The current issue of M & M can be found at: www.managementmarketing.ro

Measuring organizational learning. Model testing in two Romanian universities

Alexandra Luciana Guţă
„Alexandru Ioan Cuza" University of Iaşi, Romania

Abstract: The scientific literature associates organizational learning with superior organization performance. If we refer to the academic environment, we appreciate that it can develop and reach better levels of performance through changes driven from the inside. Thus, through this paper we elaborate on a conceptual model of organizational learning and we test the model on a sample of employees (university teachers and researchers) from two Romanian universities. The model comprises the process of organizational learning and organizational performance and some concepts that are connected to organizational learning and/or performance: practices/tools for facilitating organizational learning, the value of human capital. The paper is useful both for those who are interested in organizational learning, organizational performance and the relationships between these two notions and for those who hold management positions in universities. The purpose of the paper is to test the model, based on empirical data. We used factor analysis to determine the variables that form our constructs and we conducted correlation analysis to highlight the relationships between the variables in the study, based on the research hypotheses. There are positive relationships between the components of the organizational learning process and organizational performance. The practices/tools that we have considered are relevant for facilitating the organizational learning process. The value of human capital is correlated both with the components of the organizational learning process and with the organizational performance. The model adapted from the literature and the instrument developed based on the literature are useful for undertaking a diagnosis at the organizational level.

Keywords: organizational learning, organizational performance, practices and tools, human capital value, higher education institutions.

Please cite this article as following: Guţă. A.L. (2014), "Measuring organizational learning. Model testing in two Romanian universities", *Management & Marketing. Challenges for the Knowledge Society*, Vol. 9, No. 3, pp. 253-282.

Introduction

The knowledge that is accumulated through organizational learning is associated with superior performances for organizations (Senge, 2006; Garvin, 1998 in Curado, 2006). It can also be associated with a higher flexibility in strategic thinking and action and with a faster reaction to the changes that appear in the environment (Volberda, 1996 in Curado, 2006). Suciu (2006) mentions that competitive advantages are mainly derived from intangible

Correspondence:
Alexandra Luciana Guţă
luciana_guta@yahoo.com

assets and the notion of "intangible assets" is interchangeable with that of "intellectual capital" (Jianu and Brătianu, 2007).

Intellectual capital is composed of human capital, structural (or organizational) capital and customer or relational capital (Brătianu, 2014 after Stewart, 1999; Andriessen, 2004; Roos et al., 2005). These components are assigned to the canonical model or the standard model of intellectual capital (see Brătianu, 2014). However, these components can be seen in many models that are part of the static or the dynamic intellectual capital paradigm (Brătianu, 2014). The static intellectual capital paradigm views intellectual capital as a stock (Brătianu, 2004 after Chatzkel, 2000), while the dynamic intellectual capital paradigm refers to stocks and flows (Brătianu, 2014 after Edvinsson, 2002; Andriessen 2004; Roos et al., 2005; Nissen, 2006), thus the change from the first paradigm to the second implies seeing knowledge as a flow.

A newer paradigm, the entropic intellectual capital paradigm, sees intellectual capital as being composed of a potential field of intangibles and an operational field of intangibles (Brătianu, 2014). In regard to this paradigm, integrators gain a high significance. Integrators are considered to be powerful fields of forces that can combine elements into a new entity, taking into consideration the interdependence and the synergy (Brătianu 2007a, 2007b). This model is based on cognitive, emotional and spiritual capital, and not on human, structural and relational capital like traditional frameworks (Brătianu, 2014).

Considering the importance of knowledge and other intangible assets in the present business environment, we can argue that organizational learning is highly significant. Brătianu and Orzea (2010) appreciate that organizational learning is necessary for the survival of a business. We appreciate that this is true not only in the case of profit-based organizations, but also in the case of higher education institutions. We appreciate that the academic environment can develop and can reach better performances and master sustainable competitive advantages primarily by changing from the inside, not at the request coming from the outside. For universities, in particular, learning is part of the daily activities, but, according to Brătianu (2007b), they might be faced with a paradox: "although a university is an organization based on learning processes, it is not necessarily a learning organization" (p. 375) in any organization: there are two types of processes the production process and the management process (Brătianu, 2007b after Brătianu et al., 2006). In the case of universities, the production process is a learning process, but, in order for a university to be a learning organization, the management process needs to be a learning process too (Brătianu, 2007b).

Learning organizations are considered by Senge (2006, p. 3): "organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together". Brătianu (2007b) states that universities have the possibility to become learning organizations "if and only if there is at least a strong integrator to assure the transition from individual learning to team and

organizational learning" (p. 385). Integrators play a significant role in transforming members' individual contributions, such as individual knowledge, individual intelligence or individual values into organizational knowledge, organizational intelligence or organizational values. Brătianu (2007b) details the following integrators for learning organizations: IT systems, management, leadership, vision and mission statement, organizational culture, and highlights some aspects regarding universities.

Returning to our research, we need to say that it is part of a larger project, which is in progress. The study is based on a conceptual model that is adapted from the conceptual model proposed by Guță (2013). Guță's (2013) conceptual model links the theoretical concepts of "organizational learning" and "organizational performance"; and we extend it here by focusing on organizational learning as a process. This study is an exploratory study, describing a model for measuring organizational learning and testing it, based on empirical data. The model was tested both in public institutions, namely in universities, as well as in private organizations, in two companies from distinct business fields. In this paper we are going to analyse the results obtained at the level of the universities that are included in the sample. We also mention that in this paper only a part of the conceptual model and of the instrument that was developed from the literature are presented, and implicitly only a part of the concepts considered in the complete model.

The process of organizational learning

Organizational learning is a concept to which many definitions have been attributed. Two definitions that we appreciate as being relevant for this research are: "the development of new knowledge or insights that have the potential to influence behavior" (Slater and Narver, 1994 in Bontis, 1999, p. 13) and "learning is a process of change in cognition and behavior, and it does not necessarily follow that those changes will directly enhance performance." (Crossan et al., 1995, p. 353). From Crossan et al.'s (1995) definition, we are interested in the part regarding the relationship between learning and performance, and, more precisely, in the idea that the changes that learning implies do not necessarily enhance performance. Fiol and Lyles (1985, p. 806) state that "changes in behavior may occur without any cognitive association development; similarly, knowledge may be gained without any accompanying change in behavior".

In recent years, organizational learning has been considered in a broader sense, "whether it has a cognitive focus, a behavioural focus, or whether it has embraced approaches that dispense with this distinction altogether" (Eaterby-Smith et al., 2000, p. 786, after Nicolini and Meznar, 1995; Gherardi, 1999). We personally adhere to this broader perspective, according to which organizational learning can occur both at cognitive and at behavioural level.

Organizational learning is composed from a series of phases, processes or components. Two perspectives from the ones that are of reference in the literature are those of Huber (1991) and respectively Crossan et al. (1999).

Many of the studies in which instruments for measuring the process of organizational learning were developed start from one of these two perspectives. Huber (1991) considers four constructs, through which the researcher defines the organizational learning process: knowledge acquisition, information distribution, information interpretation and organizational memory. The definition which Huber (1991, p. 89) gives to organizational learning is a change in the range of potential behaviors of an entity based on information processing. He also considers an organization learns when its units accumulate knowledge and that knowledge can be considered of potential utility for the organization. Crossan et al. (1999) have adopted a different perspective on organizational learning; they have considered that it would consist in the following four processes: intuiting, interpreting, integrating and institutionalizing. Crossan et al.'s (1999) research correlates three levels on which learning occurs: individual, group and organizational level and takes into account two flows: feed-forward and feedback. Intuiting appears at the individual level. Interpreting appears at the individual and group levels and integrating appears at the group and organization level. Institutionalizing appear at the organization level. In a more recent perspective, Argote (2011) considers for organizational learning the following: creating knowledge, retaining knowledge and transferring knowledge. Regarding the organizational learning process, we have adopted Huber's (1991) perspective.

Organizational learning can be addressed not only as a process, but also as a capability. The organizational learning capability is defined as the "organizational and managerial characteristics that facilitate the organizational learning process or allow an organization to learn" (Chiva et al., 2007, p. 225). We appreciate that, in essence, the organizational learning capability is given by the existence of some facilitating factors for organizational learning (factors that facilitate the process of organizational learning). For example, Chiva et al. (2007) consider the organizational learning capability through five dimensions: experimentation, risk taking, interaction with the external environment, dialogue and participative decision making.

Organizational learning can be measured objectively or in a manner based on judgments or opinions (Chiva et al., 2007). In the first category we can include the analysis of learning and experience curves. The scales that were developed for measuring organizational learning fall into one of the two perspectives: measuring the organizational learning capability or measuring the organizational learning process. We can also take into account measuring the effects, the results of organizational learning. Learning effects can be analysed at individual, group/team and organizational level. Also, the performance of an organization can be partially considered an effect of organizational learning.

Measurements which aim to determine if a certain process of organizational learning is accomplished represent the first perspective. The instruments that are developed for measuring the organizational learning are conceived in accordance with the phases (processes) of organizational learning, in order to

determine if the phases that have been considered occur or not in the organizations that are analysed. These start from a perspective on organizational learning as a psychosocial process that occurs at different levels (Chiva, 2007; Huber, 1991; Crossan et al., 1999). Studies from the perspective of measuring the organizational learning process have been conducted by Bontis et al. (2002) or Tippins and Sohi (2003). According to Chiva et al. (2007), the measurements that fall into this first perspective are based on the models developed by Huber (1991) and respectively Crossan et al. (1999). Other studies that we have identified as being integrated into this perspective are those undertaken by Pérez López et al. (2005), Škerlavaj and Dimovski (2006) and López Sánchez et al. (2010).

We make an observation regarding the measurement of organizational learning as a process: the instruments do not include only processes of organizational learning, but also components, like organizational memory, that cannot be considered processes.

The approaches that aim to determine the organizational learning capability represent the second perspective. In the cases where this perspective is adopted, the instruments for measurement "are organised according to the main facilitators of organisational learning" (Chiva et al., 2007, p. 225). Initiatives in developing instruments in light of this view have been made by Pedler et al. (1997), Goh and Richards (1997), Jerez-Gómez et al. (2005) (in Chiva et al., 2007). We add the studies undertaken by Bhatnagar (2006), Chiva et al. (2007) and Camps et al. (2011) in the category of research aims to which measure the organizational learning capability.

Regarding the organizational learning measuring, we can also consider an integrative perspective. Jyothibabu et al. (2010) had an integrative approach to organizational learning, developing a scale for measuring an organizational learning system. Their measuring instrument incorporated learning enablers, learning results (at individual, group and organizational level) and performance outcomes.

Organizational learning and performance

From an organizational learning perspective, performance can be considered partly a result of organizational learning. Regarding the measurement of performance and establishing a connection with organizational learning, we must mention first that performance measurement can be done subjectively or objectively.

Organizational performance is a concept to which many definitions have been given (Abu-Jarad et al., 2010): "the organization's ability to attain its goals by using resources in an efficient and effective manner" (p. 28 after Daft, 2000). Another definition for performance makes reference to the achieved results, compared to the desired results (Leen Yu et al., 2009 after Dess and Robinson, 1984).

Kaplan and Norton (1993 in Andreadis, 2009) have proposed a method in order to capture and organize the results of an organization, method which is

called balanced scorecard. Through this method not only performance measurement can be achieved, but also performance management. The balanced scorecard method incorporates four perspectives: financial, customer, internal process and innovation and learning.

Research has demonstrated that perceived measures of performance can be "a reasonable substitute for objective measures of performance" (Bontis et al., 2002, p. 449 after Dess and Robinson, 1984) and that perceived measures present "a significant correlation with objective measures of financial performance" (Bontis et al., 2002, p. 449 after Venkatraman and Ramanujam, 1987; Geringer and Hébert, 1989; Hansen and Wernerfelt, 1989; Lyles and Salk, 1997). Thus, we can use perceived measures of performance through synthetic items included in questionnaires.

Considering that from the results of some studies (for example, Bontis et al., 2002; Jyothibabu et al., 2010) it emerges that organizational learning has positive effects on performance, we can infer that organizations can improve their performances through organizational learning. In the research undertaken by Bontis et al. (2002) it has been concluded that there is "a positive relationship between the stocks of learning at all levels and business performance" and that "the misalignment of stocks and flows in an overall organizational learning system is negatively associated with business performance" (p. 437). The researchers have also concluded that organizational level learning is more closely associated to organizational performance than individual or group level learning are.

In Tippins and Sohi's (2003) study one of the hypotheses is that „there is a positive relationship between organizational learning and firm performance" (p. 752). In the research undertaken by Pérez López et al. (2005) two of the validated hypotheses show the fact that organizational learning affects innovation and competitiveness in a positive way and also economic/financial results in a positive way. In Škerlavaj and Dimovski's (2006) research two of the is hypotheses that were validated are: "better organisational learning (OL) leads to better financial performance (FP)" and "to better non-financial performance (NFP)" (p. 17). In the study conducted by López Sánchez et al. (2010) one of the validated hypotheses is that the organizational learning "has a direct and positive effect on the business performance" a manufacturer experiences (p. 1618). Based on the details presented up to this point we can formulate the following research hypothesis:

Hypothesis 1: Between *the components of organizational learning process* and *organizational performance* there are positive and significant correlations.

The value of human capital and the link with organizational learning

Human capital is a component of intellectual capital (Jaradaat et al., 2010). In the literature, the existence of a correlation between human capital, as value and respectively uniqueness and organizational learning capability has been proposed and tested in a study conducted by López-Cabrales et al. (2011).

Although the research results need to be treated carefully (due to the small size of the sample), the hypothese according to which the value of knowledge possessed by employees is correlated with organizational learning capability respectively the uniqueness of knowledge possessed by employees is correlated with organizational learning capability have been validated. The researchers started from the idea according to which organizational learning capability "would be conditioned by the type of employees working in the organization and, more specifically, by their knowledge and skills" (López-Cabrales et al., 2011, p. 348). It resulted that the value of human capital has – compared to the uniqueness of human capital – a stronger link with organizational learning capability. However, the causal relationship may be inverse, organizational learning capability influencing human capital, as López-Cabrales et al. (2011) have concluded.

Guţă (2013) makes a mention regarding the proposal of the inverted causal relationship that was made by López-Cabrales et al. (2011), between organizational learning capability and the value and uniqueness of human capital. Guţă (2013) considers that we would have a greater accuracy if we would consider that the causal relationship would be "from organizational learning capability towards the process of organizational learning and then from the process of organizational learning towards the value and respectively the uniqueness of human capital" (p. 552). This is based on the idea that through the organizational learning process new knowledge can be accumulated or created, which could produce changes in the value and uniqueness of human capital.

In the end, we appreciate that, by going with the causal chain previously presented, we could also correlate the value and respectively uniqueness of human capital with organizational performance. In the present research we will focus only on the value of human capital. From what we have mentioned until this point the derive the following research hypotheses:

Hypothesis 2: Between *the value of human capital* and *the components of the organizational learning process* there are positive and significant correlations.

Hypothesis 3: Between *the value of human capital* and *organizational performance* there is a positive and significant correlation.

Practices and tools through which organizational learning is facilitated

A significant aspect in the analysis of organizational learning is its management, in addition to its measurement. From this point on, through managing organizational learning we will understand the plethora of means, of actions, of strategies, of practices and tools through which the organizational learning process may be facilitated.

Chen (2005) has proposed 35 practices/tools which enhance the organizational learning capability understood as the learning capability in relation to an organizational learning system and not as the facilitating factors

for the organizational learning process. We consider that the practices and tools can also be taken into consideration in connection with the organizational learning process, and not only with the organizational learning capability related to an organizational learning system. The practices and tools (after Chen, 2005, p. 11-18) that interested us directly and that are included in the questionnaire that is addressed to employees – managers and non-managers (more precisely, to teachers/researchers with or without management positions) – in higher education institutions are: employee survey system; customer survey system; after action review; attending external training program; searching external knowledge; collaboration, joint venture or strategic alliance (we must mention that in the instrument we used only the notion of collaboration); building organizational knowledge base (involves the creation of an electronic base in which different documents, reports, academic journals, books are stored, so that everyone who needs them can have access); building organizational knowledge map (Chen (2005) takes into consideration building a map with knowledge, in which names of the persons, their contact information, their expertise and work experiences would be incorporated; the document that has been elaborated must then be distributed to people so that they can find the proper colleagues when they need expertise in certain fields or problems which they encounter); teaming for excellence (this practice implies cross-functional cooperation; however, in our instrument we will consider interdepartmental cooperation); dialog (related to teamwork).

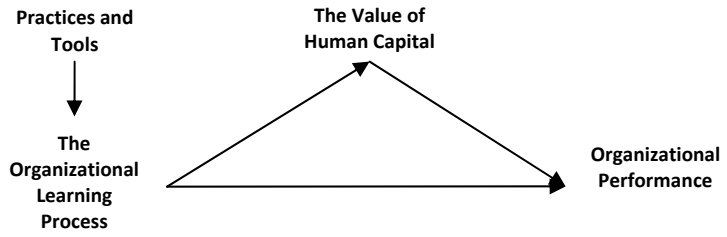
What interests us is basically the link between the practices and tools (their components) through which organizational learning may be facilitated and the organizational learning process (its components), therefore we formulate the following hypothesis:

Hypothesis 4: Between *the components of the practices/tools through which organizational learning may be facilitated* and *the components of the organizational learning process* there are positive and significant correlations.

The conceptual model

In the following figure we present the model adapted after Guţă (2013):

Figure 1. *Measuring organizational learning. The conceptual model*



Source: *Adapted after Guţă (2013, p. 553).*

We have added the practices/tools through which organizational learning may be facilitated, which are referred to in the figure as "practices and tools" and we have not taken into consideration the organizational learning capability, management of the relationship between the process of organizational learning and organizational performance, the uniqueness of human capital, which are included in Guță's (2013) model. For "acquisition" (which is part of the organizational learning process) we are considering both the acquisition of knowledge and of information. In the figure we have drawn only the links that interest us directly. The links are presented at the level of the constructs, not at the level of their components (the components are not drawn in the model), in order to facilitate the understanding of the model.

Research methodology

The instrument

The study is exploratory, the approach is deductive. The research strategy is based on conducting a survey and the methods used are mainly quantitative (Saunders et al., 2007). The instrument that was used is a questionnaire. As we previously stated, the present research is part of a wider research. Further, we are going to refer strictly to the part of the questionnaire that underlies the constructs analysed in this paper. The questionnaire was applied to teachers/researchers (with or without management positions) in universities, targeting the respondents' perception regarding certain phenomena in the organization in which they work.

Considering the fact that the present research is part of a wider research, we must mention that the statistical analyses were remade, taking into consideration only the constructs in this research. The current research is based on 57 items, rated on a Likert scale, from 1 to 5 (1 – "strongly disagree"; 2 – "disagree"; 3 – "neither disagree, nor agree"; 4 – "agree"; 5 – "strongly agree"), with the possibility for the respondents to select the option "I do not know/It does not apply".

The questionnaire that was elaborated is divided into four sections, through which the following are covered: (a) the organizational learning process; (b) the practices and tools through which organizational learning may be facilitated; (c) organizational performance; and (d) the value of human capital.

In the following section we detail the manner in which the questionnaire that underlies this research was designed. We mention that we used the 1 – 5 scale in the whole questionnaire, regardless of the scales used in the source-instruments.

Table 1. *Designing the questionnaire*

No.	Construct	Source	Observations
1	The organizational learning process	Pérez López et al. (2005); López Sánchez et al. (2010)	The items have been obtained either through translation or have suffered some changes in content, in meaning or formulation compared to the items in the two source-instruments.
2	Practices and tools through which organizational learning may be facilitated	Chen (2005)	The items were formulated by the authors based on Chen's (2005) study.
3	Organizational performance	Jyothibabu et al. (2010)	Most items have been translated, but without the expression "my organization", that appears in the source-instrument (we have considered an impersonal formulation of the items). In the case of one item we have included the term "beneficiary", instead of the term „customer". Some of the items have suffered other minor modifications.
4	The value of human capital	Lepak and Snell (2002)	In this section we have taken into consideration and translated (either as such or through adjustments at the level of content, of meaning, of formulation) nine of the 12 items that have been elaborated by Lepak and Snell (2002) for the value of human capital. We need to mention that Lepak and Snell (2002) refer only to the value of the human capital skills. However, in a research conducted by López-Cabrales et al. (2011), they refer to the value of human capital in terms of the knowledge held by the employees (the value of their knowledge). In the present research we are going to refer to the value of the skills and knowledge that the employees in an organization have.

Source: *Author's own research.*

Prior to applying the questionnaire, it was pre-tested and it passed through two stages of improvements. The pre-test of the questionnaire consisted in discussions with a specialist in the field of knowledge management and five employees of one of the two universities in the sample.

Defining the population. Determining the sample and sample description

Through this research we aim to test a model and we take into consideration higher education institutions in Romania. Thus, the population is formed of all the public higher education institutions in Romania.

Taking into consideration that this research presents the results of a testing phase and is part of a research which is ongoing, we selected a number of two universities to constitute the sample.

The questionnaire is addressed to teachers/researchers, with or without management positions and was applied online (in both universities) and also in hard copy (only in one of the two universities). Through the application of the questionnaire, we find out the perception, the opinion of the employees regarding the issues that are of interest to us. The questionnaire was applied in Romanian.

Table 2. *Number of sent and handed over, received and valid questionnaires*

Sent/handed over/received/valid questionnaires	Number of questionnaires
Number of sent questionnaires – online (total number of e-mail addresses)	759
Number of sent questionnaires – online (total number of valid e-mail addresses)	707
Number of handed over questionnaires – paper and pencil	42
Number of received questionnaires - online	55
Number of received questionnaires – paper and pencil	42
Total number of received questionnaires	97
Number of valid questionnaires	87

Source: *Author's own research.*

We need to mention that approximately 80% of the e-mail addresses are from one university and approximately 20% are from the other university (relative to the total number of e-mail addresses and, also, relative to the total number of valid e-mail addresses).

We eliminated 10 questionnaires, one being doubled and nine not being valid (the control questions the answers were inconsistent with the original item). Therefore, 87 questionnaires were considered for the analysis.

A major part of the respondents have mentioned that they work in one of our two universities from the sample. However, we have kept the answers from the second university in our sample, as well as the answers where the university was not mentioned, considering that: this research is part of a larger research; factor analysis needs as many cases as there can be obtained – Hair et al. (2006) mention that researchers need to strive in order to obtain the highest cases-per-variable ratio that would be possible –, thus we wanted to maintain as many answers in the sample as possible; our sample would be a convenience sample, our focus being on testing a model.

Chiva et al. (2007, p. 238) mentions that an "opinion-based instrument is considered adequate as we are evaluating environmental conditions, which can only be properly assessed by people working within that context." Chiva et al. (2007) refer to an instrument through which organizational learning capability is measured, but we can consider that the researchers' statement is true also for the instrument is the present study, given the nature of the studied phenomenon. Bontis et al. (2002) extensively argue the idea that measurements based on individuals' perception in an organization are appropriate. From a certain point of view, it is considered that "only the individual actor is real" – point of view which is called methodological individualism" – and that this is the only way to conduct research in social sciences (Konecni, 1977 in Bontis et al., 2002, p. 457), and although we also have the group and organizational levels, measuring certain constructs that aim organizational learning is focused on individuals (Bontis et al., 2002 after Sampson, 1977). This leads us to consider the individuals' perceptions on structures like groups or organizations (see Bontis et al., 2002 after Knoke and Kuklinski, 1982; Wellmann and Berkowitz, 1988). Therefore, we can consider that measuring certain concepts based on the respondents' perception is suited, given the nature of the phenomenon.

We further present some details regarding the sample, at the time the questionnaire was applied. We have considered the respondents from both universities, together (considering that a major part of the sample comes from one of the two universities, we consider it to be more relevant to present the details considering both universities together). From all the details that we have requested, we are going to present only a part of them, according to the relevance for the present paper.

The following table presents details regarding the position held by the respondents. It can be seen that over 60% of the respondents are either lecturers or associate professors. A few respondents did not answer at all or they just wrote "-" or "x", which can also be considered as missing values (seven respondents) and four respondents have mentioned other positions (for example, associate).

Table 3. *Positions held by the respondents in the sample*

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Teaching assistant	7	8.0	8.8	8.8
	Lecturer	29	33.3	36.3	45.0
	Associate Professor	24	27.6	30.0	75.0
	Professor	16	18.4	20.0	95.0
	Other answers	4	4.6	5.0	100.0
	Total	80	92.0	100.0	
Missing	97	7	8.0		
Total		87	100.0		

Source: *Author's own research.*

Over 70% of the respondents are within the organization for at least 10 years, so we may consider that the answers that they have offered are based on a thorough knowledge of the organization (see the following table).

Table 4. *Seniority in the organization (intervals)*

		Frequency	Percent	Valid percent	Cumulative percent
Valid	1-3 years	3	3.4	3.5	3.5
	3-5 years	4	4.6	4.7	8.2
	5-10 years	15	17.2	17.6	25.9
	10 years or more	63	72.4	74.1	100.0
	Total	85	97.7	100.0	
Missing	97.00	2	2.3		
Total		87	100.0		

Source: *Author's own research.*

From the sample, 15 respondents (17.2%; valid percent: 18.1%) hold management positions, 68 respondents (78.2%; valid percent: 81.9%) do not hold management positions and 4 respondents did not answer.

Considering the gender of the respondents, the sample is balanced, although the number of male respondents (47 respondents, which means 54.0% of the sample; valid percent: 54.7%) was slightly higher than the number of female respondents (39 respondents, which means 44.8%; valid percent: 45.3%). One respondent did not answer the question regarding the gender.

Methods and techniques used in analysing the data

For data processing we used the program Statistical Package for the Social Sciences (SPSS). We conducted factor analysis, descriptive analysis and correlation analysis.

To extract the components (the factors) for each construct, the technique used consists in factor analysis. Factor analysis can be exploratory or confirmatory (Hair et al., 2006). In this research we applied an exploratory factor analysis.

Categorical principal component analysis (CATPCA) can be used, which is a technique through which the results are optimized, but also principal component analysis can be used, in its "classic" version (PCA). We consider optimization necessary because of the small size of the sample.

Considering the nature of our data, we wanted to replace the missing values for our variables (by "variables" it should be understood "items") with the mode at the level of each distribution and we have chosen in the first phase CATPCA. However, given the fact that PCA has options that are not available for CATPCA, namely the Varimax rotation with Kaiser Normalization procedure (procedure which is often necessary to achieve a solution that is more meaningful, in terms of the resulted factors), we have applied successively the two types of factor analysis, for each construct, in order to extract its factors (also called "components"). This approach is also recommended by van der Kooij (2009).

Applying the two types of analysis successively for each construct required us to enter the variables in CATPCA. Applying this type of analysis, the variables undergo a process of transformation. Subsequently, we enter the transformed variables in PCA in its classical form and we run the analysis until we obtain a solution that has at least a minimal relevance in practice.

Lastly, we need to mention that the control questions were not taken into account in the factor analyses.

The descriptive analysis consists of an analysis of the results, based on the means obtained at the level of the components, respectively at the level of the items included in the components. In the case of the descriptive analysis, we must mention that all missing values in the database were replaced with the average for the distribution of each item.

After the factors were extracted through the factor analyses, they were generated as variables, as the average of all the items included in the case of each factor, the initial items being taken into account and not the transformed ones in the factor analyses. The variables extracted this way were used in the correlation analysis.

To test the hypotheses, we applied correlation analysis, using the Spearman's correlation coefficient, taking into consideration that most of the variables' (components') distributions do not meet the normality condition. The missing values have been replaced with each distribution's mean.

Results and discussion

Reliability analysis

To assess the reliability (the internal consistency), we calculated the Cronbach's Alpha coefficient for each scale and for the entire instrument. In order for an instrument or a scale to have a satisfactory internal consistency, the Cronbach's Alpha coefficients must exceed 0.70 (Hair et al., 2006). The lower limit that is accepted for this coefficient is 0.60, in the case of exploratory research (Hair et al., 2006), in order for a scale to be considered reliable.

Table 5. *Reliability statistics for the instrument and the scales*

No.	Scale	Cronbach's Alpha	Cronbach's Alpha based on standardized items
1	The entire instrument (57 items; including the control questions)	0.966	0.967
2	The entire instrument (55 items; the control questions are excluded)	0.971	0.971
3	The organizational learning process (29 items; the two control items are excluded)	0.955	0.955
4	a) Knowledge acquisition (10 items; the control item is excluded)	0.901	0.901
5	b) Information distribution (5 items)	0.888	0.889
6	c) Information interpretation (8 items)	0.843	0.846
7	d) Organizational memory (6 items; the control item is excluded)	0.854	0.854
8	Practices/tools through which organizational learning may be facilitated (10 items)	0.858	0.855
9	Organizational performance (7 items)	0.922	0.924
10	The value of human capital (9 items)	0.948	0.948

We need to mention that to calculate the Cronbach's Alpha coefficients, the missing values have been replaced with the mean, at the level of each item (the items that have been taken into consideration are the initial ones, not the items transformed in CATPCA). We can conclude that both the whole instrument and each scale included in the instrument are reliable (have internal consistency), the Cronbach's Alpha coefficients being situated above 0.70.

The obtained components and the descriptive analysis

Further, the results of the factor analysis for the considered constructs are presented and analysed, and also the descriptive analyses are presented. The results need to be treated with caution, given the small size of the sample.

We need to mention that in the following tables the items are displayed in a descending order of their loadings on their component (factor) and that only the factor loadings that are above 0.50 (which are practically significant) are displayed. The organizational learning process is an exception, only the loadings above 0.60 are displayed. The minimal accepted level of loadings is 0.30-0.40 (positive or negative values) for interpreting the structure, but 0.50 (positive or negative value) is necessary in order for a loading to be considered as a practically significant loading. These guidelines generally apply for samples of at least 100 subjects (Hair et al., 2006). In terms of statistical significance, given the number of 87 valid questionnaires, it is recommended that the loading reaches at least 0.60 to be considered statistically significant (Hair et al., 2006).

At the level of the considered constructs, for which we applied the factor analysis to identify the components, the results for the Kaiser-Meyer-Ohlin (KMO) test are either above 0.80, indicating a very good solution obtained through factor analysis (Pintilescu, 2007) or above 0.90, indicating an excellent solution obtained through factor analysis (Pintilescu, 2007).

The sig. value associated to the Bartlett's Test of Sphericity is 0.00, which is below 0.05, which guarantees (with a probability of 0.95) that between the variables there are statistically significant correlations (Pintilescu, 2007). This applies for each construct.

After the extraction of factors (components), which involved the elimination of some items, we needed to calculate the Cronbach's alpha coefficient for each component (by considering the items that load on that component), in order to assess its internal consistency. The Cronbach's alpha coefficient was calculated based on the initial variables (items) (not the transformed ones). The resulted Cronbach's alpha coefficients generally exceed 0.70 for each of the extracted components for the constructs in this research, so the components have internal consistency (there is one exception, in the case of the first component for practices/tools, but the minimum accepted value, 0.60, is exceeded).

The organizational learning process

In the following table we summarize the results of the factor analysis and the descriptive statistics for the organizational learning process.

Table 6. *The organizational learning process: components and descriptive statistics*

Item	Component				Percentage (%) of variance	Cronbach's alpha	Cronbach's alpha based on standardized items	Mean (Component)	Standard deviation (Component)	Mean (Item)	Standard deviation (Item)
	1	2	3	4							
Acquisition10. The organization encourages employees to be part of formal and informal networks from outside the organization.	.857				49.130%	0.922	0.923	3.15	.87	3.54	1.08
Acquisition2. New ideas and approaches of the way of doing things are experimented.	.824									2.95	1.09
Acquisition5. As a result of the experience acquired the employees are more efficient in exercising their responsibilities.	.806									3.61	.99
Distribution3. There is some time devoted to discussions about the organization's future needs.	.795									2.98	1.15

Item	Component				Percentage (%) of variance	Cronbach's alpha	Cronbach's alpha based on standardized items	Mean (Component)	Standard deviation (Component)	Mean (Item)	Standard deviation (Item)
	1	2	3	4							
Acquisition1. The employees are informed of how the organization was created, its mission and philosophy of work.	.768									3.28	1.21
Acquisition4. There is a consolidated research and/or development policy at the level of the organization.	.714									3.32	1.07
Distribution2. Regular meetings are held between departments to integrate the existing information.	.711									2.83	1.27
Distribution5. Vital information is transmitted quickly to all employees.	.692									3.37	1.23
Distribution4. There are people responsible for collecting the proposals made by the organization's employees, to reunite and distribute them internally.	.687									2.88	1.20
Acquisition3. Organizational systems and procedures support innovation.	.677									2.69	.98
Interpretation2. Obtaining an interpretation as uniform as possible of the information which has significance for the organization is attempted.		.871			10.709%	0.777	0.778	3.14	.74	3.10	.95
Interpretation1. All the employees share and are committed to the mission of the organization.		.764								2.88	.96
Acquisition8. Information about possible changes in the environment in which we operate is collected.		.744								3.29	1.00
Acquisition7. It is to be learned from other organizations to be able to respond to problems before they arise.		.694								3.30	.94
OrgMem4. The organization has databases to store information, knowledge, experiences so as to be able to use them later on.			.880		8.947%	0.895	0.894	3.17	.71	3.25	1.05

Item	Component				Percentage (%) of variance	Cronbach's alpha	Cronbach's alpha based on standardized items	Mean (Component)	Standard deviation (Component)	Mean (Item)	Standard deviation (Item)
	1	2	3	4							
OrgMem5. Databases are constantly updated.			.815							3.14	.99
OrgMem6. The employees have access to the organization's databases, depending on the specific needs of their activity.			.739							3.13	.95
OrgMem2. Once the employees know who they have to contact in the organization, when an opportunity or problem arises, it is possible to have access to that person in a convenient way.				.865	6.550%	0.780	0.784	3.57	.90	3.53	1.05
OrgMem1. The employees are aware of who are the people with the specific abilities and experience to intervene when an opportunity or problem arises.				.838						3.62	.93
Total variance explained by the four components	75.337%										
KMO Measure of Sampling Adequacy	0.807										
Sig. (for Bartlett's Test of Sphericity)	0.000										

A total number of 10 items were eliminated in the factor analysis of the process of organizational learning.

To name the four components that resulted, we take into consideration what the majority of the items included in a component refer to:

- Component 1: Internal information/knowledge acquisition and information distribution, or, shorter, internal acquisition and distribution.
- Component 2: External information/knowledge acquisition and information interpretation, or, shorter, external acquisition and interprettation.
- Component 3: Organizational memory, based on a codification strategy, or, shorter, organizational memory (codification).
- Component 4: Organizational memory, based on a personalization strategy, or, shorter, organizational memory (personalization).

We can therefore notice that information/knowledge acquisition from within the organization and information distribution are part of the same component. External information/knowledge acquisition and information interpretation are also part of a single component.

Huber (1991) has defined four constructs for organizational learning: knowledge acquisition, information distribution, information interpretation and organizational memory. Although in the present research the four processes/components do not delimit into four different components, it can be noticed that we can find, in the components that resulted, all the four theoretical elements: acquisition (we have considered both information and knowledge in the case of acquisition), information distribution, information interpretation and organizational memory. What is different is the grouping.

Acquisition can be divided into internal and external information/ knowledge acquisition (see the first two components of the organizational learning process: internal information/knowledge acquisition and information distribution; external information/knowledge acquisition and information interpretation). These results are supported by previous research identified in the literature. Pérez López et al. (2005) have considered, for knowledge acquisition: internal knowledge acquisition and external knowledge acquisition. López Sanchez et al. (2010) have considered for information acquisition: direct information acquisition and indirect information acquisition.

Organizational memory is divided into: memory based on a codification strategy and memory based on a personalization strategy (see components 3 and 4 that have resulted). The codification strategy implies storing knowledge in databases, while the personalization strategy puts accent on interactions between individuals (Werr and Stjernberg, 2003). The results can be sustained by previous studies. For example, Tippins and Sohi (2003) have considered for organizational memory: declarative memory and procedural memory. Declarative memory contains knowledge about facts, events, phenomena etc., while procedural memory stores knowledge about procedures, processes and routines (Tippins and Sohi, 2003).

Regarding the organizational learning process, the best results are obtained for organizational memory based on a personalization strategy. The employees are aware of who the people with the specific abilities and experience to intervene when an opportunity or problem arises are (mean equal to 3.62) and once the employees know who they have to contact in the organization, when an opportunity or problem arises, it is possible to have access to that person in a convenient way (3.53). Internal acquisition and distribution, external acquisition and interpretation and organizational memory – codification (the first three components) obtained somewhat weaker results. But we can differentiate a tendency in universities to focus on current tasks (as a result of the experience acquired the employees are more efficient in exercising their responsibilities, which has a mean of 3.61), the strategic matters (future needs of the organization; innovation) being in a secondary place (mean equal to 2.98 and respectively 2.69). In comparison, the results are slightly better for anticipation of difficulties, of potential problems (learning from other organizations to be able to respond to problems before they arise; collecting information about possible changes in the environment in which the organizations operate, with means equals to 3.30 and respectively 3.29). A

somewhat low mean (2.88) is found in the case of sharing and being committed to the mission of the organization for all the employees, in the case of the existence of people responsible for collecting the proposals made by the organization's employees, to reunite and distribute them internally (2.88) and for the item that regards the existence of regular meetings between departments to integrate the existing information (2.83). Another result that can be considered good is obtained by encouraging employees to be part of formal and informal networks from outside the organization (3.54). The results obtained for internal acquisition and distribution show a tendency of focusing on current tasks while the results for external acquisition and interpretation highlight an emphasis on anticipating potential difficulties.

Other aspects that obtained good results are those that regard informing the employees of how the organization was created, its mission and philosophy of work, the existence of a consolidated research and/or development policy, quickly transmitting vital information to all the employees and the existence of databases in which information, knowledge, experiences are stored for further use.

Practices and tools for facilitating organizational learning

Regarding the practices and tools for facilitating organizational learning, we selected a number of 10 practices/tools that we transposed into items. In the following table, the results of the factor analysis and the descriptive statistics are summarized.

Table 7. *Practices and tools for facilitating organizational learning: components and descriptive statistics*

Item	Component		Percentage (%) of variance	Cronbach's alpha	Cronbach's alpha based on standardized items	Mean (Component)	Standard deviation (Component)	Mean (Item)	Standard deviation (Item)
	1	2							
PT2. When necessary, different methods are used, in order to obtain information from customers/beneficiaries.	.987		49.535%	0.678	0.691	3.79	.63	3.56	.79
PT1. When necessary, different methods are used, in order to obtain information from employees.	.986							3.65	.75
PT5. External knowledge search is used (through the use of books, journals, websites, etc.).	.985							4.16	.89
PT4. Employees have access to external training programs (with outside experts), in situations when acquiring specific knowledge is necessary.		.869	27.617%	0.821	0.822	3.16	.81	3.06	1.14
PT6. When necessary, collaborations and partnerships are used for knowledge acquisition.		.807						3.61	1.03

Item	Component		Percentage (%) of variance	Cronbach's alpha	Cronbach's alpha based on standardized items	Mean (Component)	Standard deviation (Component)	Mean (Item)	Standard deviation (Item)
	1	2							
PT9. Interdepartmental cooperation is used.		.738						3.00	1.11
PT3. In this organization, examination and reflection on significant situations that have occurred are used.		.722						3.13	.94
PT8. At the level of the organization, there is a map of the organizational knowledge (that contains names of employees, contact information, their expertise and work experience), that is constantly expanding.		.703						2.98	1.10
Total variance explained by the two components	77.152%								
KMO measure of sampling adequacy	0.806								
Sig. (for Bartlett's test of sphericity)	0.000								

Source: *Author's own research.*

Two items were eliminated when applying factor analysis.

Considering the items included in the two components that have resulted, we can name them in the following way:

- Component 1: Practices/tools based on searching and discovering.
- Component 2: Practices/tools based on cooperation, collaboration and reflection.

According to the respondents' perception, we can notice a slight tendency towards using practices/tools based on searching and discovering (mean equal to 3.79), more than on using practices/tools based on cooperation, collaboration and reflection (mean equal to 3.16).

In the case of the practices/tools based on searching and discovering, according to employees' perception, the best result (mean: 4.16) is obtained for external knowledge searching (through the use of books, journals, websites, etc.) and the lowest result (mean: 3.56) is obtained in the case of using different methods, in order to obtain information from customers/beneficiaries, however all the results obtained for the items in this component can be considered good.

Regarding the practices/tools based on cooperation, collaboration and reflection, according to the opinions expressed by the respondents, the practice with the best result is for using collaborations and partnerships for knowledge acquisition (mean equal to 3.61) while the lowest result (mean equal to 2.98) is in the case of the existence, at the level of the organization, of a map of the organizational knowledge (that contains names of employees, contact information, their expertise and work experience) that is constantly expanding.

Organizational performance

To assess organizational performance, we used a number of seven items. We summarize the results of the factor analysis and the descriptive statistics in the following table.

Table 8. *Organizational performance: components and descriptive statistics*

Item	Component 1	Percentage (%) of variance	Cronbach's alpha	Cronbach's alpha based on standardized items	Mean (Component)	Standard deviation (Component)	Mean (Item)	Standard deviation (Item)
OrgPerf2. The organization meets its performance targets.	.883	69.648%	0.922	0.924	3.35	.80	3.47	.94
OrgPerf5. The organization's future performance is secure.	.858						3.14	1.01
OrgPerf1. The organization is successful.	.841						3.64	.91
OrgPerf7. In the organization, continuous improvement is being implemented.	.841						3.31	1.12
OrgPerf4. The organization meets its customers/beneficiaries needs.	.827						3.48	.83
OrgPerf6. The organization has a strategy that positions it well for the future.	.820						2.98	1.05
OrgPerf3. The employees are happy to work in this organization.	.767						3.44	.86
KMO measure of sampling adequacy	0.891							
Sig. (for Bartlett's test of sphericity)	0.000							

Source: *Author's own research.*

No items were eliminated in the factor analysis. In this case, we have a one-dimensional construct – organizational learning. As a result of respondents' expressing their opinion, the best result (mean: 3.64) is recorded for the item targeting the fact that the organization in which they work is successful, while the lowest result (mean: 2.98) is in the case of the existence of a strategy that positions the organization well for the future.

The value of human capital

The results of the factor analysis and the descriptive statistics are presented in the following table. For a better understanding of the items in the following table, we need to mention that in the questionnaire there was a general formulation preceding them: „Through the next set of items we aim to evaluate the value of human capital for the organization. To what extent do you agree that the employees in the organization in which you work have skills and knowledge that:…".

Table 9. *The value of human capital: components and descriptive statistics*

Item	Component 1	Percentage (%) of variance	Cronbach's alpha	Cronbach's alpha based on Standardized items	Mean (Component)	Standard deviation (Component)	Mean (Item)	Standard deviation (Item)
ValueHC7. Enable the organization to respond to new or changing customers/beneficiaries needs.	.883	72.036%	0.948	0.948	3.70	.76	3.60	.93
ValueHC4. Contribute to the development of new market/product/service opportunities.	.879						3.61	.94
ValueHC6. Directly affect organizational efficiency.	.870						3.70	.87
ValueHC8. Directly affect customers/beneficiaries satisfaction.	.864						3.76	.87
ValueHC2. Create value for customers/beneficiaries.	.859						3.93	.87
ValueHC5. Develop products/services that are considered the best in our industry.	.845						3.41	.95
ValueHC3. Enable the organization to provide exceptional services/products.	.842						3.67	.92
ValueHC9. Are needed to maintain high quality products/services.	.813						3.89	.85
ValueHC1. Are essential for creating innovations.	.779						3.73	.89
KMO measure of sampling adequacy	0.922							
Sig. (for Bartlett's test of sphericity)	0.000							

Source: *Author's own research.*

No items were removed in the factor analysis. We have only one component, thus a one-dimensional construct – the value of human capital. The items included in the measuring scale for the value of human capital regard the perception of the respondents of the extent to which the employees in the organization in which the respondents work have skills and knowledge that enable the organization to respond to new or changing customers/beneficiaries needs, skills and knowledge which directly affect organizational efficiency, create value for customers/beneficiaries, etc. (we randomly selected three items to exemplify).

We need to mention that for this construct two components could have been extracted, but we preferred the solution with only one component, considering the theoretical background for the notion of the value of human capital (see Lepak and Snell, 1999; Lepak and Snell, 2002) and empirical studies that include the notions of value and uniqueness of human capital (see Lepak and Snell, 2002; Lopéz Cabrales et al., 2011).

The results regarding the value that the skills and knowledge of the employees have for the organization can be considered good. The employees'

skills and knowledge create value for customers/beneficiaries (3.93), this being the aspect for which employees' skills and knowledge are the most valuable, according to the respondents' opinion. Given the average results obtained for the items (the aspects), the lowest being equal to 3.41 (which is above the level of 3.00 - the middle of the scale), it can be considered that the employees' skills and knowledge have value in the case of all the nine considered aspects. On average, the tendency is to agree with the fact that the employees in the organization where the respondents work have skills and knowledge that are valuable for the organization.

Correlation analysis. Testing the hypotheses

To test the hypotheses stated in the theoretical part of the paper we need to analyse the correlations between our variables (which are equivalent to the components that have resulted for the constructs). Because many of the distributions of the variables do not meet the normality condition, we are going to interpret the links between the variables using Spearman's correlation coefficient. The normality assumption at the level of each variable (component) was verified using the Shapiro-Wilk test (given the small sample size); most of the Sig. values do not exceed the threshold of 0.05 (in order for the normality assumption to be confirmed it is necessary that the value of Sig. exceeds the threshold of 0.05).

Table 10. *Testing the normality of distributions*

	Shapiro-Wilk		
	Statistic	df	Sig.
OLProcess_comp1	.958	87	.006
OLProcess_comp2	.946	87	.001
OLProcess_comp3	.946	87	.001
OLProcess_comp4	.940	87	.001
PracticesTools_comp1	.917	87	.000
PracticesTools_comp2	.970	87	.038
OrgPerf	.978	87	.156
Value_human_capital	.953	87	.003

Source: *Author's own research.*

The results for the correlation analysis, based on the Spearman's correlation coefficient, are presented in the following table.

Table 11. *Results of the correlation analysis*

	OLProcess_comp1	OLProcess_comp2	OLProcess_comp3	OLProcess_comp4	OrgPerf
Value_human_capital	.495**	.600**	.524**	.459**	.634**
OrgPerf	.721**	.707**	.615**	.505**	1.000

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

Source: *Author's own research.*

All the correlations that we are interested in are statistically significant (Sig.<0.01). We are interested in the correlations between the components of

the organizational learning process and organizational performance (hypothesis 1), and then the correlations between the value of the human capital (it is one-dimensional, having only one component), on the one hand, and, on the other hand:

- the components of the organizational learning process (Hypothesis 2);
- organizational performance (Hypothesis 3).

Further, we will use the shorter names of the components of the organizational learning process, in order to facilitate the following of the results.

Three of the components of the organizational learning process (internal acquisition and distribution; external acquisition and interpretation; organizational memory – codification) present strong positive correlations with organizational performance, while the fourth component, organizational memory (personalization), is positively and moderately correlated with organizational performance.

Hypothesis 1 is validated. Between the components of the organizational learning process and organizational performance there are positive and significant correlations.

The value of human capital presents a strong positive correlation with external acquisition and interpretation, moderate positive correlations with the other three components of the organizational learning process and a strong positive correlation with organizational performance. Hypotheses 2 and 3 are validated.

Next we are interested in the correlations between the components of the practices/tools through which organizational learning may be facilitated and the components of the organizational learning process (Hypothesis 4). The results of the correlation analysis, based on the Spearman's correlation coefficient, are presented in the following table.

Table 12. *Results of the correlation analysis*

	OLProcess_ comp1	OLProcess _comp2	OLProcess_ comp3	OLProcess_c omp4
PracticesTools_comp1	.422**	.548**	.284**	.556**
PracticesTools_comp2	.722**	.636**	.480**	.471**

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

Source: *Author's own research.*

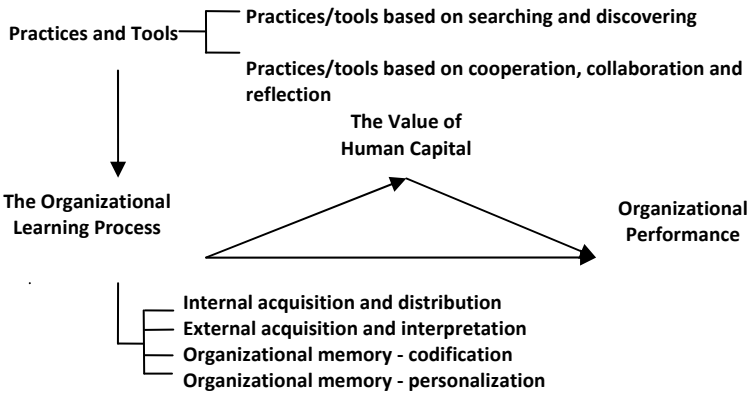
All the correlations are statistically significant (Sig. < 0.01). It can be noticed that the practices/tools that are based on cooperation, collaboration and reflection have a greater importance for the process of organizational learning than the practices/tools that are based on searching and discovering. The typology of practices/tools based on cooperation, collaboration and reflection is positively and strongly correlated with two of the components of the organizational learning process (internal acquisition and distribution; external acquisition and interpretation) and positively and moderately correlated with the other two components of the organizational learning process (organizational

memory – codification; organizational memory – personalization). In comparison, the practices/tools based on searching and discovering are positively and moderately correlated with three of the components of the organizational learning process (internal acquisition and distribution; external acquisition and interpretation; organizational memory – personalization) and are positively and weakly correlated to one of the components of the organizational learning process, namely organizational memory – codification.

The practices/tools based on cooperation, collaboration and reflection have an increased importance for the first two components of the organizational learning process (internal acquisition and distribution; external acquisition and interpretation). The practices/tools based on searching and discovering present weaker correlations with the components of the organizational learning process (except for the correlation with organizational memory - personalization), compared to the practices/tools based on cooperation, collaboration and reflection. Hypothesis 4 is validated.

However, the results show that the universities are somewhat more focused on using practices/tools based on searching and discovering (mean equal to 3.79) than on using practices/tools based on cooperation, collaboration and reflection (mean equal to 3.16), which could explain the results obtained for the components of the organizational learning process - most of them being situated at an average level, around the value of 3.00 (the means for the four components are: *3.15/3.14/3.17/3.57)* - considering the correlation coefficients obtained between the two typologies (we refer to the two components) of practices/tools and the four components of the organizational learning process. The model that resulted from the research conducted is presented below:

Figure 2. *The model with the resulted variables*



Source: *Author's own research.*

Contributions to the organizational learning theory

In this study we have adapted and tested a conceptual model. We took into consideration the process of organizational learning, organizational performance, practices/tools (through which organizational learning may be facilitated) and the value of human capital. We took into consideration measuring organizational learning as a process and correlating it with organizational performance, but also with some elements for managing organizational learning, which materialize in the practices/tools through which organizational learning may be facilitated.

Thus, the main contributions to the field of organizational learning were: (a) the adaptation of a conceptual model for organizational learning, (b) the proposal and analysis of some elements of organizational learning management (practices/tools through which organizational learning may be facilitated); (c) the development of an instrument for measuring organizational learning and another three concepts, the scales being either composed of proposed items based on a theoretical support, or generated based on instruments identified in the literature through adjustments (the results show that the instrument is reliable (has internal consistency).

For practices/tools, we have not identified instruments for measurement in the literature. The proposed scale in the instrument in this research is not aiming to be one that addresses the practices/tools in a comprehensive way, but it represents a first step in proposing a scale through which they can be measured.

The results obtained regarding the existing relationship between the components of the organizational learning process and organizational performance support the premise encountered in the literature, according to which between organizational learning and organizational performance there is a positive link and, at the same time, are consistent with prior studies (see Bontis et al., 2002; Tippins and Sohi, 2003; Pérez López et al., 2005; Škerlavaj and Dimovski, 2006; López Sánchez et al., 2010).

Managerial implications of the research

The model and the instrument tested in this research are useful for carrying out a diagnosis at the organizational level (also see Chiva et al., 2007, who have developed an instrument for measuring organizational learning capability, the authors appreciating that the scale used for measuring organizational learning capability can be considered a diagnostic tool). For certain aspects to be improved, it is necessary in the first place to know their level in an organization, as Camps et al. (2011) states regarding the elements that define organizational learning capability, with the purpose of their development. Therefore, the model and the instrument that we have detailed may be useful for decision makers. Camps et al. (2011, p. 698) considers, regarding organizational learning capability, that "the first step towards developing these capabilities is to find out their real and present level in the organization". We can generalize, considering that to facilitate the organizational learning process, to achieve improved performance etc., first it is necessary to assess all these

aspects in an organization, identify the correlations and the strength of the correlations between the aspects that are of interest for the decision maker. After this, the aspects that need improvements can be noticed.

Taking into consideration the research results, we consider that improvements in organizational performance can be achieved through a process of organizational learning, and that investing efforts to facilitate the occurrence of organizational learning by applying practices/tools through which organizational learning may be facilitated is justified.

Considering the results that we have obtained, the recommendations would consist in increasing the frequency of using the practices/tools based on cooperation, collaboration and reflection. Taking into account the results that were obtained regarding the strength of the correlations that exist between the practices/tools based on cooperation, collaboration and reflection and the components of the organizational learning process (especially the first two components: internal acquisition and distribution; external acquisition and interpretation), we can conclude that using this type of practices/tools more often could generate improvements regarding the components of the organizational learning process. If we also take into consideration the correlations that exist between the components of the organizational learning process and organizational performance, we can see that eventually it may lead to improvements in organizational performance.

Limitations and further research

In the end, we consider the limitations of this research. One would be related to the size of the sample. We have targeted only two higher education institutions (87 valid questionnaires). Therefore, the results need to be treated with caution. Another limitation would be related to be way in which organizational learning, organizational performance and the other two concepts were measured, namely considering the employees' perception. However, we have argued that this approach is appropriate, given the nature of the phenomenon. We need to add the fact that the study is not longitudinal (both for reasons of time and also considering that it is an exploratory research) thus we cannot determine the causal relationship between the considered concepts, limiting ourselves to an examination of correlations.

We have mentioned that this study is part of a research in progress, so expanding the sample, to a larger number of higher education institutions in Romania is one of the research directions. Also, another research could be conducted by applying the instrument in a large number of profit-based companies. Another direction would be conducting a longitudinal study, which would allow us to determine the existence of causal relationships between the concepts that we are interested in.

Acknowledgements

This work was cofinanced from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/159/1.5/S/142115 „Performance and excellence in doctoral and postdoctoral research in Romanian economics science domain".

References

Abu-Jarad, I.Y., Yusof, N.A. and Nikbin, D. (2010), "A review paper on organizational culture and organizational performance", *International Journal of Business and Social Science*, Vol. 1, No. 3, pp. 26-46.

Andreadis, N. (2009), "Learning and organizational effectiveness: A systems perspective", *Performance Improvement*, Vol. 48, No. 1, pp. 5-11.

Argote, L. (2011), "Organizational learning research: Past, present and future", *Management Learning*, Vol. 42, No. 4, pp. 439-446.

Bhatnagar, J. (2006), "Measuring organizational learning capability in Indian managers and establishing firm performance linkage. An empirical analysis", *The Learning Organization*, Vol. 13, No. 5, pp. 416-433.

Bontis, N. (1999), "Managing an Organizational Learning System by Aligning Stocks and Flows of Knowledge: An Empirical Examination of Intellectual Capital, Knowledge Management, and Business Performance", *ProQuest Dissertations and Theses.*

Bontis, N., Crossan, M.M. and Hulland, J. (2002), "Managing an organizational learning system by aligning stocks and flows", *Journal of Management Studies*, Vol. 39, No. 4, pp. 437-469.

Brătianu, C. (2007a), "An integrated perspective on the organizational intellectual capital", *Review of Management and Economic Engineering*, Vol. 6, No. 5, pp. 107-112.

Brătianu, C. (2007b), "The learning paradox and the university", *Journal of Applied Quantitative Methods,* Vol. 2, No. 4, pp. 375-386.

Brătianu, C. (2014), "Intellectual capital of the European universities", in A.M. Dima (Ed.), *Trends in European higher education convergence,* pp. 24-43, IGI Global, Hershey.

Brătianu, C. and Orzea, I. (2010), "Organizational knowledge creation", *Management, Marketing. Challenges for Knowledge Society,* Vol. 5, No. 3, pp. 41-62.

Camps, J., Alegre, J. and Torres, F. (2011), "Towards a methodology to assess organizational learning capability. A study among faculty members", *International Journal of Manpower*, Vol. 32, No. 5/6, pp. 687-703.

Chen, G. (2005), "Management practices and tools for enhancing organizational learning capability", *S.A.M. Advanced Management Journal*, Vol. 70, No. 1, pp. 4-35.

Chiva, R., Alegre, J. and Lapiedra, R. (2007), "Measuring organisational learning capability among the workforce", *International Journal of Manpower*, Vol. 28, No. 3/4, pp. 224-242.

Crossan, M.M., Lane, H.W. and White, R.E. (1999), "An organizational learning framework: from intuition to institution", *Academy of Management Review*, Vol. 24, No. 3, pp. 522-537.

Crossan, M.M., Lane, H.W., White, R.E. and Djurfeldt, L. (1995), "Organizational learning: Dimensions for a theory", *The International Journal of Organizational Analysis*, Vol. 3, No. 4, pp. 337-360.

Curado, A. (2006), "Organisational learning and organisational design", *The Learning Organization*, Vol. 13, No. 1, pp. 25-48.

Easterby-Smith, M., Crossan, M. and Nicolini, D. (2000), "Organizational learning: Debates past, present and future", *Journal of Management Studies,* Vol. 37, No. 6, pp. 783-796.

Fiol, C.M. and Lyles, M.A. (1985), "Organizational learning", *Academy of Management Review*, Vol. 10, No. 4, pp. 803-813.

Guţă, A.L. (2013), "Organizational learning and performance. A conceptual model", in: *Proceedings of The 7th International Management Conference "New Management for the New Economy",* 07-08 November 2013, Bucharest, Romania, pp. 547-556.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), *Multivariate Data Analysis,* Sixth Edition, Pearson Prentice Hall, New Jersey.

Huber, G.P. (1991), "Organizational learning: the contributing processes and the literatures", *Organization Science*, Vol. 20, No. 1, pp. 88-115.

Jaradaat, D., Nasser, M.S., Al-Saleh, D. and Asma, R. (2010), "Measuring intellectual capital in corporations", *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 2, No. 4, pp. 42-52.

Jianu, I. and Brătianu, C. (2007), "The semantic dynamics of the intellectual capital concept", *Management & Marketing. Challenges for the Knowledge Society,* Vol. 2, No. 1, pp. 15-26.

Jyothibabu, C., Farooq, A. and Pradhan, B.B. (2010), "An integrated scale for measuring an organizational learning system", *The Learning Organization*, Vol. 17, Np. 4, pp. 303-327.

van der Kooij, A. (2009), "CATPCA categories vs. conventional factor analysis" (e-mail), available at: listserv.uga.edu/cgi-bin/wa?A2=ind0901&L=spssx-l&P=39707 (accessed June 13, 2014).

Leen Yu, M., Hamid, S., Taha Ijab, M. and Pei Soo, H. (2009), "The e-balanced scorecard (e-BSC) for measuring academic staff performance excellence", *Higher Education*, Vol. 57, No. 6, pp. 813-828.

Lepak, D.P. and Snell, S.A. (1999), "The human resource architecture: Toward a theory of human capital allocation and development", *Academy of Management. The Academy of Management Review*, Vol. 24, No. 1, pp. 31-48.

Lepak, D.P. and Snell, S.A. (2002), "Examining the human resource architecture: the relationships among human capital, employment, and human resource configurations", *Journal of Management*, Vol. 28, No. 4, pp. 517-543.

López Sánchez, J.A., Santos Vijande, M.L. and Trespalacios Gutiérrez, J.A. (2010), "Organisational learning and value creation in business markets", *European Journal of Marketing*, Vol. 44, No. 11/12, pp. 1612-1641.

López-Cabrales, Á., Real, J.C. and Valle, R. (2011), "Relationships between human resource management practices and organizational learning capability. The mediating role of human capital", *Personnel Review*, Vol. 40, No. 3, pp. 344-363.

Pérez López, S., Montes Peón, J.M. and Vazques Ordás, C.J. (2005), "Organizational learning as a determining factor in business performance", *The Learning Organization*, Vol. 12, No. 3, pp. 227-245.

Pintilescu, C. (2007), *Analiză statistică multivariată,* Editura Universităţii „Alexandru Ioan Cuza", Iaşi.

Saunders, M., Lewis, P. and Thornhill, A. (2007), *Research Methods for Business Students,* Fourth Edition, Prentice Hall, Harlow.

Senge, P.M. (2006), *The Fifth Discipline: The Art & Practice of the Learning organization,* Doubleday, New York.

Škerlavaj, M. and Dimovski, V. (2006), "Study of the mutual connections among information-communication technologies, organisational learning and business performance", *Journal for East European Management Studies*, Vol. 11, No. 1, pp. 9-29.

Suciu, C. (2006), "Intellectual capital as a source of the competitive advantage", *Management & Marketing. Challenges for the Knowledge Society,* Vol. 1, No. 4, pp. 89-94.

Tippins, M.J. and Sohi, R.S. (2003), "IT competency and firm performance: Is organizational learning a missing link?", *Strategic Management Journal*, Vol. 24, No. 8, pp. 745-761.

Werr, A. and Stjernberg, T. (2003), "Exploring management consulting firms as knowledge systems", *Organization Studies*, Vol. 24, No. 6, pp. 859-869.