

Fostering Organizational Performance at Central and Eastern European Universities: The Impact of Knowledge Creation and Affective Commitment

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Abstract

The purpose of this study is to examine the impact of knowledge creation and affective commitment on organizational performance. The study also explores the mediating role of affective commitment in this relationship. The results based on the sample of 825 academics and members of the administrative staff at universities from Central and Eastern European countries support the proposed hypotheses of this research. Exploratory and Confirmatory factor analyses were performed to assess the reliability of scales, while structural equation modeling was used to evaluate the hypotheses. This study demonstrates that knowledge creation and affective commitment are predictors of organizational performance. It also shows that affective commitment, which is influenced by knowledge creation, is an important mediating factor that affects organizational performance at public and private universities in Central and Eastern European countries.

Keywords: *Affective Commitment, Knowledge Creation, Organizational Performance.*

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1. Introduction

It is widely known that contemporary society is turning into a knowledge-based society (Toffler, 1991). Knowledge is categorized by Nonaka (1994) into explicit and tacit. Explicit knowledge can be easily processed, shared, and stored, while tacit knowledge is completely personal and difficult to formalize. In its simplest form, knowledge is useless. Only when it is activated through creative processes for application and sharing, can it lead to outstanding performance? Therefore, knowledge management is the process of activating passive knowledge for the benefit of organizations and gaining a competitive advantage (Abubakar et al., 2019; Duffy, 2000). There are many practical benefits for organizations that focus on knowledge (Inkinen, 2016; Mohammed et al., 2019). Universities are generally recognized to be in the knowledge business (Rowley, 2000). Students receive knowledge and training from them, as well as the improvement of their skills before starting professional life. Both public and private universities need to attract prospective students, as well as retain and satisfy the current ones in order to survive in the higher education business (Dinc, 2018). In this respect, the organizational performance of public and private universities has become vital. The performance and rankings of universities correspond to the knowledge of their high-performing employees (Lynch, 2015; Horseman, 2018). These employees significantly improve the university's performance by attracting new students, conducting high-quality teaching and research, and securing funds for further research (Diezmann, 2018). In this regard, encouraging knowledge-based activities as well as attracting, developing, and retaining talented staff is very crucial for universities that are looking to enhance their organizational performance. According to research, one of the best ways to keep talented employees in universities is to increase their commitment, especially affective commitment to the organization (Dinc, 2018). Academic and administrative staff who are effectively committed to their universities will put in extra effort (Dinc & Aydemir, 2014).

However, both affective commitment and knowledge management research in the higher education sector is limited. The majority of knowledge management research has focused on specific elements of knowledge management, such as knowledge sharing amongst academics (Veer Ramjeawon & Rowley, 2017, p. 1). Furthermore, there is much more research to be done in this field, especially in relation to affective commitment and knowledge management using empirical methodologies. Empirical studies which explore the relationship between knowledge creation, affective commitment, and organizational performance are also scarce. Therefore, the purpose of this research is to provide a model for higher education institutions (Figure 1). Based on the model, this study examines the impact of knowledge creation and affective commitment on organizational performance at both public and private universities in Central and Eastern European countries. It also investigates the mediating role of affective commitment in this relationship.

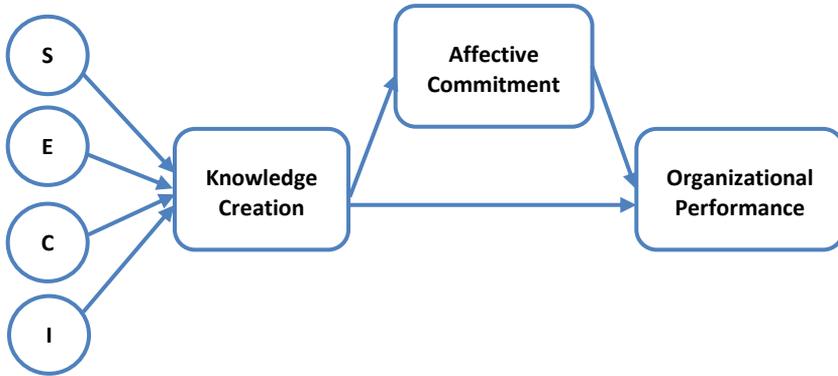


Figure 1. Proposed Research Model

2. Conceptual framework and hypotheses development

2.1. Organizational Performance and Knowledge Creation

The image and success of an organization are the results of its accomplishments and performance (Carmeli et al., 2007). Job performance is defined as quality and quantity accomplished by individuals or groups after completing a task (Schermerhorn, 1989). Human resources are also of great importance for organizations since employees' performance has a direct influence on organizational performance. Organizational performance is the degree of accomplishments of organizations in relation to their organizational objectives (Alaarj et al., 2016; Elenkov, 2002; Lee & Choi, 2003). In today's competitive business world, financial and non-financial elements are used to convert an organization's goals into explicit performance specifications for its employees. Therefore, organizations are required to develop the ability to motivate and improve employee performance in order to support organizations' performance in modern business environments (Chiang & Birtch, 2012). The significance of innovation, quality, and acquisition of knowledge are commonly recognized as crucial for competitive organizational performance (Chiang & Birtch, 2012; Danneels, 2002; Hull & Rothenberg, 2008; Janssen et al., 2004). One of the most discussed topics in knowledge management has been the relationship between knowledge and organizational performance.

Knowledge can be categorized into explicit and tacit knowledge. Explicit knowledge can be described in systematic and formal language, as well as demonstrated by formulas, data, manuals, specifications, and so on. It can be easily processed, shared, and stored. On the other hand, tacit knowledge is completely personal and difficult to formalize. Personal intuitions, insight, and guesses can be classified as this type of knowledge. Tacit knowledge deeply permeates procedures, actions, routines, ideals,

emotions, commitments, and values. It resides in the awareness of the human mind. It is difficult to transfer tacit knowledge to someone else since it is often an analog process that demands some sort of concurrent processing. Knowledge management has become very popular in recent years in the field of management studies. Knowledge management is divided into four key processes: creation, transfer, storage, and application. Amongst them, knowledge creation has gained popularity due to its competitive advantage for organizations in the global economy (Alavi & Leidner, 2001; Demarest, 1997; Lee & Choi, 2003). Organizations that are not constantly creating new knowledge are destined for obsolescence (Lee & Choi, 2003; Nonaka, 1994; Parent et al., 2000). Knowledge creation is a continuous process where explicit and tacit knowledge are shared between individuals and teams within an organization, as well as between organizations (Lee & Choi, 2003; Nonaka & Takeuchi, 1995).

In order to examine knowledge creation, the SECI model, developed by Nonaka and Takeuchi (1995), was adopted in this study. The SECI acronym represents the four forms of knowledge creation: socialization, externalization, combination, and internalization. *Socialization* is the process that creates new tacit knowledge from the existing one by utilizing experience sharing, which occurs in daily social exchanges, cultural procedures related to activities happening in the organization, and apprenticeship-style relationships (Easa, 2012; Martin-de-Castro et al., 2008; Nonaka & Takeuchi, 1995; Nonaka, 2005; Schulze & Hoegl, 2008; Nonaka et al., 2000). *Externalization* is the process in which explicit knowledge is generated from tacit knowledge. It is realized through formal social activities such as interviews with experts or an impartment of useful knowledge from previous projects (Nonaka & Takeuchi, 1995; Schulze & Hoegl, 2008). Nonaka and Takeuchi (1995) stated that externalization is the key component in knowledge creation within the four forms of knowledge creation processes since it is the stage in which a new explicit idea is created from tacit knowledge. Conversion of tacit knowledge to explicitly enables it to be transferred to others and to serve as a base for new knowledge (such as images, written documents, or concepts). Keeping records of dialogue results is an efficient way to express an individual's tacit knowledge clearly and transform it into explicit knowledge (Easa, 2012; Nonaka, 2005; Nonaka & Takeuchi, 1995). The *combination* is the process by which explicit knowledge is converted into systematic and more complex sets of explicit knowledge. Explicit knowledge is gathered internally or outside of the organization, and then it is processed, edited, or combined to produce new knowledge. The newly generated explicit knowledge is circulated among the individuals in the organization. Innovative use of computer systems, networks, and databases can assist in this phase of knowledge creation (Easa, 2012; Nonaka & Takeuchi, 1995). *Internalization* is the process of converting explicit into tacit knowledge. During the internalization process, generated explicit knowledge is distributed to all members of the organization, who then transform it into tacit knowledge. Internalization is often associated with learning by practicing. Explicit knowledge (for example, manufacturing processes or product ideas) has to be

realized through practice and action (Nonaka et al., 2000). When new knowledge is internalized into tacit knowledge, such as technical expertise or common mental models, it is considered an important asset. This accumulated tacit knowledge in individuals can later start a new pattern of creating knowledge when it is shared among other members of the organization through social activities (Nonaka & Takeuchi, 1995; Nonaka et al., 2000).

Nonaka and Takeuchi (1995) identified the SECI model as the engine of knowledge creation and added that various Japanese organizations have successfully implemented the SECI model to create new knowledge in their organizations (Easa, 2012; Nonaka, 2005). The successful implementation of the model in different Japanese organizations encourages most of the organizations (especially education-related ones) in the West to use this model. Higher education institutions where the knowledge creation and dissemination processes exist on a daily basis can be suitable environments in which to implement this model. But it is crucial to mention that processes of creating new knowledge cannot depend solely on the individuals' characteristics. Their work environment has to be arranged in a way that encourages and facilitates knowledge sharing and creation (Easa, 2012; Nonaka & Takeuchi, 1995; Nonaka et al., 2000; von Krogh et al., 2012).

The SECI model has gained considerable popularity (Lee & Choi, 2003; Scharmer, 2000) and has been applied to many different research fields, such as product development, information technology, and organizational learning (Lee & Choi, 2003; Scharmer, 2000). Although the importance of knowledge creation has been significantly discussed in various fields, a relatively small number of empirical studies on the topic have been conducted (Lee & Choi, 2003; Raven & Prasser, 1996). One of the studies that were conducted on 470 employees working in pharmaceutical companies indicated that the relationship between knowledge creation and organizational performance is positive (Mehralian et al., 2018). Another study based on the analysis of 284 employees in Spanish companies showed that four modes (including knowledge creation) have a significant and positive impact on organizational performance (Ramirez et al., 2011). In higher education, a recent study conducted on 217 academic and administrative personnel found a positive and direct influence of knowledge management processes on organizational performance (Iqbal et al., 2018). Based on the literature above, the study proposes the following hypotheses:

Hypothesis 1: Knowledge Creation has a positive impact on Organizational Performance.

2.2. Affective Commitment, Organizational Performance, and Knowledge Creation

Organizational commitment is crucial for organizations that intend to keep talented employees. It is defined as "the relative strength of an individual's identification with and involvement in a particular organization" (Porter et al., 1974, p. 604). There are

many models which attempt to clarify the dimensions of organizational commitment. An often-cited one is a three-component model designed by Meyer and Allen (1991). Affective commitment, continuance commitment, and normative commitment are three components of this conceptualization. Affective commitment is among the most explored constructs in studies related to workplace behavior (Newman & Sheikh, 2012), and its positive impact on employee behaviors and performance have been confirmed by many empirical studies (Moorman et al., 1993; Douglas, 1997). Therefore, the focus of this study will be on affective commitment. The affective commitment represents an individual's inner attachment to the organization (Meyer & Allen, 1991). Employees who exhibit higher affective commitment wish to remain with their organization. Several studies have shown a significant and positive correlation between knowledge management and affective commitment (Matzler et al., 2011; Razaq et al., 2018). On the other hand, numerous studies have demonstrated the effects of affective commitment on organizational performance (Woznyj et al., 2019; Hadziahmetovic & Dinc, 2020; Hadziahmetovic & Dinc, 2017). For example, in one study, both normative commitment and affective commitment were linked to performance; however, affective commitment proved to be related to it to a greater extent (Meyer & Allen, 1997). Thus, this study proposes the following hypotheses:

Hypothesis 2: Knowledge Creation has a positive impact on Affective Commitment.

Hypothesis 3: Affective Commitment has a positive impact on Organizational performance.

In this article, a theoretical model supposes that organizational performance (which is affected by knowledge creation) is mediated by employees' affective commitment. In the model, alongside knowledge creation, the mediating role of affective commitment becomes important in increasing organizational performance. Several studies have examined the mediating impact of affective commitment between several variables (Dinc, 2018). For example, Martin-Perez & Martin-Cruz (2015) found the mediating role of affective commitment within the rewards–knowledge-transfer relationship. Another study further confirmed that there is an indirect relationship between overall job satisfaction and employees' job performance through a mediating role of affective commitment (Dinc & Plakalovic, 2016). A recent study (Hadziahmetovic & Dinc, 2017) that was based in university settings found that rewards have a significant indirect impact on organizational performance through the mediating role of affective commitment. Based on the existing literature, this study examines the indirect effect of knowledge creation on organizational performance through affective commitment. Therefore, the following hypothesis was proposed:

Hypothesis 4: Affective Commitment mediates the relationship between Knowledge Creation and Organizational Performance.

3. Research Methodology

3.1. Sample and Data Collection Procedures

The target population of the study consisted of academics and administrative staff employed by universities in Central and Eastern European countries. After World War II, Central and Eastern European countries were significantly influenced by the Soviet Union. This influence resulted in the development of a similar organizational structure at universities. The labor market requirements shaped the development of such structures. In all these countries, the university system was centralized due to the communist regime (Manta et al., 2015). With the collapse of the communist regime, deindustrialization and widespread reengineering of the manufacturing systems has begun, as well as the development of consumer and producer services (Serbanica & Constantin, 2017). Considering the conditions in which the investigated universities were similarly managed, this study aims to research how public and private universities in these countries established knowledge management, specifically knowledge creation systems, as well as its direct and indirect influence on organizational performance. Twelve selected countries included seven EU member countries and five countries from the Balkans region. EU member countries are Slovakia, Poland, Slovenia, Croatia, Czech Republic, Romania, and Bulgaria, while the non-EU countries are Montenegro, Serbia, North Macedonia, Albania, and Bosnia and Herzegovina. Esteemed public and private universities from the above-mentioned countries were selected as a target group.

After the survey instrument was developed by using online survey tools, the survey weblink was distributed to all participants via e-mail. An electronic follow-up notice was sent two weeks later, followed by another one four weeks later. In total, around 20,000 e-mails were sent. After the respondents completed the online survey, they were able to click on the "Submit Responses" button. A thank-you note appeared on the screen, and the responses were registered in the appropriate data file. 825 academic and administrative staff from 94 different universities completed the survey.

As it can be seen in Table 1, the majority of the participants (69.7 %) were over 36 years of age, and 83% of all participants had a Ph.D. degree. 81.8% of them had 5+ years of work experience at their current universities.

3.2. Instrumentation and measurement

A three-page questionnaire with four sections was used to collect data. The first section of the questionnaire included questions about knowledge creation, while the second section was focused on affective commitment. The third section of the questionnaire consisted of questions about organizational performance, whereas the last section included demographic questions about participants. Questions related to age, gender, education, marriage, income, and work experience were asked in this fourth section.

Table 1. Sample Characteristics

Variable	Demographics	Number	Percentage
Age	20-25	20	2.40%
	26-29	58	7.00%
	30-35	172	20.80%
	36-40	145	17.60%
	Above 40	430	52.10%
Gender	Male	405	49.10%
	Female	420	50.90%
Marital Status	Married	594	72.00%
	Single	231	28.00%
Education Level	Doctorate Degree	690	83.60%
	Master's degree	121	14.70%
	Bachelor's degree	9	1.10%
	High School	5	0.60%
Organization Type	Public	668	81.00%
	Private	157	19.00%
Position	Assistant	134	16.20%
	Assist. Prof. Dr.	278	33.70%
	Assoc. Prof. Dr.	197	23.90%
	Prof. Dr.	168	20.40%
	Head of Office	5	0.60%
	Employee	39	4.70%
	Coordinator	4	0.50%
Administrative Responsibility (Among academics)	Yes	403	51.30%
	No	383	48.70%
Work Experiences at Current University	Less than 5 years	150	18.20%
	5-10 years	222	26.90%
	10-15 years	156	18.90%
	more than 15 years	297	36.00%
Total Work Experiences	Less than 5 years	57	6.90%
	5-10 years	156	18.90%
	10-15 years	155	18.80%
	more than 15 years	457	55.40%
Country	Romania	125	15.20%
	Bulgaria	109	13.20%
	Czech Republic	83	10.10%
	BiH	80	9.70%
	Albania	79	9.60%
	Macedonia	75	9.10%
	Croatia	69	8.40%
	Slovenia	67	8.10%
	Poland	59	7.20%
	Slovakia	40	4.80%
	Serbia	29	3.50%
Montenegro	10	1.20%	
	Total	825	100.00%

Questions were originally designed in English, and they were not translated into any other language. A Pilot study of the survey was performed with 25 academics and administrative staff members with varying years of experience. Based on the feedback collected from the pilot test participants, there were a few minor modifications that were related to wording. One question was extended by adding an example in order to explain a specific term.

Knowledge creation was measured with a scale that was previously used by Nonaka (1994). Items were slightly modified for the purpose of the study. Four dimensions were used to measure knowledge creation, namely *socialization*, *externalization*, *combination*, and *internalization*. Socialization was measured with a four-item scale, while externalization was measured with a six-item scale. Nonaka's (1994) scales have been widely used by researchers, and they have been modified and applied to many different industries.

The affective commitment was measured using Allen and Meyer's (1990) six-item affective commitment scale. The items were: "I would be very happy to spend the rest of my career with this organization," "I really feel as if this organization's problems are my own," "I do not feel a strong sense of belonging to my organization," "I do not feel like 'part of the family' at my organization (R)," "I do not feel 'emotionally attached' to this organization (R)," and "This organization has a great deal of personal meaning for me". These items were measured using a five-point Likert scale (5 = strongly agree; 1 = strongly disagree).

Finally, this study used *perceived* organizational performance to measure organizational performance. Benchmarked or relative measures were constructed from survey questions asking participants to evaluate the organizational performance of their university relative to the performance of their competitors. A five-item scale developed by Deshpande et al. (1993) and Drew (1997) was also used in this study (alongside many others, including Andreeva & Kianto, 2012; Chuang et al., 2013; Lee & Choi, 2003). Respondents answered five questions that asked them to compare their university's performance with a key competitor's performance according to five performance factors: number of students, general success, profitability, growth rate, and innovativeness.

3.3. Data analysis

A quantitative analysis of collected data was performed by using descriptive analysis, factor analysis, and structural equation modeling (SEM). SPSS 23.0 was used for descriptive analysis and exploratory factor analysis (EFA), while AMOS 23.0 was used for confirmatory factor analysis (CFA) and structural equation modeling. The maximum likelihood factor extraction method with Promax rotation was used for the exploratory factor analysis. Cronbach's alpha was computed for each factor in order to confirm its reliability. In order to determine the structure of factors in collected data, CFA was used as a measurement model of SEM. Goodness-of-fit indices were calculated during SEM, and if the fit of a proposed model was not suitable, the

proposed model would be slightly modified according to recommendations given in the AMOS results section.

4. Results

4.1. Initial Analyses

The construct validity of the three scales used in the analysis was examined by using exploratory factor analysis in order to investigate the initial factor structure (Churchill, 1979). As mentioned earlier, the three factors were knowledge creation, affective commitment, and organizational performance. The three scales were analyzed separately. The knowledge creation scale was analyzed first. The principal component analysis was used as the factor extraction method, and the varimax method was used for the component rotations. This research used Hair's (1998) proposals during factor-loading evaluation. He suggested using a 0.3 loading level as a minimum level of factor-loading for 825 samples. The internal consistency of factors was calculated using Cronbach's alpha coefficient. Nunnally (1978) suggested that a group of items whose Cronbach's alpha coefficient was higher than 0.7 could be considered internally consistent. In the first run, four meaningful factors were obtained. Cronbach's alpha value ranged from 0.88 to 0.93. The factor loadings and coefficient alpha of the knowledge creation scale are presented in Table 2. The factors represented the four different dimensions of EC: (1) Socialization, (2) Externalization, (3) Combination, and (4) Internalization.

Second, Affective commitment and Organizational performance scales were analyzed together. No item was removed from further analysis. The Cronbach's alpha values of the affective commitment and the organizational performance scales were 0.85 and 0.88, respectively. The factor loadings and coefficient alpha of both scales are presented in Table 3.

Confirmatory Factor Analysis (CFA) was conducted to determine if the number of factors and loading values of measured items on factors confirms that the proposed factor structure fits the hypothesized model. CFA analysis was conducted using AMOS software. The first step at CFA was to check the model fit. This study used several fit indices: the chi-square fit index, GFI (goodness-of-fit) index (Jöreskog & Sörbom, 1989), CFI (Comparative fit index) (Bentler, 1990), RMSEA (Root Mean Square Error of Approximation) (Bollen, 1989), TLI (Tucker-Lewis Index) (Tucker & Lewis, 1973), IFI (Incremental Fit Index), and NFI (Normed Fit Index) (Hooper, Coughlan, & Mullen, 2008). According to Hu and Bentler's (1999) cutoff criteria for fit indexes, model fit values of the study were within the acceptable range: Chi-square/df (χ^2/df)=2.515 ($p < 0.001$); GFI=0.848; CFI=0.941; TLI=0.935; RMSEA=0.043, IFI=0.941; NFI=0.905.

Table 2. Factor Loadings and Coefficient Alpha for Knowledge Creation

	Factor Loading	Chronbach's Alpha
<i>Knowledge Creation</i>		
<i>Socialization</i>		0.889
Detailed face-to-face discussions of work issues are encouraged at the University.	0.545	
The University conducts meetings, seminars, and workshops to discuss the update on work issues	0.626	
The University encourages informal meetings for tea, coffee, lunch, and other.	0.585	
The University encourages social activities outside the workplace.	0.636	
<i>Externalization</i>		0.932
The University documents its staff members' points of view regarding relevant topics	0.783	
The University asks its staff members to report information learned from students' and project partners' feedback.	0.818	
The University documents findings of conducted meetings, seminars, workshops, conferences, and training programs	0.863	
The University issues reports about students, project partners, competitors, and others based on its accumulated experience.	0.897	
The University documents the useful experiences and knowledge of its employees in reports	0.885	
<i>Combination</i>		0.932
The University classifies information from files, databases, networks, and reports.	0.887	
The University updates its databases.	0.863	
The University takes into consideration information mentioned in databases, networks, and previous reports to develop its rules and decisions.	0.901	
The University uses documented information as a way of connection between its staff, and a connection with external bodies.	0.922	
The University collects, classifies, and informs its staff members with reports and decisions issued by external bodies	0.89	
<i>Internalization</i>		0.914
The University encourages its staff members to join postgraduate courses e.g. Diploma, Master, PhD, and Postdoc.	0.546	
The University facilitates access to outcomes or recommendations of training programs, workshops, and seminars.	0.749	
The University facilitates access to its databases and the internet to obtain the required information.	0.727	
The University arranges meetings to explain the content of related reports or documents.	0.844	
The University believes that the available data and information strongly shape its point of view and culture.	0.871	

Table 3. Factor Loadings and Coefficient Alpha for Affective Commitment, and Organizational Performance

	Factor Loading	Chronbach's Alpha
<i>Affective Commitment</i>		0.85
I would be very happy to spend the rest of my career at this University.	0.563	
I really feel as if this University's problems are my own.	0.458	
This University has a great deal of personal meaning to me.	0.569	
I do not feel a strong sense of belonging to my University*	0.89	
I do not feel "emotionally attached" to this University.*	0.946	
I do not feel like a "part of the family" at my University.*	0.919	
<i>Organizational Performance</i>		0.887
Compared with key competitors, our University is more successful	0.828	
Compared with key competitors, our University has a greater number of students.	0.976	
Compared with key competitors, our university is growing faster	0.837	
(For non-profitable universities) Compared with key competitors, our University is financially healthier. (For profitable universities)	0.807	
Compared with key competitors, our University is more profitable.		
Compared with key competitors, our University is more innovative	0.624	

Note: *Items are reverse coded

Correlation values and standardized regression weights of the proposed model were used to calculate convergent validity (CV) and composite reliability (CR) by evaluating the discriminant validity (DV), average shared variance (ASV), maximum shared variance (MSV), and the average variance extracted (AVE).

Table 4 shows CR, AVE, MSV, and inter-factor correlation values in order to assess convergent validity, discriminant validity, and reliability. Reliability was assessed by examining CR values for each factor. All CR values were higher than 0.7 (required threshold). Therefore, the reliability of the factor structure was confirmed. Convergent validity was assessed by examining AVE values. The AVE value for each factor was higher than 0.5 (required threshold), thus also confirming convergent validity. In order to assess discriminant validity, MSV and AVE values were compared, and the square root of AVE was compared with inter-factor correlation for each factor as well. The square root of AVE had a higher value than correlation values for each factor, while all AVE values were greater than MSV values. Hence, discriminant validity was confirmed for the extracted factor structure.

Table 4. CR, AVE, MSV, and Inter-Factor Correlation Values

	CR	AVE	MSV	MaxR(H)	OP	AC	KC
Organizational Performance (OP)	0.886	0.661	0.476	0.89	0.813		
Affective Commitment (AC)	0.712	0.558	0.462	0.918	0.68	0.747	
Knowledge Creation (KC)	0.957	0.847	0.476	0.973	0.69	0.68	0.921

4.2. Model testing

The relationship between knowledge creation and organizational performance and the mediating effect of affective commitment between knowledge creation and organizational performance were analyzed using the structural equation modeling method in AMOS. First, the hypothesized model was developed using factor structures which were confirmed in the CFA analysis, and then the model fit was investigated. Model fit indices were found as follows: Chi-square/df (χ^2/df) = 2.523 ($p < 0.001$); GFI=0.848; CFI=0.940; TLI=0.935; RMSEA=0.043, IFI=0.940; NFI=0.905. Model fit indices showed that all indices met the required conditions for a good model fit.

In order to assess the mediating role of a factor among two factors, the bootstrapping method in AMOS was used. Bootstrapping was suggested for mediation testing by Hayes (2009), MacKinnon & Pirlott (2015), and Preacher (2015), over Baron, Kenny, and Sobel’s approaches. Bootstrapping with 5000 resamples was used during the analysis. This study separately examined the significance of the direct and indirect effects of knowledge creation on organizational performance through affective commitment. Afterward, significant direct and indirect effects through affective commitment were examined. If both direct and indirect effects were found significant, it would be concluded that partial mediation existed. On the other hand, if the direct effect was not significant, but the indirect effect was significant, it would be concluded that a full mediation existed.

The direct effect of knowledge creation on organization performance and affective commitment was examined. Table 5 presents the direct effect of factors on other factors according to the hypothesized model using both SEM. Significant connections were presented in bold and with an asterisk (*), according to their level of significance. According to the results, knowledge creation had a significant effect on organizational performance and affective commitment, and affective commitment had a significant effect on organizational performance. Therefore, Hypotheses 1, 2, and 3 are supported.

Table 5. Direct and Indirect Effects of Knowledge Creation on Organizational Performance

	Standardized Direct Effects on Affective Commitment	Standardized Direct Effects on Organizational Performance	Standardized Indirect Effects on Organizational Performance (Mediated by Affective Commitment)
Knowledge creation	0.68***	0.44***	0.26***
Affective commitment	--	0.38***	--

Note: *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$

Table 5 also demonstrates the indirect effects of knowledge creation on organizational performance through affective commitment. The results showed that knowledge creation had a significant indirect effect on organizational performance.

Therefore, hypothesis 4 is partially supported. The research model and standard regression weights can be seen in Figure 2.

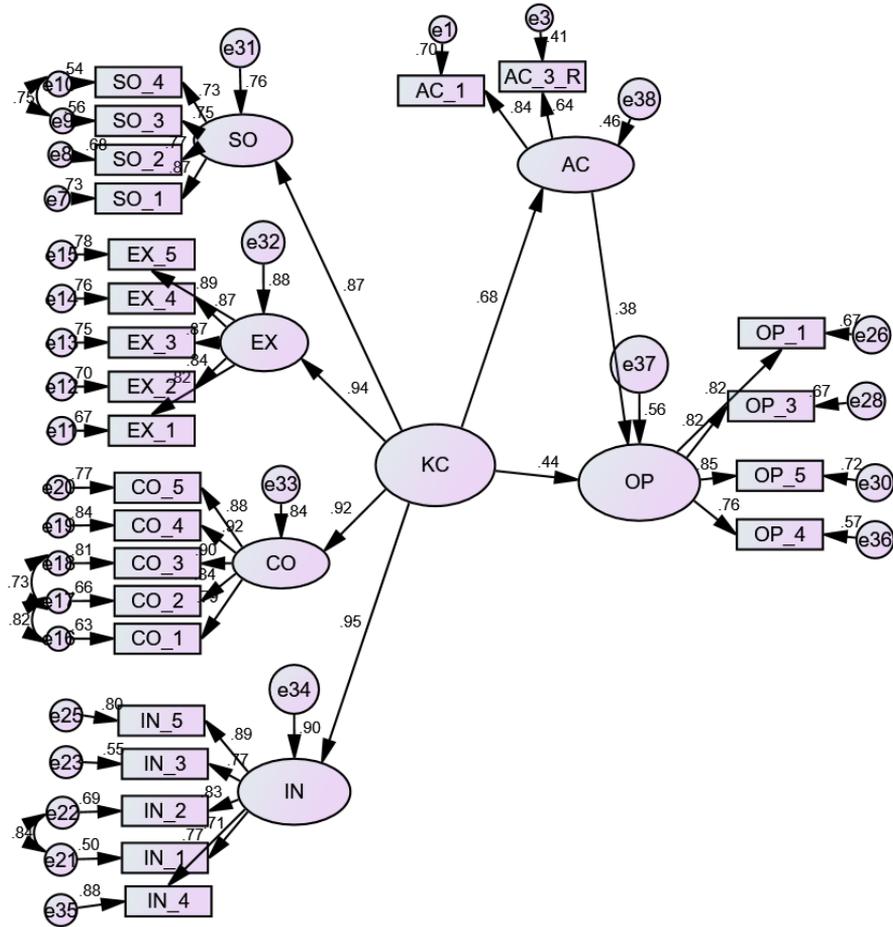


Figure 2. Structural Model

5. Discussion

This study examines the effect of knowledge creation and affective commitment on organizational performance at public and private universities in Central and Eastern European countries. It also explores the mediating role of affective commitment in this relationship. Consistent with the research hypotheses, knowledge creation and affective commitment are found to influence organizational performance positively. Affective commitment is found to mediate the relationship between knowledge creation and organizational performance. The theoretical and practical implications of the study are highlighted in the following paragraphs.

5.1. Theoretical implications

This study has a few theoretical implications. First, it suggests a unique model which finds support for the idea that knowledge creation and affective commitment are predictors of organizational performance. It was found that knowledge creation had a positive influence on organizational performance. These results are consistent with the literature (Siong Choy et al., 2006; Inkinen et al., 2015). In their study, Inkinen et al. (2015) indicated that knowledge management affected organizational performance by enabling organizations to use more efficient frameworks to realize their innovative strategies. The study also revealed that affective commitment had a strong positive influence on organizational performance. These results are also consistent with the literature (Parish et al., 2008; Vandenberghe et al., 2004). In the study conducted on 194 nurses, Vandenberghe et al. (2004) found that affective commitment had a positive influence on organizational performance. These findings contributed to the literature on knowledge creation and affective commitment by exploring their consequences. Moreover, they contributed to the literature on organizational performance by investigating its antecedents.

Another contribution of this research to the literature concerns the effect of knowledge creation on organizational performance through the mediating role of affective commitment. Although a considerable number of researchers examined the relationship between knowledge management and organizational performance (Andreeva & Kianto, 2011), the same cannot be said for the mediating roles of affective commitment in this relationship. This study tries to fill this gap.

5.2. Implications for Practice

Given the significance of affective commitment in the enhancement of organizational performance, administrations of universities should try to find ways to increase the affective commitment of their employees since employees with a high-level affective commitment would feel emotionally attached to the university. Committed academics would be willing to represent themselves and their universities on national and international platforms. Moreover, they could improve the quality of their research, bring funds and projects to the university, and help students improve themselves.

Another practical implication is the positive influence of knowledge creation on organizational performance. The results of this study recommend that universities should encourage activities to facilitate socialization, externalization, combination, and internalization activities of knowledge creation in order to increase their performance. Socialization-related activities involve formal and informal interaction among colleagues. They enable individuals to share their ideas, opinions, knowledge, experience, and interests. Since these exchanges contribute to the creation of new knowledge, universities should encourage social interactions such as group trips, lunches, regular meetings, and joint research. Externalization-related activities include documenting individuals' knowledge and sharing it with others. This activity

permanently records knowledge so that it can be accessible to everyone. Universities should modify their procedures about knowledge-involved activities and include more practices in order to record, document, or update knowledge. Recording meeting minutes and seminars, documenting good and bad experiences from projects or past events, and feedback from students, professors, and partners are some examples of externalization activities. Furthermore, universities should establish database systems in order to save, share, and allow easier access to knowledge. Combination-related activities involve creating new knowledge from existing one. In these activities, documented knowledge is employed to generate new knowledge, which is then distributed within the organization. Universities should establish information systems where individuals can reach internally-created documents and other knowledge databases (such as journal databases and medical datasets). The last activity of knowledge creation was internalization, where individuals process documented knowledge, and improve or update their own knowledge. Individuals could share their new knowledge with others and contribute to the creation of new knowledge. Since this stage of knowledge creation depends on individuals themselves, the only role of universities could be to encourage them to use information systems and access previously generated knowledge. Rewards could be used to encourage academics to be more active in the knowledge-creation process so that universities' performance could be indirectly improved.

6. Limitations

This research has similar limitations as other related studies. The first limitation is related to the sample size. For the purpose of this study, 825 responses were collected. However, in order to analyze a multiple-factor model (by using structural equation modeling) more accurately, a larger sample size is needed. The development status of the target countries was another limitation of this study. Target countries consisted of European Union members (economically developed), and non-EU members (economically developing). Economic status combined with membership status produced different procedures and practices in each country. For instance, results from Slovenia (which is an EU member and economically-stable country) would be different from the results from North Macedonia (which is a non-EU member and economically-developing country). Variations among countries constituted this limitation. Future research which would focus on individual countries is necessary in order to acquire more detailed information about each country.

7. Conclusion

The main goal of this study is to develop and test a knowledge-creation model which will increase organizational performance if it is implemented. This model will help organizations identify the most beneficial and efficient types of knowledge creation ways in order to obtain better and improved organizational performance.

To achieve this goal, the current study examined the effects of knowledge creation on organizational performance, and it investigated the mediating role of affective commitment between knowledge creation dimensions and organizational performance. Upon the analysis of previous literature, this study identified four different types of knowledge creation dimensions to be used as independent variables. A mediator was included in the model because the literature background suggests that the effect of knowledge creation on organizational performance is rather indirect than direct. Moreover, the developed model was tested in universities from Central and Eastern European countries.

This study indicates that knowledge creation and affective commitment are important predictors of organizational performance. It also shows that affective commitment mediates the link between knowledge creation and organizational performance at public and private universities in Central and Eastern European countries. In a nutshell, the performance of universities is highly dependent on the performance of individuals. Therefore, the commitment of individuals to university plays a very important role in improving universities' overall performance. Moreover, universities are knowledge-oriented organizations, and they focus on knowledge management processes, specifically on knowledge creation which carries an important value.

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