

ISSN 2560-421X

UDK 33+502/504

ECONOMICS

of Sustainable Development

1



Vol. V

Niš, 2021

ECONOMICS OF SUSTAINABLE DEVELOPMENT
ЕКОНОМИКА ОДРЖИВОГ РАЗВОЈА



ДРУШТВО ЕКОНОМИСТА “ЕКОНОМИКА” НИШ
SOCIETY OF ECONOMISTS “ЕКОНОМИКА”, NIS

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Prepress & Cover:

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WEB: <http://www.ekonomika.org.rs>

Bank Account: 160-19452-17

Printed by:

“MEDIVEST”

18000 Niš

Copies: 200

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ORIGINAL SCIENTIFIC PAPER

DOI: 10.5937/ESD2101001D

Received: September 5, 2020

Accepted: October 12, 2020

PENSION EXPENDITURE ANALYSIS: EMPIRICAL STUDY OF A SERBIAN LOCAL SELF-GOVERNMENT

Abstract

The problem of pension financing in the system of mandatory pension insurance in the Republic of Serbia became actual after the great economic crisis of the 1990s, although this problem had been present before. Accordingly, considerable attention has been paid to the analysis of determinants of pension expenditures. Considering the fact that in the Republic of Serbia the possibilities for reducing expenditures in the system of mandatory state pension and disability insurance have already been exhausted by reforms so far, it is necessary to consider other measures and possibilities for changing the design of the pension disability system. Therefore, the subject of this paper is the analysis of the relationship between pension beneficiaries, the type and amount of pensions. The aim of the paper is to analyze the influence of the pension beneficiary and the type of pension on the amount of the pension, based on the analysis of the collected data.

Key words: *pension system, pension expenditure, pension beneficiaries, type of pension, Serbia.*

JEL classification: *H55, J26, H75*

АНАЛИЗА РАСХОДА ЗА ПЕНЗИЈЕ: ЕМПИРИЈСКО ИСТРАЖИВАЊЕ ЛОКАЛНЕ САМОУПРАВЕ У РЕПУБЛИЦИ СРБИЈИ

Апстракт

Проблем финансирања пензија у систему обавезног пензијског осигурања у Републици Србији је постао актуелан након велике економске кризе 90-их година XX века, иако је присутност овог проблема била заступљена и раније. Анализи детерминанти расхода за пензије се, у складу са тим, почела поклањати велика пажња. Сходно томе да су у Републици Србији могућности за смањење расхода у систему обавезног државног пензијског и инвалидског осигурања, досадашњим реформама већ исцрпљене, неопходно је сагледати и друге мере и могућности за промену дизајна пензијско-инвалидског система. Стога је предмет овог

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рада анализа односа између корисника пензије, врсте пензије и висине пензије. Циљ рада је, да се на основу анализе прикупљених података, анализира утицај корисника пензије и врсте пензије на висину пензије.

Кључне речи: *пензијски систем, расходи за пензије, категорија корисника пензије, врста пензије, Србија.*

Introduction

In the economic literature which examines the causes of crises of state pension systems, most attention has been paid to the disturbed relationship between the number of employees and the number of pensioners. This imbalance has had a major impact on the sustainability of the ongoing pension systems. However, significant repercussions on the frequent reforms of the pension systems in the world were also caused by shortcomings in the conduct of the pension policy, as well as the problem of social sustainability.

An estimate of the actuarial deficit as the difference between pension expenditures and contribution income indicates that the financial sustainability of most EU Member States is in jeopardy, given that contributions and other income over the 50-75-year period are insufficient to pay the projected retirement benefits during this period (D'Addio & Whitehouse, 2012). One of the problems that is also highlighted in economic literature is the problem of social sustainability, which is a much broader concept than the previously mentioned problem of financial sustainability. Social sustainability is an actual problem that is interpreted as the adequacy of the pension, i.e. the relationship between the amount of the pension and the amount of earnings the insured person receives before the retirement status. In order to construct sustainable pension systems, factors that affect both financial and social sustainability must be considered. It is therefore important to consider pension policy effects that affect both sustainability when reforming the pension system. It is necessary to find a link between the two goals and strive for their balance. In order to achieve this, a detailed analysis of the pension income and expenditure is necessary.

The provision of pensions in the mandatory pension system faces major problems in the world, with the increasing number of pensioners relative to the number of employees as the main factor. Explicitly, one of the causes of the deficit in pension payments is the reduction in the pension system's income and the increase in pension expenditures. The increase in pension expenditures emphasizes the increase in the number of pensioners, but also the reforms of the conditions for retirement, which are becoming more and more liberal. According to the projected pension expenditures for the period up to 2050 in most EU countries, the amount of pension contributions will not be sufficient to finance them (European Commission, 2009). Pension expenditures in Serbia represent the most important category of expenditures of the Republic Pension and Disability Insurance Fund, bearing in mind that they account for about 85% of the total expenditures of the Fund.

However, the pension system of the Republic of Serbia is unsustainable in the long run, which is the reason for many authors' interest in reforming this system (Đurović-Todorović & Đorđević, 2018). Considering the problems of financing pensions and finding the ways for the sustainable functioning of the pension system in the Republic of Serbia, we conducted a detailed analysis of the structure of pension expenditures. The paper analyzes

the relationship of the pension beneficiary, the type of pension and the amount of pensions. In order to examine the sustainability of the pension system in the Republic of Serbia, the aim of the paper is to examine whether the category of pension beneficiaries and the type of pensions have an impact on the amount of pensions. The data collected for the empirical analysis were provided by the Republic Pension and Disability Insurance Fund - Leskovac Branch and relate to the structure of expenditures for pensions at the city level. Considering that the possibilities for reducing expenditures in the system of mandatory state pension and disability insurance for some types of pensions have already been exhausted, it is necessary to consider other measures and possibilities for changing the design of the Serbian pension disability system. Starting from the fact that the unsustainability of state pension systems is a consequence of the inconsistency of pension system design with the changes that occur in the contemporary environment, the results of the survey indicate a complete picture of the structure and scope of expenditures for pensions at a local level and possible directions for the reform of the pension insurance system in Serbia.

1. Determinants of the crises in a pension system

The crisis in pension systems is present in all countries of the world. It is evident in the European Union countries that the design of the pension system differs significantly between the Member States and that generating differences between them leads to different sustainability.

The main factors affecting the crisis in the functioning of the pension insurance system and the economic security of pension beneficiaries are longer life expectancy of the population than expected, global economic crises, high unemployment rates, globalization, competitiveness in the field of pension insurance as well as the forms of pension benefits payment. According to Rakonjac-Antić (2013), for a pension system to work, all forms of payment of pension benefits need to be anticipated in advance. Determination of pension benefits also plays a major role in pension system functioning. "Depending on whether the pre-defined formula, with parameters, for determining the pension benefit, or the pension benefit depends on the amount of the accumulated contribution funds and the return on the invested contribution funds, there is a division into: defined benefit plans, defined benefit plans contributions and hybrid plans" (Rakonjac Antić, 2013, p. 128).

According to Holzmann et al. (2003), the crisis of pension systems is influenced by the link between pension benefits and contributions, which needs to be strengthened, but also by the factors related to sources of pension financing such as the contribution period and sources of pension financing. According to this author, it is very important to introduce changes in the pension structure.

Matković (2010) analyzes the impact of the number of pension beneficiaries on the amount of net pension expenditure. The author considers that the decrease in income is a consequence of the decrease in the number of insured persons due to the decrease in the number of employees, the avoidance of contributions and the informal economy, and the increase in expenditures is the consequence of the increase in the number of pension beneficiaries due to the aging of the population and liberal retirement conditions (Matković, 2005).

The complexity of the pension system functioning is recognized by international and national statistical institutions as well as by research institutions. According to Stanc et al.

(2019), the pension system is influenced by demographic policy, intergenerational relations, general equilibrium in the country, public debt, but also by macroeconomic balance. "Aging, falling employment rates, financial market volatility, pose serious problems for the sustainability of the pension system" (Stanc et al., 2019, p. 53). According to Stanc et al., (2019) any study on the sustainability of retirement and disability insurance begins with at least three demographic problems that a state faces or will face over the next 40 years: population decline, population aging, and emigration. All these factors call into question the sustainability of pension systems. Dobre et al. (2012) consider that every state must maintain its public debt at a reasonable level in order to cope with public spending increases in the future due to demographic trends. Peter Askins (2010) analyzes the challenges facing pension policy makers regarding sustainability and risk, emphasizing the need for change in Europe with aging population and declining birth rates.

Barr et al. (2009) indicate that there are a number of pension design principles that are rooted in the economic theory. Some of these principles are: pension systems have multiple goals, their analysis should consider the pension system as a whole, different systems face different risks, different systems have different effects by generation and gender. The emanation of this discussion is increasing with the emergence of errors in the World Bank's work and the emergence of irregular analyzes of pension debt and incomplete analyzes of pension systems. In his research, the author emphasizes the necessity of a complete analysis of pension systems that differ depending on the level of economic development of different countries.

Some research points to the importance of the moment of retirement, and they find a solution to the pension system crisis in examining the optimum time for retirement. In order to define retirement age, it is necessary to start from what defines retirement. However, there is still no consensus on the definition of retirement in literature (Gustman, Mitchell & Steinmeier, 1995). Montalto et al. (2000) analyze the determinants of the retirement age limit. Their research findings highlight that retirement adequacy research should focus on planned retirement. Financial planners should consider that the planned retirement of all categories of beneficiaries increases with age. Accordingly, his study focuses on the financial characteristics of the pension as well as on the demographic characteristics of the pension as one of the determinants of the retirement limit. Boskin (1977) indicates that the level of net earnings can have a strong negative impact on the likelihood of retirement. Stojilković (2011) uses indicators such as years of service and average retirement age into retirement structures in Serbia. The author considers that the average retirement age is of great importance for the financial sustainability of the Pension and Disability Insurance Fund. Due to the fact that retirement life expectancy is increasing, longer use of the pension is expected. "The data of the Pension and Disability Insurance Fund show tendencies that will continue in the future, as all processes related to the population are long-term, including those related to pensioners who are, in addition to socio-economic factors, influenced by demographic factors" (Stojilković, 2011, p. 69).

As in most other countries, pension and disability insurance in Serbia is based in part on the ongoing pension financing. Mandatory insurance covers: employees, employers, the self-employed and farmers. At the end of 2000, large debts in the pension and disability system were found in Serbia. Difficulties in financing pensions in Serbia were around since the mid-1980s to cumulate during the 1990s, which was compounded by workforce reduction, avoidance of contributions and a decrease in the number of insured persons. On

the other hand, due to the existence of liberal conditions of retirement and the aging of the population, there was a constant growth in the number of pensioners. According to Matković (2001), pension financing required increasingly "creative" measures.

"The uncertainties regarding the causes of the growing deficit in the pension system of the Republic of Serbia make its difficult situation even worse" (Bajec & Stanic, 2005, p. 52). The authors Bajec & Stanic (2005) explain that the problems that the pension system in Serbia has fallen into are, in fact, a consequence of the economic crisis of the late 1990s, but also of the inefficient management of the pension policy. In their study, the authors analyze the factors that influence the dynamics of the pension system deficit and conclude that pension financing system should not be viewed partially but as an integral part of social security and public expenditures.

In the Republic of Serbia, pensions are part of the expenditures of the mandatory pension and disability insurance system. However, pension expenditures represent the most significant category of expenditures of the Republic Pension and Disability Insurance Fund in our country. These expenditures include expenditures for old-age, invalidity and survivor pensions, which are paid to pension beneficiaries such as employees, farmers, military insurers and pension beneficiaries in the self-employed category. According to statistics, pension expenditures record an upward trend resulting from the increase in the number of pension beneficiaries and the average value of the pension. In order to analyze the structure of expenditures of the mandatory pension and disability insurance system, the following section analyzes the categories of insured persons and types of pensions at the local level in the Republic of Serbia.

2. Data and Methodology

Since 2012 in the Republic of Serbia pension expenditures have included the pensions of employees, self-employed, farmers and professional military personnel. For the sake of the accuracy of the analysis of pension expenditures by population categories, the data were collected at the city level.

The hypothesis was analyzed using primary data obtained from the Republic Pension and Disability Insurance Fund and the Republic Pension and Disability Insurance Fund - Leskovac Branch. Also, the problem was analyzed using the secondary data published in the statistical monthly bulletin of the Republic Pension and Disability Insurance Fund, as well as on the basis of the statistics of the Republic Bureau of Statistics.

Based on the quantitative data on the number of beneficiaries of the Pension and Disability Insurance Fund in Leskovac and their disbursements, we have analyzed the pension beneficiaries in the following categories: a) 24,427 pension beneficiaries from the category of employees; b) 4,781 pension beneficiaries from the farmer category; c) 1,666 pension beneficiaries from the self-employed category; d) 415 pension beneficiaries from the military insurance category.

The main objective of the research was to determine whether the category of pension beneficiary influences the amount of the pension paid to him, as well as to examine whether the type of pension influences the amount of the paid pensions in Leskovac. We used Two-way between – groups analysis of variance which implicitly allowed us to explore the joint impact of two independent variables, on one dependent variable.

We used the data provided from the Republic Pension and Disability Insurance Fund-Branch Office Leskovac on pension beneficiaries in November 2019, by pension groups (Table 1).

Table 1: Groups of pension amounts

1-10000
10000.01-15000
15000.01-20000
20000.01-25000
25000.01-26643.75
26643.76-27899.36
27899.37-29250.77
29250.78-30000
30000.01-30709.45
30709.46-32288.50
32288.51-34003.90
34003.91-35000.00
35000.01-40000
40000.01-45000
45000.01-50000
50000.01-55000
55000.01-60000
60000.01-70000
70000.01-80000
80000.01-90000
90000.01-100000
100000.01-999999.99

Source: Statistical Monthly Bulletin H/2019: Number of pension beneficiaries and funds for the payment by the amount of pensions, Republic Pension and Disability Insurance Fund.

The advantage of the two-factor analysis of variance is in the fact that it examines the basic influence of both independent variables and the possible influence of their interaction. Using different statistical tools, we analyzed the interaction which occurs when the influence of one independent variable on a dependent variable changes and when that change is initiated depending on the value of another independent variable. The independent variables in the model are pension beneficiary category and type of pension, while the dependent variable, the amount of pensions for each pension beneficiary category was calculated using the following formula:

$$PP = \frac{TAP}{TNE} \quad (1)$$

where, PP is the average amount of funds disbursed by groups of pension amounts and type of pension or the average amount of pensions paid out by each group of pension amount and type, TAP is the total amount of pensions paid to beneficiaries of a certain type of pension by

groups of amounts of pensions, and TNB is the total number of beneficiaries of a certain type of pension by groups of amounts of pensions.

Table 2: Results of the analysis of variance for an independent variable – pension beneficiary category

Dependent Variable: PP					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	7556060301.800 ^a	3	2518686767.267	5.326	.002
Intercept	175695792379.244	1	175695792379.244	371.531	.000
Pension beneficiary category	7556060301.800	3	2518686767.267	5.326	.002
Error	81811184948.252	173	472897022.822		
Total	330201662087.951	177			
Corrected Total	89367245250.052	176			

R Squared = .085 (Adjusted R Squared = .069)

Source: Authors

Based on the results presented in Table 2, we can conclude that there is a significant difference between the mean values of the dependent variable in the four groups (employees, craftsmen, farmers, military). The overall significance is Sig = 0.002, which is less than 0.005, i.e. the result of one of the groups is statistically significant.

Table 3: Results of analysis of variance for an independent variable – type of pension

Dependent Variable: IIII					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2704058690.010 ^a	2	1352029345.005	2.715	.069
Intercept	237674265543.047	1	237674265543.047	477.196	.000
Type of pension	2704058690.010	2	1352029345.005	2.715	.069
Error	86663186560.042	174	498064290.575		
Total	330201662087.951	177			
Corrected Total	89367245250.051	176			

a. R Squared = .030 (Adjusted R Squared = .019)

Source: Authors

Based on the results in Table 3, we conclude that there are no statistically significant differences between the mean values of the dependent variable in the three groups (disability, old-age and family pensions). The table below gives the average pension amounts by the category of the beneficiary and the type of pension.

Table 4: Descriptive Statistics

Dependent Variable: IIII				
Type of pension		Mean	Std. Deviation	N
Invalidity	Employees	43637.8335	26635.06196	22
	Craftsmen	33602.2745	17118.06127	17
	Agricultural workers	16865.7046	9198.83879	5
	Military	39533.4879	15893.45607	16
	Total	37468.9222	21390.61950	60
Old-age	Employees	43584.6308	26581.51677	22
	Craftsmen	35585.2204	17426.69543	19
	Agricultural workers	27622.4826	12137.89970	11
	Military	60878.9760	41500.92026	10
	Total	41090.6151	26827.48940	62
Survivors	Employees	35475.6411	20375.92187	19
	Craftsmen	29460.7536	12818.12185	15
	Agricultural workers	12212.0656	8924.11062	4
	Military	33437.5503	15487.25936	17
	Total	31513.3655	17086.19952	55
Total	Employees	41157.6412	24785.40657	63
	Craftsmen	33122.9247	15984.61536	51
	Agricultural workers	21851.2047	12382.05851	20
	Military	42087.5331	25836.10475	43
	Total	36886.9411	22533.71782	177

Source: Authors

In the category of disability pension beneficiaries, employees have the highest average pension amount. In the category of old-age pension beneficiaries, the highest average pension amount is attributed to the members of the military, while the last observed category, family pension beneficiaries, has the highest average pension amount for employees. On the other hand, the disability pension beneficiary category recorded the lowest average pension amount for farmers, and the same result was observed for the other two pension beneficiary categories.

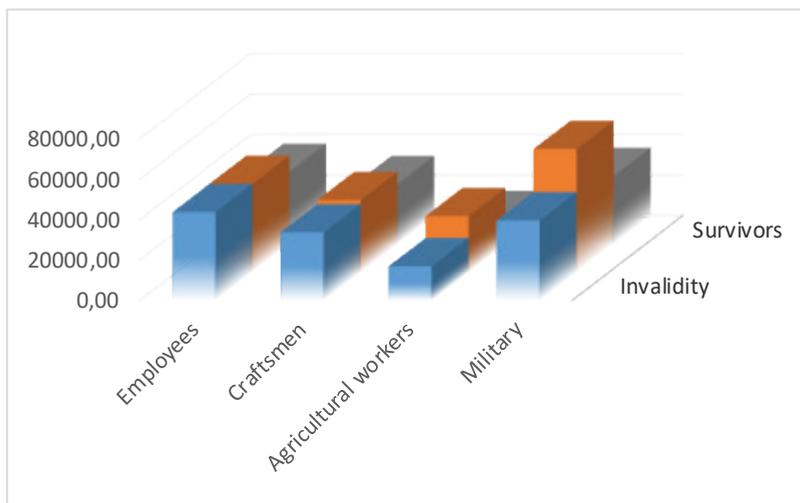


Figure 1: Descriptive statistics of the observed categories of pension beneficiaries

Source: Authors

To determine whether there is an influence of interaction (factors, independent variables) in the model on the observed dependent variable, we used the two-factor analysis of variance of different groups. The results of the two-factor analysis of variance are given in Table 5.

Table 5: The results of the two-factor analysis of variance

Dependent Variable: PP					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14524510637.266 ^a	11	1320410057.933	2.911	.002
Intercept	156526984900.651	1	156526984900.651	345.083	.000
Type of pension	4769670011.999	2	2384835006.000	5.258	.006
Pension beneficiary category	9608028218.348	3	3202676072.783	7.061	.000
Type of pension * beneficiary category	2628462808.325	6	438077134.721	.966	.450
Error	74842734612.785	165	453592330.987		
Total	330201662087.951	177			
Corrected Total	89367245250.052	176			

Source: Authors

Based on the obtained results, it can be concluded that there are statistically significant differences in the average amounts of disbursed funds or the average amounts of pensions between different categories of pension beneficiaries ($F = 7.061$, Sig. 0.000). The highest pensions are paid to the members of the military and employees, slightly lower pensions are paid to craftsmen, while the lowest pensions are paid to farmers. Also, significant differences in the amount of pensions exist between different types of pensions ($F = 5.258$, Sig. = 0.006). The highest pensions are old age, then disability and family. There was no interaction between the two independent variables ($F = 0.966$, Sig. = 0.450). In the case of disability pensions, old-age and family pensions, employees and the members of the military have the highest pensions, craftsmen have slightly lower pensions, while farmers have the lowest pensions. Therefore, there is no difference between the two factors analyzed (type of pension and category of pension beneficiaries) in pension amounts. We conclude that the category of pension beneficiaries and the type of pension do not have a statistically significant effect on the amount of pensions in Leskovac.

Conclusion

The pension policy, which emphasized the problem of the pension system reform in the Republic of Serbia, was mainly focused on reconciling the disturbed relationship between the number of employees and the number of pensioners. The reconciliation of these variables is caused by an increase in the number of pensioners and a decrease in the number of employees in our country. Our analysis of the scope and structure of pension expenditures as the dominant and most important category of expenditures of the Pension and Disability Insurance Fund

of the Republic of Serbia has shown a complete picture of expenditures arising from the payment of pensions in order to thoroughly review and examine the determinants of the sustainability of pension systems.

The financial and social sustainability of the pension system, as outlined in the introductory part of the paper, must be based on a complete analysis of expenditures. Bearing in mind the diversity of national pension systems, specific economic and social conditions, Serbia's pension policy reflects its responsibility both in terms of regulation and laws related to pension expenditures and as a function of a sustainable pension system. The Europe 2020 Strategy recommends reducing public debt, increasing employment and reforming the social security system. Mercer and the CFA Institute presents "ideal retirement systems" based on fundamental principles (Mercer & CFA Institute, 2018): clear government targets for each pension pillar, the minimum level of funding for general retirement savings, effective pension schemes for both the retirement period and the post-retirement period, transparency of the administrative and investment costs of each retirement plan, flexibility, contributions or raising capital during the years of retirement, accumulated benefits, sustainable relief to encourage voluntary savings, corporate pension funds management that is independent from the government, the protection of participants in the pension system. In Serbia, in the medium term, funding for pensions and the sustainability of the pension and disability system can be obtained by increasing employment or by reducing the presence of the informal economy. However, in the long run, the problems that are inevitable, including the aging of the population, the extension of the retirement age, lead to the unsustainability of state pension systems based on ongoing pension funding.

The results of our study show that at the city level there are statistically significant differences in average amounts of disbursed funds or average amounts of pensions between different categories of pension beneficiaries ($F = 7.061$, Sig. 0.000). The highest pensions are paid to the members of the military and employees, slightly lower pensions are paid to craftsmen, while the lowest pensions are paid to farmers. Also, significant differences in the amount of pensions exist between different types of pensions ($F = 5.258$, Sig. = 0.006). The highest pensions are old age ones, followed by the ones of disability and survivors. The study results also showed that there was no interaction between the two independent variables ($F = 0.966$, Sig. = 0.450). Therefore, there is no difference between the two factors analyzed (type of pension and category of pension beneficiaries) in pension amounts, i.e., the category of pension beneficiaries and the type of pension do not have a statistically significant effect on the amount of pensions in Leskovac.

This paper examined the structure of city-level pension expenditures and it can provide a basis for further examination of the factors associated with expenditure reductions and improve the ability to analyze pension system policies, including proposed changes to the social security program. Also, the study can provide a better insight into the factors that should be included in the analysis when assessing the determinants of retirement. The survey tends to move pensions across all categories of retirees and points to problems that can cause an imbalance in the pension system. The paper also points to the necessity of further research at the national level.

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P. 13-22

SCIENTIFIC REVIEW PAPER

DOI: 10.5937/ESD2101013J

Received: January 5, 2021

Accepted: February 28, 2021

KEY DETERMINANTS OF SUSTAINABLE INTELLECTUAL CAPITAL OF ENTERPRISES

Abstract

Sustainable intellectual capital, in the new economy, is becoming a key determinant of sustainable growth and development of enterprises. This is an important precondition for gaining a sustainable competitive advantage of a modern enterprise. It is intellectual capital that includes knowledge aimed at solving environmental issues. Also, these intangible assets of enterprises include the so-called green innovations that contribute to the sustainability of enterprise business. Moreover, successful enterprises are expected to adopt corporate social responsibility strategies, and as a result, the concepts of sustainable intellectual capital and green intellectual capital are being developed. The aim of this paper is to present the basic characteristics of the modern approach to intellectual capital in the era of knowledge economy, i.e. to point out important elements of the concept of sustainable intellectual capital and the concept of green intellectual capital.

Keywords: *sustainable intellectual capital, sustainable business, green intellectual capital, corporate social responsibility*

JEL classification: *M21, O34, Q56*

КЉУЧНЕ ДЕТЕРМИНАНТЕ ОДРЖИВОГ ИНТЕЛЕКТУАЛНОГ КАПИТАЛА ПРЕДУЗЕЋА

Апстракт

Одрживи интелектуални капитал, у новој економији, постаје кључна детерминанта одрживог раста и развоја предузећа. То је важна претпоставка стицања одрживе конкурентске предности савременог предузећа. Реч је о интелектуалном капиталу који укључује знање усмерено на решавање питања заштите животне средине. Такође, ова нематеријална имовина предузећа укључује и такозване зелене иновације које доприносе одрживо-

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сти пословања предузећа. Осим тога, од успешних предузећа се очекује и да усвајају стратегије корпоративне друштвене одговорности, а као резултат, развијају се концепти одрживог интелектуалног капитала и зеленог интелектуалног капитала. Циљ рада је да прикаже основне карактеристике новог приступа интелектуалном капиталу у ери економије знања, односно да укаже на битне елементе концепта одрживог интелектуалног капитала односно концепта зеленог интелектуалног капитала.

Кључне речи: одрживи интелектуални капитал, одрживо пословање, зелени интелектуални капитал, корпоративна друштвена одговорност

Introduction

In the era of knowledge economy, the success of an enterprise increasingly depends on the intangible asset. It is based on people, their competencies and experience. Namely, it is intellectual capital of an enterprise and it includes employees, structural intellectual capital and employee relations with the enterprise stakeholders. Unlike the industrial era, in which physical and financial resources played a key role in achieving a competitive advantage, in modern business conditions, intellectual resources are the most important asset for gaining a sustainable competitive advantage, as well as sustainable growth and development (Mladenović, Arsić, 2017).

Sustainable intellectual capital is related to all the knowledge that an enterprise uses in the environmental management process (Lopez-Gamero et al., 2011). It requires the inclusion of all elements of intellectual resources in solving environmental issues. This includes environmental management and the development of innovations that can enable environmental protection. These innovations are also known as green innovations or eco-innovations.

The development and application of green innovations allow an enterprise to grow and develop sustainably and enhance business performances. In this way, the enterprise ensures long-term business activity, meeting the requirements of the community in which it operates.

Corporate social responsibility (CSR) initiatives and practices are of great importance in developing sustainable intellectual capital, which ultimately means a sustainable competitive advantage. As a result, human resources of an enterprise are motivated better, loyal and long-term relations with all stakeholders are created and valuable structural assets of the enterprise are developed - above all, adequate organizational structures and innovative organizational culture. Therefore, the CSR concept is an important segment of the concept of sustainable intellectual capital. On the other hand, the motivation for applying CSR practices depends on the quality of intellectual capital possessed by the enterprise.

1. Sustainable intellectual capital as a determinant of sustainable business of enterprises

There are different understandings of authors when it comes to the concept of intellectual capital of an enterprise. According to Roos and Roos (1997), intellectual capital is based on two segments: human capital and structural capital. Van Buren (1999) identifies four

components of intellectual capital: human capital, innovation capital, process capital, and customer capital. Intellectual capital as an intangible asset of an enterprise consists of three segments: human capital, structural capital (organizational and innovation/technological capital) and relational capital (social capital) (Bontis, 1999; Bernardi, Demartini, Paoloni, 2014; Krstić, 2014; Vătămănescu et al., 2019). The concept of intellectual capital includes three elements, as suggested by Sveiby (1997), but with a slightly different structure - employee competencies, internal structure and external structure.

However, despite the disagreement over the elements of intellectual capital, all authors point out that intellectual capital provides various benefits to the modern enterprise (Krstić, Bonić, 2016; Krstić, Rađenović, 2018). In addition, it is a condition for its sustainability. Intellectual capital, in an era based on knowledge, is becoming a key source of competitive advantage. Although it is an invisible and non-physical asset, it determines the future value of the company and indirectly the value creation in the company (Petković, Krstić, Rađenović, 2020). Some authors conclude that intellectual capital is an important factor of sustainable enterprise performances (Bueno et al., 2004; Mondal, Ghosh, 2012). Intellectual asset is a key determinant of gaining a sustainable competitive advantage (Steward, 1991; Petty, Guthrie, 2000; Todericiu, Stanit, 2015; Yaseen, Dajani, Hasan, 2016; Vătămănescu et al., 2019) and a key source of value creation (Hall, 1992; Edvinsson, 1997; Sveiby, 1997; Lev, 2001) in the knowledge economy. Namely, intangible resources are more difficult to copy, resulting in barriers to competition. By doing so, an enterprise can more easily maintain a long-term competitive advantage. In addition, Todericiu and Stanit (2015) highlight that intellectual resources are essential to the long-term development of an enterprise. Without these resources, the company will not be able to grow and develop in the long run (Gross-Golacka et al., 2020). Xu, Chen and Zhang (2020) emphasize that intellectual capital has a significant influence on sustainable growth of enterprises. Such claims have been made by other authors (Wiig, 1997; Subramaniam, Youndt, 2005, Xu, Wang, 2018). Some authors (Omar, Yuso, Zaman, 2017; Mukherjee, Sen, 2019; Gross-Golacka et al., 2020) state that intellectual capital contributes to business sustainability. They concluded that some elements of intellectual capital have a significant importance for enterprise sustainability – employee skills, reliability, knowledge, motivation and health, customer loyalty and satisfaction, reputation and image of an enterprise, information systems and databases, organizational culture. All this underlines the importance of intangible assets for sustainable business.

Bernardi, Demartini and Paoloni (2014) argue that the inclusion of the concept of sustainability in the concept of intellectual capital can be envisaged by segments of intellectual capital - structural capital, human capital, and relational capital. Within the structural intellectual capital, the category of sustainability is environmental capital – eco-product strategy and greenhouse gas emissions strategy. Further, in human capital, health and security and gender can be observed. Finally, the determinants of sustainability within relational capital are corporate citizenship and stakeholder engagement.

Other authors (Cavicchi, Vagnoni, 2017) suggest that the link between intellectual capital and sustainability can be seen across the following elements of intellectual capital:

- Human capital – competences;
- Structural capital – organizational culture, leadership support, collaborations among managers and employees, organizational capabilities, managerial philosophy, advanced technologies;
- Relational capital – cooperation and stakeholder support.

The development of sustainable intellectual capital, from which an enterprise derives various advantages, requires certain investments and efforts of the enterprise management. Lopez-Gamero and his co-authors (2011) describe how sustainable intellectual capital can be achieved. Creating sustainable human capital requires, first of all, publishing an environmental policy. It includes the company's commitment to address specific issues – "pollution prevention, legislative compliance and ongoing improvement" (p. 24). For greater employee involvement, these authors suggest the following: environmental training and meetings, seminars and workshops, employee participation by appreciating their innovative ideas and initiatives. The final goal is to develop employee environmental skills in that way. Sustainable structural intellectual capital includes two components: 1) sustainable organizational capital – organizational structures and organizational culture in accordance with environmental issues; and 2) sustainable technological capital – eco-products, cleaner processes and machinery in the enterprises. Claver-Cortes and co-authors (2007) indicate that sustainable relational capital includes ecological brands, ecological labels and certifications. This type of sustainable intellectual capital is based on different relationships of an enterprise with its stakeholders – customers/clients, investors, society, competitors, suppliers, strategic partners. It requires the involvement of those stakeholders and their knowledge to solve environmental problems. These authors (Claver-Cortes et al., 2007) also use the following terms for this issue - human environmental capital, structural environmental capital and relational environmental capital. They define environmental capital as "part of the "gap" existing between market value and book value" (p. 173). In addition, the concept of green intellectual capital is introduced as well (Chen, 2008).

2. The concept of green intellectual capital

For the business of modern enterprises, the dimension of the environment plays an important role. It means that successful enterprises are supposed to invest in environmental protection and solve environmental problems. In order to meet these goals, enterprises are investing in the development of the so-called green innovations, which are an important part of sustainable intellectual capital.

Chen (2008) analyses the impact of intellectual capital on the competitiveness of enterprises and introduces the concept of green intellectual capital. This author points out the connection between intellectual capital and environmental management, and defines the three components of green intellectual capital – green human capital (knowledge, skills, experience, creativity, commitment of people within an organization), green structural capital (management systems and philosophies, reward systems, IT systems, databases, processes, organizational culture) and green relational capital (relationships of the organization in relation to environmental management and green innovation). *Chen (2008)* proposes certain indicators for monitoring and measuring green intellectual capital by elements (Table 1). This concept of intellectual capital includes intellectual capital in the context of green innovation. Namely, the results of this study highlight that larger investments in »green human capital, green structural capital and green relational capital" strengthen the company's competitive advantage (*Chen, 2008*).

Table 1: Indicators of green intellectual capital

"Green human capital" Chen (2008)	<ul style="list-style-type: none"> - productivity in terms of environmental protection activities - employee's environmental protection competences - green products and services - the degree of teamwork in terms of environmental protection activities - the degree of management support to employees in relation to environmental goals
"Green structural capital" Chen (2008)	<ul style="list-style-type: none"> - a management system for improving the quality of environmental protection activities - profit from environmental protection activities - environmental protection investments in R&D/sales - green innovations - investments in environmental protection facilities - quality of management system for enterprise environmental knowledge
"Green relational capital" Chen (2008)	<ul style="list-style-type: none"> - the level of respect for desires of eco-friendly consumers - the level of relationships stability with suppliers in terms of environmental protection - the level of relationships stability with strategic partners in terms of environmental protection

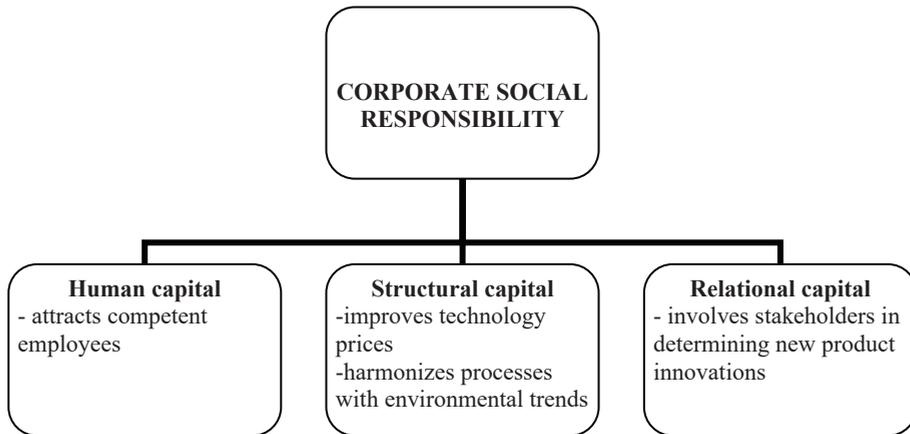
Source: Chen (2008)

Chen and his co-authors (2006) investigated the importance of green innovations to an enterprise competitive advantage. They concluded that there was a positive impact of green innovations (waste recycling, energy-saving technology, pollution-prevention technology) on the competitive advantage of analysing enterprises. In this way, the importance of the green elements of intellectual capital for business performance and business sustainability is pointed out.

3. Corporate social responsibility as a factor of sustainable intellectual capital

In new business conditions, enterprises notice the need to harmonize their business decisions and goals with the interests of the community, environmental issues and to take responsibility for the consequences of their activities. This means that the actions and policies of a company are in line with the expectations of stakeholders, while respecting economic, social and environmental dimensions (Jovanović, 2017). Corporate social responsibility becomes an important factor in resolving ethical and social issues associated with management behaviour and decision-making in an enterprise (Gangy et al., 2019). Environmental issues are the basis of the concept of corporate social responsibility (Li, Toppinen, 2011) which implies that there is a close connection between the concepts of CSR and green intellectual capital.

Figure 1 assumes that corporate social responsibility (CSR) promotes the development of sustainable intellectual capital (Chang & Chen, 2012).

Figure 1: Benefits of CSR for sustainable intellectual capital

Source: Chang & Chen (2012)

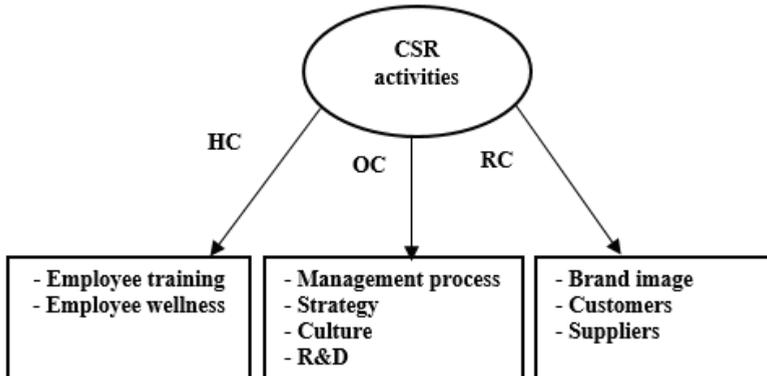
Gallardo-Vázquez, Valdez-Juárez and Lizcano-Álvarez (2019) studied the relationship between CSR and segments of enterprise intellectual capital. They came to the conclusion that CSR initiatives affected the satisfaction and commitment of human intellectual capital of enterprises. On the other hand, satisfied employees were motivated to implement CSR strategies of the enterprise. Moreover, a responsible management of the company was established. Furthermore, CSR encouraged external communications and, as a result, that led to better relations with external stakeholders. It enabled enterprises to obtain greater legitimacy. With respect to structural intellectual capital, CSR strategies can specifically enhance the organizational capital of an enterprise. The improvement of intellectual capital through the implementation of CSR initiatives contributes to the creation of sustainable intellectual capital.

Gangi and co-authors (2019) analyse the impact of CSR engagement on intellectual capital efficiency. Namely, the efficient use of intellectual capital contributes to the development of sustainable intellectual capital. They make a conclusion that the effects of CSR on intellectual capital are based on the following (Gangi et al., 2019):

- 1) CSR increases organizational and individual knowledge of enterprises;
- 2) CSR improves organizational culture by fostering an innovative culture and a culture of trust;
- 3) CSR attracts experts, talented and creative employees;
- 4) CSR strengthens trust in relations with strategic partners;
- 5) CSR improves transparency of business and internal and external communications;
- 6) CSR improves the image and reputation of the enterprises.

Pedrini (2007) found that the concept of sustainability linked CSR activities with intellectual capital of the enterprise (Figure 2). This study included the investigation of the impact of CSR activities on the sustainability of intellectual capital components (Pedrini, 2007): “human capital (HC), organizational capital (OC) and relational capital (RC)”.

Figure 2: Impact of CSR activities on the sustainability of intellectual capital



Source: Pedrini (2007)

The previous figure highlights the positive effects of CSR on intellectual capital. Namely, CSR activities affect employee motivation, skills, loyalty, safety and health, which contribute to sustainable human capital of an enterprise. Also, CSR improves communication, enterprise processes, competitive strategies, culture and environmental R&D activities. Furthermore, CSR engagement encourages brand image and reputation, attracts new loyal customers and improves cooperative relationships (with partners, competitors, suppliers).

Conclusion

In modern conditions, enterprises are required to identify all available resources, especially intellectual, bearing in mind that these resources are invisible and that there is an increasing tendency to report on this component of the company's assets. By raising the visibility of these resources, intellectual resources contribute to sustainable business. Namely, a more efficient use of all forms of resources, and especially intangible resources, contributes to the sustainability of enterprises.

Successful enterprises accept the concept of sustainability in the development of human resources, structural and relational capital. This means that they develop their processes, IT systems, strategies, relationships with stakeholders in a way that respects the needs of the environment. By directing the enterprise knowledge towards solving environmental problems, enterprises adopt the concept of sustainable intellectual capital, which ultimately contributes to their business performance. The goal is to ensure sustainable growth and development of enterprises and businesses in the long run through the adoption of this concept.

Although sustainable intellectual capital implies certain investments in emission and pollution control systems, recycling, eco-technology and eco-processes, the development of this capital provides a long-term market advantage of an enterprise. These are investments that take less into account the short-term goals, and more the long-term orientation and the survival of enterprises.

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P. 23-31

SCIENTIFIC REVIEW PAPER

DOI: 10.5937/ESD2101023M

Received: August 5, 2020

Accepted: October 18, 2020

BARRIERS AND MEASUREMENT OF WORK/LIFE BALANCE OF MANAGERS AND OTHER EMPLOYEES

Abstract

Due to major changes and challenges in the way of conducting business in recent decades, establishing work/life balance of employees and managers has become a very important topic. The aim of this paper is to emphasize the obstacles to successfully establishing this balance, the most important of which being the supportive organizational culture and superiors' communication. Another goal of this paper is to introduce the Standards of Excellence Index as a measure for determining the success of the companies' work/life balance programs for employees and managers within 7 components: leadership, strategy, infrastructure, accountability, relationship building, communication, and measurement. In this regard, this paper presents research results on this index in companies in America, where this index was created.

Key words: work/life balance, Standards of Excellence Index

JEL classification: O15

ПРЕПРЕКЕ И МЕРЕЊЕ УСКЛАЂЕНОСТИ ПОСЛА И ПРИВАТНОГ ЖИВОТА МЕНАџЕРА И ОСТАЛИХ ЗАПОСЛЕНИХ

Апстракт

Због великих промена и изазова у начину пословања у последњим деценијама, усклађивање посла и приватног живота запослених и менаџера постало је веома значајна тема. Циљ овог рада јесте указивање на препреке успешном успостављању овог баланса, од којих су најзначајније подржавајућа организациона култура и комуникација надређених. Још један од циљева овог рада јесте представљање индекса стандарда изврсноности као мерила за утврђивање успешности програма за балансирање живота запослених и менаџера у предузећу у оквиру 7 критеријума: лидерство, стратегија, инфраструктура, одговорност, односи, комуникација и мерење. Са тим у вези, у овом раду су представљени резултати истраживања овог индекса у компанијама у Америци, где је овај индекс и настао.

Кључне речи: усклађеност посла и приватног живота, индекс стандарда изврсноности

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Introduction

As one of the crucial issues in career development, the concept of work-life balance is based on the idea of spending "a sufficient amount of time" on both work obligations and private life activities (Postolov, Bardarova, Magdinčeva-Sopova, & Ristovska, 2019). Work/life balance can be achieved by both putting enough "weight" and focus on work activities, and creating a healthy "counterweight" in the form of personal interests and family activities (Mladenović, 2020). In order to establish work/life balance of employees and managers, companies should develop a supportive organizational culture. Superiors' communication on the created work/life balance programs plays a crucial role here. The offered benefits and programs, such as flexible working hours, work from home, or child care (Bird, 2006) should be presented to the employees and managers in a clear and transparent way. Otherwise, there will be no desired increase in employee and management productivity, and consequently no increase in organizational performance, either due to the lack of information on the new benefits, or due to the lack of understanding of the benefits that the offered programs could bring to the employees and managers.

The research conducted on Serbian companies in the service sector has shown a very low level of work/life balance programs and benefits offered to employees and managers (Stojanović-Aleksić & Bošković, 2017). In addition, offering work/life balance programs does not automatically guarantee their success. On the contrary, the research conducted among UK companies has shown that even after the introduction of work/life balance programs, employees and managers are often unaware of these benefits that companies offer them or they do not want to use these benefits, for various reasons (Thompson, Beauvais & Lyness, 1999). Furthermore, research results of American companies have shown that 56% of employees and managers use work/life balance benefits when offered (Lockwood, 2002). It can be observed that work/life benefits are insufficiently used by both men and women who are focused on developing their careers, but also by single employees and managers who do not have children and family obligations (Kodz, Kersely, Strebler & O'Regan, 1998).

This paper will address some of the most significant barriers to establishing work/life balance of employees and managers, as well as introduce the Standards of Excellence Index as a work/life balance measure.

1. Barriers to establishing work/life balance

The most common barriers to introducing and using work/life balance programs for employees and managers are the following *aspects of organizational culture*: fear of negative career consequences, expected working hours, different perceptions of genders, and support from superiors, colleagues, life partners and family members (Reynolds, 1999).

One of the barriers to establishing work/life balance of employees and managers is often the *fear of negative career consequences* if they use these benefits. Employees and managers are afraid that someone else will take their job if they go on maternity leave or any other type of paid leave - that is exactly why only 3% of US attorneys use these

benefits even though 95% of all US law firms offer various work/life benefits (Kodz, Kersely, Strebler & O'Regan, 1998).

Superiors often expect their subordinate employees and managers to work a certain number of hours daily, stay overtime and finish part of the work at home, after working hours. This attitude towards work is often perceived as a "sign of commitment, loyalty, productivity, competence and motivation" to get promoted in the company (Reynolds, 1999). These *expected working hours* are the reason why employees accept additional work obligations and even refuse to go on vacation or take days off, hoping to be perceived as great potential that deserves work promotion (Beauregard & Lesley, 2008). Companies should understand that overtime work does not indicate a greater work commitment of employees and managers, but rather an inadequate organization or delegation of work tasks. If companies want to help their employees and managers improve their work/life balance, their performance should be evaluated and rewarded based on achieved goals, i.e. results, rather than their working hours. Such a change in organizational culture would encourage employees and managers to value their free time and manage their work and private responsibilities better in order to become more satisfied with their work and private lives.

It is often considered that work/life balance programs are intended exclusively for women, which is supported by the results of a study that has shown that even though work/life imbalance can be observed in both male and female employees, women had a higher level of work/life imbalance (Rose, Hunt & Ayers, 2007). These *different perceptions of genders* do not help men. If women are perceived as being in charge of taking care of the children and household, whereas men are considered to be in charge of working and providing better living conditions for their family, the question arises whether men have a real need to use various work/life benefits that would enable them to spend more time with their families. This gender inequality can be resolved by enabling men, not just women, to go on paid leave to take care of their children and family. This would encourage a greater division of responsibilities between men and women, but it would also require the support of the work environment, as well as a change in public opinion and attitudes of the wider community.

One of the most important factors influencing work/life balance of employees and managers is the *support from superiors* to employees and managers' aspirations and efforts to establish work/life balance. In recent years, superiors have increasingly come to realize that the quality of private life significantly affects the commitment and behavior of employees and managers at work, which has become a good reason for them to support various work/life balance programs in companies, given that work performance of employees and managers ultimately affects company's performance (Nosak & Zubanov, 2013). Support from superiors essentially represents the following "offer": employees and managers are required to provide the greatest possible contribution and energy at work in exchange for interesting work activities, respectful treatment, opportunities for development and training, as well as a working environment that recognizes and enables the company to adapt to individual needs and obligations of each individual employee and manager (Moore, 2007). It is important to take into account whether superiors really understand the impact of work/life (im)balance of employees and managers on their behavior and work engagement, as well as whether superiors sincerely support the implementation of work/life balance programs that would be offered to employees and managers.

Apart from the support from their superiors, the implementation of work/life balance programs for employees and managers can also be affected by the *support from their colleagues*. It is also not uncommon for colleagues to consider employees who use work/life balance programs as less committed, as if they did not deserve a salary increase or work promotion (Beauregard & Lesley, 2008).

In addition to the support from superiors and colleagues, *support from their life partner* also has a significant impact on employees and managers. Partner support is more important in situations in which superiors do not provide support to employees and managers because they do not understand the need for establishing work/life balance. In contrast, for employees and managers who do not receive support from their partners, understanding shown by their superiors reduces their stress levels and leads to greater life satisfaction (Adams, King & King, 1996). This way, one source of support can in some way compensate for the lack of another. The best situation is, of course, having both support from their superiors as well as partner support, which can lead to even greater life satisfaction of employees and managers.

Partner support can be extended to also include *support from family members*, which can also lead to greater life satisfaction and work/life balance of employees and managers (Adams, King & King, 1996).

Only if employees and managers are satisfied in both their work and private lives, will they be able to give their maximum in effort, commitment and energy. Superiors should also encourage employees and managers to use the benefits offered, emphasizing that all people have the need to socialize and improve various aspects of their private lives. By changing the organizational culture and supporting such attitudes, one can expect an increase in overall life satisfaction of employees and managers, and consequently an increase in productivity and performance of the company (Lazăr, Osoian & Rațiu, 2010).

2. Standards of excellence index as a measure of work/life balance

The Standards of Excellence Index is a modern performance measure that enables companies to assess the existing organizational culture in terms of the level and quality of the implemented work/life balance programs for employees and managers (Harrington & James, 2005). This assessment begins with a survey of employees and managers on the support of organizational culture towards their work and private goals. The Standards of Excellence Index includes *7 components: leadership, strategy, infrastructure, accountability, relationship building, communication, and measurement* (Harrington & James, 2005).

1) *Leadership* - The Standards of Excellence Index was created to assess the “extent to which leaders understand, support and communicate the importance of work/life balance” of employees and managers (Friedman & Lobel, 2003). The evaluation of the leadership component is obtained by asking respondents to assess the extent to which leaders are committed to developing an organizational culture that supports work/life balance of employees and managers.

2) *Strategy* - The strategy for establishing work/life balance of employees and managers should be aligned with the vision, goals, and priorities of the company

(Bailyn, Fletcher & Kolb, 1997). In addition, this strategy should address potential barriers to achieving work/life balance.

3) *Infrastructure* - The company should support the strategy for establishing work/life balance through appropriate infrastructure - by providing the necessary financial, technological and human resources, creating and implementing adequate policies and procedures, as well as by organizing training for employees and managers regarding the implementation of these policies (Harrington & James, 2005).

4) *Accountability* - The success of establishing work/life balance is a joint responsibility of superiors, employees and managers. Superiors must balance between the company's business goals on the one hand, and career and private goals of employees and managers on the other hand. Moreover, employees and managers must understand their role and responsibility in achieving the company's goals, but also in implementing work/life balance programs.

5) *Relationship Building* - The company should promote the organizational culture built on mutually respectful relationships with its employees, managers and other stakeholders (Mirvis, Pitt-Catsouphes, Lewis & Lichtfield, 1997). Furthermore, the company should strive to gain trust and support of all stakeholders - employees, managers, customers, investors, and the community through active engagement and agreement.

6) *Communication* - The strategy for establishing work/life balance of employees and managers should be constantly promoted in the company's internal communication. This can improve understanding of work tasks, increase motivation and provide feedback on the performance and social needs of employees and managers (Bailyn, Fletcher & Kolb, 1997). Employees often do not express their work/life balance needs out of fear of not seeming committed enough to the company or not being offered a work promotion, which leads to nervousness and reduced satisfaction, productivity, and retention of employees and managers (Bailyn, Fletcher & Kolb, 1997). In order to prevent these negative consequences, it is important that the company understand the needs of its employees and managers, and adequately communicate the strategy for establishing work/life balance throughout the company.

7) *Measurement* - The company should strive to constantly improve work/life balance of its employees and managers through constant assessment and measurement of the implementation of its work/life balance strategy. It is important to assess the company's "general health in terms of productivity, satisfaction, retention, and utilization of various work/life benefits" of employees and managers (Harrington & James, 2005). This way, measurement enables the perception of the company's strengths and weaknesses, as well as the comparison of the implemented benefits in the company with other companies.

The Standards of Excellence Index enables measurement of the company's efforts to establish work/life balance of its employees and managers by "dividing organizational performance into smaller components and focusing on tangible measures" (Harrington

& James, 2005). Measuring the success of the implementation of the strategy for establishing work/life balance of employees and managers can help justify spending resources for the implementation of this strategy.

Table 1: Some of the statements that are assessed in the company for all 7 components of the Standards of Excellence Index

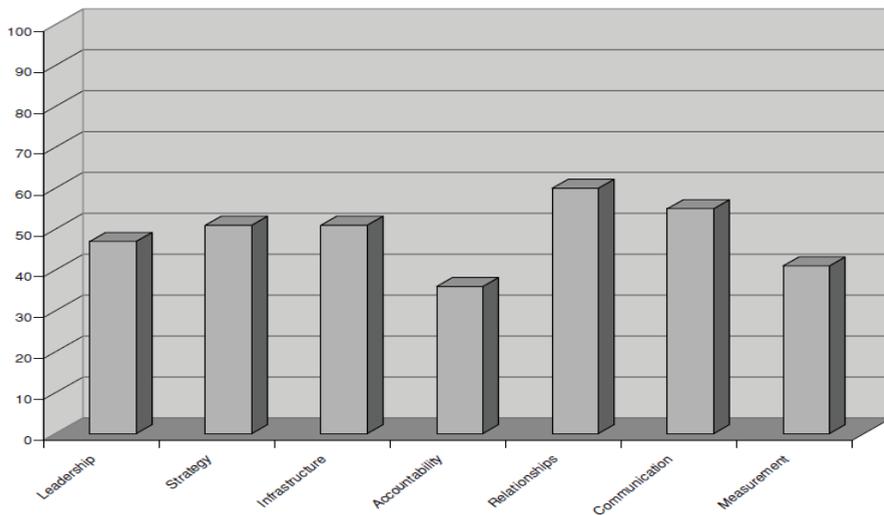
1) Leadership:
1.1. Leaders create an organizational culture that values work/life balance as a component of organizational identity.
1.2. Through their behavior, leaders create an environment supportive of establishing work/life balance.
2) Strategy:
2.1. The company has a strategic plan for establishing work/life balance of employees and managers.
2.2. The company creates long-term work/life balance programs and benefits.
3) Infrastructure:
3.1. Leaders are trained on implementing work/life balance strategies and helping employees and managers resolve work/life balance issues and conflicts.
3.2. Sufficient financial and human resources are allocated for work/life balance programs.
4) Accountability:
4.1. Leaders are responsible for balancing company's business goals with employees and managers' work/life balance needs.
4.2. Leaders are responsible for implementing work/life balance programs and encouraging employees and managers to use them.
5) Relationship Building:
5.1. Work/life balance professionals work with employees and managers in the company to integrate work/life balance into its organizational culture.
5.2. The company collaborates with work/life balance professional organizations to provide efficient work/life balance solutions for its employees and managers (e.g. child care, elderly care, work/life balance associations...).
6) Communication:
6.1. Leaders identify important work/life balance issues by communicating to the company's employees and managers.
6.2. The company communicates and educates its employees and managers on available work/life balance programs and benefits.
7) Measurement:
7.1. The company monitors the use of its work/life balance programs.
7.2. The company monitors the effect of its work/life balance programs on its performance measures (e.g. productivity, work efficiency, quality of work, work satisfaction...).

Source: Adapted from: Harrington, B., & James, J. B. (2005). The Standards of Excellence in Work/Life Integration: From Changing Policies to Changing Organizations. In Pitt-Catsouphes, M., Kossek, E., & Sweet, S. The Work and Family Handbook: Multi-Disciplinary Perspectives, Methods and Approaches (pp. 665-683). Mahwah, NJ: Lawrence Erlbaum Associates.

Representatives of human resources sectors of the most successful US multinational companies were invited to assess their companies regarding the 7 components of the Standards of Excellence Index (Harrington & James, 2005). These ratings were then used to create a US national database, which can be used to compare companies by the success of the implementation of strategies for establishing work/life balance of employees and managers. However, this assessment of companies is based on subjective opinions of HR representatives, so the evaluation was limited by their knowledge, experience, and perceptions of the company.

For each of the 7 components of the Standards of Excellence Index, specific statements are defined, and the degree of their implementation and existence in the company is assessed using the Likert scale, from grade 1 - “not at all” to grade 5 - “to a large extent” (Table 1). All grades for each of the 7 components are then summed up, and an average grade for each individual component is calculated, representing the overall success of their implementation in the company. The maximum total score for each component can be 100.

Figure 1: Average grades for 7 components of the Standards of Excellence Index from the US national database



Source: Harrington, B., & James, J. B. (2005). *The Standards of Excellence in Work/Life Integration: From Changing Policies to Changing Organizations*. In Pitt-Catsoupes, M., Kossek, E., & Sweet, S. *The Work and Family Handbook: Multi-Disciplinary Perspectives, Methods and Approaches* (pp. 665-683). Mahwah, NJ: Lawrence Erlbaum Associates.

Figure 1 shows average grades for 7 components of the Standards of Excellence Index from the US national database, revealing certain strengths and weaknesses of American companies. The components with the highest average grades are relationship building (average grade 60) and communication (average grade 54.7), which shows that the greatest progress in American companies has been made in these areas. The components with satisfactory implementation in companies, with room for improvement, are strategy (average grade 50.8)

and infrastructure (average grade 50.5). The components with the lowest average grades are leadership (46.5), measurement (40.6) and accountability (35.5). Respondents feel not only that superiors do not provide enough support to employees and managers in establishing work/life balance, but also that they are not held accountable for the implementation of work/life balance programs or for balancing between the company's business goals and employees and managers' private goals. Respondents also have the impression that many measurement-related issues have not been given enough attention in companies (many work/life balance factors are still not measured and monitored). Low measurement grades indicate companies' failure to link work/life balance programs to employees and managers' performance. All this indicates significant weaknesses of companies, which need to be addressed and improved in the future.

It should be noted that the Standards of Excellence Index was primarily created as a tool for companies' self-assessment, learning and improvement, rather than as a tool for ranking or rewarding companies (Harrington & James, 2005). In other words, this index serves companies in assessing the success of their efforts and programs for establishing work/life balance of their employees and managers, as well as in planning future programs and activities to support employees and managers in balancing their work and private lives. The Standards of Excellence Index can therefore indicate both "strengths (areas of excellence) and weaknesses (areas for improvement)" of the company, enabling the company to identify priorities, i.e. the most critical areas for improvement that should be addressed first. It can be concluded that the Standards of Excellence Index shows the extent to which companies have integrated work/life balance programs for employees and managers into their human resource management strategies, but also the extent to which these programs are practically implemented in their everyday business.

Conclusion

In today's way of conducting business, establishing work/life balance has been gaining more and more importance. There are some barriers to that, specifically the lack of support of the organizational culture. Developing an organizational culture that supports establishing work/life balance of employees and managers involves changing the way that both superiors and managers think about their work and work/life balance, with the aim of making work/life benefits acceptable for everyone, regardless of gender, age, years of work in the company, or private obligations. As a means of measuring work/life balance in a company, the Standards of Excellence was created and introduced in American companies, which is presented in detail in this paper.

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P. 33-46

SCIENTIFIC REVIEW PAPER

DOI: 10.5937/ESD2101033V

Received: October 10, 2020

Accepted: December 28, 2020

PROBLEMS AND POSSIBLE DIRECTIONS OF THE SUSTAINABLE RURAL DEVELOPMENT OF REPUBLIC OF SERBIA

Abstract

Sustainable development of rural areas is very significant for the economic development of the Republic of Serbia. Reduction in the number of citizens in rural areas and neglect of agriculture in the previous years have led to numerous economic and social problems. The most important among them include the unfavorable demographic trends, undeveloped infrastructure, small agricultural farms that are not market oriented, a low productivity level of agriculture and a low income per farm, a large share of agriculture in rural economy, a low degree of diversification of rural economy, insufficient investment into rural areas, etc. Such condition is unsustainable because it causes more difficult life and work conditions in rural areas. Rural areas in the Republic of Serbia are the subject of this analysis. The aim of the paper is to examine possibilities of further development of rural areas in Serbia. The methods which will be used in the paper include the methods of synthesis, analysis and compilation.

Key words: sustainability, rural areas, underdevelopment, rural development.

JEL classification: Q20, Q40, Q50

ПРОБЛЕМИ И МОГУЋИ ПРАВЦИ ОДРЖИВОГ РУРАЛНОГ РАЗВОЈА РЕПУБЛИКЕ СРБИЈЕ

Апстракт

Одрживи развој руралних подручја представља велики значај за привредни развој Републике Србије. Смањење броја становника у руралним подручјима и запостављање пољопривреде годинама уназад довело је до бројних економских и социјалних проблема. Најважнији међу њима су неповољни демографски трендови, неразвијена инфраструктура, уситњена пољопривредна газдинства која нису тржишно орјентисана, ниска стопа продуктивности пољопривреде и низак приход по газдинству, висок удео пољопривреде у руралној привреди, низак степен диверзификације руралне економије, недосвоље инвестиције у рурална подручја и сл. Такво стање је неодрживо јер узрокује све теже услове живота и рада у руралним подручјима. Предмет анализе су рурална подручја

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у Републици Србији. Циљ рада је испитати могућност даљег развоја руралних подручја у Србији. Методе које ће бити коришћене у раду су метод синтезе, анализе и компилације.

Кључне речи: *одрживост, рурална подручја, неразвијеност, рурални развој.*

Introduction

In modern conditions sustainable development becomes the main concept of development. The concept of sustainable development connects the care for the living world on the planet and the preservation of the natural capacities with the social and economic challenges. Although there is no unique and universally accepted definition of sustainable development, there is global awareness about the need to introduce this concept. The most frequently used definition was created by the World Commission on Environment and Development back in 1987. According to this definition, "sustainable development is an economic and social development which meets the needs of current generations without jeopardising the opportunities of future generations to meet their needs" (WCED, 1987, p.43).

Rural development is one of the catalysts of sustainable development. Development of economic activities in rural areas plays a significant role in the development of every country, but they also have a very important role in the preservation of environment since they represent the places which are inhabited by rural population. Sustainable rural development is a mixed developmental concept which is created by an integral merging of sustainable and rural developments and represents a particular combination of their basic elements.

The concept of sustainable rural development includes three main dimensions of developmental sustainability: economic, social and ecological dimensions of rural development (Stojanović, Manić, 2009, p.43.). The economic dimension of rural development refers to the economic growth through the achievement of vitality, efficiency and effectiveness of the economic activity in the rural areas. The social dimension of rural development refers to the social progress through the improvement of the human potential and the creation of equal opportunities for a living in rural areas. The ecological dimension of the rural development refers to the protection of environment through the management of natural resources and the pollution in rural areas. Ecological sustainability and economic sustainability are basic assumptions of the survival of rural areas. The society expects from rural population to take care of and protect the environment. Therefore, one of the goals of sustainable development is the development of highly competitive agriculture with regard towards the ecological question (Đekić, Jovanović, Krstić, 2011, p. 634.).

The rural areas of the Republic of Serbia have certain resources for a successful application of the concept of sustainable rural development. However, there are also numerous limiting factors of development, so there is a need for large structural changes and significant investments into this field. The aim of this research is to analyse possibilities of implementation of the concept of sustainable development in rural areas in Serbia. The purpose of the paper is to show the state in which the Serbian rural space is currently and to explore the possibilities for its improvement.

1. Main characteristics of the rural areas in the Republic of Serbia

A rural area is a specific economic, social and spatial area, i.e. it is a specific segment of economy, society and space. Not only in Serbia, but also in Europe, rural areas occupy significant amounts of territory (Đekić, 2010, p. 207). According to the definition of OECD, rural areas occupy 85% of the territory of Serbia, more than 50% of the population live in them and they constitute more than 40% of the GDP of Serbia. The population density in rural areas is 63 per km² and it is smaller than the national average for a third (Bogdanov, 2007, p.31).

The rural areas of Serbia fulfil all the prerequisites for a successful implementation of the concept of multifunctional agriculture and integral rural development: the wealth of natural resources, the diversity of rural areas, the preserved rural ambient spaces and tradition, and the unused potential for the development of non-agricultural activities in villages (Ristić, Vujičić, 2011, p. 65). However, there are also numerous limitations: "negative demographic trends, undeveloped infrastructure, small and non-market oriented agricultural farms, a low productivity level of agriculture and a low income per farm, a large share of agriculture in the rural economy, a low degree of diversification of the rural economy, insufficient investment into the rural areas, high unemployment ratio, insufficient capacities for trade, etc." (Ristić, 2013, p. 232).

"The rural areas of the Republic of Serbia are characterised by a high degree of differentiation in regard to: the natural, infrastructural and other conditions for agricultural production and the development of other economic activities, the proximity of the market and the conditions for placing a product on the market, as well as the size and the morphology of communities." (Bogdanov, 2007, p. 60). That is the reason why rural areas, within the Strategy of the Rural Development of the Republic of Serbia, are divided in the following manner: (MAFWM, 2009, p. 6-9)

Region 1 – highly productive agriculture and integrated economy;

Region 2 – economy sectors typical for smaller urban areas with agriculture, in which there is an intensive use of workforce;

Region 3 – branches of economy oriented towards the use of natural resources, primarily mountain areas;

Region 4 – large tourist capacities, but bad agricultural structure.

Therefore, development possibilities of rural areas are different and they depend on: *the geographic position and accessibility* (areas which are closer to urban areas, important roads, processing capacities and the market have development advantages), *natural conditions and potentials* (altitude, climate, soil, forest cover, biodiversity, water resources, mineral resources), *human and material resources* (infrastructure, economy-related capacities, the number and the level of expertise of workforce, the degree of development of public services, the size and morphology of the region) and *the social capital and interactions* (cultural particularities, the attitude towards tradition, modernisation, horizontal and vertical cooperation, etc.) (Popović, 2011, p.35).

On the basis of the SWOT analysis (table 1), which includes the rural areas of Serbia, there are advantages which can be transformed into possibilities and contribute to a more dynamic growth and development of these rural areas. It can be noticed that the weaknesses are more dominant in relation to the advantages, and that the rural areas

of the Republic of Serbia are expecting a large number of chances and dangers from the surrounding environment that they will have to face. (Ristić, 2013, p. 232).

Table 1 shows that the strengths of the rural areas are reflected in the favourable geographical position, diversity and attractiveness of the ambient, rich cultural heritage, development of the rural tourism, etc. As far as the weaknesses and threats are concerned, a significant part includes a lack of funds, low infrastructural equipment, unfavourable social structure, socio-economic and political instability, etc.

Table 1. The SWOT analysis of the sustainable development of the rural areas

STRENGTHS	WEAKNESSES
Geographic location;	Lack of financial funds;
Diversity and attractiveness of the rural ambient;	Unfavourable demographic trends;
Biodiversity;	Inactive job market;
Rivers, lakes, thermal springs, and forests;	Unfavourable social structure;
Rich cultural heritage;	Unused possibilities of the diversification of income at households;
Preservation of traditional knowledge and technology;	Insufficient utilisation of cultural heritage;
Gastronomy and hospitality of people;	Low infrastructure equipment;
	Restricted access to social services;
	Insufficient business integration;
	Inadequate volume/quality of production;
	Inadequate waste management;
OPPORTUNITIES	THREATS
EU integration;	Socio-economic and political instability;
Inclusion into EU funds;	Climate changes;
Sustainable use of resources;	Irrational use of natural resources;
Economic diversification;	Competition on the national and the international markets;
Development of small and medium enterprises and entrepreneurship;	The lack of qualified workforce;
Development of rural tourism;	Insufficient availability of financial resources;
Organic food, traditional food and indigenous products;	Insufficient development of infrastructure;
Export;	

Source: MAFWM, 2009

2. Problems of the rural areas in the Republic of Serbia

In modern conditions, the rural areas of the Republic of Serbia are facing great challenges which are the consequence of both the socio-economic occurrences it has faced and the sociological changes experienced by the people from these rural areas. In this part of the paper, the focus is on the problems which are characteristic of the rural areas of the Republic of Serbia:

- Depopulation and unfavourable age structure;
- Unfavourable educational structure of the rural population;
- Inadequate economic structure,
- Traditional structure of production and disorganisation of agricultural producers;
- Unemployment, low income and poverty;
- Insufficiently developed rural infrastructure;

- Devastation of material resources;
- Lack of appropriate institutional, organisational and planning support for the rural development;
- Irregular and poor incentives proposed to the rural areas.

Depopulation and unfavourable age structure are the most significant demographic characteristics of the rural areas of the Republic of Serbia which have occurred as a consequence of placing more and more emphasis on urbanisation and industrialisation. (Spalević, 2009, 134) Tendency towards more and more of the so-called internal migration of the population from rural into urban areas, a low rate of the population growth, strengthening of economic activities and certain political events have influenced the current unfavourable structure of population in the rural areas.

Besides the decrease in the number of the total population of Serbia during the period between 2002 and 2011, the rural population has also declined. In the period from 2002 to 2011, the rural population has decreased by 10.9%. According to the results of the census, the rural population makes up 40.6% of the total population of Serbia (MAFWM, 2018). From a regional aspect, the most expressed decrease in the rural population has been noted in the rural areas of South and East Serbia. Depopulation trends also lead to more expressed gender differences. "Namely, the decrease in the number of people in the rural areas is more expressed with female than male population" (Đurić, 2018, p.71). The departure of young women from the rural areas directly jeopardises the survival of the village, because women perform multiple functions in the development of the village: working at an agricultural property and its household, giving birth, i.e. the population rebirth of the village, and maintaining the family and giving men the opportunity to start their families and have heirs.

The change in the age structure of the population in Serbia has moved towards the lower share of the young and the increase in the number of old people. The median age of the rural population is 41.6 years, and in more than 200 villages there are no people younger than 20 years (www.minpolj.gov.rs). The causes due to which the young leave agriculture and rural areas are: the decrease in agricultural production, hard labour in agriculture, lack of security in the individual sector in agriculture, production risks. The age structure of the population in the rural areas is significantly unfavourable in central, and especially the south-eastern parts of the country, in relation to the regions of Belgrade and Vojvodina (MAFWM, 2018, p. 19).

The depopulation trend is accompanied by a parallel process of deagrarianization of the rural areas, i.e. the lower share of agricultural population in the total population. According to the census from 1981, agricultural population made up around 25% of the total population, while in only two decades, the agricultural population decreased to around 11% of the total population of the Republic of Serbia (MAFWM, 2018, p.19).

Educational characteristics of the rural population are significantly more unfavourable than the characteristics of the urban one. Namely, in the rural population, there are predominantly people with high-school education (42.4%), which is a significantly higher level in relation to those who only have an elementary school diploma (27.7%) or do not have any formal education (23.4%) (MAFWM, 2018, p.19). Such educational structure reflects negatively on the acquisition and implementation of new technologies in agriculture, innovation, entrepreneurship and all other segments which secure progress of

this economic activity and rural environment in general. If the analysis of the educational structure of the rural population is conducted by taking into account the gender, the situation is even more unfavourable. Within the rural female population, more than half are individuals without any qualification, i.e. without any education or they only finished elementary school (Đurić, 2018, p.73). A digital gap between rural and urban areas is expressed. Only 20% of the rural population is computer literate and 14% partially knows how to work on a computer, while nearly 66% is still computer illiterate. The presence of a broadband internet connection is 52.4% in urban population, and 28.5% in rural population. This has a negative effect on the quality of the workforce and the overall business the rural areas (Government of the Republic of Serbia, 2014, 39).

The economic structure of the rural areas of Serbia depends largely on natural resources. The participation of the agricultural sector is particularly significant. Also, mining and energetics, and a small share of tertiary sector are represented. Natural conditions enable the development of intensive agriculture. It has, as such, been developed in Vojvodina, while its extensive character has developed in the mountainous regions (MAFWM, 2018, p. 20).

A significant problem occurs with the traditional structure of production and disorganisation of agricultural producers so that local communities do not have autochthonous, recognisable and competitive products, which can be successfully promoted on the global market. Such condition is unsustainable because it causes, in the local environments, more and more difficult conditions for living and working, the decay of the existing agricultural households, the loss of function of agricultural land, economic and social decay, the loss of identity of the local communities, exposure to harmful occurrences, devastation of cultural and traditional heritage, bad economy management, unemployment, etc. (www.invest.negotin.rs).

Unemployment is an important problem in rural areas. Although rural economy has a high unemployment rate, it is, however, in a somewhat more favourable position than the urban areas (MAFWM, 2011, p.10). The reason for this is the fact that rural environments provide more opportunities for employment of individuals with lower education, which refers particularly to their work in agriculture. A dominant part of the actively working rural population in Serbia is working in agriculture (Bogdanov, 2007, p. 32).

The incomes of the rural households largely (35-42%) come from the incomes earned due to employment, and pensions occupy the second place (Government of the Republic of Serbia, 2014, p. 40). For most small agricultural farms, agriculture does not provide a stable source of income. In order to reduce the level of business risk and to stabilise income, these farms are mostly oriented towards a diverse structure of production. On the other hand, those agricultural farms with a significant scope of agricultural work, higher prevalence of younger agriculturally-oriented working population, and a better position on the market, are primarily oriented towards greater specialisation of its production.

In the Republic of Serbia poverty is significantly higher in the rural areas. Rural population, which is more exposed to poverty, mostly include: farmers in the mountainous regions, elderly and single-person households, internally displaced individuals in the rural areas, employed rural population who do not earn their income from agriculture, or they earn incomes from agriculture, but not outside of it (Ristić, 2018). Regional differences in the distribution of rural poverty are significant and they follow the relation which exists among the regions when it comes to the total poverty: the situation is the least favourable

in South and East Serbia, and more favourable in the AP Vojvodina (Government of the Republic of Serbia, 2014, p. 42).

The rural infrastructure in the Republic of Serbia is not developed enough. Rural areas are characterised by a low number of roads, poor communal infrastructure and other important elements of the standard of living. The infrastructure on the municipal level is more or less developed with great potential for further development; however, it is also accompanied by large limitations such as a low amount of information about the needs, characteristics and benefits of the rural infrastructure, which contributes to the unresolved question of the water supply system, telecommunication and other problems that prevent further development (MAFWM, 2011, p. 23).

The road infrastructure is not distributed evenly on the territory – many areas are far away from the main roads and highways. The current state of the water-management infrastructure is unfavourable, which is also confirmed by the fact that only around 5% of agricultural lands are equipped for irrigation. The communal standard of villages lags behind the standard in the cities. When it comes to supplying the population with drinking water, it is pointed out that 40% of the population uses water from their own wells (Spalević, 2009, p.137). A significant problem of the rural areas is also the sewage system. The transportation of garbage and other solid waste relies on the individual activity, i.e. landfills are formed on the sides of the roads, rivers, near the villages, and they represent a significant ecological problem. The condition of the objects of public services is unsatisfactory on the entire rural territory of Serbia. The work of the secondary rural services such as preschool institutions, postal offices, banks, sports halls has been evaluated as the worst. Very often, several rural areas are oriented towards a single primary school while there are almost no preschool facilities (Spalević, 2009, p.138).

“According to the results of the 2012 census, there are 631,522 agricultural farms which use 3.437 million hectares of agricultural land. The average size of the used land per farm is 5.4 hectares” (MAFWM, 2018, p.77). “Among the registered agricultural farms, 99.6% of them are owned by individual natural persons, who use 82% of the territory. The average size of agricultural farms is 4.5 hectares and it significantly varies among regions. The other 0.4% of farms are owned by legal entities which use 16% of the territory and have an average size of 210 hectares per farm” (Kvrgić, Ristić, 2018, p.32, according to: MAFWM, 2014, p. 10). Almost one half of the farms which are registered in the form of legal entities that perform agricultural activities are operating in the region of Vojvodina, while the form of individual entrepreneurship of this activity is mostly present in the regions of Šumadija and West Serbia (MAFWM, 2018, p. 21). “Therefore, there is a problem of too many small plots of land on the farms owned by families. The average number of plots per farm is over 6, with the average size of 0.98 hectares per plot” (Kvrgić, Ristić, 2018, p.32). Around 77% of the total number of agricultural farms on the territory of Serbia are livestock breeders. In the decades to come, the number of farms is expected to drop down further, due to aging and vanishing of households without heirs.

The rural areas of Serbia are characterised by degradation of ecological integrity, i.e. devastation of material resources – pollution of waterways and exhaustion of water sources, pollution by solid waste, decay and impoverishment of the recognisable architectural heritage, devastation of agricultural and forest lands, uncontrolled changes in the soil treatment, uncontrolled deforestation, reduction of biodiversity, ecological problems

caused by increased pressure and the use of space due to additional activities (rural tourism, production and processing – small enterprises) (Republic Office for Development, 2009, p. 25).

The rural areas of the Republic of Serbia are facing the lack of appropriate institutional, organisational and planning support for the rural development, i.e. spontaneous and unplanned urbanisation, an unclear strategy and policy of development of the rural areas, the lack of planned restructuring of villages, the significant lack of planning, project, professional civil engineering and inspection activities in the rural areas, and an insufficiently developed information system (Republic Office for Development, 2009, p.25).

In addition, there are poor, irregular and unsystematically created incentives for our rural areas from a poor national budget and an even poorer agricultural budget, which leads to an obvious conclusion that the main obstacles for the development of the Serbian rural areas are systematic and structural, as well as deep and permanent (Mitrović, 2015, p.210). The solution to the problem of rural development should be sought through an integral approach, which requires a multi-sector cooperation at all levels (local, regional and national), and a combination of measures that could be the jurisdiction of the ministries, regional or local authorities. Besides this, it is necessary to define a programmed framework, which will contain clear goals, expected results, and clear establishment of indicators and their monitoring in order to review successfulness and, if needed, to consider corrective measures.

3. Possible directions of the sustainable rural development in the Republic of Serbia

Finding opportunities to improve the condition of the Serbian rural areas is not simple, and even more developed countries have not been able to solve the aforementioned problems although they have a more proactive policy of rural development than the one in Serbia. The main aim of the development of the villages and rural areas of the Republic of Serbia is the increase in life quality in rural areas through preservation, renovation and sustainable development of their economic, social and ecologic vitality, as a result of decentralisation of cities and municipalities (Government of the Republic of Serbia, 2010, p.134). The following points could be singled out as possible directions of the sustainable rural development in the Republic of Serbia:

- Renovation and development of rural infrastructure;
- Stimulation of agriculture based on knowledge, i.e. organic agriculture;
- Establishment of cooperatives;
- Development of rural tourism;
- Production and use of renewable sources of energy;
- Development of the agro-business system;
- Development of small and medium businesses;
- Education on sustainable rural development;
- Improvement of legal regulations.

“An important priority for the sustainable rural development is *the improvement of the rural infrastructure* (roads, water management, sewage, electrical energy, and

information and telecommunication services).” (Ristić, 2013, 242) Due to the funds from the National Investment Plan for agriculture in Serbia, the projects of renovation and construction of village infrastructure are being realised, which also includes construction and renovation of water supply and sewage networks, reinforcement of the power grid, construction of agribusiness centres, reconstruction of roads, etc. (Đekić, 2010, p.207). Besides the National Investment Plan, a part of the activities on the development of rural infrastructure is funded from the funds of the Ministry in charge of the economic activities, donation projects and local self-government units.

Research shows that agriculture which is based on knowledge, i.e. agriculture which produces quality foods, organic agriculture, indigenous products with the protected geographical origin, traditional specialties, as well as functional food for the prevention or reduction of the risk of certain diseases, creates opportunities for the development of industry, transport, storage, trade, services and other economy sectors in the rural areas (Ristić, 2013, p.238).

Since it is socially, economically and ecologically accepted, organic agriculture can contribute to the sustainable development of rural areas. (Ristić, 2013, 243) “According to the data from the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia, the organic production in 2017 took place on the total territory of 13,423 ha. The arable lands included in organic production in 2017 were 11,874.8 ha” (Organic Agriculture in Serbia 2017). Vojvodina is the region with the largest share of lands which are included in organic production, followed by the regions of South and East Serbia, and then, the regions of Šumadija and West Serbia (Organic Agriculture in Serbia 2017). In the period to come, the state needs to stimulate investments into this field, while it should encourage the production of products which are scarce in the world, especially in the EU.

Cooperatives have an important role in renovation and sustainable development of rural areas. However, the programmes of support for the cooperative sector, which have been provided by certain ministries in the previous years, have been operating on an ad-hoc principle, and they have been unsynchronised and systematically disorganised. Some of the key problems are: unresolved property relations, the question of cooperative property as a collective mode of private property, agricultural cooperatives in the Republic of Serbia do not have their own processing capacities, they have a harder access to the capital market, cooperation among cooperatives is not developed, etc. In the modern conditions, there is a growing number of associations but their power of negotiation is mostly low due to their dependence on the processing industry (Government of the Republic of Serbia, 2014, p.33).

In order to economically strengthen rural areas, it is necessary to create an environment that would increase work motivation of people. In this sense, the development of incentive programmes is needed in order to contribute to the introduction of new technologies and innovation which opens up space for entrepreneurship in which young people would participate. The priorities of development are shifted from agricultural to non-agricultural activities such as tourism, eco-industry, craftsmanship, etc.

The development of *tourism* in rural areas is an example of activities that can significantly contribute to achieving the goals of sustainable rural development. The potential in the form of natural and cultural assets can be significantly preserved and used in a sustainable way with the help of tourism in rural areas. Sustainable rural tourism produces revenue on a local level and integrates local communities with the aim of improving the quality of life and reducing poverty, it protects natural and cultural goods

such as biodiversity, cultural heritage and traditional values, supports understanding and tolerance among cultures, aspires to greater energy efficiency and maintaining a healthy climate, avoids overconsumption of water and reduces the production of waste to the smallest possible amount.

Serbia has the base of the rural tourism, which has been developed over many years, especially in the West Serbia, Vojvodina and Central Serbia. The largest part of the territory of Serbia is rural where there are the most natural goods, as well as significant potential in the form of anthropogenic. These resources are extremely attractive for the development of rural tourism experience. The natural surrounding represents one of the strongest resources of Serbia and it should be protected and improved through the responsible development of tourism (The Master Plan of the Sustainable Rural Tourism in Serbia).

Rural tourism can play a significant role in the diversification of rural economy. On that way, tourism contributes to the increase revenue, improvement of the quality of life, preservation of the cultural heritage. With higher incomes much more can be done with nature conservation. Therefore, it is necessary: to invest in rural and tourist infrastructures, to adapt and build housing capacities which are of specific appearance and architecture, to bring investments into rural areas with a significant tourist potential, to educate those who work in rural tourism, to promote rural tourism at all levels, to strengthen public-private partnerships, to organise manifestations, together with the selling of specific products of a certain region (especially gastronomic and home-made products), to introduce additional attractive content, to adjust tourist offers to the specific demands of health, children, youth and family tourism, to encourage the education of women who live in rural areas so that they could be much more engaged and employed in rural tourism through old crafts and homecrafts. (Ristić, 2013, 244)

The production and use of renewable sources of energy (bio-mass, bio-gas, bio-diesel, energy from the sun, wind, water, etc.) are being developed intensively, thus providing an additional income, but also employing people and providing other economic gains. It is the ecological reasons for the use of this type of energy which are emphasised. There is energy potential in the renewable sources of energy in the Republic of Serbia, but it is mostly unused. In Serbia, the largest potential, as a source of energy from renewable sources, belongs to bio-mass. However, agricultural producers are mostly led by the idea that the largest share of biomass should be ploughed in order for the soil to recover from the extraction of so many matters and thus prepare for a new season. On the other hand, in livestock breeding, biomass is most often used for animal bedding. The production of bio-gas is growing in Serbia, although it requires a lot of money to make and equip the gas facility. The Republic of Serbia encourages the construction of mini hydro-electric power plants which produce up to 10MW and it refers to them as the Green kilowatts. However, due to the economic reasons, there are not many farms in Serbia which use waterways to produce renewable sources of energy, the water is used for irrigation and livestock watering. The greatest potential for the utilisation of the wind energy is in the Košava region of Serbia.

“In order to stimulate broader applications for renewable sources of energy, it is necessary to create an incentive regulatory framework, to subsidise the introduction of an adequate equipment and facilities to use these sources of energy, to provide tax benefits and to educate the staff due to the lack of knowledge and experience in the production and use of alternative sources of energy in our country.” (Ristić, 2013, 244)

One of the directions of development can be *to connect agricultural production with the processing industry, and service organisations, thus building an agribusiness system*. Employing workers from rural areas in that capacity leads to an increase in the number of the so-called mixed households and the stay of a certain number of residents in these areas (Đekić, 2010, p. 206).

The development of the rural areas of the Republic of Serbia also depends on mutual activities of both social and private sectors. Besides supporting the economic development, *The development of small and medium sized businesses* will also increase employment. The advantages of SME are reflected in greater flexibility, quicker adoption of innovations, application of the methods of direct control and worker motivation, simple organisational structure and the fact that they can optimally be adapted to the comparative advantages of the region. Support to the development of SME would be enabled by tax exemptions, as well as help in the form of certain instructions and business-related information (Đekić, 2002, p.143).

Sustainable rural development, due to its complexity and multidimensionality, encompasses a wide spectrum of skills and disciplines. This is why education is one of the important factors in achieving sustainable rural development. It is important to provide knowledge and enable the spread of awareness of the importance of behavior and business in a way that will ensure sustainable rural development. It is necessary to educate the inhabitants of rural areas about all the consequences of irresponsible behavior and actions that endanger future development. The education for sustainable rural development implies learning about certain skills which need to be mastered in a practical way in order to conduct sustainability. This kind of education encourages creativity to make new development solutions in the domain of sustainability. Better engagement of the agricultural advisory service, as well as other organizations that can provide professional services and consultations is very important.

Institutional support is very important, which provides an environment for numerous improvements in behavior and action in the direction of sustainable rural development. There is a need for coordinated work of a number of institutions in the implementation of activities to ensure sustainable development. The organisations and institutions which have a significant role in sustainable rural development are various ministries and government organs led by the Ministry of Agriculture, Forestry and Water Management, which are responsible for sustainable rural development. Important role in coordinated activities have ministries and agencies responsible for the economy and regional development, finance, infrastructure, education, the environment, work and social politics, tourism, local government, as well as many more.

Conclusion

In accordance with the aim, the paper identifies several problems which the rural areas of the Republic of Serbia are facing. The most significant among them is the reduction of population and the departure of young people from the rural areas. The main reason why the young are leaving includes very hard conditions of life and work in rural areas due to insufficiently developed infrastructure, inadequate social structure, unavailable social services and large dependence on agriculture. The educational structure of rural population

is very unfavourable, which slows down the acceptance of new technological solutions which would facilitate the working process.

The most important source of income for people in rural areas is from agriculture. Another characteristic of rural areas refers to the significant negative impact and degradation of natural resources. Also, the rural areas of the Republic of Serbia are facing a high unemployment rate and poverty. Besides this, the support for the development of entrepreneurship is very modest. The rural areas of the Republic of Serbia are faced with very modest investments, with insufficient institutional, organisational and planning support, as well as with irregular and small incentives. Problems should be approached in a strategic and systematic way. It is necessary to create a development plan for rural areas and provide resources and a favorable environment for its implementation.

The opportunity of fertile soil and beautiful nature should be used in the best possible way, thus keeping the population in the rural areas. The analysis used in the paper shows that the larger attractiveness of rural areas, as places in which young people live and work, can be achieved through the renewal and development of infrastructure, the improvement of social structure, the development of secondary rural services such as preschool institutions, post offices, banks, and sports halls. Stimulation of rural population towards a higher level of education is also very important for the development of rural areas. Of special importance is the training of a larger number of people and the implementation of modern technological solutions and innovations.

Another important thing for sustainable rural development is the encouragement of population to turn towards organic agriculture, i.e. the agriculture which produces healthy, high quality and safe food. Considering the fact that organic agriculture is economically, socially and ecologically acceptable, it can contribute to sustainable rural development. Rural population can acquire additional income through the production and use of renewable sources of energy. The construction of agribusiness centres is also important for the development of the rural areas. This way, the employment rate would increase, and poverty would be reduced, which would make rural areas more attractive for the young to live in.

Support for entrepreneurship in rural areas is one of the important issues. The development of non-agricultural activities is of great importance in order to provide additional employment and additional sources of income. One of the examples is the development of rural tourism which can lead to diversification of activities and reduction of poverty, improvement of the quality of life, preservation of cultural heritage and protection of the environment. Therefore, it is necessary to invest in rural and tourist infrastructures, to constantly improve tourist offers, to introduce new content, to organise manifestations and to invest into the renewal and development of accommodation capacities. Besides this, another significant point for the development of rural areas is the stimulation of rural population towards old crafts in order to develop unique, recognisable and competitive products, which can be successfully presented on the global market.

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P. 47-58

SCIENTIFIC REVIEW PAPER

DOI: 10.5937/ESD2101047K

Received: December 15, 2020

Accepted: February 3, 2021

MEASUREMENT AND EFFICIENT MANAGEMENT OF ENVIRONMENTAL PERFORMANCES

Abstract

Numerous environmental problems and stakeholder pressures have led companies to accept responsibility for the environmental consequences of doing business. Measuring the environmental performances of companies is gaining in importance and is becoming the subject of analysis in scientific papers and academic circles. Environmental performance indicators enable companies to systematically review and obtain information on the environmental aspect of a company business. If companies take care of the living and working environment, they can increase the motivation of employees and thus increase labor productivity. The aim of this paper is to point out the role and importance of environmental performances of companies, the way they are measured and managed.

Key words: *environmental performances, measurement of environmental performances, environmental performance management.*

JEL classification: *M48, Q51, Q56*

МЕРЕЊЕ И ЕФИКАСНО УПРАВЉАЊЕ ЕКОЛОШКИМ ПЕРФОРМАНСАМА

Апстракт

Бројни еколошки проблеми и притисци стејхолдера навели су предузећа да прихвате одговорност за последице обављања пословања по животну средину. Мерење еколошких перформанси предузећа добија на значају и постаје предмет анализе у научним радовима и академским круговима. Показатељи еколошких перформанси омогућавају предузећима систематски преглед и добијање информација о еколошком аспекту пословања предузећа. Уколико предузећа воде рачуна о животној и радној средини могу повећати мотивацију запослених и тиме повећати продуктивност рада. Циљ рада је да укаже на улогу и значај еколошких перформанси предузећа, начин њиховог мерења и управљања.

Кључне речи: *еколошке перформансе, мерење еколошких перформанси, управљање еколошким перформансама.*

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Introduction

In contemporary conditions, a large number of companies face environmental pressures from different stakeholders. Besides financial information and after accounting scandals (Enron and WorldCom), stakeholders have also shown interest in non-financial information (environmental performances and other performances of corporate social responsibility). Environmental performance measurement represents an important and very demanding control and management section of a company's management. The measures of environmental performances reflect an interaction between a company's management and the environment. Environmental performance measurements should on the corporate level quantify its effectiveness and efficiency in the field of environmental protection. International organizations and institutions have determined certain instructions and guidelines with the aim of measuring and managing environmental performances. Environmental performance measurement is of great importance to the company because the environmental activities and projects of a company cannot be controlled or directed in a proper way if the eco-effectiveness (eco-efficiency) cannot be measured precisely.

The paper consists of four parts. The first part of the paper contains a review of environmental performances. The second part of the paper focuses on environmental performance measurement. The third part is dedicated to environmental performance management, while, in the fourth part, the focus is on the instruments of environmental performance management.

1. Environmental performances

Besides their main business aim (maximizing the worth for the companies' owners), companies should be focused on environmental responsibility in order to eliminate negative impacts which occur as a consequence of their action in the environment. Impacts on the environment occur due to the use of land, resources, energy, and pollutants which are released into air, water and soil during production, distribution, i.e. in a lifecycle of a product (Ienciu, 2009).

Companies dedicate more and more time to the implementation of the concept of *corporate social responsibility* (CSR). Socially responsible operation implies, first of all, economic success while simultaneously achieving corporate responsibility for environmental and social aspects of the operation (Jovanović, 2017). The concept has evolved from the idea that a company operates not just to make profit, but also to comply with legislation and ethical principles, and to have a tendency to preserve the environment. Therefore, nowadays the environmental dimension of operating, as well as social responsibility, are becoming very important for companies. This demand creates a task and a challenge for company managers – measurement and management of environmental performances.

Environmental performance is defined as the efficiency of a company to fulfil and overcome social expectations regarding the environmental care. This desired goal goes beyond the usual compliance with the current regulations. A proactive approach regarding future environmental questions is particularly important. Environmental

performance reflects the dedication of an entire organization towards environmental responsibility (Judge, 1998).

The definition of environmental performance also places emphasis on the amount of harming agents which are being emitted from the factories (Klassen, 1999). Environmental performance refers to the identified level of harmful influence on the environment caused by a company. Less harmful influences on the environment lead to better environmental performance and higher corporate environmental responsibility (Lankoski, 2000). Corporate environmental performance can be defined through naturally expressed performances of different company outputs which are related to environmental aspects (the amount of raw material waste, water, CO₂ emissions, etc.) (Wagner, 2003). Environmental performance is defined through certain factors such as: current environmental obligations and risk exposure, potential to use business opportunities which refer to environmental protection, corporate ability to manage environmental risks and possibilities, the use of the system for the management of environmental protection, monitoring of environmental performance and accounting systems, and the quality of environmental reporting (Salo, 2008). All of these factors influence environmental performance. As a consequence, the impact of environmental performance on business (financial) performances of companies is also evident.

2. Environmental performance measurement

By measuring environmental performance, the company focuses on measuring impacts on the environment. Based on the results of measurement, the company's management evaluates relevant environmental impacts. Also, the comparison of the target environmental performance with the achieved performance enables the determination of a deviation and decision-making by using corrective actions. Environmental performance measurement is not a simple and easy assignment. It implies the selection of a set of key measures of environmental performance so that they reflect the determined environmental strategy of a company, while acknowledging stakeholders' interests.

2.1. The concepts of eco-effectiveness and eco-efficiency: the base for the development of a set of environmental performance indicators

The concept of environmental performance is a wider term than environmental effectiveness and environmental efficiency. Environmental effectiveness implies the success in achieving corporate environmental goals (Krstić & Vučić, 2004). It refers to the degree of fulfilling the requirements of preserving the environment. Environmental effectiveness can be quantitatively expressed in the following way (Krstić & Sekulić, 2020):

$$\text{Eco-effectiveness} = \frac{\text{Planned (target) environmental costs}}{\text{Achieved environmental effects}}$$

Environmental efficiency refers to the success in the realization of environmental activities. It can be expressed quantitatively (Krstić & Sekulić, 2020):

$$\text{Eco-efficiency} = \frac{\text{Inputs for the realization of environmental actions and programs}}{\text{Achieved environmental effects}}$$

The indicators of environmental performance are quantitative and qualitative (descriptive), financial or non-financial. They provide information on the corporate impact on the environment, the compliance of corporate activities with the environmental regulations, as well as the relations with stakeholders (Chinander K.R., 2001). The system of key indicators of environmental performance should consist of (Krstić & Sekulić, 2020): 1. Indicators of environmental effects; 2. Indicators of investing into the actions for the improvement of environmental performance; 3. Indicators of environmental effectiveness and environmental efficiency; 4. Indicators of environmental standards achievement; 5. Indicators of compliance in the implementation of the corporate environmental strategy; and 6. Indicators of success in the organization of environmental activities, programs and initiatives.

2.2. Classifications of environmental performances

There are many classifications of the indicators of environmental performance present in the literature. In this paper, the emphasis is on the classification of environmental performance indicators according to: 1) Thorsen (1999), 2) ISO 14031 and 3) *Global Reporting Initiative* – GRI.

The performance indicators according to *Thorsen* (Thorsen, 1999) are:

a) *The performance indicators in a lifecycle of a product.* These indicators show the impact on the environment based on the consumption of energy, materials, resources, distribution, transport, use by consumers, waste treatment and consumers' needs contrary to environmental demands;

b) *Environmental performance of a chosen production technology.* During the selection of production technology, companies should take into account what kind of impact this technology has on the environment, i.e. the company should achieve optimum balance between economic and environmental aspects during the selection of production technology;

c) *Environmental performance of the influence of processes, activities and operations on the environment.* It is the result of production and management processes in the company and it represents a segment of performance in a lifecycle of products; and

d) *Indicators of environmental status, i.e. indicators of environmental performance.* Indicators of environmental performance show the influence on the environment by production activities and products on the local and global levels.

The Global Reporting Initiative. and the latest version of the G4 Sustainability Reporting Guidelines include 34 environmental indicators through the following aspects: material, energy, water, biodiversity, emissions, wastewater and sewage, products and services, obeying the law, transportation, and generally, the evaluation of suppliers in terms of environmental impact and the mechanisms for resolving disputes related to the environment (Initiative, G. R., 2013).

ISO 14031 provides guidelines for the development of the tool for monitoring and measuring which is used for the evaluation of the efficiency of protecting the

environmental system. The standard includes three categories of the environmental performance indicators (Krstić et al., 2012):

1. *Environmental condition indicators.* These indicators provide information on the condition of the environment on local, regional or global levels. The indicators include receptor indicators (the emission of a substance according to the production volume or the unit of added value) and proxy indicators (showing data on the emission and waste in regard to the influence on the environment);
2. *Operational performance indicators.* These indicators provide information on the environmental performance of organizational activities. They include indicators such as the investment of the input of materials, energy and services, the work of machinery and equipment, etc.
3. *Management performance indicators.* These indicators provide information on management's effort to influence the environmental performance of the organization. Within this indicator, the following subcategories have been identified: the implementation of policies and programs, the synchronization of activities with the demands or expectations, the relations with the community, and the financial performance related to the environment.

2.3. Key indicators of environmental performances

The set of environmental performance is broad, and only key indicators are listed here as an illustration (Krstić, Sekulić, 2020):

- Indicator of the amount of emitted CO₂ (carbon footprint),
- Indicator of the amount of water (water footprint),
- Degree of reduction of raw waste in the production process,
- Level of waste recycling,
- Level of recycling of final products (as the merchandise which was returned by buyers),
- Indicator of the amount of used energy (energy footprint), etc.

The indicator of the amount of emitted CO₂ (carbon footprint) is important to measure and control in order to undertake corporate environmental actions and programs, as a type of response of the company's management to the biggest challenge nowadays, which is the impact on climate change and the environment (Marr, 2012). Companies which are not interested adequately in the aim of reducing the emission of gases with the greenhouse effect face bad reputation, profit loss and market share prices. The measurement of emission at the company level should be conducted once a year, or more often. In all larger industries on international and national levels, states usually set the limits of the permitted emission of greenhouse gases. The International Organization for Standardization (ISO) has developed a standard for managing the emission of CO₂. Every company should have an intervention plan which will be used in order to decrease the emission of CO₂.

Water footprint (measured at a company level) is the amount (expenditure) of used water (directly or indirectly) for business processes and activities (Marr, 2012). Water is nowadays considered a scarce and endangered resource of the planet. The use of water implies the consumption of "green" water (rainfall), "blue" (underground and

surface water), as well as “grey” (polluted) water. The use of water in many companies is excessive in everyday business operations. Due to this, it is necessary to undertake certain environmental actions with the aim of achieving a more rational use of water.

The degree of reduction of waste material is also a significant environmental indicator, and not just an indicator of efficiency (success) in the sphere of production and the economic area of the cost of waste (disposal, cleaning, etc.). Minimizing these costs goes in favor of the rationalization (reduction) of the production costs and the increase in business competition. In essence, waste is the difference between the amount of raw materials intended for use and the amount of materials actually used for production. Through certain actions and programs, it is possible to reduce the level of waste to a certain degree during a certain period. Otherwise, after an action (program) has been undertaken to reduce waste, the degree of the change (reduction) of waste resulting from this action can be calculated for the current period in relation to the previously observed period (before the action) in the following way:

$$\text{The degree of reduction of waste material} = \frac{\text{Discarded used material}_t}{\text{Discarded used material}_{t-1}} * 100\%$$

It is of the utmost importance to control waste for certain products and production lines.

The degree of waste recycling shows the amount of waste which is recycled (and used again) in relation to the total amount of generated waste. The monitoring of this degree reflects the tendency to use environmental (and production) management for the improvement of this indicator in order to minimize the unfavorable impact of the inevitably generated waste on the environment. This degree is calculated in the following way:

$$\text{The degree of reduction of waste recycling} = \frac{\text{The amount of recycled waste}_t}{\text{The total amount of waste}_t} * 100\%$$

The goal of every company should be recycling and reusing all the generated waste, the increase in the economical level of business activity, as well as, the reduction of the negative environmental impact.

The degree of product recycling is an important environmental indicator of manufacturing companies for products which are no longer used by buyers (users) because they are timeworn, broken, old, etc. Such products have a negative environmental impact. The degree of product recycling is obtained in the following way:

$$\text{The degree of product recycling} = \frac{\text{The amount of products which is recycled}_t}{\text{The total amount of sold products}_t} * 100\%$$

The goal of the manufacturing company which is responsible for its own products (which are no longer used by buyers) is to recycle 100% of their products.

The indicator of the amount of used energy is a significant indicator of corporate environmental responsibility if we take into account that every day the consumption of energy in the world increases, fossil resources decrease, and the price of energy grows (Marr, 2012). Therefore, the programs for preserving energy are very important. Based on their current consumption, companies should set a goal to reduce the usage of energy

(the amount of consumed energy), and thus reduce the cost as well to a certain degree. The derived indicators of energy efficiency are among the most relevant ones (Benedetti, Cesarotti & Introna, 2015, 48).

3. Environmental performance management – concept and key instruments

On the basis of the aforementioned indicators of environmental performance, it can be inferred that they sum up the information about the environment and that, based on them, the control of the set goals can be conducted and the area which requires the improvement of performance can be determined. A company should adequately choose the key measures of performance from the proposed framework so that it could, with the efficient measuring for management purposes, achieve good performances of the relation with both internal and external stakeholders. Internal stakeholders (managers and employees) can have benefits in the sense that they can set goals more easily and more realistically, monitor the performance of an environmental product, measure the discrepancy in relation to the target performance, identify factors of bad or unsatisfactory performance, and undertake activities in order to continuously improve business processes. The benefits for external stakeholders (from a broader social community) include the regulation, control and supervision of a company by international and national environmental institutions and competent state authorities, as well as the provision of relevant environmental information. Also, other external stakeholders (buyers, suppliers, potential investors) benefit from the environmental performance measurement (Krstić & Sekulić, 2012), because they receive vital information for their business decisions.

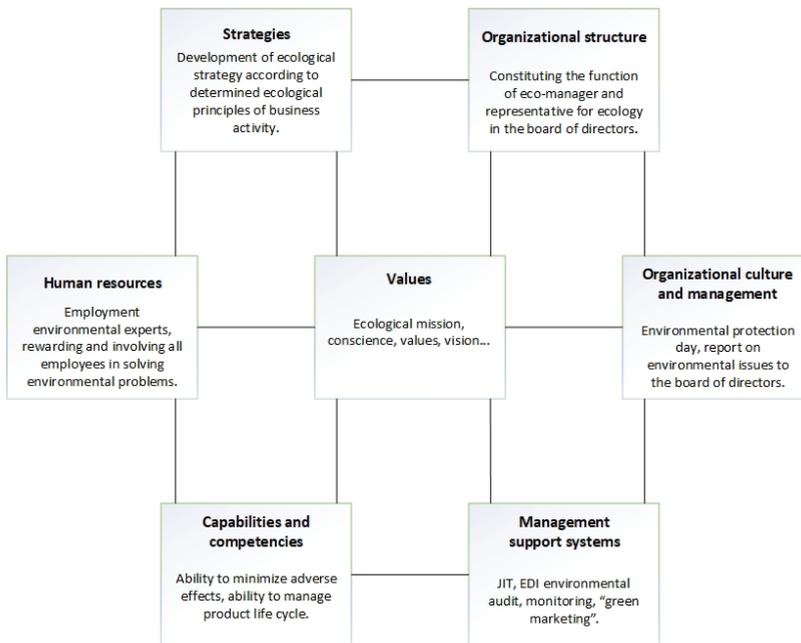
Environmental performance management is the assignment of the company's management sector. Environmental performance management is a continuous process of identification, measurement, development and synchronization of corporate performance with the strategic goals (Aguinis, 2013). The management process is conducted through four stages (Krstić & Vučić, 2004): 1. *Defining target environmental performances*. Performance planning is the starting point in environmental performance management. In this stage, a possible negative impact of a company on the environment and the willingness of the company to improve are determined. The goals are set in such a way as to eliminate entirely or reduce the negative impact on the environment. They can be defined at the levels of companies, business units, departments and products (Sharman, 2001). When the plans are determined, the next step is their operationalization with the help of designed environmental programs and projects; 2. *Defining environmental actions, projects and programs to accomplish desired goals*. In this stage, certain documents are prepared in the form of investment projects, technical procedures, protocols, etc; 3. *Environmental revision of undertaken actions, measurement and evaluation of achieved environmental performances*. This stage is characterized by the measurement and evaluation of environmental performance in order to determine whether there has been any detour from the target levels of environmental performance, and to measure the current (achieved) environmental performance; 4. *Feedback, communication and training related to environmental issues*. Based on the feedback regarding the achieved environmental performance, a decision on further everyday activities is made, and there

is a tendency to improve awareness and strengthen the responsibility of the management sector through educational programs for the exchange of knowledge and information.

A company can improve its competitive position through the efficient management of environmental performance which is based on the following characteristics (Krstić & Sekulić, 2012):

- Reduction of losses by using environmentally acceptable materials;
- Reduction of costs related to waste and material disposal;
- Implementation of the concept of an environmental product in the design, development and production stages;
- An increase in income by turning waste material into new products;
- Reduction in the use of risky and bio-hazardous materials, due to a timely and adequate system of monitoring and reporting;
- Reuse of materials which can be recycled and returned components of products, by conducting efficient programs for the reverse flow of production.

Figure 1. *Strategic environmental performance management*



Source: Krstić, B., Vučić, S. (2004a). *Upravljanje ekološkim performansama preduzeća*. Poslovna politika, 53-57

During the management of environmental performance, companies can use different models. *Strategic Environmental Performance Management* helps the company to respond to the challenges of environment preservation by designing and conducting programs (projects) for improving environmental performance. The key elements of the system for strategic environmental performance management (Figure 1) include: environmental strategy, organizational structure, human resources, organizational values, organizational culture, capabilities and competencies, and management support systems.

Through this conceptual framework, a manager can also integrate an environmental dimension into their corporate or business unit strategy. The environmental strategy is a segment of social responsibility and an inevitable area of a competitive strategy, because environmental performances influence the business (financial) performances, image and reputation of a company.

Besides the model for strategic environmental performance management, a company can also use different support systems. A relevant factor in environmental performance management is the application of: cost-benefit analyses, the concept of risk management, environmental issues management, environmental management of total quality, and standards ISO 14001.

The cost-benefit analysis is used to evaluate project justification. It is applied with projects which have direct commercial effects, which can be measured simply and easily, but also with projects which bring indirect benefits and are more difficult to measure. The aim of the cost-benefit analysis is to compare the benefits and costs of a project, to perform its comparison and to evaluate to what extent it is justified for the company. The cost-benefit analysis contributes to a more efficient location of resources through better identification and selection of different regulatory activities and projects (Krstić&Vučić, 2004). It affects the regulation process by the state authorities and other bodies. It enables decision-making about the selection of the right project for the company. Besides advantages, there are a few flaws such as the occurrence of errors in prediction and errors in measuring and evaluation.

Risk management is one of the instruments of environmental performance management which enables identification and quantification of a risk event. During the process of decision-making about the investments into environmental measures, it is necessary to take into account the necessary costs, but also benefits, of preventing a risk event, which points to the similarity with the cost-benefit analysis.

Environmental issues management enables the compliance of corporate activities with the public interest in the areas of preservation and protection of the environment. During the process of making and conducting previously set plans which refer to environmental issues, their occurrence is minimized (Jugović, 2019).

Environmental total quality management is the synergy of the principles of eco-management and total quality management. It implies the following basic principles (Krstić & Vučić, 2004): recognition of the users' needs, which implies that the quality defines buyers' needs and desires, regulators, eco-groups, and society in general, continuous improvement – a systematic and continuous effort should be provided in order to improve the processes, and the performances of business activities in such a way so that environmental problems are not manifested – a timely recognition, prevention and elimination of potential environmental difficulties enables the recognition of causes of possible problems, a systematic approach in environmental performance management – an individual part of the process should be observed as a separate system, i.e. a whole, because every part implies certain resources, techniques and procedures for making decisions.

The *ISO 14001* has the aim of encouraging the preservation of the environment and the avoidance of conflicts between different management approaches. Standards connect environmental goals, politics, and systems so that the companies could adequately manage environmental performance. Companies apply this standard if they want to:

- Apply a systematic approach to environmental management;
- Adjust their business activities and respect environmental principles;
- Comply with the environmental legislation, and
- Receive a certificate for the system of environmental management.

Environmental performance management brings numerous benefits for both the company and the environment, it enables cost reduction, but also increases production and attractiveness to potential investors (stakeholders) (Mladenović & Arsić, 2017).

Conclusion

Negative environmental consequences of economic activities have made companies take responsibility for the healthy environment. The costs of the prevention and detection of pollution affect the total amount of costs, which is why companies tend to simultaneously improve both financial and environmental performances and to achieve economic sustainability of their business activities. During the resolution of environmental issues, management should play an essential role. The main motive for management should be the fact that corporate environmental performances affect corporate financial performances, as well as the efficiency of the management. Environmental performance measurement is an important assignment of the management. Properly selected and designed environmental indicators provide a good base for making decisions and achieving sustainable development.

In order for companies to successfully reduce the negative impact on the environment and to improve environmental performance, it is necessary for them to integrate appropriate tools into the process of environmental management. One of the tools which can be useful during the integration of environmental strategy into business strategy is the ISO 14001 standard. This way companies raise environmental awareness within each department, and they are able to improve their environmental performances, effectiveness and profitability. Moreover, the introduction of environmental management accounting contributes to a better connection between the corporate strategy and the environment, which has a long-lasting effect on the protection of the environment. Furthermore, by introducing the appropriate system of calculating environmental costs which were until recently treated as general costs and very often ignored, companies will be able to track environmental costs and manage them. An efficient environmental cost management enables companies to make business decisions more easily. Nowadays, it is an ethical obligation of every management to create a framework for environmental performance measurement and management, to measure and monitor performance, to efficiently direct environmental activities based on the afore-mentioned points, and consequently to choose the forms for reporting on the protection of the environment, be it in an annual report on business activities or in a special report on the protection of the environment or on sustainable development.

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Zoran Simonović. - Vol. 5, br. 1 (2021)- . - Niš :
Society of Economists "Ekonomika", 2020 - (Niš :
"Medivest"). 68 стр. - 24 cm

Dva puta godišnje.

ISSN 2560-421X = Economics of Sustainable
Development

