowledge based of the sustainable knowledge based organization

Source: Leon, R.D. (2012b). Sustainable knowledge based organization from a Romanian and Spanish perspective. In Brătianu, C., Lixăndroiu, D., & Pop, N.A. (Eds.) Business Excellence Challenges during the Economic Crisis. Proceedings of the 7th International Conference on Business Excellence (vol. I), Braşov: Editura Universităţii Transilvania, pp. 277.

At the same time, managers must develop activities and programs that are encouraging employees to share knowledge with one another and to improve their capacity of making decisions (10.20%) and also, bring benefits to suppliers, customers and community (9.00%). They have to take into account the idea of investing in stakeholders' development: using training and teambuilding sessions, mentoring or coaching programs and participating actively to the community life.

The elements that belong to the organizational structure domain are also important. As a result, 5.20% of respondents sustained that having a flexible organizational structure is extremely important while 2.40% of them argued that reducing the number and roles of the middle managers is the main characteristic of the sustainable knowledge based organization. These will reduce the costs, increase the coordination between the white-color and blue-color personnel, offer both of them more freedom of action and improve efficiency and increase customer satisfaction.

So, in order to develop the first three characteristics, a company must have a flexible organizational structure capable of encouraging the creation, dissemination and use of knowledge and, in the same time, capable of maintaining a close relationship with all the stakeholders.

If we take into consideration the knowledge management specialists' point of view then we may argue that a sustainable knowledge based organization is a complex adaptive system in which knowledge creation, dissemination and use is the key to gain competitive advantages in terms of knowledge, economic, environmental and social performances. Its sustainability is coming from the fact that managers are oriented towards planning for short, medium and long term, the company is adapting to the challenges induced by the environment in timely manner and last but not least, the firm is adopting an ethical attitude towards all the stakeholders.

The main characteristics of this kind of organization are combining the need for developing through knowledge with the one of establishing a strong partnership with the community in which the

community operates. Therefore, in order to gain the title of “sustainable knowledge based organization”, a company must have:

- knowledge, economic, environmental and social objectives;
- an open organizational culture;
- a developed knowledge base;
- activities and programs that encourage knowledge sharing among the employees and, in the same time, are improving their capacity of making decisions;
- programs that bring benefits to employees, customers, suppliers and to other members of the community;
- an increased level of innovations’ absorption;
- activities based on self-organized and interdependent teams;
- investments in research and development;
- extended relationships with stakeholders.

5. Conclusions and further research

The sustainable knowledge based organization is a complex construct whose features are revealed differently depending on the perspective from which is analyzed.

From a theoretical point of view, a sustainable knowledge based organization is the result of a merger between sustainable organization and the knowledge based one. Therefore, it combines the economic, environmental and social objectives with the ones that are oriented towards creating, disseminating and using knowledge in order to develop a good relationship with all the stakeholders. Its main characteristics are represented by establishing economic, environmental and social objectives for a long time period; using strategic knowledge; developing programs that bring benefits to the company, its stakeholders and its environment.

On the other hand, from the knowledge management specialists’ perspective, this is not a merger but a subsequent stage to the knowledge based organization. Although they highlight the importance of establishing objectives that aim knowledge, economic, environmental and social development, they also identify some specific aspects of this kind of organization. From their point of view, a sustainable knowledge based organization is a complex and adaptive system in which managers are oriented towards achieving multiple objectives (knowledge, economic, environmental and social) by planning for short, medium and long term, adapting to the economic environment challenges in timely manner and by adopting an ethic attitude towards all the stakeholders. Its main characteristics are represented by: establishing knowledge, economic, environmental and social objectives; developing an open organizational culture; developing an internal knowledge base; developing activities that encourage knowledge sharing among the employees and, in the same time, are improving their capacity of making decisions; creating programs that bring benefits to employees, customers, suppliers and to other members of the community; increasing the level of innovation absorption; developing activities based on self-organized and interdependent teams; investing in research and development activities; extending the relationships with the stakeholders; implementing a flexible organizational structure; outsourcing activities that are not essential for the firm; reducing the number and the roles of the middle and first line managers.

Besides the fact that there are a couple of differences between the theoretical and the knowledge management specialists’ perspective, a sustainable knowledge based organization as a formal ethical entity in which the activity is planned for short, medium and long term so that the knowledge creation,

dissemination and use to be encouraged and to facilitate the achievement of the economic, environmental and social objectives.

Despite all these, the research may be limited by the fact that the respondents shared the same specialization and the survey was developed during the economic crises. Due to the fact that all the respondents are specialists in knowledge management, they tended to focus on the intangible aspects of a company. They concentrated on the processes and activities that encourage the creation, dissemination and use of both explicit and tacit knowledge. Maybe the definition of the “sustainable knowledge based organization” and its main characteristics would have been different if the subjects of the research would have been specialized in area of environmental protection, sociology, natural resource management etc.

On the other hand, we must also take into account that the survey was developed during the economic crises when the traditional leverages of an organization highlighted their limits or failed. As a result, the respondents were more open to the possibility that a new type of firm may exist and also they have described it as being based on dynamic elements (knowledge) just like the environment in which it operated.

All these results are going to be used in a future research called “A managerial early warning system for sustainable knowledge based organizations” which aims to find the answers to following questions:

1. What are the factors that influence the performance of a sustainable knowledge based organization?
2. Are there any sustainable knowledge based organizations in the Romanian and Spanish business environment?
3. How would a managerial early warning system based on advanced neural network look like for this type of company?

Through this approach not only a new concept into the theory of the firm will be introduced – “the sustainable knowledge based organization” – but a new strategic instrument capable of anticipating the challenges that may occur in the micro- and macro- environment, on medium and long term will be developed.

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References:

1. Anderson, V. (1991). *Alternative Economic Indicators*. London: Routledge.
2. Ashill, N.J., & Jobber, D. (2010). Measuring State, Effect and Response Uncertainty: Theoretical Construct Development and Empirical Validation. *Journal of Management*, 36(5), 1278-1308. doi: 10.1177/0149206308329968.
3. Audia, P.G., Locke, E.A., & Smith, K.G. (2000). The paradox of success: An archival and a laboratory study of strategic persistence following radical environmental change. *Academy of Management Journal*, 43(5), 837-853. doi: 10.2307/1556413.
4. Bennett, A., & Bennett, D. (2003). Designing the knowledge organization of the future: the intelligent complex adaptive system. In C.W. Holsapple (Ed.) *Handbook of knowledge management* (Vol. 2, pp. 623-638), Berlin: Springer-Verlag.
5. Bueno, E., & Leon, R.D. (2012). Dynamic capabilities – present or absent in a sustainable knowledge based organization. Paper presented at Conferencias y Comunicaciones del II

Congreso Internacional de Conocimiento e Innovacion – CIKI 2012, Madrid, Spain, 27 September – 2 October 2012.

6. Calabrese, F.A. (2006). Knowledge – based organizations in context. *VINE The journal of information and knowledge management systems*, 36(1), 12-16. doi: 10.1108/03055720610667318.
7. Cându, D. (2006). De la dezvoltarea durabilă la întreprinderea sustenabilă. *Întreprinderea sustenabilă*, 1, iii-vi.
8. Davies, S., & Botkin, J. (1994). The coming of knowledge based business. *Harvard Business Review*, 72(5), 165-170.
9. Dodd, E.M. Jr. (1932). For whom are corporate managers trustees? *Harvard Law Review*, 42, 1145-1148.
10. Drucker, P. (1988). The coming of the new organization. *Harvard Business Review*, 66(1), 45-53.
11. Dunphy, D., Griffiths, A., & Benn, S. (2003). *Organizational Change for Corporate Sustainability*. New York: Routledge.
12. Fiksel, J. (2006). Sustainability and resilience: toward a system approach. *Sustainability: Science, Practice & Policy*, 2(2), 14-21.
13. Friedman, M. (1970). The responsibility of business is to increase its profits. *The New York Times Magazine*, 13/09/1970, 32-33.
14. Gottschalk, P., Holgersson, S., & Karlsen, J.T. (2009). How knowledge organizations work: the case of detectives. *The Learning Organization*, 16(2), 88-102. doi: 10.1108/09696470910939189.
15. Grant, R.M. (1996) Toward a knowledge – based theory of the firm. *Strategic Management Journal*, 17(1), 109-122. doi: 0143-2095/96/S20109-14.
16. Hart, S.L. (1995) A natural – resource – based view of the firm. *Academy of Management Review*, 20(4), 986-1014. doi: 10.5465/AMR.1995.9512280033.
17. Hess, J.D., & Bacigalupo, A.C. (2010). The emotionally intelligent leader, the dynamics of knowledge – based organizations and the role of emotional intelligence in organizational development. *On the Horizon*, 18(3), 222-229. doi:10.1108/10748121011072672.
18. Jennings, P.D., & Zandbergen, P.A. (1995). Ecologically sustainable organizations: an institutional approach. *Academy of Management Review*, 20(4), 1015-1052. doi:10.5465/AMR.1995.9512280034.
19. Ketola, T. (2010). Five Leaps to Corporate Sustainability through a Corporate Responsibility Portofolio Matrix. *Corporate Social Responsibility and Environmental Management*, 17(6), 320-336. doi: 10.1002/csr.219.
20. Kollmus, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behaviour. *Environmental Education Research*, 8(3), 239-260. doi: 10.1080/13504620220145401.
21. Kotler, P., & Caslione, J.A. (2009). *Chaotic: management și marketing în era turbulențelor*, București: Publica.
22. Leon, R.D. (2012a). Strategic factors for developing sustainable knowledge based organization. In J.G. Cegarra (Ed.), *Proceedings of the 13th European Conference on Knowledge Management (Vol. 1, pp. 618-625)*. Reading: Academic Publishing International Limited.
23. Leon, R.D. (2012b). Sustainable knowledge based organization from a Romanian and Spanish perspective. In Brătianu, C., Lixândriu, D., & Pop, N.A. (Eds.) *Business Excellence Challenges during the Economic Crisis. Proceedings of the 7th International Conference on Business Excellence, vol. I, Brașov: Editura Universității Transilvania, pp. 273-278.*

24. Liebowitz, J., & Beckman, T.J. (1998). *Knowledge Organizations: What Ever Manager Should Know*. London: CRC Press.
25. Lozano, R. (2008). Developing collaborative and sustainable organizations. *Journal of Cleaner Production*, 16(4), 499-509. doi: 10.1016/j.jclepro.2007.01.002.
26. Maddox, J. (2000). Positioning the goalposts. *Nature*, 403(6766), 139-140. doi:10.1038/35003065.
27. Mahesh, K., & Suresh, J.K. (2009). Knowledge criteria for organization design. *Journal of Knowledge Management*, 13(4), 41 – 51. doi: 10.1108/13673270910971815.
28. Marcus, A.A., & Nichols, M.L. (1999). On the edge: heeding the warnings of unusual events. *Organization Science*, 10(4), 482-499. doi: 10.1287/orsc.10.4.482.
29. Millar, C.C., & Choi, C.J. (2010). Development and knowledge resources: a conceptual analysis. *Journal of Knowledge Management*, 14(5), 759-776. doi: 10.1108/13673271011074881.
30. Nehrt, C. (1996). Timing and intensity effects of environmental investment. *Strategic Management Journal*, 17(7), 535 – 547. doi: 10.1002/(SICI)1097-0266.
31. Nicolescu, O., & Nicolescu, L. (2005). *Economia, firma și managementul bazate pe cunoștințe*. București: Economică.
32. Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37. doi: 10.1287/orsc.5.1.14.
33. Parrish, B.D. (2010). Sustainability – driven entrepreneurship: Principles of organization design. *Journal of Business Venturing*, 25(5), 510-523. doi: 10.1016/j.jbusvent.2009.05.005.
34. Ramus, C.A., & Steger, U. (2000). The roles of supervisory support behaviors and environmental policy in employee ‘eco-initiatives’ at leading – edge European companies. *Academy of Management Journal*, 43(4), 605-626. doi: 10.2307/1556357.
35. Rich, W.C. (1998). Spontaneous talk, linguistic capital and diversity: Communication in knowledge based organizations. *Administration & Society*, 30(3), 316-330. doi: 10.1177/0095399798303005.
36. Russo, M.V., & Fouts, P.A. (1997). A resource – based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534-559. doi: 10.2307/257052.
37. Sharma, S. (2000). Managerial interpretation and organizational context as predictors of corporate choice of environmental strategy. *Academy of Management Journal*, 43(4), 681-697. doi: 10.2307/1556361.
38. Zollinger, P. (2004). Sustainable Management? Don't bother! In Seiber-Hansman, J.D., Liedtke, C., & von Weizsacker, E.U. (Eds.) *Eco-Efficiency and Beyond*. Sheffield: Breenleaf Publishing.