



26th International Scientific Conference  
**Strategic Management and Decision Support Systems  
in Strategic Management**

21st May, 2021, Subotica, Republic of Serbia

**Viktorija Petrov**

Faculty of Economics, University of Novi Sad,  
Novi Sad, Serbia  
viktorija.petrov@ef.uns.ac.rs

**Zorica Uzelac**

Faculty of Technical Sciences, University of  
Novi Sad Novi Sad, Serbia  
zora@uns.ac.rs

**Zoran Drašković**

Faculty of Technical Sciences, University of  
Novi Sad, Novi Sad, Serbia  
zoran.draskovic@uns.ac.rs

**Đorđe Čelić**

Faculty of Technical Sciences, University of  
Novi Sad, Novi Sad, Serbia  
celic@uns.ac.rs

## **MANAGEMENT DYNAMICS IN SMES: EXAMINING THE INTERACTION BETWEEN EMPLOYEE ATTITUDE, TECHNOLOGY, AND STRUCTURE**

**Abstract:** The objective of this research was to evaluate the knowledge management capability as a precondition for successful management dynamics in an organization. The paper examines the three key pillars that constitute knowledge management infrastructure capability. The survey was conducted in Serbia on a sample of 761 respondents, from 86 SMEs, and 15 different industry sectors. Applying the criteria defining stronger factor homogeneity and higher instrument validity, the most influential constructs were identified as: Employee Attitude, Technology and Structure. These pillars provide a firmer structure for knowledge management infrastructure capability model for SMEs in Serbia. The result of the research presented in the paper underlines the segment of knowledge management infrastructure capability that should be of special interest for management decision making.

**Keywords:** Organizational Culture, Knowledge Management Infrastructure Capability, Employee Attitude, Performance Improvement, Quantitative Research.

### **1. INTRODUCTION**

Organizational dynamics is defined as the process of continuously strengthening resources and enhancing employee performances. One of the fundamental business activities that contributes to an organization's dynamics is management of knowledge (Freeze and Kulkarni, 2007). Knowledge management capability is being challenged as organizations increasingly are concerned with the production of knowledge.

The knowledge-based view of the firm distinguished capabilities from resources, by defining capability as the use of the resources (Grant, 2002). Generally speaking, capabilities are the product of the organization's entire system. Capabilities include the accumulation of skills, routines, and processes (Bitar and Hafsi, 2007) that are the essential part of management dynamics in organizations. A knowledge management capability (KMC) is a special kind of capability, i.e. is an organizational mechanism to continually and intentionally create knowledge in organizations (von Krogh and Grand, 2002). As direct determinants of organizational effectiveness, Gold et al. (2001) proposed two main dimensions of KM capability, namely: KM infrastructure capabilities (KMIC) and KM process capabilities (KMPC).

Knowledge management process capability (KMPC) consists of organizational capabilities that manipulate knowledge stored in the form of standard operating procedures and routines throughout the organization (Chiu and Chen, 2016). According to Edvission (2000) the KMPC has four phases: sharing tacit knowledge, creating concepts, justifying concepts, and facilitating cross-leveling knowledge. Different four-stage KMPC model, consisting of acquisition, transformation, application, and protection of knowledge, was suggested by Gold et al. (2001). In this research, the authors were not interested in KM process capabilities (KMPC), and focused instead on perceived quality and extent of KM infrastructure capabilities (KMIC).

## 2. RESEARCH MODEL

Management dynamics is supported by development and maintenance of key capabilities that are shared across activities within an organization. One such capability is knowledge management infrastructure capability (KMIC) defined via three major constructs: Technology (information technology), Structure, and Culture (Gold et al., 2001; Mills and Smith, 2011).

In their attempt to identify important factors of KM infrastructure the authors have taken into consideration factors similar to those identified in literature (Gold et al., 2001; Zack et al., 2009; Sveiby and Simons, 2002).

Technology encompasses the information technology (IT) systems which enable the integration of previously fragmented information and knowledge in organization, as well as creation, transfer, storage and safe-keeping of the firm's knowledge resources. In this research construct Technology was assessed via the following items:

- Organization has provided different tools and technologies in order to improve knowledge sharing and distribution;
- Technology tools for knowledge sharing provided by the organization are useful to me;
- Knowledge sharing tools are easy to use.

The organizational hierarchy, rules and regulations, and their relationships are elements that define organizational structure and can inhibit or support collaboration and sharing of knowledge across organization (Allee V., 2009). In some works it has been shown that certain characteristics of organizational structures have positive effect on the effective knowledge management (Nonaka and Takeuchi, 1995). In this research construct Structure was assessed via the following items:

- Employees are rewarded for sharing their knowledge and experience with coworkers;
- Rewards for knowledge sharing motivate employees to share their knowledge;
- Employees are rewarded more for team work and cooperation than for individual results;
- Employees take active participation in decision making.

In his work, Sveiby (2007) emphasized organizational culture as potentially the most significant obstacle to effective KM. Organizational culture is defined as a complex collection of values, beliefs, behaviours and symbols that influence KM in organizations (Gold et al. 2001). Sveiby and Simons (2002) focused on one specific aspect of culture: willingness to share knowledge as a consequence of values, beliefs and assumptions that influence behaviour of employees. They named this aspect Collaborative Climate.

In this work we modified the dimension Culture by adding part of the Collaborative Climate Survey (Sveiby and Simons 2002) which refers to Employee Attitude. According to Sveiby and Simons (2002) one specific aspect of an organizational culture, called collaborative climate, is of special interest for knowledge sharing to take place in an organization. Collaborative climate represents the 'permeability' of the human infrastructure for knowledge sharing, or common cognitive space where knowledge sharing and creation take place.

In this research construct Culture was assessed by the three sub constructs with the following items:

Overall Climate:

- We are encouraged to say what we think even if it means disagreeing with people we report to;
- We are continuously encouraged to bring new knowledge into the Department;
- Open communication is characteristic of the Department as a whole;
- Sharing of knowledge is encouraged by the Department in action and not only in words;
- The people I report to keep me informed.

Employee Attitude:

- I learn a lot from other staff in this Department;
- In the Department, information sharing has increased my knowledge;
- Most of my expertise has developed as a result of working together with colleagues in this Department;
- Combining the knowledge amongst staff has resulted in many new ideas and solutions for the Department;
- Sharing information translates to deeper knowledge in this Department.

Knowledge Sharing:

- People don't tend to keep knowledge only for themselves, and most of the employees are willing to share their knowledge;
- Co-workers freely share their knowledge and experience during work;
- I do not hesitate to share my feelings and attitudes with my colleagues.

Development of the KM infrastructure has been shown to be a necessary precondition for the successful application of the activities related to KM process capabilities, and is a reliable predictor of KM capability as a whole (Gold et al. 2001).

### 3. METHODOLOGY

We conducted research related to this work from September 2015 to April 2016 with the goal of better understanding the research problem within specific environment, and exploring theoretical insights from the literature. Theoretical and practical knowledge acquired through exploratory research was basis for generation of questionnaire used for identifying key construct factors related to the dimensions of KMIC. We identified 20 indicators of KMIC either based on the works of other authors, or through our qualitative evaluation process.

We collected data via a survey instrument designed to assess the capability of KM infrastructure in SMEs in Serbia. The unit of analysis for testing the model was the individual and all our measures were based on respondents' perception.

The structure of survey questionnaire was as follows: general information about the organization (name, head office) and about the respondent (gender, education level, position in the organization), followed by the questions relating to indicators for KM infrastructure. All of the indicators in our survey were measured with five-point Likert-type scales. The scales are anchored by (1) strongly disagree, (2) disagree, with (3) neutral (either agree or disagree) as the midpoint, (4) agree, and (5) strongly agree.

There were two phases in our quantitative research. In the phase one, we sent the electronic form of the questionnaire to mid-level managers and senior executives at 986 randomly selected SMEs found in the database of the National Agency for Regional Development of Serbia. We received responses from 132 companies, of which 114 were valid, corresponding to real response rate of 11.56%.

In the phase two, questionnaires were distributed to the employees of organizations from which we received answers in the phase one. There were 647 valid responses from employees, which combined with responses from the phase one gave us sample of 761 respondents, from 86 SMEs, and 15 different industry sectors (Čelić, 2016).

In our sample there were 102 (13.4%) top executives, 87 (11.4%) middle managers, and 572 (75.2%) employees. Out of the total number of respondents, 212 (27.9%) of them were up to 30 years of age, 306 (40.2%) were older than 30 but younger than 41, 151 (19.8%) were older than 40 but younger than 51, and 92 (12.1%) were older than 50. Gender distribution in our sample was as follows: 470 (61.8%) were male and 291 (38.2%) were female.

In the paper Uzelac et al. (2018) the authors assessed the underlying structure for the 20 items of the KMIC questionnaire with Exploratory Factor Analysis, identifying constructs: Technology, Structure, as well as three sub-constructs of Culture. In this research authors applied criteria with stronger factor homogeneity and higher instrument validity using Confirmatory Factor Analysis.

### 4. RESULTS

Applying the criteria defining stronger factor homogeneity and higher instrument validity using Confirmatory Factor Analysis, we obtained the following knowledge management infrastructure capability model: Employee Attitude, Technology and Structure, as presented in Table 1

**Table 1:** Validation, factor structure and reliability of the analysis

Items	Loadings	AVE - Convergent reliability	Composite Reliability
<b>Employee Attitude</b>		0.592	0.852
I learn a lot from other staff in this Department	0.769		
In the Department, information sharing has increased my knowledge	0.825		
Most of my expertise has developed as a result of working together with colleagues in this Department	0.716		
Combining the knowledge amongst staff has resulted in many new ideas and solutions for the Department	0.763		
<b>Technology</b>		0.618	0.829
Organization has provided different tools and technologies in order to improve knowledge sharing and distribution	0.868		
Technology tools for knowledge sharing provided by the organization are useful to me	0.798		
Knowledge sharing tools are easy to use	0.872		
<b>Structure</b>		0.529	0.818
Employees are rewarded for sharing their knowledge and experience with coworkers	0.805		
Rewards for knowledge sharing motivate employees to share their knowledge	0.8		
Employees are rewarded more for team work and cooperation than for individual results	0.751		

Source: Authors' calculations

Composite reliability and the discriminant validity are used to evaluate indicator loadings in stricter form (indicator loadings are greater than 0.7, composite reliability index is higher than 0.8 and average variance extracted index (AVE) should exceed 0.50 (Hair et al., 2013, p. 6; Barclay et al., 1995).

Table 1 presents constructs with accompanying items that satisfy defined criteria. Results presented in Table 1 show that each of the constructs: Employee Attitude, Technology and Structure is strongly related to its set of indicators.

## 5. DISCUSSION AND CONCLUSIONS

In the paper Uzelac et al. (2018) the authors considered five factors of KMCI for SMEs in Serbia. In that paper the authors considered model where construct Culture consisted of three sub-constructs: Overall Climate, Employee Attitude and Knowledge Sharing. Using methodology presented in this paper, sub-constructs Overall Climate and Knowledge Sharing, were eliminated from the KMIC model.

These criteria define greater factor homogeneity and higher instrument validity. Applying these criteria to the KMIC model for SMEs in Serbia, the following key factors stood out: Employee Attitude, Technology and Structure. Interestingly, the most influential factor that defines the KMIC is Employee Attitude. Given that people have a key influence on the management dynamics of an organization, this result should be helpful to management in deciding which organizational capacity segment to put the most effort into.

## REFERENCES

- Allee, V. (2009). Value-creating networks: organizational issues and challenges. *The Learning Organization*, 16(6), 427 – 442.
- Barclay, D., Higgins, C., Thompson, R. (1995). The partial least squares (PLS) approach to causal modelling: personal computer adoption and use as an illustration. *Technology Studies*, 2(2), 285-309.
- Bitar, J., Hafsi, T. (2007). Strategizing through the capability lens: Sources and outcomes of integration. *Management Decision*, 45(3), 403–419.
- Chiu, CN., Chen, HH. (2016). The study of knowledge management capability and organizational effectiveness in Taiwanese public utility: the mediator role of organizational commitment. *SpringerPlus*, 5, article number: 1520.
- Čelić, Đ. (2016). The key success factors of small and medium sized enterprises in transition, doctoral thesis.
- Edvission L. (2000). Strategy and knowledge creation in: von-Krogh G, Ichiko K, Nonaka I, editors. *Enabling knowledge creation*, New York: Oxford University Press; pages 69–99.
- Freeze, R. D., Kulkarni, U. (2007). Knowledge management capability: Defining knowledge assets. *Journal of Knowledge Management*, 11(6), 94-109. <https://doi.org/10.1108/13673270710832190>.
- Gold AH., Malhotra A., Segars AH. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*, 18(1), 185-214.
- Grant RM. (2002). The Knowledge-Based View of the Firm. In: Choo CW, Bontis N, editors. *The Strategic Management of Intellectual Capital and Organizational Knowledge*. pages 133–48.
- Hair, J. F., Ringle, C. M., Sarstedt, M. (2013). Editorial Partial Least Squares Structural Equation Modelling: Rigorous Applications, Better Results and Higher Acceptance. *Long Range Planning*, 46, 1-12.
- Mills AM, Smith TA. (2011). Knowledge management and organizational performance: a decomposed view. *Journal of Knowledge Management*, 15(1), 156–171.
- Nonaka I., Takeuchi H. (1995). *The knowledge-creating company*, Oxford university press.
- Sveiby K. E. (2007). Disabling the context for knowledge work: the role of managers' behaviours. *Management Decision*, 45(10), 1636-1655.
- Sveiby, K.E, Simons, R. (2002). Collaborative climate and effectiveness of knowledge work – an empirical study. *Journal of Knowledge Management*, 6(5), 420-433.
- Uzelac Z., Čelić, Đ, Petrov, V., Drašković, Z., Berić D. (2018). Comparative Analysis of Knowledge Management Activities in SMEs: Empirical Study from a Developing Country. *Procedia Manufacturing*, 17, 523-530.
- von Krog G., Grand S. (2002). From Economic Theory toward a Knowledge - Based Theory of the Firm in Choo CW, Bontis N, editors. *The Strategic Management of Intellectual Capital and Organizational Knowledge*. Oxford, UK: Oxford University Press pages 163–83.
- Zack MH., Mc Keen J., Singh S. (2009). Knowledge management and organizational performance: an exploratory analysis. *Journal of Knowledge Management*, 13(6), 392–409.