

Methodological aspects of examination of leadership and organizational culture influence on knowledge conversion in public administration

Miglena PENCHEVA

University of Ruse "Angel Kanchev", Ruse, Bulgaria
mpencheva@uni-ruse.bg

Abstract. *Leadership, organizational culture and knowledge conversion are sufficient concepts in contemporary organizational development. Thus, there are variety of concepts, methods and instruments in the literature, employed to examine either the current situation or the relationship among those categories. However, these methods are so diverse, that they could confront to one another if composed in a common survey. What is more, leadership, organizational culture and knowledge conversion are soft areas of study, which implies specifics that ought to be taken into consideration, especially when it comes for public administration. The objective of the paper is to compile a framework of models, instruments and data manipulation techniques to reveal current structure and the relationships among leadership, organizational culture and knowledge conversion in an organization. The survey focuses on managers in public administration (officers with subordinates). However, it is applicable in business environment as well. The concepts examined are as follows: Full range of Leadership Model, Hofstede Cross-cultural Model, Revised profile of Organizational Culture and SECI Model. The methodology employed composes of Descriptives, Preliminary data analysis, Outlier analysis, Exploratory Factor Analyses (Parallel analysis including), Pearson Correlation and Standard Linear Regression. As a result, there is a framework outlined to describe the current structure and the relationship among leadership, organizational culture and knowledge conversion practices.*

Keywords: leadership, organizational culture, knowledge conversion, current structure, data manipulation techniques.

Introduction

The interest in knowledge and knowledge management is sufficient over a decade, mainly from a business perspective. It has outgrown the fashion phase and is perceived as a sustainable tool for organizational development. According to the literature, knowledge development is closely connected to organizational culture, leadership, and human resources management (Davenport, DeLong & Beers, 1998; Horak 2001). Contemporary researches are focused on "soft" areas of knowledge development (Bratianu, 2010; Bratianu and Bolisani, 2015), which is dependent on the social environment in the organization and the level of intergenerational knowledge transfer (Lefter et al., 2011).

Leaders are those who create the conditions in which employees exercise and cultivate their skills in handling knowledge, contribute their individual knowledge to organizational aggregate knowledge and access the information they need (Crawford 2005, DeLong & Fahey 2000, Ribiere & Sitar 2003).

Organizational culture reflects in the unwritten rules of social interaction. The fact that administration develops in its unique way towards business requires investigation of the current situation and the influence of organizational culture. Thus, it is important to explore current situation in terms of knowledge and its relationship with leadership and the unwritten rules of social game.

From conceptual perspective, the subject is important because significant researches indicates a link between leadership and knowledge development, between organizational culture and knowledge management, between organizational culture and leadership. However, a combined study of these three constructs is lacking behind, especially in public administration.

From a practical point of view, the all three categories in hand are complicated, multidimensional ones. They could be explored on an individual, organizational, and even on a higher level. Thus, they impose on certain challenges. When it comes to a choice of survey questionnaires and forthcoming data manipulation a researcher could face really tough pitfalls.

The objective of the paper is to propose a framework of methodological aspects for conducting a survey on leadership and organizational culture influence on knowledge conversion. More specifically, to present a layout of steps to follow to examine the categories in hand in public administration

Literature review

Knowledge

The nature of knowledge

The concept of knowledge has evolved and changed in the course of its study (Nonaka & Takeuchi, 1995). However, two general characteristics can be derived from the theoretical analysis. First, knowledge is a humanistic category, because it is essentially related to human action. It is a dynamic human process of validating personal perceptions upon truth. Secondly, knowledge is context-related because it is directly influenced by the specific time and space. In other words, it is perceived that knowledge does not exist alone without human experience. It develops through social creation of meanings and concepts (Sabherwal & Bacerra-Fernandez, 2003). The subjective and context-sensitive nature of knowledge determines the dependence of meaning and its categories on individual perceptions (Davenport & Prusak, 1998).

For the purposes of this study, the definition of knowledge given by Probst (2000, p. 24) and his colleague is adopted: "Knowledge covers the whole set of cognitive abilities and skills that individuals use to solve problems. It includes theories, practices, daily rules and instructions for taking action. Knowledge is based on data and information, but unlike them, it is always tied to a person. It is built up by individuals and breaks through their beliefs about causal relationships." The choice of this definition is determined by the fact that it to some extent overlaps the definitions of knowledge given by a number of scientists (Davenport & Prusak, 1998; Nonaka & Takeuchi, 1995; Wiig, 1999).

There are number of knowledge types cited in the literature, when it comes to a classification of knowledge. For the purpose of this paper the focus will lie on the individual knowledge, as individual knowledge is the building element of the organizational. What is more, some authors (Wiig, 1993), argues that individual knowledge is the toughest to reach but also the most complete form of knowledge. Nonaka and Takeuchi (1995) distinguish two types of knowledge: explicit – clearly formulated, well structured knowledge and tacit – hidden knowledge, gained via personal experience, subconscious and thoughts. This idea is widely discussed in the literature on knowledge management (Beckman, 1999; Boiral, 2002; Davenport & Prusak, 1998; Nonaka & Takeuchi, 1995).

Level of conceptualization

Knowledge and its related categories (e.g. knowledge development, knowledge transfer, knowledge management) are multi-layered constructs studied at national, inter-organizational and in-organizational level. The literature is rich in researches on organizational level. As a result, the individual level is a bit neglected. However, the individual level is considered best suited to exploring the foundations that determine the beginning, existence, conservation, and change in a variety of organizational phenomena (Felin & Foss, 2006).

Knowledge conversion – SECI model

The creation of knowledge always begins with an individual human being - a scientist, a manager, an employee. Based on the distinction between explicit and tacit knowledge in the organization, Nonaka and Takeuchi (1995) designed a dynamic model for creating and transforming knowledge from tacit into explicit, and vice versa. This model is based on the idea that knowledge is created and developed through a social interaction between tacit and explicit knowledge. This interaction is called conversion of knowledge. Creating knowledge is a cyclical process that takes place between individuals. By converting the tacit and explicit knowledge, the quantity and the quality of knowledge increase (Nonaka et al., 2000). Nonaka and Takeuchi derive four domains of knowledge conversion: socialization, externalization, combination, and internalization which together form the acronym "SECI". Socialization refers to tacit to tacit knowledge transfer via face-to-face or concluded from experiences. Externalization means tacit to explicit knowledge transfer by publishing, speaking, articulating knowledge. Combination is organizing, integrating explicit knowledge, organizing, editing and integrating it to another explicit knowledge. Internalization refers to conversion of explicit to tacit knowledge - receiving and applying knowledge by an individual (e.g. learning by doing).

Leadership

It is generally accepted that leadership plays a decisive role in the functioning of organizations and administrations and has a direct impact on team processes and results. Like majority constructs in social science, defining leadership is conditional and subjective. Some definitions are more used than others, but there is no "one size fits all" definition (Yukl, 2006). For the purposes of this study, the definition of leadership given by Sindell & Hoang (2001, p. 24) is adopted: "leadership in public administration is specific behavior of people with an influence causing from the interaction of personality, role, organization, tasks, values and position, including knowledge creation and exchange, strategic thinking, communication and motivation." The perspective of leadership adopted here is to study the leader itself. It is common sense that the leader is the "starter" and the "performer" of the processes in the team. This emphasizes the importance of studying the leader because he / she is both a key participant in the current state of the subject under study and a "major player" when necessary change.

Level of conceptualization

Level of conceptualization is a tricky topic when it comes to the leadership. Often, in theory, there is no distinction between leadership in a small team, in a large organization, specific leadership-follower relations, and a leader of a high public-state position. The following

levels of conceptualization of leadership are most often distinguished (Yukl, 2006): intra-individual, dyadic, group and organizational level theories. In fact, because of the difficulty of creating a theory covering all these levels, most researches focus on one of them; therefore each applies only at the appropriate level. The present study considers the individual perspective of managers. The starting point is a notion of leadership as an inner process of understanding the inherent leadership behavior and the process of knowledge conversion.

Transformational and transactional leadership theories

In contemporary theory, special attention is paid to transformational and transactional leadership, as it envisioned as best candidate to meet the demands of an ever-changing, complex and global world.

The transformation group of theories teaches the way the leader influences the others. In the current study "Full-range leadership model" is adopted for the following reasons: 1) the model is widely employed in business survey, however there is almost none of them conducted in the public administration; 2) this model could be integrated with other concomitant categories, such as knowledge conversion. According to Bass and Avolio, the transformational leadership is determined by four main components (Bass, 1997) as follows: individualized consideration, intellectual stimulation, inspirational motivation and idealized influence (attributive and behavioural). Leaders who apply an individual consideration provide an atmosphere of support in which they give personal attention to each employee and his/her individual peculiarities. Leaders who apply intellectual stimulation inspire followers to be creative and innovative, question their beliefs and values, along with their own and those adopted in the organization (Avolio et al., 1991, Northouse, 2001). Leaders inspire (inspirational motivation) and motivate by clarifying and providing challenges for their followers using understandable language, symbols and visualization. Regarding the idealized influence leaders are a role model for their followers. They are deeply respected, admired and enjoy the trust of their colleagues (Northouse, 2001).

Transactional behaviors include contingent rewards, management-by-exception (active and passive) and laissez-faire (hands-off leadership). Regarding contingent rewards, the leader provides a reasonable reward for the efforts made and the results achieved, cherish the good performance to keep it. With respect to management-by-exception (active and passive), the leader maintains the status quo and intervenes when employees do not achieve the required level of performance. Whether the leader is actively looking for mistakes to prevent or react to deviations that have already occurred, we can distinguish active and passive management of exceptions. Laissez-Faire is avoidance or lack of leadership, including no decision-making.

With respect to organizational culture, transformational leaders firstly understand culture, secondly align it with the new vision along with revision of commonly accepted values and norms. Transactional leader works within existing culture, with no attempts to change it.

Organizational culture

Level of organizational culture

Definition of an organizational culture is a tricky topic. More than 250 definitions exist in the literature. What is more, essence and importance of organizational culture, apart from

definitions could be explained via its relationships with other cultural systems, also revealed as a system (Ghinea, Mihailova, Papazov, 2015) e.g. through structuring at levels. In summary, the concepts revealing the organizational culture levels assume that it is constructed from two types of elements - ideal and real / visible.

The ideal level refers to the reasons that motivate employees in an organization to behave in a certain way. It includes values, clearly stated / perceived values, hidden assumptions, and so forth. Those things that are under the surface of the iceberg. Although the organization functions within society and should have the same dimensions as society, it is presumable to have individuals with different values. The facts that ideal elements form the core of culture are fundamental and resisting change, require thorough exploration of the matter.

Visual/ real cultural elements include all aspects that can be observed, namely - practices, norms and artifacts, the top of the iceberg. These elements are also a good construct for exploration, since it is a common ground between individual beliefs and organizational spirit.

Level of conceptualization

Usually, when it comes to the level of organizational culture conceptualization two main areas could be derived: a) what to study - values, logical schemes of expression, symbols, practices and behaviors, or other; b) where to explore - documents, employees, managers, other elements of the environment. Again, because of the difficulty of creating a theory covering these two levels, attention should be focused on a narrow set and applied to the appropriate level. In this case, values and practices are adopted to be examined at an individual level (in public administrations).

Cultural models employed

For the purposes of this study two models are employed. The first one is Geert Hofstede's five-level model and the second one is Profile of organizational culture –revisited and revised (Sarros, Gray, Densten & Cooper, 2005) among all variety of cultural methodologies and measures.

In its most popular form, Hofstede's concept comprised of five cultural dimensions e.g. individualism-collectivism; uncertainty avoidance; power distance, masculinity-femininity and future orientation. Geert Hofstede's five-level model is adopted for the following reasons: 1) the dimensions assess values; 2) it is widely used in Bulgaria, thus provides ground for comparisons and analysis; 3) even though the model has been explored, there are no surveys conducted in public administration in Bulgaria which provides element of novelty; 4) the five dimensions rather than the six-grade model are deliberately chosen because the object of the survey are employees. The survey is carried out at the workplace but on every day life. In this sense, the sixth dimension –Indulgence vs. Restraint is considered as non relevant. The five dimensions are employed to expose the value level of culture (Pencheva, 2015).

The Profile of organizational culture –revisited and revised involves the following dimensions: Competitiveness, Social Responsibility, Supportiveness, Innovation, Emphasis on Rewards, Performance Orientation, and stability (Sarros, Gray, Densten & Cooper, 2005). The Profile of organizational culture is adopted for the following reasons: 1) the original Profile of organizational culture is well established and recognized tool; 2) the revised and revisited version overcomes the limitations of Q methodology of the original one, thus makes it suitable for combined surveys; 3) it is suitable for searching a link between

organizational culture and knowledge development; 4) there are no surveys conducted in public administration in Bulgaria, actually overall it is lagging behind in other areas as well, which provides element of novelty. The Profile of organizational culture –revisited and revisited is engaged to expose the level practices of culture (Pencheva, 2015).

Methodology

PICBE | 765

Methodological framework of research

As a result of the analysis of the applied scientific literature and similar conducted research, the methodology of the study is developed, briefly described below.

Choosing appropriate perspective, models and research methods to approach the problem

Quantitative method of research has been adopted because of their potential for establishing facts, casualities and testing hypotheses. Two approaches of exploration are adopted: nomothetic and ideographic. The first approach has been adopted in order to find common trends/ laws valid for the studied administrations, and the second - for describing and explaining the constructs in hand.

Subject of the study is the perception of managers in public administration on transformational and transactional leadership behavior, shared values, accepted cultural practices and SECI practices. Defining restrictive study conditions: a) the number and detail of questions in the questionnaires includes the baseline questionnaire options; b) because of the many factors affecting administrations, the research focuses on elements of the internal environment only; c) research of leadership is based on self-assessment by managers. The idea to occupy leaders as respondents is grounded in their suitability to know the condition of the studied constructs. However, managers fill in the questionnaires on their own, thus leaving a room to results to be influenced by a Common-method variance – CMV.

Defining research problem (question)

Problem of the study (research question)

The study aims to reveal the actual structure of leadership, organizational culture and SECI practices, as well as to identify the relationships and influence between them in the public administrations under study.

Survey constructs

The present study covers the following constructs: transformational, transactional leadership behavior, organizational culture - values, organizational culture - practices and SECI practices.

Defining population and sample size

Defining conditions and limitations of the survey

Object of research are managers employed in regional and municipal administrations in the territory of Northern Bulgaria, in particular the North Central Region and the Northwest Region. The choice to study the perceptions of managers is made according to the assumption that exploring key figures with good awareness of the research subject is a prompt way to collect data across a broad range of research. Typically, such respondents

are managers of senior management positions, top managers, managers from the middle management line, and so on. They are preferred because they have "the biggest picture" of the functioning of the represented organization.

Subject of the study is the perception of public administration managers on transformational and transactional leadership behavior, shared values and common cultural practices as well as SECI practices.

Regarding the limitations of the survey, they are defined as follows: a) first restrictive condition is related to the territorial scope of the study. The sample is narrowed to local authorities and district administrations in the territory of the North Central Region, and the Northwest Region. B) Second limitation is related to the number and detail of the items included in the data collection questionnaire. Due to the financial constraints on the one hand and the lack of tolerance from participation in surveys on the other, the baseline questionnaire options were used; however, baseline questionnaire provide sufficient prospect for analysis.

Defining population (universum)

Defining population by criteria, location and time. When it comes to that part of the survey two questions occur: 1) which set of individuals need to be studied (universum); and 2) how many of the derived set are targeted (sample size), keeping in mind that in most cases it is impossible or at least not necessary to ask them all (Giglioni & Matalon, 2005). The first question is not always clear, therefore, the focus is most often on the second issue, which deals with the problems of sampling methods and their size - problems to which statisticians make accurate decisions. However, the choice of the general population - subject of research - is much less formalized.

The population is the aggregation of all the units defined by a given criterion. The population is defined by three parameters, e.g. determination of matter (essence), location and time. The universum of the current study is defined as follows: a) in essence, on the basis of a managerial position - persons in managerial positions in district or municipal administration; b) in location, on the basis of regional and municipal administrations located on the territory of the North Central Region, and the Northwest Region; c) in time, the managers in the listed administrations should hold that position in a certain period of time, e.g. from April to September 2015.

Defining a probe unit

Due to the fact that information such as how many managers are employed in the administrations is neither in the scope of the National Statistical Institute nor subject to regulatory regulation, the general population of the present study is determined by the use of a probing base. Probing base is derived of the available information in hand. Sometimes the probing base does not necessarily have much to do with the units of interest to the researcher (Giglioni & Matalon, 2005). In that case a probe unit needs to be outlined. The probe unit is a unit containing in other units which are matter of the study. The later units are named analytical ones. For example, the probe unit here is organizational structure uploaded on the official sites of the administrations. Consequently, the analytical unit is a manager/ chief of department/ member of the political cabinet/ district governor end etc.

Defining factors that sample size depends on

From the point of view of applied statistics, especially in socio-economic research, a sample is called representative if both the following two conditions are met: a) the sample reproduces the main characteristics and proportions of the population; b) the sample contains a sufficient number of units, ie. the volume of the sample is large enough. Usually, to meet those conditions three factors are used: 1) the margin of error, 2) the confidence level, and 3) the proportion (or percentage) of the sample that will choose a given answer to a survey question. The margin of error determines the perceived degree of inaccuracy for the survey. Herewith is adopted the most popular percentage for such surveys e.g. 5 %. The confidence level determines the degree of security to which the resulting assessment is within the tolerable error – 90 % for this current survey. The percentage determines assumptions about the individuals of the population studied who would respond in a certain way, that is, they are fit enough to provide relevant answers -50 % in this case.

Defining the size of the sample

Based on the above mentioned factors sample size is calculated via online calculators. Those used in this survey are: Raosoft and Pragmatika.bg. The sample size is calculated with an auto-correction for limited samples.

Research instrument

This study is based on well established tools used in similar studies.

Compiling a research questionnaire

The questionnaire is composed of five modules as follows: SECI practices (Sabherwal & Becerra-Fernandez, 2003), Full Range of leadership questionnaire (5X) (Bass & Avolio, 1997), Cross-cultural questionnaire (Hofstede, 2003), Organizational culture profile – revised (Sarros, Gray, Densten & Cooper, 2005), general information for the respondent (e.g. sex, age and etc.).

Adaptation of a research questionnaire

The structural parts of the questionnaire (except the general information) have been translated into Bulgarian language. To make sure that they reproduce items correctly, they have been translated again back to English and compared with the original texts to see if match in meaning. Similarly, the terminological compatibility test has been done. Due to the fact that the questionnaires were developed for general application and not specialized for public administration, the opinion of a specialist working in this field was required to indicate unclear statements.

Separation of the main research hypothesis into secondary research hypothesis

Main research hypotheses should be formulated on a literary review stage. This is the stage where, they should be decomposed to secondary hypothesis. For example, if a main hypothesis is as follows: the SECI model, Leadership and Organizational culture in the studied population have a different structure, more basic, with fewer substructures than those in the theoretical formulations, it could be split to : a) The structure of SECI practices in the studied population would impose a smaller number of building elements of the generally accepted theoretical setting and etc.

Conducting the survey

Pilot testing

A pilot testing of ten respondents was conducted. The purpose of the survey was to test the questionnaire, the dissemination and transmission process, to identify inaccuracies and weaknesses before the actual survey.

Conducting survey

It comes to an actual dissemination of the questionnaire and to respondents' activity.

Preliminary data analysis – understanding the data

Analysis of the missing data

Analyzing the non-responders and how they are allocated to different categories, how their frequency is related to other types of information in the items may be of interest in itself. Not answering a question can be an indicator, like any other answer, about the attitude towards the issue.

Apart from registering and interpreting the non responders, a decision should be made on how to proceed with them - whether to engage in further analysis or to exclude them. Some argues that questionnaires with missing responses on dependent variables should automatically be excluded from further processing. In questionnaires with missing data on different variables, it is a matter of a research decision whether to exclude or be subject to statistical processing.

Checking for errors

After removing of nonvalid questionnaires, it comes to checking for errors in the dataset. In the SPSS environment, this could be done by the Frequences option (Pallant, 2005), which shows missing values and the frequency of responses according to the coding. For example, if the question "How long do you think to work for this administration", a response with an encoding of 5, with 1 to 4, is the result of an error.

Descriptives – revealing common trend

It shows the number of individuals in the sample holding a given characteristic as well as their relative percentages.

Distribution by sex, age, education, years within the organization, occupied position, etc.

Evaluation of normality – mean, standart deviation, skewness

Mean level indicators are generic quantitative characteristics that describe the typical, characteristic condition of the subject at test.

Checking for outliers

Outlier is a value that is too far from the other values in the sample. From one hand, outliers could be often guests when it comes to survey which relies on respondents' opinion. From the other hand, dealing with outliers is not very poular yet. There is a debate in the literature about the importance of this type of values and the reactions to them. The majority of the parametric statistical teckniques are outlier sencitive (Osborne & Overbay, 2004). Thus, a lot researches are in favour of transformation of the outliers. However, outliers could reflect a trend and their transformation could distort the outcomes of the surbey. In that case statistical plan need to be changed, not the data.

How to proceed with outliers? It is quite controversial question. In particular, it is questionable whether or not to remove it. Opinions range from removing each of them, transforming them, preserving them, and adapting the statistical strategy to them. A fruitful way of approaching them is to evaluate the potential influence outliers would have over statistical manipulation. It could be done by evaluation of trimmed mean (Pallant, 2005). Trimmed mean is mean reduced with 5% from both ends (5% off the highest and lowest values). The trimmed mean should be compared to the mean. If the difference is over 0.20 the outlier is considered as influencing the statistical outcomes.

Drawing out the data common trend

Checking for validity and reliability

This section deals with checking for reliability of the employed questionnaire, checking for validity of the variables and if appropriate defining of the additional hypothesis ensued during data processing. Reliability indicates how well the variables are aligned around a certain goal. Usually, Cronbach alpha is employed. It is possible that a scale has a high internal coherence of the variables as a whole and at the same time some individual variables show low coherence or other unfavorable properties. The main characteristic of a variable is its discriminatory power. It is possible to have strong reliability of scale and variable with negative or close to 0 impacts. Thus, that variable “works against” or measures something else. Here the chance for additional hypothesis comes to scene.

Analyzing data structure

Exploratory factor analysis – factorability of the data, extraction method, rotation technique, interpretation of the outcomes

Factor analysis is a multivariate statistical approach commonly used in behavioural studies. There are two major classes of factor analysis: Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA) (Williams, Onsman & Brown, 2010). EFA allows the researcher to explore the main dimensions at hand, to model them, or to check for latent constructs. What is more, EFA reduces issues with normality. Factor analysis is a useful tool, but rather complicated, thus it requires additional attention.

Cross-cultural indexes – calculation of cross-cultural indexes based on the formulas of Hofstede. Based on the nature of variables, cross-cultural items are not suitable for EFA.

Exploration of the relations among the examined constructs

Pearson correlation

Multiple regressions – checking the assumptions, evaluation of the regression model, evaluation of the influence of the independent variables

Survey outcomes

Drawing out a model composed of the derived structure of the examined constructs along with the revealed relationships

Interpretation of the formulated hypothesis in terms of gained results

Results and discussions

In this section the author presents the main findings of his/her research. It is important to use critical thinking in order to analyze realistically the results obtained, and how the

research hypotheses have been validated or not. Also, it is important to compare results of present research with results obtained in similar research, by using the literature in the domain. If the paper presents a theoretical model or theory, the discussion should be about the way the new conceptual contribution can be applied and how it compares with some similar models or theories.

For a better explanation of the research results the author may use graphical illustrations or tables.

Conclusion

Theoretical questions on the SECI practices, leadership and organizational culture have been systematized. A methodological approach has been outlined to explore the constructs at hand, as well as the interrelationships between them. This framework has been applied in public administration survey. However, it is applicable in other sectors e.g. business as well.

A limitation of this paper is that a factor analysis, Pearson correlation and Multiple regression are not explained in details. Regarding correlation and regression Pallant (2005) is clear and easy assessible reading that could be employed as a guide. In terms of EFA, Williams at all is a helpful reading to start with.

References

- Avolio B. J. Waldman D. A. & Yammarino F. J. (1991). Leading in the 1990's: The four I's of transformational leadership. *Journal of European Industrial Training*, 15 (4), pp. 9-16
- Bass B. M. (1997). Personal selling and transactional/transformational leadership. *The Journal of Personal Selling & Sales Management*, 17 (3), pp. 19-28
- Beckman T.J. (1999). The current stage of knowledge management. In J. Liebowitz (Ed.) *Knowledge Management Handbook*. CRC press.
- Boiral, O. (2002). Tacit Knowledge and Environmental. *Management, Long Range Planning*, vol. 35, no. 3, p. 291-317.
- Bratianu, C. (2010). A critical analysis of Nonaka's model of knowledge dynamics. In Rodrigues, S. (Ed.). *Proceedings of the 2nd European Conference on Intellectual Capital*, ISCTE Lisbon University Institute, Lisbon, Portugal, 29-30 March 2010 (pp. 115-120). Reading: Academic Conferences and Publishing International.
- Bratianu, C. and Bolisani, E. (2015). Knowledge strategy: an integrated approach for managing uncertainty. In Massaro, M. and Garlatti, A. (Eds.). *Proceedings of the 16th European Conference on Knowledge Management*, University of Udine, Italy, 3-4 September 2015 (pp. 169-177). Reading: Academic Conferences and Publishing International.
- Crawford C. B. (2005) Effects of transformational leadership and organizational position on knowledge management. *Journal of Knowledge Management*, 9 (6), pp 6-16
- Davenport T. H., De Long D. W. & Beers M. C. (1998), Successful knowledge management projects. *MIT Sloan Management Review*, 39 (2), pp 43-57
- Davenport T. H. & Prusak L. (1998). *Working knowledge: how organizations manage what they know*. Boston, Mass & Harvard Business School Press
- De Long D. W. & Fahey L. (2000). Diagnosing cultural barriers to knowledge management. *Academy of management Executive*, 14 (4), pp 113-127

- Felin T. Foss N. (2006). Individuals and Organizations: Thoughts on a Micro-Foundations Project for Strategic Management and Organizational Analysis, SMG Working Paper 2/2006, Copenhagen Business School
- Giglion R. Matalon B. . (2005). Sociological syrveys. Theory and practice, Sofia
- Ghinea VM, L Mihaylova, E Papazov (2015). Organizational Culture Dynamics Complex Systems Dynamics, Calitatea 16 (147), 99
- Hofstede G. (2003). Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations, 2nd Edition, SAGE Publications
- Horak J. B. (2001). Dealing with human factors and managing change in knowledge management: A phased approach in Topics in Health Information Management, 21(3), pp. 8-17.
- Lefter, V., Bratianu, C., Agapie, A., Agoston, S. and Orzea, I. (2011). Intergenerational knowledge transfer in the academic environment of knowledge-based economy. *Amfiteatru Economic*, 13(30), pp. 307-319.
- Nonaka I. & Takeuchi H. (1995). The knowledge-creating company: how Japanese companies create the dynamics of innovation. New York: Oxford University Press
- Nonaka, I., Toyama, R. & Konno, N. (2000) SECI, ba and leadership: aunified model of dynamic knowledge creation. *Long Range Planning*, Vol. 33, pp. 5-34.
- Northouse, P. G. (2001). Leadership: theory and practice (2nded.) Thousand Oaks, Calif. : Sage Publications
- Osborne, Jason W. & Amy Overbay (2004). The power of outliers (and why researchers should always check for them). *Practical Assessment, Research & Evaluation*, 9(6)
- Pallant J (2005) SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS for Windows (Version 12). Open University Press, Maidenhead
- Pencheva M. (2015). Organizational culture as a moderator of leadership, *Leadership and organizational development*, p. 726-732
- Sabherwal R. & Bacerra-Fernandez, I.(2003). An empirical study of the effect of knowledge management process at individual, group, and organizational levels. *Decision Sciences*, 34 (2), pp. 225-260
- Sarros J. C., Gray J., Densten I. L. & Cooper B.(2005). The Organizational Culture Profile Revisited and Revised: An Australian Perspective, *Australian Journal of Management*, Vol. 30, No. 1, pp. 159 – 182
- Sindell, S. S. Hoang (2001). Leadership Development. *Management Development*, Alexandria , VA :ASTD
- Ribiere V. M. & Sitar A. S. (2003). Critical role of leadership in nurturing a knowledge – supporting culture. *Knowledge Management research and practice*, 1 (1), pp. 39-48
- Wiig, K. (1993). *Knowledge Management Foundations*. Arlington, TX: Schema Press.
- Wiig K. M. (1999) Introducing knowledge management into enterprise. In J. Liebowitz (Ed.) *Knowledge management handbook*. CRC Press
- Williams, Brett & Onsman, A & Brown, Ted. (2010). Australian paramedic graduate attributes: a pilot study using exploratory factor analysis. *Emergency Medicine Journal*, 27, 794-799.. *Emergency Medicine Journal*. 27. 794-799.
- Yukl G. (2006). *Leadership in organizations* (6thed.). Upper Saddle River: Pearson.