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DOES KNOWLEDGE MANAGEMENT BOOST WAGES IN LARGE AND MEDIUMD-SIZED SERBIAN COMPANIES?

Da li menadžment znanja povećava plate u velikim i srednjim srpskim kompanijama?

Abstract

This study analyzes the impact of knowledge management on the business variables of large and medium-sized companies in Serbia. The research relies on Romer's theory of endogenous knowledge as a basis for stable growth. For the purpose of the study, a dataset for measuring knowledge management was created, containing 11 variables grouped into fivecategories: academic education, employee training, storage, knowledge dissemination and technical support. The aim is to confirm the dataset'simpact on the average wage in the companies. Using the closed-endedquestionnaire, with interval and Likert scales, managers of 126 companies were interviewed. By way offactor analysis, four complex factorscores were isolated, representing strategies that companies use and combine in knowledge management. Based on the results of the ordinal regression analysis carried out in large companies at the level of totaleconomy, a set of four independent variables explains 69% of the variability of the dependent variable Company's average wage. As for medium-sized companies, the R2 coefficientis higher and amounts to 74.4%. When it comes to large and medium-sizedindustrial companies, the management pushes forwardastrategy of investing in employee training at seminars, funding subscriptions for accessing virtual libraries and knowledge bases, as well asorganizing knowledge storage procedure. Management of these companies also strivesto have the highest possible percentage of experts with master's and bachelor's degreesamong its employees.

Keywords: *knowledge management, factor analysis, average wage, large and medium-sized companies, industry.*

Sažetak

U ovoj studiji se analizira uticaj menadžmenta znanja na poslovne varijable velikih i srednjih kompanija u Srbiji. Istraživanje se oslanja na Romerovu teoriju o endogenom znanju kao osnovi za stabilan rast. U svrhu istraživanja, kreiran je *dataset* za merenje menadžmenta znanja koji sadrži 11 varijabli svrstanih u pet tematskih celina: akademsko obrazovanje, obuka zaposlenih, skladištenje, diseminacija znanja i tehnička podrška. Cilj istraživanja jestedase potvrdiuticaj *dataseta* na prosečnu mesečnu platu zaposlenih u kompanijama. Korišćenjem upitnika sa zatvorenim odgovorima, intervalskim i Likertovim lestvicama, intervjuisani su menadžeri 126 kompanija. Putem faktorske analize, izolovanasu četiri složena faktorska skora, koji predstavljaju strategije koje kompanije koriste i kombinuju u upravljanju znanjem. Na osnovu rezultata ordinalne regresione analize, sprovedene u velikim kompanijama na nivou privrede, set od četiri nezavisne prediktorske varijable objašnjava 69% varijabilnosti zavisne varijable „prosečna plata zaposlenih u kompaniji". U slučaju srednjih kompanija, koeficijent R2 je veći i iznosi 74.4%. Kada je reč o velikim i srednjim industrijskim kompanijama, primetno je da menadžment forsira strategiju ulaganja u obuku zaposlenih na seminarima, finansiranje pretplate za pristup virtuelnim bibliotekama i bazama znanja, kao i organizovanje procedure skladištenja znanja. Menadžment ovih kompanija takođe nastoji da među zaposlenima ima najveći mogući procenat eksperata sa master i fakultetskim diplomama.

Ključne reči: *menadžment znanja, faktorska analiza, prosečna plata, velike i srednje kompanije, industrija.*

Introduction

The role of knowledge in the companies' operationsis increasing. The entire conceptof knowledge and its types has changed over time. The shifttoward deeper understanding of the role of knowledge and innovations in the process of economic development is expressed in the recent reports of the World Economic Forum [30],from factor-driven economies, via efficiency-driven to innovation-driven economies. The most advanced economies in the contemporary world belong to the innovation-driven type. The role of knowledge and its macro-level recognition has been elaborated in the work of Nordhaus [18],becoming a postulate of the endogenous growth model. Full recognition in contemporary theory was illustrated by awarding Nordhaus (and Romer) a Nobel Prize for their contributions.

However, the subject and its various aspects are discussed in microeconomic research and business economics, as well. The common ground is the understanding of human capital that could be analyzed on macro, but also on a microlevel. Therefore, when asking who is responsible for the problem at the microlevel – different standpoints will surface(from capital assets to HR management). The same goes when trying to answer the question "Who should be the one investing in knowledge? "- one would get different answers. It could be expected that people should invest, expecting better economic outlooksin the future, but also that the employers should invest in bettering the structure of knowledge and skills of their employees, to improve their performance. The focus in the research is to identify the extent to which knowledge contributes to companies' results and how relevant knowledge and education are for boosting wages in largeand medium-sized companies in the Republic of Serbia. Therefore, the problem in focus is the interrelation between knowledge management and its impacton wages.

Literature review: From human capital theory to knowledge management in companies

In his Methodology of economics, MarkBlaug[3] has devoted a full chapter tomethodological aspects of analyzing and understanding human capital.The roots of the human capital theory go back to the first published work of Schultz[24],followed by the thematic issue of the Journal of Political Economy (under the title Investments in human beings, 1982) and the research of GaryBecker [2],creating the dataset for measuring human capital. What are the constituents of the human capital?According to Becker[2], there are four main factors creating human capital. The first is education (Becker is noting that it could be measured only via calculating the expenditures for education in the countries where public schooling – being for free – isnot a major part of the education system). According to OECD, human capital consists of knowledge, competences and skills relevant for economic activities[19],[20].The second one is health. Namely, only healthy employees can contribute to the companies' outputs. The Human Capital Index [31]only offerssome basic facts on the probability that citizens of certaincountries could reach a certain age (life expectancy). There is interdependence between education and health. More educated people live longer. However, up to this moment, analyses have revealedjust acertain correlation between education and life expectancy, but the causality is not proved [29]. The third factor is including the costs of migrations. Namely, the product becomes a commodity (capital) when it entersamarket matching itsdemand. The same principle applies to human capital. Migrations toward markets that are most appealing to employees are an important phenomenon and need to be inserted in the human capital formula. Finally, the fourth factor is the amount of financial resourcesavailable for financing the periods of searching for appropriate employment – where knowledgeyieldsthe highestreturns. Methodologically, it is important to note the opinion of Blaug and his skepticism that testing the implications of the human capital theory could produce new knowledge and deeper understanding of the phenomenon. Contrary to this, Jakob Mincer [16]is the biggest optimist, arguing that the scientific program of human capital is progressive and afertile ground for further development and new scientific results.

Nevertheless, it seems that Becker is right when puttingthe problem of credentialism on the agenda. How to measure the contribution of human capital to the output of companies? How to design the starting salaries of employees

(and paying for thisfactor of production) withoutknowing exactly what theircontribution would be to the companies' output? Having in mind the already identified diploma and grade inflation, the problem of credentialismis somehow undermining the understanding of human capital as a pure factor of production. The Nobel Prize for economics in 2018,awardedto Paul Romer[21],[22], shifted the attention again toward human capital, underlying the role of the economics of ideas and proof of the shifttoward innovation-driven economies. Here are some of the typicalproblems of designing, enlarging and treasuring the intangible assets ofcompanies:

a. The role and limits of academic and regular systems of education.

b. Education and capacity building of employees. Some of the educational activities are financed by the companies, some are expected to be paid by the employees in order to strengthen their own competitiveness.

c. Repository of knowledge and common-pool resources. Patents and intellectual property:There are the questionsof to whom they belong and how to quantify them in the standard accounting systems.

d. Dissemination of knowledge created within the enterprise – cultural capitalhubs[13] for exchanging ideas, debriefing sessions, offering crowdpreneurship platforms.

e. Developing technical support for successful knowledge management. Databases, online courses and webinars, access to virtual libraries,IT platforms for crowdpreneurship (supporting the intrapreneurship).

The idea of strengthening theintrapreneurial activities [33] and its evidence are very present today in modern companies. After a number of social "experiments" worldwide (from Mittbestimung in West Germany to self-management in the former Yugoslavia), nowadays, the employee initiativeshave to be supported with new organizational communication, internal publicrelations and the crowdpreneurship approach[32].However, the approach is subject to theinfluence of the organizational culture, typicalofsome countries (let us mention the power distance dimension) and of the education system (for instance, if the system is supportive ofteam work or not).All this is creating the environment suitable for implementation of different concepts of knowledge management.

The scientific concept of knowledge management has started to develop in the 1990s.IkujiroNonaka defined knowledge as the unique source of competitive advantage:"When markets shift, technologies proliferate, competitors multiply, and products become obsolete almost overnight, successful companies are those that consistently create new knowledge, disseminate it widely throughout the organization, and quickly embody it in new technologies and products"[17, p. 96]. Explaining the importance of knowledge management, Peter Drucker [10] said that in present-day economy, knowledge was the wellspring of reasonable, cutting edge enhancements,whereas theother standard factors such asland, workforce and money were staying at ensuing levels of criticalness. Davenport [9] describedknowledge management as the procedure of capturing, distributing and effectively using knowledge. During the said period, numerous consulting firms started to apply in-house management programs. According to Eisenhardt&Martin [11],knowledge is considered to be the most important resource for organizations working in dynamicallycompetitive environments. Speaking about the knowledge management, Darroch&McNaughton [8] said that the learning process happened when knowledge was utilized as a part of the association,and at last this learning came about into creativeness and improvement. Trying to define the concept of knowledge management, Seidler-de Alwis&Hartmann[23] explained that KM had a crucial influence on the success of innovation processes in companies and played a vital role as a company resource and success factor. According to Bobinac[4], impacts of knowledge management includeincreasing profitability and revenue, improving customer service and satisfaction, ensuring a more stable position in the market, reducing the costs of developing new products, increasing innovation processes and collecting knowledge fromcustomers and employees. While the concept of intrapreneurship [1] insists on financial autonomy of innovative teams, KM emphasizes the importance of dissemination techniques as a way to allocate knowledge insidea company. Recently, authors have investigated the impact of KM on bank productivity. In the case of Koosar Bank of Iran, the

analysis showed that knowledge sharing increased not only productivity, but also innovative contribution of employees [27]. Bolisani&Bratianu[6] pointed to the inevitability of having a new knowledge economy in a postindustrial society. At the center of this new economy is the knowledge-based company. In suchan organization, the pressure of efficiency and productivity should be replaced by new metrics capableofmeasuring the quality of contribution of knowledge and learning to company performance [6].

Empirical approach and results

Sample and dataset description

This research analyzes the impactof the knowledge management concept on the business variables of companies in Serbia. The selection of citiesfor the sample was intentional. The sample included companies in the most important economic centers in Serbia: Belgrade, Novi Sad and Niš. The sample covered the following five business sectors: industry, construction, IT, trade and services. When planning a sample, we paid attention to the fact that the shareof Serbian business sectors inGDP must be credibly reflected in the sample [7].Inselectinga company, we tookinto account that the sample should represent the actualratio between the number of micro, small, medium-sized and large companies in Serbia. For the definition of the size of companies, weused a valid national criterion [28]. A selection of companies from the list of the Serbian Business Directory [26]was made by applyingsimple random sampling without repeating. As an instrument for collecting data, we used an online questionnaire with closed-endedquestions, the interval and the Likert scale. An online self-administered questionnaire was forwarded to managers of the selected companies. The interviewswereconducted from November 1st to 30th, 2018. The questionnaire was distributed twice, at intervals of 15 days. The second time, questionnaires were sent again to companies that did not provide answers after the first attempt. We sent 360 questionnaires and receivedanswers from 126 companies.

The dataset for measuring the KM concept in companies contains 11 variables grouped into fivecategories.

The first categorytitled 'Academic education'consists of three variables: the share of employees in the company with bachelor's, master's and PhD degrees. The second categorytitled'Employees' training' consists of the following variables: attending seminars and courses outside the company, as well as attending educational seminars and courses within the company. The third categorytitled'Storage'consists of the following variables: the existenceof an organized procedure for storing the necessary knowledge useful for the functioning of the company and the existence of a system for protection and registration of innovative solutions and procedures (withthe Intellectual Property Office). The fourth category titled'Dissemination'contains two variables: the obligation of participants in innovative knowledge seminars to report the resultsto departments, sectors or direct colleagues, as well as a variable that measures the obligation of the employees to inform coworkers about the results concerning the company's activities upon returning from a business trip (after visiting fairs, exhibitions and other business events). The fifth category titled'Technical support'consists of two variables. The first variable measures the possibility to access intranet in companies, while the otherone measures the possibility to access virtual libraries and knowledge bases. Each of these variables was measured by using the 4-pointLikert scale, where score 1 represents the minimum, andscore 4 represents the maximum value of the measured indicator. When it comes to business variables, for the purpose of this study the average wage of employees in companies was measured. Measurement was performed through the 3-pointLikert scale. Respondents were asked the question: Is the average wage in your company lower, equal or higher than RSD 47,893, the median net wagein Serbia?The data for the median net wage in Serbia for 2017 were retrievedfrom the Official Gazette [25].The influence of knowledge management on business variables was measured by using appropriate statistical and econometric techniques.

The model

Since significant correlation values between the variables in the dataset for measuring knowledge management

have been confirmed, they have been processed by factor analysis to identify the existence of a number of complex factors, with the idea of analyzing their impact on the company's business variables. The starting point for the analysis is the following basic model:

$$X_{i} = a_{i1}F_1 + a_{i2}F_2 + a_{i3}F_3 + a_{i4}F_4 + e_i \qquad (1)$$

where X is the value of the factor score, i the ordinal number of the variable, F is the factor index, a factor loading and e specific factor associated only with the given variable. The study employed factor analysis with the method of extraction of maximum likelihood[15]. As presented in Table 1, the necessary conditions of the Kaiser-Mayer and Bartlett's test for the continuation of the analysis [12] have been met.

Table 1:KMO and Bartlett's test

Kaiser-Meyer-Olkinmeasure of sampling adequacy.		.710
Bartlett's test of sphericity	Approx. chi-square	306.160
	df	55
	Sig.	.000

Source: Authors' calculations.

Once the varimax rotation was implemented, four important complex factors were allocated. The factors with the factor loadings are presented in Table 2. Taken together, they explain 51.22% of the total variance. In general, the minimum value of factor loadings taken into account in this research is ± 0.3, while factor loadings with values of ± 0.70 are considered indicative of a well-defined structure and they are the real objective of factor analysis [14]. In this study, the minimum threshold input for factor loadings is set to ± 0.339, so in accordance with this, the relevant cells in the table are colored in gray.

Observing the entire sample, four factors which represent strategies that companies use and combine in knowledge management are extracted. As it is presented, Factor 1 includes a strategy that relies on attending educational seminars outside and within a company, on the obligation to report to the department, sector or direct colleagues the results of innovative knowledge seminars, on paying the subscription for accessing virtual libraries and knowledge bases, and on organizing a procedure for storing knowledge useful for the functioning of the company. Factor 2 contains a strategy that includes the obligation of employees to inform coworkers upon returning from business trips about the results concerning the company's activities, the obligation to report to the department, sector or direct colleagues the results of innovative knowledge seminars and the procedures for storing knowledge useful for the functioning of the company. Within Factor 3, the knowledge management strategy puts in the forefront the employment of experts with a PhD degree, as well as the existence of a system of protection and registration of innovative solutions and procedures. Factor 4 implies

Table 2:Rotated factor matrix[a]

	Factor			
	1	2	3	4
Number of employees with bachelor's degree %	0.316	0.068	0.103	0.477
Number of MSc/MA %	0.019	0.071	-0.022	0.771
Number of employees with a PhD %	-0.017	0.048	0.982	0.180
Attending seminars and coursesoutside the company %	0.576	0.139	0.170	0.127
Attending educational seminars and courseswithin the company %	0.846	0.109	0.130	0.208
Are there organized procedures for storing necessary knowledge useful for the functioning of the company?	0.383	0.339	0.088	0.144
Is there a system of protection and registration of innovative solutions and procedures (withthe Intellectual Property Office)?	0.280	-0.017	0.406	-0.104
Do participants in innovative knowledge seminars have the obligation to report the results to the department, sector or direct colleagues?	0.500	0.380	0.153	-0.083
Upon returning from business trips (after visiting fairs, exhibitions and other business events), are the employees obliged to inform coworkers about the results concerning the company's activities?	0.098	0.984	-0.141	0.031
Is there access to virtual libraries and knowledge bases?	0.645	0.136	-0.049	0.068
Are you connected via intranet?	0.155	0.238	0.080	0.095

Extraction method: Maximum likelihood.
Rotation method: Varimax with Kaiser normalization.
[a] Rotation converged in 5 iterations.
Source: Authors' calculations.

a strategy in which companies try to have the highest possible percentage of expertswith master's and bachelor's degreesamong their employees. Company management can use one or combine multiple strategies for knowledge management. This may depend on the business sector, the size of the company, the business environment and other circumstances.

Regression analysis and results

Identifying four complex factors for knowledge management enabled the measurement of their impact on the companies' business variables. This chapter analyzes the factors' influence on the business variabletitledWages. The wages of thecompanies'employees were measured through the three-pointLikert scale. In the survey, the following question was asked: Is the average wage in your company lower, equal or higher than RSD 47,893, the median net wagein Serbia?The study firstanalyzedthe impact of the four factor scores on wages in large and medium-sized companies at thelevel of totaleconomy. The H1 hypothesis was tested: *Regression factor scores 1-4 (as independent variables, predictors) influence the change of the dependent variable Wages of employees in the company in large and medium-sized companies.*Ordinal regression was applied, because the dependent variable was measured by the ordinal scale. In order to test the hypothesis H1, large and medium-sized companies were isolated from the rest of thesample. Having completed this step, the following ordinal regression model was set up:

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \beta_3 x_{i3} + \beta_4 x_{i4} + \varepsilon_i \qquad (2)$$

where, for $i=n$ observations:

y_i = dependent variable (average company's wage)

β_0 = y intercept (constant)

β_1 = slope coefficient of the predictor xi1

β_2 = slope coefficient of the predictor xi2

β_3 = slope coefficient of the predictor xi3

β_4 = slope coefficient of the predictor xi4

$x_{i1}, x_{i2}, x_{i3}, x_{i4}$= the independent variables or predictors (regression factor scores 1-4)

ε_i = random error

Table 3 shows the case processing summary of ordinal regression.

The results revealsignificant values of pseudo R-square coefficients (Table 4). Based on the values obtained for the Nagelkerke R-square coefficient, a set of four predictor variables explains 69% of variability of Wages of employees in the company.

Table 4:Large companies (251+ employees): Pseudo R-square

Cox and Snell	.587
Nagelkerke	.690
McFadden	.465
Link function: Logit.	

Source: Authors' calculations.

Table 5 shows that there is a significance of regression factor scores 1 and 2. In the context of knowledge management, large companies rely on two strategies. Within the first strategy, the management invests resources in employees attending educational seminars withinthe company and outside of it, emphasizing the obligation to report to the department, sector or direct colleagues the results of innovative knowledge seminars. In addition, large companies allocate funds for subscriptions for accessing virtual libraries and knowledge bases, as well as for organizing storage procedure for knowledgeuseful for the functioning of the company. When it comes to the second strategy, which is represented by the regression

Table 3: Large companies (251+ employees): Ordinal regression analysis Case processing summary

		N	Marginal percentage
Is the average wage in your company lower, equal or higher than RSD 47,893, the median net wage in Serbia?	Lower than RSD 47,893	4	20.0%
	Equal to RSD 47,893	4	20.0%
	Higher than RSD 47,893	12	60.0%
Valid		20	100.0%
Missing		0	
Total		20	

Source: Authors' calculations.

Table 5:Large companies (251+ employees): Parameter estimates

		Estimate	Std. error	Wald	df	Sig.	95% Confidence interval	
							Lower bound	Upper bound
Threshold	[v13 = 1]	-3.867	1.489	6.748	1	.009	-6.785	-.949
[v13 = 2]		-1.616	1.035	2.435	1	.119	-3.645	.414
Location	REGR. factor score 1 for analysis 1	**2.473**	**1.107**	**4.990**	**1**	**.025**	**.303**	**4.643**
	REGR. factor score 2 for analysis 1	**-2.189**	**1.279**	**2.926**	**1**	**.087**	**-4.696**	**.319**
	REGR. factor score 3 for analysis 1	-.255	.665	.148	1	.701	-1.558	1.047
	REGR. factor score 4 for analysis 1	.648	1.084	.358	1	.550	-1.477	2.773
Link function: Logit.								

Source: Authors' calculations.

factor score 2, large companies impose an obligation on employees to inform coworkersabout the results related to the company's activities, as well as the obligation to reportto the department, sector or direct colleagues the results of innovative knowledge seminars upon their return from business trips. Besides, the second strategy also includes allocations for storage procedures ofknowledge useful for the functioning of the company.

In addition to the factor score 1 having a positive impact on the growth of employees' wages in large companies, a negative estimatedvalue of -2.189in the factor score 2 is also observed. This would mean that factor score 2 has a negative impact on wage growth. The causesof this phenomenon are complex, and they pertain to the domainof psychology. The reasons for this phenomenon are related to employeemotivation that ismost affected by the way and approach in which large companies organize and design briefing sessions where employees upon returning from business trips are obliged to inform coworkers about the results concerning the company's activities, as well as the obligation to report to the department, sector or direct colleagues the results of innovative knowledge seminars. The way of organizing these briefings can be problematic if they are held outside of working hours and if there is no financialstimulation.

Furthermore, if they are not designed in a creative manner, briefings can becomea burden foremployees and lead to a reduction in employeemotivation. An unfair criterion for the selection of employees going on business trips can lead to unhealthy competition among employees, which negatively affects the work atmosphere and productivity.

When it comes to medium-sized companies, the case processing summary of the ordinal regression analysis ispresentedin Table 6.

The results show thatthere are significant values for all three types of pseudo R-square coefficients. Based on the values obtained for the Nagelkerke pseudo R-squarecoefficient, a set of four predictor variables explains the 74.4%variability of the dependent variable Wages of employees in the company (Table 7).

Table 7: Medium-sized companies (51-250 employees): Pseudo R-square

Cox and Snell	.655
Nagelkerke	.744
McFadden	.501
Link function: Logit.	

Source: Authors' calculations.

Table 8 shows contributions by factor scores. It is noticeable that in medium-sized companies,factorscores 4 and 2 have the greatest impact on employees'wages.

Table 6: Medium-sized companies (51-250 employees): Ordinal regression analysis Case processing summary

		N	Marginal percentage
Is the average wage in your company lower, equal or higher than RSD 47,893, the median net wage in Serbia?	Lower than RSD 47,893	8	28.6%
	Equal to RSD 47,893	13	46.4%
	Higher than RSD 47,893	7	25.0%
Valid		28	100.0%
Missing		0	
Total		28	

Source: Authors' calculations.

Table 8: Medium-sized companies (51-250 employees): Parameter estimates

		Estimate	Std. error	Wald	df	Sig.	95% Confidence interval	
							Lower bound	Upper bound
Threshold	[v13 = 1]	-2.231	.776	8.264	1	.004	-3.752	-.710
[v13 = 2]		2.414	.948	6.486	1	.011	.556	4.273
Location	REGR.factor score 1 for analysis 1	.661	1.048	.398	1	.528	-1.393	2.714
	REGR.factor score 2 for analysis 1	**1.722**	**.853**	**4.071**	**1**	**.044**	**.049**	**3.394**
	REGR. factor score 3 for analysis 1	.448	.707	.402	1	.526	-.937	1.834
	REGR.factor score 4 for analysis 1	**3.783**	**1.311**	**8.325**	**1**	**.004**	**1.213**	**6.353**
Link function: Logit.								

Source: Authors' calculations.

The management of medium-sized companies uses a combination of two strategies for knowledge management that are different from those practiced by large companies. The first strategy includes the management's efforts to employ the highest possible percentage of experts with master's and bachelor's degrees. The management observes such experts as sources of innovative solutions useful for the company. Based on the results obtained, this strategy for medium-sized companies leads to a greater increase in employees' wages compared to the other one. The second strategy is represented by the regression factor score 2. Just as in large companies, it includes the obligation of employees to inform coworkers through briefings about the results concerning the company's activities, as well as the obligation to report to the department, sector or direct colleagues the results of innovative knowledge seminars upon returning from business trips. This strategy also includes allocations for procedures for storing knowledge useful for the functioning of the company. Although this strategy is also practiced by large companies, there is a difference. Unlike large companies, in the case of medium-sized companies, this strategy has a positive impact on employees' wage growth. This could probably be explained by a more creative and effective manner of organizing briefings, where employees should, after returning from their business trips, inform coworkers about the results concerning the company's activities. Medium-sized companies are likely to have a fairer criterion for sending employees on business trips, which also contributes to the growth of employee motivation. We can conclude that the hypothesis H1 is confirmed.

Regarding the situation in individual business sectors, the industrial sector was selected as the target sector for this analysis. The following research was based on the hypothesis H2: *Regression factor scores 1-4 (as independent variables, predictors) affect the change of the dependent variable Wages of employees in the company in large and medium-sized industrial companies.* In order to test the hypothesis H2, large and medium-sized industrial companies were isolated from the rest of the sample. Having completed this step, the following case processing summary of the ordinal regression analysis was obtained (Table 9).

According to the Nagelkerke pseudo R-square coefficient, a set of four predictor variables explains 77.9% of the variability of Wages of employees in the company (Table 10).

When analyzing the contributions by factor scores, we observed that Factor 1 and Factor 4 make the largest and most significant contribution (Table 11). A positive estimate is interpreted in the following way. For every

**Table 9: Large and medium-sized industrial companies: Ordinal regression analysis
Case processing summary**

		N	Marginal percentage
Is the average wage in your company lower, equal or higher than RSD 47,893, the median net wage in Serbia?	Lower than RSD 47,893	4	22.2%
	Equal to RSD 47,893	9	50.0%
	Higher than RSD 47,893	5	27.8%
Valid		18	100.0%
Missing		0	
Total		18	

Source: Authors' calculations.

Table 10: Large and medium-sized industrial companies:Pseudo R-square

Cox and Snell	.681
Nagelkerke	.779
McFadden	.551
Link function: Logit.	

Source: Authors' calculations.

one unit increase in an independent variable, there is a predicted increase (of a certain amount) in the log-odds of falling at a higher level of the dependent variable [12]. More specifically, if factor score 1 is increased by one line, there is a predicted increase of 4.356 in the log-odds of falling at a higher level of the dependent variable. When factor score 4 is increased by one line, there is a predicted increase of 3.412 in the log-odds of falling at a higher level of the variableCompany's average wages.

When it comes to knowledge management, large and medium-sized industrial companies favor the strategy of investing resources in employees' trainings in seminars outside and within companies, insisting on the obligation to report to the department, sector or direct colleagues the results of innovative knowledge seminars and onpayingfor employees' subscriptions for accessing virtual libraries and knowledge bases and organizing a storage procedure for knowledge that is useful for the functioning of the company. Management of large and medium-sized industrial companies also aspires to have the highest possible percentage of experts with master's and bachelor's degreesamong their employees. Based on the resultsobtained, we can conclude that the hypothesis H2 is confirmed.Segmentation and differentiation in terms of medium-sized or large industrial companies in particular was not possible, since in this case the sample size is below the statistical acceptability limit.

Conclusion

The study explains the importance of knowledge management for companies' business. Satisfactorywages areone of the most important incentives for employee motivation. Above-average wages provide loyalty of employees. When employees are happy with their wages, they will strive to maximize productivity and achieve the company's goals. In the long run, increasing the wages savesmoney for the company and functions asan investment for high-quality business[5].Ourresearch testedand confirmed the positive impactof KM dataset on company's average wages. According to the results, four complex factors were isolated, representing strategies that companies use and combine in knowledge management. The use of these strategies depends on the business sector, companysize and business environment.At the level of total economy, the positive influence of isolated factors on wages was confirmed both in large and medium-sized companies. However, there are differences in the choice of combinations of KM strategies betweenlarge and medium-sized companies. Large companies combine complex factors 1 and 2, while medium-sized companiesbase their knowledge management on a combination of factors 2 and 4.When it comes to individual business sectors, the industrial sector was selected as the target one. In the case of large and medium-sizedindustrial companies, a set of four predictor variables explained 77.9% of the variability of the average company's wage. It was observedthat Factor 1 and Factor 4makethe largest and most significant contribution.According to Romer's model of increasing returns[21], a stable positive growth is a result of endogenous accumulation of knowledge. As the Nobel Prize winner says, knowledge determines how successful

Table 11: Large and medium-sized industrial companies: Parameter estimates

		Estimate	Std. error	Wald	df	Sig.	95% Confidence interval	
							Lower bound	Upper bound
Threshold	[v13 = 1]	-4.396	1.932	5.176	1	.023	-8.183	-.609
[v13 = 2]		1.096	1.353	.656	1	.418	-1.556	3.748
Location	REGR. factor score 1 for analysis 1	4.356	1.870	5.423	1	.020	.690	8.022
	REGR. factor score 2 for analysis 1	.725	1.103	.432	1	.511	-1.437	2.886
	REGR. factor score 3 for analysis 1	.789	.901	.766	1	.382	-.978	2.555
	REGR. factor score 4 for analysis 1	3.412	1.867	3.341	1	.068	-.247	7.070
Link function: Logit.								

Source: Authors' calculations.

we are infacing the constraints that nature imposes on economic growth[22].Knowledge accumulation, as well as the positive effects it generates in production,areof great importance for yielding growth.

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