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Način učenja se menja pred nama: Kako AI oblikuje novu pedagogiju

Kada sam prošle jeseni jednoj studentkinji preporučila da potrebne knjige potraži uz pomoć veštačke inteligencije, odgovorila mi je: „Ja koristim svoju inteligenciju.“ Samo nekoliko meseci kasnije, seminarski i diplomski radovi istih tih studenata već su bili pisani uz značajnu podršku veštačke inteligencije.

Danas je uobičajeno da studenti tokom predavanja, uz pomoć veštačke inteligencije, proveravaju da li je ono što govorim tačno i šta je to što nisam pomenula. Takve situacije postaju odličan povod za dalju diskusiju. Tada ponavljamo gradivo: studenti proveravaju šta sve kaže veštačka inteligencija, pri čemu svaka aplikacija daje drugačiji odgovor. Ponekad su ti odgovori veoma slični, što nas posebno zadivljuje.

Razgovaramo i o tome *zašto* nešto nisam rekla. Ponovo analiziramo sve do najsitnijeg detalja, uz svesrdnu pomoć veštačke inteligencije. Svaki student koristi svoj mobilni telefon, ali se svi u istom trenutku bavimo istom temom — bez obzira na to da li fizički sedimo u jednoj učionici ili smo okupljeni u virtuelnom prostoru.

Čas se pretvara u igru. Rezultat je višestruk: pored gradiva predviđenog za taj čas, naučili smo kako da zajednički pristupamo problemu, kako da uočimo različite perspektive i kako da argumentovano diskutujemo. Na kraju, svi smo zadovoljni časom koji je tako brzo prošao.

A meni ostaje da ovo iskustvo ugradim u narednu lekciju.



Editorial

The Way We Learn Is Changing Before Our Eyes: How AI Is Shaping a New Pedagogy

Last autumn, when I suggested to one of my students that she might use artificial intelligence to find the books she needed, she replied, “I use my own intelligence.” Only a few months later, the same students were writing their seminar and thesis papers with substantial support from AI tools.

Today, it has become common for students to use artificial intelligence during lectures to check whether what I am saying is accurate — and to discover what I may have left unsaid. These moments often open the door to deeper discussion. We revisit the material together: students compare what different AI systems say, each offering its own version of the answer. Sometimes those answers are remarkably similar, which never fails to surprise us.

We also talk about *why* I didn’t mention certain things. Once again, we analyze everything down to the smallest detail, with the steady assistance of AI. Each student works from their own phone, yet we are all focused on the same topic at the same moment — whether we are sitting together in a classroom or gathered from different places in a virtual one.

The class turns into a kind of shared exploration. The outcome is multifaceted: beyond the planned lesson, we learn how to approach a problem collectively, how to recognize different perspectives, and how to engage in reasoned discussion. In the end, we all leave satisfied with a class that passed far too quickly.

And I am left with the task of weaving this experience into my next lesson.



The Impact of Economic Growth and Foreign Direct Investment on Environmental Quality in European Countries

Abstract: *The paper provides an analysis of the dynamic mutual connection between economic growth, foreign direct investment inflows and environmental pollution. The primary focus of the research is to test the validity of the Ecological Kuznets Curve (EKC) and Pollutant Haven Hypotheses (PHH) in selected European countries over the period 1990 to 2021. Using the Dynamic Ordinary Least Squares method (DOLS), the long-term impact of international trade, energy consumption and population on environmental quality is analysed. The results obtained confirm the EKC and PHH hypotheses in European countries for the period 1990 to 2021. The research results indicate that foreign direct investment inflows have a positive impact on CO2 emissions, and therefore on environmental pollution. Based on the results obtained from the research, governments and policymakers are recommended to develop and implement policies to reduce CO2 emissions in order to stimulate economic growth and improve environmental quality. In addition, the introduction of "clean" energy should be supported, and innovations and technological inventions in the fields of hydropower, solar energy, wind energy, etc. should be encouraged.*

Keywords: *income, environmental pollution, dynamic ordinary least squares, structural effect, new technologies*

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INTRODUCTION

One of the most difficult tasks for experts, politicians and governments of the whole world is to oppose to the harmful consequences caused by climate change. The greenhouse gases pollute the environment and lead to the lack of clean air and water. Changes of climate seriously threaten to all living things. Therefore, the following task has been set ahead of the governments of countries of world: to confront the dangers caused by change of climate and, at the same time, provide sustainable and competitive economic development (5).

The growth of emissions of carbon dioxide and other harmful gases has led to the warming of the Earth. These gases are, also, the main cause of change of climate. So, the economic growth has led to the worsening of quality of the environment. Given idea was first presented by Gene M. Grossman, with Alan B. Kruger (12). This idea also called the environmental Kuznets curve. In fact, the environmental Kuznets curve represents an inverted-U curve that reflects the dependence between the growth of economy and the pollution of environment in the long time period.

Also, a greater inflow of foreign direct investments intended for sustainable economic development and new job creation is needed. There is no doubt that the countries – beneficiaries of foreign direct investments, are exposed to the environmental problems that are gaining more and more actuality due to the negative consequences that lead to climate changes. Despite this, foreign direct investment remains a significant source of the creating job and the growth of revenue in many countries.

Environmental or external of production costs have important role in the “delivery” of foreign direct investments in the weaker developed countries. The environmental costs of companies that pollute the environment are higher in developed countries than in the weaker developed countries, due to more flexible policy of environmental protection. Lower environmental costs and more flexible the policy of environmental protection enable developed countries moves their “dirty” industries to middle- and low-income countries. There is no doubt that this kind of environmental policy of rich countries affects the worsening of the quality of the environment of medium-developed and poor countries that with their dependence on the rich, stimulate the pollution.

This is also the topic of the hypothesis “a haven for polluters”. According to this hypothesis, developed countries invest in the weaker developed countries because those countries have low environmental standards and insufficient respect for the law (9).

The starting from the above arguments, in this paper we try to examine the dynamic mutual connection between economic growth, foreign direct investments and the worsening of quality of the environment in the weaker developed European countries in the period from 1990. to 2021. Besides that, the influence of international trade, consumption of energy from renewable sources and inhabitants on the quality of the environment is analyzed.

THEORETICAL BACKGROUND AND EMPIRICAL LITERATURE

In the next chapter, it are considered the concept “environmental Kuznets curve”, the hypothesis of “a haven for polluters”, the influence of international trade, population and consumption of energy from renewable sources the quality of the environment. The topic of the second chapter is also the results of previous empirical research in this scientific field.

The Concept “Environmental Kuznets Curve” – the Interdependence of Economic Growth and the Environment

The concept “Kuznets curve of environment” began to be applied in the nineties of the last century, whereas and it is based on the Kuznets curve that describes the relationship between the economic growth and inequality of the distribution income. It is a form the inverted-U letter. In other words, on beginning of economic growth, inequality in income distribution is not large, but it grows along with the economic development up to one point after which the difference in income begins to decrease.

A similar concept can be applied for viewing the relationship between the deterioration of quality of environment and gross domestic product per capita. The negative impact of economic activities on the environment initially grows as the gross domestic product per capita grows. When the country reaches the maximum level of environmental pollution, further growth, i.e. an increasing of gross domestic product per capita, is followed by a decreasing environmental pollution.

Grossman and Krueger are published the first research about “environmental Kuznets curve” in 1991 (12). They considered “environmental Kuznets curve” for the sulphur-dioxide (SO₂), the smoke and the dust. For SO₂ as a “turning point” (the point where the improvement of the quality of the environment begins) they determined a level of income per capita from 4000 to 5000 dollars. The concentration of particles of dust decreases already at lower income levels. At income levels of 10000-15000 dollars, there is an increase of concentration of all three pollutants.

The results of other empirical studies of the EKC hypothesis are mixed. Shafik and Bandyopadhyay estimated the environmental Kuznets curve for 10 indicators. The sample included 149 countries over the period 1960 to 1990. The “turning point” appears at different levels of per capita income, depending on which indicator is it about. Shafik and Bandyopadhyay concluded that it is possible to outgrow certain environmental problems, but this mechanism is not automatic (21).

In the recent empirical literature about EKC, one comes across data did not consistent with this concept. Thus, Shahbaz et al. examined CO₂ emissions, studying EKC in 87 countries with high and low level of income. They noted that a U curve or inverted-U curve were confirmed in some countries. However, for many countries, none of them is not suitable (22). Aslanidie and Iranzo did not offer evidence on the validity of this concept, but they confirmed the existence of two regimes: the regime of low-income countries

and the regime of middle- and high-income countries. The conclusion of this research is that carbon dioxide emissions growth with economic growth in the low-income regime, while economic growth in the long term slows down the worsening of the quality of the environment in the regime of countries with medium and high-income (4).

The uncritical using of the ecological Kuznets curve represents a great challenge. In this sense, it should be kept in mind the following. As first, there are theorists who believe that development, described by the ecological Kuznets curve, represents a spontaneous or natural flow. In other words, the development is interpreted as the result of normal economic choice, and not of effective political solutions, institutional development and other changes of the social environment. As second, it must not be ignored another danger. If even oppositely directed economic forces cause change and be able to reach a new equilibrium, that stagnation in achieving equilibrium represents a “danger”. In this sense, one can speak about competition between negative tendencies and corrective mechanisms, and as can be seen from the examples of great civilizations, the first competitors can, in some cases, come to “victory” (10).

International Trade and Foreign Direct Investments

Globalization processes significantly affect both the environment and environmental policy. Thus, international trade can significantly affect the worsening of state of the environment in that one cases when environmental costs are not taken into account in forming prices. Countries, that ignore these costs, have a comparative advantage due to dangerous environmental activity, which it frequently leads to the appropriate specialization and the significant environmental degradation. Furthermore, states may decrease environmental standards in order to attract foreign capital (20).

International trade can also stimulate the raw material sector of the economy, and accordingly, the export of natural wealth. In this case, a negligent relationship towards environmental costs gives competitive advantages. Thus, in countries with weak environmental administration, such as China and India, economic liberalization can lead to the worsening of state of the environment (19).

In general, international trade changes the environment through the effects of structure, scale, technology, and consumption. The effect of structure is manifested through the determination of specialization and production arrangements. This effect is neither positive nor negative. Depending on environmental policy, which decides who bears environmental costs, the state can choose between export products that do not pollute the environment or import products from “dirty” enterprises, or vice versa.

The scale (or size) effect, mostly, is negatively reflected on the environment, because the country's resources are burdened by the expansion of economic activity (16). The impact of technology on the environment is generally viewed from the “positive side” and consists in following: with the growth of the income of population, their demands in question the environment increase. As such, the population strives for stricter environmental standards

and the introduction of modern technology. The effect of consumption depends on the model of consumers, and therefore it is conditioned by the level of environmental knowledge of consumers.

The modeling trade between the rich North and the poor South shows that the effect of structure and the effect of scale cause the degradation of environment in developing countries. The countries with low and medium income specialize for ecologically dangerous production, then when the positive effect of the technological effect is minimal.

Besides that, due to economic liberalization, the total level of pollution in countries with low- and medium-income growth which become a “paradise” for polluters. The hypothesis “a haven for polluters”, that is very popular in Chinese and Indian scientific discourse, talks about dangerous production and the tendency of multinational firms, especially those that pollute the environment to a significant extent, to “migrate” into countries that have weak environmental administration and the decline of foreign direct investments (9).

According to the results of conducted empirical research, this hypothesis has not been clearly confirmed or refuted. Acharyya finds a positive impact of foreign direct investments on growth of economy and emission of CO₂ in India. Moreover, this research showed that during the 90s, foreign direct investments had a far greater impact on the carbon dioxide emissions through economic growth. So, this research approved the hypothesis of “a haven for polluters” (1). Al-Mulali et al. concluded that the inflow of foreign capital causes an increasing pollution and confirmed the validity of the hypothesis “a haven for polluters” in Vietnam (3). Mert et al. confirmed the existence of the pollution haven hypothesis in twenty-seven European countries, which they divided into two groups, depending on when they joined the EU (15).

Population and Renewable Energy Sources

Empirical testing of the direct influence of demographic trends on the emission of harmful gases resulted in different findings. Many analyses point to the conclusion that the elasticity of CO₂ emissions in relation to the number of inhabitants almost one. Besides that, Cole and Neumayer find that the impact of the number of inhabitants on CO₂ emissions has the shape of a U curve (8). In contrast to the aforementioned studies, in which the elasticity of CO₂ emissions in relation to the number of inhabitants was estimated to be almost one, certain analyses show that it could even be more pronounced (18). DeHart and Soulé, for example, estimated an elasticity greater than one for total and commercial-industrial emissions (10).

Renewable energy sources are those that are available on Earth in unlimited quantities, and are partially or completely renewed or compensated, over and over again. The production of energy from renewable energy sources damages the environment, climate and health significantly less than the production of energy from fossil fuels. Extensive research about the external costs of electricity production from renewable and non-renewable sources show that the environmental damage, ie. the external costs of electricity production, are significantly higher with fossil fuels than with renewable sources (17). According to Chiu and Chang renewable energy sources can influence the reduction of

greenhouse gas emissions, if their share in the total electricity supply is at least 8.38% (7). Tiwari, also, points out that stimulating renewable energy sources can be significant for the reducing greenhouse gas emissions (23).

METHODOLOGY

The object of this research is to examine the interconnection of CO₂ emissions, economic growth, international trade, foreign direct investments, energy consumption from renewable sources and the number of inhabitants in the period from 1990 to 2021. Below, the equation of the empirical model is given:

$$\ln CO2E_{it} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{it}^2 + \beta_3 \ln FDI_{it} + \beta_4 \ln TRAdf_{it} + \beta_5 \ln RES_{it} + \beta_6 \ln POP_{it} + \varepsilon_{it} \quad (1)$$

where: i – cross-sectional data, t – time, β_1, \dots, β_6 regression coefficients, ε_{it} – the residual, \ln – natural logarithm of variables. The explanations of the variables are presented in Table 1.

Table 1. Defining variables and data sources

Label	Description	Source
CO ₂ E	The emissions of CO ₂ that use as an indicator of pollution environment.	World Development Indicator
GDP	The gross domestic product <i>per capita</i> at purchasing power parity.	World Development Indicator
FDI	The inflow of foreign direct investments expressed as a % of GDP.	World Development Indicator
TRAdf	The indicator of international trade taken from the KOF Globalization index.	KOF Globalisation Index: Forecasts & Indicators
RES	The energy consumption from renewable sources expressed as the share in total final energy consumption.	World Development Indicator
POP	The average number of the country's population.	World Development Indicator

Source: Author's research based on (14) and (24)

To estimate model (1), data on the following European developing countries in the period from 1990 to 2021 are used: Albania, Azerbaijan, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Lithuania, Latvia, Moldova, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovenia, Turkey, Slovakia and Ukraine.

The existence of EKC dependence can be confirmed by the values of the regression coefficients for the variables GDP and GDP², ($\hat{\beta}_1$ and $\hat{\beta}_2$). Namely, the EKC dependence or the dependence of shape of inverted letter “U” exists if $\hat{\beta}_1 > 0$ and $\hat{\beta}_2 < 0$.

When estimating the econometric model (1), it is necessary to check whether there is a unit root in the (panel) time series. For this purpose, several tests have been developed that are divided into first and second generation tests. In the literature, tests of cointegration

are frequently used as a supplement to tests of unit root. Cointegration tests based on the residual are used in this paper. If there is a unit root in the the relation errors, the variables are not cointegrated with each other. Conversely, the cointegration between variables exists if unit root is not present (6). The next step is to choose a tool (method) for the estimating cointegration. As the estimate of the method “ordinary least squares” has an asymptotic bias of the second order, alternative methods for estimation of panel cointegration are used in researches. These are: the method “fully modified ordinary least squares” (FMOLS) and the method “dynamic ordinary least squares” (DOLS).

The advantage of method “fully modified ordinary least squares” consists of its ability to correct problems related to serial correlation in the residuals and endogeneity of regressors. Also, this method helps to eliminate the problem of heterogeneous cointegration. It is similar with the method “dynamic ordinary least squares”. Using lagged independent variables, it also corrects for the autocorrelation and the endogeneity that are characteristic of the method “ordinary least squares” (2).

RESULTS AND DISCUSSION

On the Table 2, the results of tests unit roots for the variables (or the level) and results for first differences is presented. The results point out the absence stationarity problem first differences for all variables in the model at the significance level of 5%. Thus, it is confirmed the combination of process $I(0)$ and $I(1)$. Furthermore, it is examined the cointegration between the variables in given the model.

We applied two tests: Pedroni and Kao. The null hypothesis of these tests is that there is no cointegration, and the alternative assumes cointegration between the variables. The results of the Pedroni and Kao test are given in Table 3. The results of the tests show that there is a long-term dependence between the variables, ie. that they are cointegrated.

In continuation the estimate of the connection between the variables obtained by dynamic ordinary least squares is given (Table 4). Dynamic OLS gives better results than fully modified OLS, which is in the line with the conclusions of Kao and Chang who, by Monte Carlo method, showed that dynamic OLS was better than fully modified OLS on a finite sample (13). In addition, FMOLS requires that all variables have the same order of integration, and independent variables are not cointegrated with each other (2). In accordance with DOLS, these requirements are not needed and therefore she uses for estimating the model (1).

So, according to the results of the DOLS method, the coefficients of the logarithm of GDP per capita and the logarithm of the square of GDP per capita are statistically significant at the 1% significance level and have a positive and negative value, respectively (Table 4). This means that the concept “environmental Kuznets curve” has been confirmed for observed countries. The coefficient of logarithmic GDP per inhabitant shows that a one percent increase in GDP per inhabitant leads to an increase in CO_2 emissions of 19.283% in the long term. The coefficient of the logarithmic square of GDP per inhabitant shows

that a one percent increase in the square of GDP per inhabitant leads to a reduction in CO₂ emissions of 0.7533% in the long term.

The coefficient of inflows of foreign direct investments is positive and statistically significant at the level of 2%. An increase in the inflows of foreign direct investments by 1 percent leads to an increase in CO₂ emissions by 0.0913%, and thus to the worsening of the quality of the environment. The obtained result is in accordance with the results of the research (3) and (15). The one percent increase in the size of international trade leads to a 0.689% decrease in CO₂ emissions. The obtained result is in accordance with the research (9). According to their opinion, when external trade leads to an increase in residents' income, their demands about environment increase. This can lead to the development of clean technologies and changes in the structure of production. The problem is that changes in the structure of production are not followed by the same kind changes in the structure of consumption, so industries that pollute the environment can migrate to the countries with a low level of income (for example, Serbia, Albania etc.). The relocation of industries, therefore, leads to an increase in pollution in low-income countries and a decrease in pollution in middle- and high-income countries from the sample.

The coefficient of energy consumption from renewable sources is statistically significant at the significance level of 5 percents and confirms the existence of a negative connection with CO₂ emissions. An increase in green energy consumption for 1 percent reduces CO₂ emissions by 0.237 percent in the long run. The obtained result corresponds to the results research (7,17,23). Finally, the coefficient of the variable "Population", in the long run, does not significantly affect the CO₂ emissions.

Table 2. The output of panel unit root tests

Tests	Levin-Linn-Chu	Im-Pesaran-Shin	ADF-Fisher	PP-Fisher
p-values (variables or at level)				
$\ln\text{CO}_2\text{E}_{it}$	0.0000	0.0000	0.0000	0.0000
$\ln\text{GDP}_{it}$	0.0000	0.9947	0.9998	1.0000
$\ln\text{GDP}^2_{it}$	0.0000	0.9954	0.9999	1.0000
$\ln\text{FDI}_{it}$	0.0003	0.0000	0.0000	0.0000
$\ln\text{TRAdf}_{it}$	0.0000	0.0000	0.0000	0.0000
$\ln\text{POP}_{it}$	0.0000	0.9680	0.9956	1.0000
$\ln\text{RES}_{it}$	0.0000	0.0000	0.0000	0.0000
p - values (first differences of variables)				
$\Delta\ln\text{CO}_2\text{E}_{it}$	0.0000	0.0000	0.0000	0.0000
$\Delta\ln\text{GDP}_{it}$	0.0006	0.0000	0.0000	0.0000
$\Delta\ln\text{GDP}^2_{it}$	0.0005	0.0000	0.0000	0.0000
$\Delta\ln\text{FDI}_{it}$	0.0000	0.0000	0.0000	0.0000
$\Delta\ln\text{TRAdf}_{it}$	0.0000	0.0000	0.0000	0.0000
$\Delta\ln\text{POP}_{it}$	0.0000	0.0000	0.0000	0.0000
$\Delta\ln\text{RES}_{it}$	0.0000	0.0000	0.0000	0.0000

Source: Author's calculations with Eviews

Table 3. The output of panel cointegration tests

Panel tests cointegration		p-values
Pedroni	Panel v-Statistic	0.4505
	Panel rho-Statistic	0.4444
	Panel PP-Statistic	0.0076
	Panel ADF-Statistic	0.0055
	Group rho-Statistic	0.6447
	Group PP-Statistic	0.0034
	Group ADF-Statistic	0.0088
Kao	t-Statistic	0.0000

Source: Author's calculations with Eviews

Table 4. The output of DOLS method

Variables	Coefficient	Std. Error	t-Statistic	Prob.
$\ln \overline{GDP}_{it}$	19.28321	10.11494	1.906409	0.0747
$\ln \overline{GDP}_{it}^2$	-0.753326	0.362028	-2.080850	0.0539
$\ln \overline{FDI}_{it}$	0.091398	0.032674	2.797257	0.0129
$\ln \overline{TRADE}_{it}$	-0.689689	0.191589	-3.599837	0.0024
$\ln \overline{POP}_{it}$	-22.97323	14.02871	-1.637586	0.1210
$\ln \overline{RES}_{it}$	-0.237369	0.109136	-2.174973	0.0450
R-squared	-0.242577	Mean dependent var		10.19265
Adjusted R squared	-3.426679	S.D. dependent var		1.078604
S.E. of regression	2.269348	Sum squared resid		82.39907
Long-run variance	0.000440			

Source: Author's calculations with Eviews

CONCLUSION

In the research we tried to estimate the degree of suitability of the concept “environmental Kuznets curve” and the hypothesis “a haven for pollutants” and to analyze the impact of international trade, energy consumption from renewable sources, and the number of inhabitants on the environmental quality in selected countries. In the paper, we used the method “dynamic least ordinary squares” to estimate connection between listed factors. The obtained results confirm the the concept “environmental Kuznets curve” and the hypothesis “a haven for pollutants”.

After a certain level of development (GDP per capita), when the economic growth continues the quality of the environment becomes better and thus the environmental Kuznets curve gets confirmation of its existence. At a higher level of development, structural changes in the economy (domination of service sector), increasing environmental

awareness, using environmentally friendly technologies, and higher spending on the environment result in a gradual reduction in degradation and improvement of environmental quality.

The obtained results show that the inflow of foreign direct investments is strongly linked to the emission of CO₂ and, as such, contributes to the worsening of the quality of the environment. This means that multinational companies find “a haven” in developing countries, where they move their (production) facilities which heavily pollute the environment.

The results of research allow the following recommendations to be given. First, to preserve the ecological system and the environment, governments should coordinately decide on target indicators and the reducing CO₂ emissions by taking adequate measures. For example, it has been proven the implementation of policy for forming carbon price creates conditions for lowering carbon dioxide levels. In addition, governments should develop and implement policies for encouraging economic growth in parallel with environmental protection policies. Second, since the validity of the hypothesis “a haven for the polluters” has been confirmed, the governments are obliged to encourage the inflow of foreign direct investments that positively affects the state of the environment and the transfer of energy-efficient technologies. Thirdly, the environmental pollution, that occurs as a result of the increase in total energy consumption, should be solved by stimulating the development and use of clean energy, encouraging innovation and modern technological solutions in the areas of hydropower, wind energy, solar energy.

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Uticaj ekonomskog rasta i stranih direktnih investicija na kvalitet životne sredine u evropskim zemljama

Apstrakt: U radu je data analiza dinamičke uzajamne veze između ekonomskog rasta, priliva stranih direktnih investicija i zagađenja životne sredine. Primarni fokus istraživanja je testiranje validnosti hipoteza ekološke Kuznjecove krive (EKC) i utočišta za zagađivače (PHH) u odabranim evropskim zemljama tokom perioda od 1990. do 2021. godine. Primenom metode dinamičkih običnih najmanjih kvadrata (DOLS), analizira se dugoročni uticaj međunarodne trgovine, potrošnje energije i broja stanovnika na kvalitet životne sredine. Dobijeni rezultati potvrđuju hipoteze EKC i PHH u evropskim zemljama za period od 1990. do 2021. godine. Rezultati istraživanja ukazuju da prilivi stranih direktnih investicija imaju pozitivan uticaj na emisiju CO₂, a samim tim i na zagađenje životne sredine. Na osnovu rezultata dobijenih istraživanjem, vladama i kreatorima politike se preporučuje da razrade i realizuju politiku smanjivanja CO₂ emisije u cilju stimulanja ekonomskog rasta i poboljšanja kvaliteta životne sredine. Pored toga, treba podržati uvođenje „čiste“ energije, podsticati inovacije i tehnološke izume u oblasti hidroenergije, solarne energije, energije vetra itd.

Ključne reči: dohodak, zagađenje životne sredine, dinamička metoda običnih najmanjih kvadrata, efekat strukture, nove tehnologije

What Motivates Internal Auditors? Comparative Regional Study: The Role of Non-Material Compensations

Abstract: *The Vision of internal audit 2035 envisages a transformation of the profession, in which internal auditors become strategic consultants in their organizations, which makes their work even more important and useful. The quality of the work of this function, in addition to other factors, is influenced by the motivation of internal auditors. Bearing in mind that financial compensation cannot satisfy all the needs of an individual, the aim of this research was to examine the impact of non-material compensations on the work motivation of internal auditors. The anonymous survey was conducted at five professional meetings of the internal audit associations in the Republic of Serbia, the Republic of Srpska, the Republic of Croatia and the Republic of Slovenia, including a total of 252 respondents. Descriptive statistics were used in processing the obtained data. The results of the research showed that non-material incentives have a significant impact on the work motivation of internal auditors, while three were rated as the most important: good interpersonal relations, independence in performing work, and professional education and development. The research found that there is a certain difference in the choice of motivators among the group of youngest respondents, while gender and management position did not influence the most important intangible motivators. The paper discusses a motivational mix that can be helpful to managers in managing human resources in internal audit. It is expected that non-material compensations to be important for the work motivation of internal auditors in the future as well, especially with the growth of the share of new generations in the total workforce.*

Keywords: *Internal audit, work motivation, intangible motivators, human resources, organizational culture*

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INTRODUCTION

The focus of internal audit is shifting from an ex ante approach toward a proactive, visionary, and agile approach in providing audit engagements. In this way, internal auditors will become increasingly involved not only in the current but also in the future operations of organizations.

A high-quality internal audit function is considered an essential mechanism for strengthening transparency, accountability, and organizational compliance with business standards in order to ensure stakeholder trust (18). The role of internal auditors is reflected in their contribution to identifying and mitigating the impact of emerging risks, as well as assisting management in overcoming business challenges caused, among other factors, by the implementation of new technologies, the use of artificial intelligence, increasing geopolitical uncertainty, and climate change.

The results of research conducted by the Internal Audit Foundation, which included 4,073 respondents from 131 countries, show that human capital ranks fourth on the list of the most significant global risks for 2026 (11). This risk should be viewed from two perspectives. On the one hand, internal auditors should devote attention and time to this issue in their annual plans; on the other hand, internal auditors themselves represent part of a company's human resources and an important organizational function, and therefore also deserve the attention of governing bodies.

When emphasizing the contribution of the internal audit function to organizational performance, it should be kept in mind that the quality of this function's work, among other factors, depends on the work motivation of internal auditors.

Work motivation has a direct impact on employee performance, both individual and team-based, and consequently on the performance of the entire organization. Behind motivation lie employee needs. According to Maslow's theory of motivation, human needs are classified into five hierarchical levels: physiological needs, safety needs, social needs, esteem needs, and self-actualization needs (Petković, 2008).

Certain authors reject Maslow's assumption of the successive satisfaction of needs, arguing that salary is relevant for satisfying physiological needs, but not for fulfilling social needs such as belonging, love, or self-actualization (Rojas, 2023).

Financial compensation has a primary influence when choosing a job and represents the basis of work motivation. However, salary alone cannot satisfy all employee needs. Practice shows that employees usually leave jobs for non-material reasons.

Employees leave companies due to the lack of recognition for their work, feelings of "invisibility" despite their efforts, or situations in which they have a good manager but work within a poor organizational environment. The reason for turnover is often reflected in the statement: "People leave what no longer motivates them" (BIZLife, 2025).

Considering the growing importance of the role of internal audit in increasingly unpredictable business conditions, on the one hand, and the fact that work motivation is influenced not only by material but also by non-material compensation, on the other hand, the

subject of this paper is the examination of the impact of non-material incentives on the work motivation of internal auditors. The research aimed to determine whether non-material incentives are important for the motivation of internal auditors and which of the ten examined factors have the greatest influence.

In addition, the study sought to examine whether there is a relationship, and consequently a causal connection, between respondents' demographic characteristics—age and gender—as well as their job position, and the importance internal auditors attributed to specific non-material factors. The survey conducted also examined the level of job satisfaction among internal auditors and whether there is a difference in job satisfaction between employees working in the public and private sectors.

Every employee responds to a specific “mix” of motivators that are personally important and encourage their work motivation. In this regard, the role of the Chief Audit Executive is emphasized, not only in ensuring a sufficient number of competent internal auditors, but also in developing and retaining them, which includes rewards, recognition, training opportunities, and the provision of an ethical and professional work environment (Institute of Internal Auditors, 2024).

In both literature and practice, the term “positive organization” is increasingly encountered, referring to a work environment and organizational culture that provide supportive conditions for employees, enabling them to achieve psychological stability and a balance between professional and private life while maintaining sustainable business performance.

Organizations that prioritize employee development, support, and recognition are more likely to achieve sustainable employee engagement and productivity (Sunmola, 2025). A human resource management approach based primarily on salaries, bonuses, and pressure to achieve targets is becoming outdated, giving way to organizations centered on employees and their development.

OBJECTIVE, SCOPE, AND RESEARCH METHODOLOGY

The aim of the research was to examine the work motivation of internal auditors and to identify the non-material factors influencing it. The research was conducted at five professional events organized by relevant professional associations in the Republic of Serbia, the Republic of Srpska, the Republic of Croatia, and the Republic of Slovenia, as follows:

- The 12th Conference of the Institute of Internal Auditors Serbia (IIA Serbia), entitled “*Looking Ahead: Redefining Internal Audit for the Modern Era*”, held in Belgrade on October 10 and 11, 2024 (71 completed questionnaires);
- A seminar for internal auditors on the topic “*Global Internal Audit Standards*”, organized by the Association of Internal Auditors headquartered in Banja Luka, held in Banja Vrućica on November 28 and 29, 2024 (22 completed questionnaires);

- The 14th International Conference of the Croatian Institute of Internal Auditors (IIA Croatia), entitled “*Shaping the Future of Internal Audit*”, held in Petrčane near Zadar from April 9 to 11, 2025 (88 completed questionnaires);
- The 14th International Conference of the Slovenian Institute of Internal Auditors (IIA Slovenia), entitled “*Internal Audit 360°*”, held in Bled on April 24 and 25, 2025 (38 completed questionnaires);
- The international seminar entitled “*A Step Further Toward the Effective Implementation of the Management Accountability Concept in the Public Sector*”, organized by the International Association of Certified Internal Auditors in the Public Sector (EUIAPS) and SEVOI Financial Consulting, held in Zlatibor from July 1 to 4, 2025 (33 completed questionnaires).

The research was conducted during the period from October 10, 2024, to July 4, 2025. An anonymous and voluntary survey, in the form of a paper-based questionnaire, was distributed to participants who were present in the conference halls at the time of questionnaire distribution.

The approach to the aforementioned three conferences was hybrid, meaning that participants who attended the conferences online were not included in this research. Attendance at the seminars was exclusively offline, i.e., in person, which enabled all participants to conduct the survey.

The survey consisted of eight closed-ended questions in which internal auditors selected one of the answers offered by circling it. The final, ninth question was open-ended, allowing participants to provide additional comments in free form.

The questionnaire included questions related to respondents’ characteristics (gender, age, and years of professional experience in internal audit), sector affiliation, the position they hold within the internal audit function, whether this function is organized in their organization as a single job position or as a separate organizational unit, as well as their level of job satisfaction.

In examining the significance of ten non-material factors affecting the work motivation of internal auditors, a Likert scale was applied, allowing respondents to choose one of five offered statements for each of the examined factors.

A total of 254 questionnaires were collected across all five professional events. However, two questionnaires that were not fully completed were excluded from the research, resulting in a final sample of 252 questionnaires included in the further data analysis.

The respondents participating in the research belonged to different generational groups, had varying lengths of professional experience, different sector affiliations, and worked in different countries, thereby ensuring the heterogeneity of the collected sample.

The limitation of the research lies in the inability to determine the exact share of the sample within the total population, i.e., within the total number of internal auditors in the countries where the professional events were held, due to the absence of unified registries.

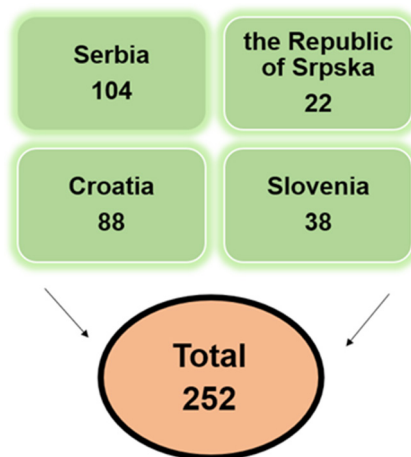
For example, in the Republic of Serbia, at the two professional events held, the research included 62 internal auditors from the public sector and 42 internal auditors from the private sector.

According to the Consolidated Annual Report for 2024 prepared by the Central Harmonization Unit of the Ministry of Finance of the Republic of Serbia, the total number of filled internal auditor positions in the public sector in 2024 was 618 (15). Accordingly, it may be concluded that the sample of internal auditors employed in the public sector of the Republic of Serbia included in this research (62 respondents) represents approximately 10% of the total population.

An examination of the register of the Chamber of Authorized Auditors of the Republic of Serbia revealed that this institution had issued 192 certificates for the professional title “Certified Internal Auditor” (Chamber of Authorized Auditors, 2026). However, since the role of internal auditors in the private sector is also performed by individuals holding other national and international certifications, the stated number of certificates cannot be directly compared with the number of private-sector internal auditors who participated in the research (42 respondents).

The following figure presents a territorial overview of the total number of research participants, i.e., completed questionnaires.

Figure 1. Number of Completed Questionnaires



BASIC CHARACTERISTICS OF THE SAMPLE

In order to determine the basic characteristics of the sample included in the research, the collected data related to the position of internal audit within the organization, the respondents' position or job title within the internal audit function, as well as the length of respondents' professional experience in internal audit, were analyzed below.

Position of Internal Audit within the Organization

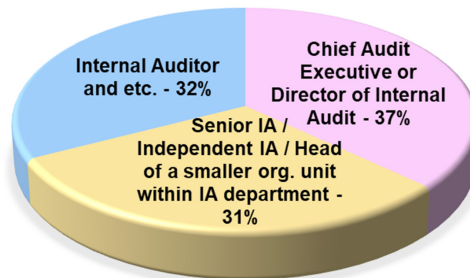
The collected data show that a separate organizational unit for internal audit exists in the organizations of 87% of respondents, compared to 13% of surveyed internal auditors whose organizations have only one systematized internal audit position. Nevertheless, in practice, situations are encountered in which not all systematized positions within the internal audit unit are filled, as well as cases where the total number of employed internal auditors in one organization is fewer than three (15).

Bearing in mind the nature of the profession and the obligation to maintain the confidentiality of data accessed by internal audit, it may be assumed that the work of internal auditors is easier and of higher quality in organizations where there is a team within which uncertainties regarding specific issues can be discussed and the collective knowledge and skills of the entire unit can be utilized.

Respondents' Position within Internal Audit

The collected responses indicate a balanced distribution of survey participants across different positions within internal audit. Specifically, 37% of respondents hold the position of Chief Audit Executive or Director of Internal Audit within their organizations, while 31% occupy the positions of Senior Internal Auditor / Independent Internal Auditor / Head of a smaller organizational unit within the internal audit department. Furthermore, 32% of respondents are employed as Internal Auditors.

Chart 1. Respondents' Positions within Internal Audit



Respondents' Professional Experience

The largest number of survey participants, accounting for 40%, have between 11 and 20 years of professional experience in internal audit, while 19% of respondents have been working as internal auditors for more than 20 years. Internal auditors with up to 5 years of professional experience represent 23% of the total number of respondents.

These data indicate that the majority of respondents (almost 60%) are professionals with significant experience in internal audit.

THE MOST SIGNIFICANT NON-MATERIAL MOTIVATORS FOR INTERNAL AUDITORS

The primary objective of the research was to examine whether non-material factors influence the work motivation of internal auditors, as well as to determine which of the offered non-material incentives internal auditors consider the most important.

The respondents assessed the importance of ten offered non-material factors for their work motivation. Using a Likert scale, participants evaluated each non-material factor with a score ranging from 1 to 5, where 1 indicated that the factor was not important, while a score of 5 indicated that the specific non-material factor was very important for the respondent's work motivation.

In the survey, this question was presented in the following manner:

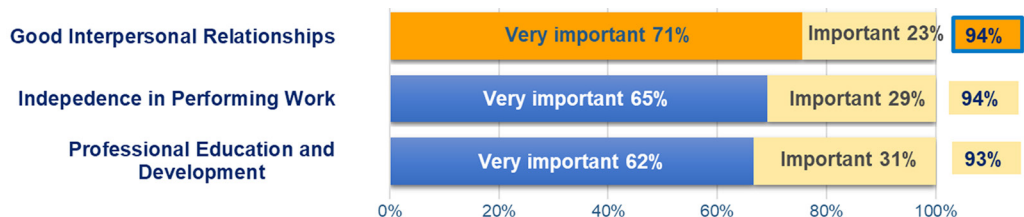
Figure 2. Question No. 8 in the Conducted Survey

Please evaluate the importance of the following factors for your work motivation: (circle one answer for each statement)					
Motivational factors	Not important	Slightly important	Moderately important	Important	Very important
Appreciation of your opinion	1	2	3	4	5
Independence in performing work	1	2	3	4	5
Interesting work tasks	1	2	3	4	5
Use of advanced software programs and tools in work	1	2	3	4	5
Public recognition for a job well done	1	2	3	4	5
Good interpersonal relationships	1	2	3	4	5
Job security	1	2	3	4	5
Professional education and development	1	2	3	4	5
Physical working conditions: office, equipment, furniture, etc.	1	2	3	4	5
Flexible working hours and the possibility of remote work	1	2	3	4	5

Note: The survey questionnaire was translated into English for the purposes of the IIA Slovenia Conference.

By analyzing the overall data collected at all five professional events, it was determined that the following non-material factors are the most significant for the work motivation of internal auditors:

Chart 2. The Most Significant Non-Material Motivators for Internal Auditors



Good Interpersonal Relationships

The survey results indicate that satisfying social needs, expressed through good interpersonal relationships in the workplace, is highly important to respondents. For 71% of surveyed internal auditors, good interpersonal relationships are very important, while for an additional 23% they are important for their work motivation. The data indicate that this non-material factor influences the work motivation of 94% of respondents.

Considering that a significant portion of the day is spent in the work environment, it is very important how this time will be experienced. Whether employees feel comfortable and relaxed during work or spend their working hours under stress and tension greatly affects both job satisfaction and work performance. Feelings of misunderstanding and lack of acceptance by colleagues or superiors negatively influence both job satisfaction and work results.

In the literature, the following are recognized as forms of interpersonal relationships within organizations: communication, teamwork, conflict management, empathy, (active) listening, a positive approach, and leadership abilities (Phillipa, 2022).

The positive impact of good interpersonal relationships on productivity and work performance was identified as early as the beginning of the last century during Elton Mayo's experiments at the Hawthorne factory, which laid the foundation for the Human Relations Theory (Anteby).

Independence in Performing Work

The survey results showed that independence in performing work is significant for the work motivation of internal auditors. A total of 65% of respondents rated this non-material factor as very important for their motivation at work. In addition, 29% of respondents considered the influence of this factor important for their workplace motivation. These percentages indicate that 94% of respondents consider independence in performing work to be significant for their work motivation.

The need for independence in performing work may also be linked to the independent organizational and functional position of internal audit within the organization. Principle 7, Standard 7.1 of the Global Internal Audit Standards specifically prescribes requirements and conditions for boards and senior management to ensure the independence of the internal audit function and its activities.

Responsibility and independence in work performance are based on entrusting a task and having confidence that it will be completed appropriately. Trust is precisely the relationship that internal auditors, through the application of professional principles, should establish with the board and organizational management. In line with the transformation of the role of internal auditors into trusted advisors, governing bodies increasingly rely on their work when making business decisions.

Professional Education and Development

Professional education and development were rated as the third most important non-material factor influencing the work motivation of internal auditors participating in the research. Of the total number of participants, 62% rated professional education and development as very important, while 31% considered them important for their work motivation. This indicates that for 93% of respondents, this non-material factor has a significant impact on the motivation of internal auditors at work.

In addition to the obligation of continuous professional development prescribed by global and national regulatory frameworks, ongoing education represents a necessity for every internal auditor in order to competently perform audit engagements.

“Auditors are therefore forced to adopt more flexible, dynamic, and comprehensive approaches to audit risk management, while continuously improving their professional competencies” (Joksimović, 2025)

The high percentage of respondents who recognized professional development as a motivational factor supports the alignment of internal auditors’ attitudes with the principles of the profession. It may be concluded that respondents do not perceive training merely as a prescribed obligation, but rather as a prerequisite for delivering high-quality services.

The assessment of internal auditors’ competencies, in accordance with the IIA Competency Framework, includes an objective evaluation of knowledge and skills across 28 subcategories by assigning one of four levels: foundational, intermediate, advanced, and expert (Beke-Trivunac, 2025). Participation in conferences, seminars, webinars, and other professional events organized by national, regional, and global internal audit organizations and associations represents an effective way to improve internal auditors’ knowledge and keep up with the latest trends.

The Most Significant Motivators According to Professional Events

The responses of internal auditors according to the professional events attended showed that “Good interpersonal relationships” was rated as the most significant motivator at three professional events (the IIA Serbia Conference, the seminar in the Republic of Srpska, and the IIA Croatia Conference). At the IIA Slovenia Conference, “Independence in performing work” ranked first, while according to the respondents at the EUIAPS seminar, this motivator shared first place with “Professional education and development.”

The Influence of Respondents’ Demographic Characteristics on Work Motivation

The questionnaire included two questions related to respondents’ demographic characteristics—age and gender.

The data from the conducted research show that the internal audit profession relies to a greater extent on female employees, considering that women accounted for almost three-quarters (72%) of the total number of respondents.

When analyzing the results separately for men and women, it was determined that both groups ranked the three most significant non-material motivators in the same order, corresponding to the overall research findings. This suggests that gender did not influence the ranking of the most important motivational factors.

However, what was observed is that the intensity of the influence of these motivators on the work motivation of male and female internal auditors differs. For example, for 96% of women, professional education and development are important or very important for their work motivation, while this percentage among men amounts to 87%.

In the survey, respondents were offered the possibility to choose one of three generational groups. The obtained responses showed that more than half of the respondents (56%) were between 30 and 50 years of age, 40% of participants were over 50 years old, while only 4% of respondents were younger than 30 years of age.

By linking the respondents' age with the highest ratings assigned to specific non-material factors affecting their work motivation, the following findings were obtained:

Regarding the latter two groups, it may be concluded that respondents rated the same three motivators as the most significant for their work motivation, although in a different order. Among all three groups, good interpersonal relationships and professional education and development were identified as the most important non-material motivators. It is particularly interesting to note that the oldest group of respondents rated continuous professional development as their most significant non-material motivator.

Comparing the obtained data among respondent groups divided according to demographic characteristics, it may be concluded that these characteristics have a partial influence on the evaluation of the importance of non-material factors affecting work motivation, particularly among different age groups of internal auditors.

New Generations of Internal Auditors

It should be noted that the youngest group of respondents, in addition to good interpersonal relationships and professional education and development, emphasized the importance of two additional motivators that are among the most significant for their work activity: appreciation of their opinions, and flexible working hours with the possibility of working from home.

Although the share of respondents belonging to this age group is relatively small in the total number of participants, the findings indicate the emergence of new needs among younger generations, whose share in the workforce will continue to grow over time.

Namely, it is estimated that the share of Generation Y, the so-called Millennials (born between 1983 and 1994), and Generation Z (born between 1995 and 2006), will account for 74% of the global workforce by 2030. A Deloitte study involving 23,482 respondents across 44 countries indicates that learning and professional development are the most important factors for these two generational groups. Salary is important to them, but so are meaningful work and well-being (Deloitte Global, 2025).

It should be taken into consideration that new generations bring a different approach to work into the internal audit profession, and that their work motivation is partly influenced by incentives that differ from those motivating the current majority of employed internal auditors.

Representatives of Generation Y strive for work–life balance, greater independence, and demand flexible working hours. Generation Z feels comfortable in a digital working environment, expects their supervisor to act as a mentor and provide rapid feedback—preferably in an online format rather than through face-to-face interaction—takes responsibility in the early stages of their careers, and prefers remote work with flexible working arrangements (Fuchs, 2024).

In order to attract and retain younger generations, McKinsey believes that companies should offer flexibility, mental well-being, benefits related to social and health aspects, as well as a strong and meaningful organizational culture (Ellerbeck, 2022).

Attracting younger generations to the internal audit profession is an issue of importance both in our country and the region, as well as globally. One of the key elements of the transformation of internal audit toward 2035 is precisely the strengthening of the talent pipeline (12).

However, in addition to attracting new talent, Chief Audit Executives will also need to adapt their team management approaches, taking into account the different generational characteristics of each internal auditor in order to ensure the effectiveness of the internal audit function.

Remote Work as a Motivator and a Form of Business Sustainability

New generations expect the companies they work for to provide flexible working hours and flexible workplaces, which simultaneously represent important non-material factors influencing their work motivation.

During and after the Covid-19 pandemic, working from home became highly prevalent, especially in the private sector, in industries that allow such arrangements, including financial services, telecommunications, information technologies, and others, and this practice has remained present even six years later. Unlike the private sector, remote work has not been widely implemented in the public sector, although 72% of respondents employed in the public sector rated this factor as important or very important for their work motivation.

The risk of future pandemics or climate-related disasters, such as sudden cyclonic storms, floods, and fires, which may affect the physical possibility of going to work, continues to exist and will very likely become even more pronounced in the coming years.

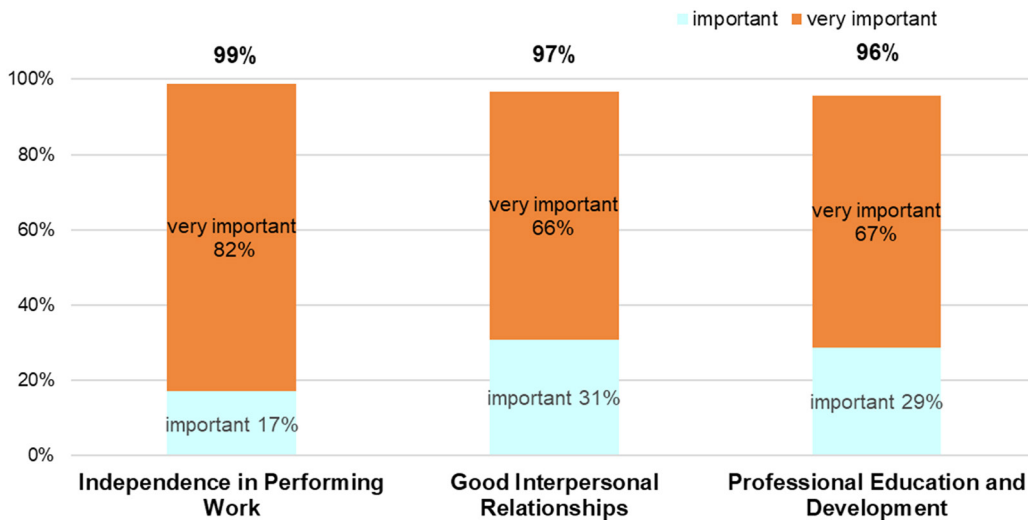
In addition, according to research conducted by the Internal Audit Foundation on the most significant risks for 2026, geopolitical uncertainty is the risk that has recorded the greatest increase over the past year (11). All of the above contributes to the growing need for companies to enable employees to work from home or from another remote location.

In the modern era, remote work may be considered not only a form of non-material compensation, but also one of the measures for strengthening organizational business sustainability. For these reasons, it is necessary to consider including this incentive in the human resource management strategy of internal audit, as well as of the entire organization, and also within the company's resilience plan, which in both cases strengthens organizational flexibility and the capacity to respond to the challenges of modern business operations.

Motivation of Chief Audit Executives

Considering the importance of the function managed at the organizational level, it was particularly interesting to examine which non-material compensation factors are the most significant for the work motivation of Chief Audit Executives / Directors of Internal Audit. The obtained data show that the most significant non-material factors correspond to those identified at the level of the overall sample, with only slight differences in ranking order. In this regard, it may be concluded that the position within the internal audit function did not influence the importance respondents assigned to the offered non-material motivators.

Chart 3. The Most Significant Motivators for Chief Audit Executives /Directors of Internal Audit



The Least Significant Non-Material Motivators

By analyzing the responses obtained through the conducted research, the non-material motivators that respondents rated as the least significant for their work motivation were also identified. Considering the sum number of responses “not important,” “slightly

important,” and “moderately important,” on the one hand, and the lowest number of responses marked as “very important,” on the other hand, the following factors were identified as having the least influence on the work motivation of internal auditors:

- Public recognition for a job well done
- Use of advanced software programs and tools in work
- Physical working conditions: office, equipment, furniture, etc.

The respondents’ results regarding the least important factors, according to the professional events attended, are presented in the following figure:

Figure 3. The Least Important Non-Material Factors for Internal Auditors According to Professional Events

IIA Serbia Conference	Seminar of the Association of Internal Auditors of the Republic of Srpska	IIA Croatia and IIA Slovenia Conferences and the EUIAPS Seminar
Advanced software programs and tools	Physical working conditions	Public recognition

JOB SATISFACTION OF INTERNAL AUDITORS

In order to examine the level of job satisfaction among internal auditors, survey participants were offered the possibility to choose one of the following responses: very satisfied, partially satisfied, and not satisfied.

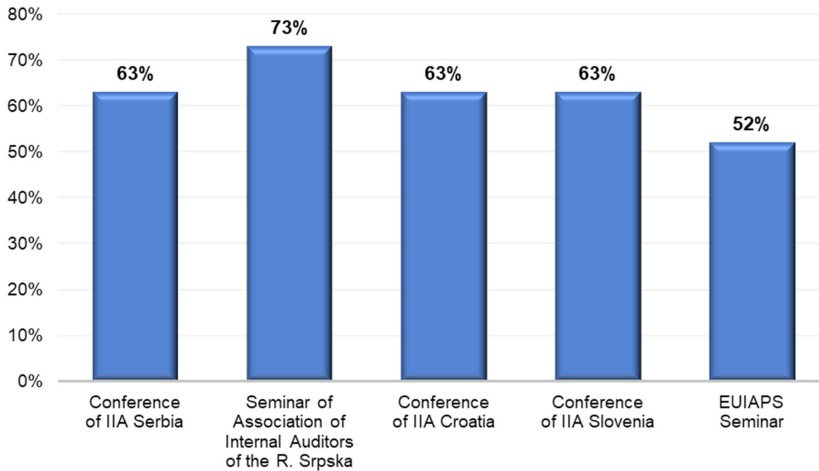
Of the total number of respondents, the majority, specifically 62%, stated that they were very satisfied with their job. Approximately one-third of respondents (35%) were partially satisfied, while only 3% of respondents (6 in absolute numbers) stated that they were not satisfied at their workplace.

Chart 4. Job Satisfaction of Internal Auditors



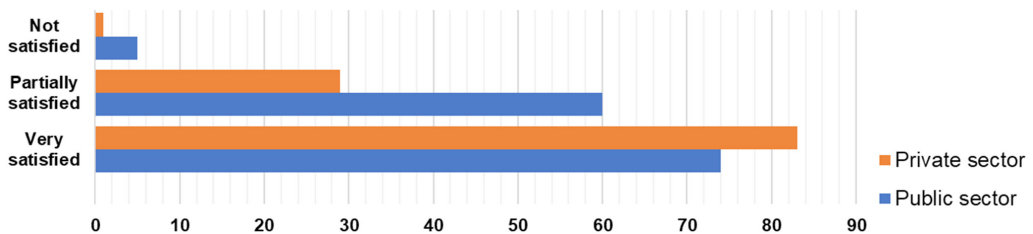
By reviewing the responses according to the professional events attended, the survey results show that internal auditors who attended the seminar organized by the Association of Internal Auditors from Banja Luka were the most satisfied with their jobs.

Chart 5. Percentage of Internal Auditors Who Are Very Satisfied with Their Job According to Professional Events



Participants included in the research were employed in both the public and private sectors. The data collected from all five professional events show that 139 participants were from the public sector and 113 from the private sector, indicating a relatively balanced distribution with a slight predominance of public sector representatives (55%).

Chart 6. Job Satisfaction of Internal Auditors in the Public and Private Sectors



The analysis of respondents' answers indicates that internal auditors employed in the private sector are more satisfied with their jobs compared to their colleagues from the public sector. More precisely, the response "I am very satisfied" was recorded among 73% of respondents from the private sector, compared to 53% of internal auditors employed in the public sector.

The aforementioned data should be interpreted with caution, considering that the number of respondents included in this research represents only a portion of the total number of internal auditors in the observed region. Therefore, the obtained results leave room for further research and analysis.

In order to retain high-quality employees, managers, including Chief Audit Executives, may conduct "stay interviews" to assess employee satisfaction, identify the reasons why employees remain in the company, and determine what is important to them for their future work.

On the other hand, when an employee has already decided to leave the organization, “exit interviews” may also provide valuable insights into organizational culture. In this regard, S. Boeri, a member of the Executive Committee of the European Confederation of Institutes of Internal Auditing (ECIIA), believes that such interviews are underestimated and underutilized in practice; despite representing one of the most powerful tools an organization possesses in this context (Boeri, 2026).

Nevertheless, considering the overall survey results, it should be emphasized that the response “I am very satisfied” was the option most frequently selected by participants across all five events, and that in both sectors more than half of the internal auditors are very satisfied with their jobs, which speaks positively in favor of the internal audit profession itself.

MOTIVATIONAL MIX FOR INTERNAL AUDITORS

If a company wishes to motivate its employees, that is, to enable them to satisfy all of their needs, it should apply a motivational system that includes a combination of material and non-material compensation and rewards (20).

The conducted research supports the conclusion that non-material factors are important for the work motivation of internal auditors. Among the ten factors examined, the following were rated as the most significant non-material motivators: good interpersonal relationships, independence in performing work, and professional education and development. The total percentage of respondents rated these factors as important and very important for their work motivation exceeds 90%.

The research results showed that gender and holding a managerial position within the internal audit function did not influence the selection of the most significant non-material motivators compared to the results of the overall sample.

However, a certain difference in the evaluation of non-material factors among different age groups was observed. Specifically, the youngest group of respondents identified two additional motivators as highly significant for their work motivation: appreciation of their opinions, and flexible working hours with the possibility of remote work.

The “Baby Boomer” generation (born between 1945 and 1960) was marked by the emergence of television, while Generation Z (born between 1995 and 2006) uses “Google” glasses and communicates through handheld devices. These differences influence recruitment, management, development, and employee retention processes, while the role of managers is increasingly directed toward mentorship, intellectual stimulation, and employee motivation. Chief Audit Executives should take all of the above into consideration when implementing Standard 10.2 of the Global Internal Audit Standards.

In contemporary business conditions, flexible working hours and remote work, in addition to representing forms of non-material incentives, also constitute measures for strengthening organizational flexibility and resilience.

The literature contains viewpoints suggesting that traditional principles of motivating people are often ineffective, and that a sense of purpose positively influences work motivation and employee engagement (Fowler, 2017).

In the process of improving human resource management strategies and ensuring greater employee satisfaction at work, “stay interviews” and “exit interviews” may provide significant insights to management, as well as to Chief Audit Executives. These interviews reveal characteristics of organizational culture, which affects all employees, all business processes, and consequently business performance, although its importance is often underestimated compared to the influence it exerts on a daily basis.

In modern business conditions, companies must demonstrate care for their employees. Human well-being is becoming an indicator of organizational health because exhausted and disconnected people do not create value (23).

Chief Audit Executives should establish a specific mix of motivators for each member of their team, including both material and non-material compensation. It is expected that an individual approach to each employee, not only within the internal audit function but throughout the organization, will gain increasing importance in the 21st century for both work motivation and business performance.

CONCLUSION

The contemporary business environment is characterized by the emergence of new risks and increasingly unstable business conditions—an increasingly demanding regulatory framework, the implementation of new technologies and artificial intelligence, geopolitical uncertainty, climate-related disasters, as well as a shortage of competent workforce in many industries. Organizational management needs a trusted advisor for making business decisions within increasingly shorter timeframes.

“The quality of internal audit represents one of the key determinants of the success of modern organizations and is increasingly viewed as a strategic factor rather than merely a technical or regulatory requirement.” (18)

Considering the above, it may be concluded that it is highly important that internal auditors, among other things, possess a high level of work motivation in order to provide high-quality and timely services to management. Organizations are built upon people. At the core of work motivation lies the satisfaction of employee needs. Salary is certainly a fundamental motivational factor; however, financial compensation satisfies only a portion of employees’ needs.

“In order to satisfy their social and developmental needs, organizations should provide employees with non-material compensation, rewards, and incentives.” (20) Both literature and practice indicate that people often leave jobs because of non-material factors, confirming their importance for employee work motivation.

In November 2022, approximately 4.5 million employees voluntarily left their jobs in the United States. Investigating the reasons behind the “Great Attrition,” McKinsey found

that burnout was the leading cause of employees leaving companies, while employees also expressed a need for improvements in the “human aspects” of work (World Economic Forum, 2022).

In order to examine the impact of non-material incentives on the work motivation of internal auditors, an anonymous and voluntary survey was conducted at five professional events held in the Republic of Serbia, the Republic of Srpska, the Republic of Croatia, and the Republic of Slovenia, from October 2024 to July 2025.

The results of the research conducted support the conclusion that non-material factors are significant for the work motivation of internal auditors. Among the ten factors examined, the following were rated as the most significant non-material motivators: good interpersonal relationships, independence in performing work, and professional education and development. The percentage of respondents rated these factors as important and very important for their work motivation exceeds 90%.

The collected data show that gender and holding a managerial position within the internal audit function did not influence the selection of the most significant non-material motivators compared to the results of the overall sample.

However, for the youngest group of respondents, two additional motivators were identified as highly significant for their work motivation: appreciation of their opinions, and flexible working hours with the possibility of remote work.

The share of younger generations in the total number of internal auditors will continue to grow in the future. Therefore, human resource management strategies should include a specific motivational mix for young internal auditors, with particular emphasis on meaningful work, well-being, and flexibility in work arrangements. In order to respond to the needs of younger generations, Chief Audit Executives should further develop their mentoring approach and soft skills.

In modern business conditions, flexible working hours and remote work, in addition to being incorporated into human resource management strategies as forms of non-material incentives, should also be included in corporate resilience plans, enabling greater flexibility and strengthening the organization’s ability to respond to business challenges.

The challenge facing every Chief Audit Executive is to create a motivational mix for each member of a multigenerational team, while taking into account the specific characteristics of the organization, business activities, and individual motivational preferences.

“Organizations that possess an effective internal audit function are perceived as more reliable and less risky, which directly affects their reputation and market position, thereby positioning internal audit as a factor of competitive advantage and long-term business sustainability.” (18)

Two challenges in managing human resources within internal audit are recognized for the future—attracting new talent and subsequently retaining them. Managing internal audit teams, as part of the organization’s key human resources in the contemporary business environment, should be recognized within organizational strategy, with the aim of continuously ensuring a sufficient number of competent internal auditors.

Building a positive environment is not merely something that is “nice to have,” but rather an imperative for managers who seek to ensure long-term stability, growth, and competitive advantage for their organizations (Caprino, 2013).

In the future, organizations will have to become places with a broader meaning than merely task execution—places that enable individual development and create relationships with employees that respect their integrity as human beings, including their needs and aspirations (23).

One of the goals of the conducted research was to connect theory and practical experience with the purpose of improving the internal audit profession and the working conditions of internal auditors. The presented results and analyses may serve as a basis for considering motivational factors and human resource management strategies in internal audit, while recognizing that the topic of work motivation is broad and complex, leaving room for further research.

It may therefore be concluded that the traditional approach to human resource management, including within internal audit, based on salaries, bonuses, and pressure, is becoming outdated, giving way to organizations centered on employee development, supported by a positive organizational culture and a sense of well-being.

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Šta motiviše interne revizore? Uporedna istraživanja u regionalnom okruženju: Značaj nematerijalnih podsticaja

Apstrakt: Dokument "Vizija interne revizije 2035" predviđa transformaciju profesije u kojoj interni revizori postaju strateški konsultanti, čime njihov rad dobija na još većem značaju i korisnosti. Među faktorima koji utiču na kvalitet ove funkcije nalazi se i motivacija internih revizora za rad. Pošto finansijska kompenzacija ne može zadovoljiti sve potrebe pojedinca, cilj istraživanja bio je da ispita uticaj nematerijalnih kompenzacija na njihovu radnu motivaciju. Anonimna anketa sprovedena je na pet stručnih skupova udruženja internih revizora u Srbiji, Republici Srpskoj, Hrvatskoj i Sloveniji, obuhvatajući ukupno 252 ispitanika. Primenjena je deskriptivna statistika. Rezultati pokazuju da nematerijalni podsticaji značajno utiču na motivaciju, pri čemu su tri ocenjena kao najvažnija: dobri međuljudski odnosi, samostalnost u radu i stručno usavršavanje. Razlike su uočene samo kod najmlađih ispitanika, dok pol i rukovodeća pozicija nisu uticali na rangiranje ključnih motivatora. U radu se predlaže motivacioni miks koristan za upravljanje ljudskim resursima u internoj reviziji. Očekuje se da će nematerijalna kompenzacija ostati važna i ubuduće, posebno sa rastućim udelom novih generacija u radnoj snazi.

Ključne reči: Interna revizija, radna motivacija, nematerijalni motivatori, ljudski resursi, organizaciona kultura

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UVOD

Fokus interne revizije se sa *ex ante* menja u proaktivni, vizionarski i agilni pristup u pružanju revizorskih angažmana. Na ovaj način, interni revizori biće u većoj meri uključeni u tekuće ali i buduće poslovanje organizacije.

Kvalitetna funkcija interne revizije se smatra neophodnim mehanizmom u jačanju transparentnosti, odgovornosti i usklađenosti organizacije sa standardima poslovanja, kako bi se obezbedilo poverenje interesnih strana (18). Uloga internih revizora se vidi u doprinosu identifikaciji i smanjenju uticaja novih rizika, pružanju pomoći menadžmentu u prevazilaženju izazova poslovanja, između ostalog, uslovljenih primenom novih tehnologija, upotrebom veštačke inteligencije, sve većom geopolitičkom nesigurnošću, kao i klimatskim promenama.

Rezultati istraživanja, koje je sprovedla Fondacija interne revizije i koje je uključilo 4.073 ispitanika u 131 zemlje, pokazuju da se na četvrtom mestu liste najznačajnijih rizika na globalnom nivou za 2026. godinu, nalazi ljudski kapital (11). Sagledavanje ovog rizika je dvostruko – sa jedne strane interni revizori treba da mu posvete pažnju i vreme u svojim godišnjim planovima, dok sa druge strane, interni revizori predstavljaju deo ljudskih resursa kompanije i bitnu funkciju organizacije, pa u tom smislu takođe zaslužuju pažnju organa upravljanja.

Prilikom ukazivanja na doprinos funkcije interne revizije poslovanju organizacije, treba imati u vidu da je kvalitet rada ove funkcije, pored drugih faktora, uslovljen radnom motivacijom internih revizora.

Motivacija za rad ima direktan uticaj na rezultate rada zaposlenih, kako individualne tako i timske, a zatim i cele organizacije. Iza motivacije stoje potrebe zaposlenih. Prema Maslovljevoj teoriji motivacije, potrebe ljudi su svrstane u pet nivoa, koje se hijerarhijski ispunjavaju: fiziološke potrebe, potrebe sigurnosti, društvene potrebe, potrebe za poštovanjem i potrebe samoaktuelizacije (Petković, 2008).

Određeni autori odbacuju Maslovljevu pretpostavku sukcesivnog zadovoljavanja potreba, pri čemu smatraju da je plata relevantna za zadovoljavanje fizioloških potreba čoveka ali ne i za ispunjenje njegovih socijalnih potreba za pripadnošću, ljubavlju ili samoostvarenjem (Rojas, 2023).

Finansijske kompenzacije imaju prioritetni uticaj prilikom izbora posla i predstavljaju osnov radne motivacije. Međutim, plata ne može zadovoljiti sve potrebe zaposlenog. Praksa pokazuje da određeni posao ostavljamo uglavnom iz nematerijalnih razloga. Zaposleni napuštaju kompanije usled izostanka priznanja za svoj rad, zbog osećaja "nevidljivosti" uprkos uloženoj trudu, kada imaju dobrog šefa ali lošu firmu, dok se razlog fluktuacije krije u rečenici „Ljudi napuštaju ono što ih više ne pokreće“ (BIZLife, 2025).

Imajući u vidu rastući značaj uloge interne revizije u sve nepredvidljivijim uslovima poslovanja, sa jedne, i da na radnu motivaciju, pored materijalnih utiču i nematerijalne kompenzacije, sa druge strane, predmet ovog rada jeste ispitivanje uticaja nematerijalnih podsticaja na radnu motivaciju internih revizora. Istraživanjem se želelo ispitati da li su

nematerijalni podsticaji bitni za radnu motivaciju internih revizora, i koji od ispitivanih deset faktora imaju najveći uticaj.

Pored navedenog, želelo se ispitati da li postoji povezanost, odnosno posledično uzročni odnos, između demografskih karakteristika ispitanika - godina starosti i pola, kao i pozicije koju obavljaju, i značaja koji su interni revizori dali određenim nematerijalnim faktorima. Sprovedena anketa je ispitivala i nivo zadovoljstva internih revizora poslom i da li postoji razlika u zadovoljstvu poslom po osnovu pripadnosti javnom ili privatnom sektoru privrede.

Svaki zaposleni reaguje na određeni "miks" motivatora, koji su za njega lično bitni i podstiču njegovu motivaciju za rad. U tom smislu se ističe uloga Rukovodioca interne revizije da, pored obezbeđivanja dovoljnog broja kompetentnih internih revizora, iste razvija i zadrži, što uključuje nagrađivanje, priznanja, obezbeđivanje obuke, kao i etičkog i profesionalnog radnog okruženja (Institut internih revizora, 2024).

U literaturi i praksi sve češće nailazimo na termin "pozitivna organizacija", gde radno okruženje i organizaciona kultura imaju podržavajući uticaj na rad zaposlenih, omogućavajući im da ostvare psihološku stabilnost i balans između poslovnog i privatnog života, uz održive poslovne rezultate.

Organizacije koje daju prioritet razvoju zaposlenih, podršci i priznanju imaju veće izgleda da ostvare održivu angažovanost i produktivnost zaposlenih (Sunmola, 2025). Pristup upravljanja ljudskim resursima baziran na zaradama, bonusima i pritiscima da se ostvare targeti, postaje prevaziđen ustupajući mesto organizaciji u čijem središtu je zaposleni i njegov razvoj.

CILJ, OBUHVAT I METODOLOGIJA ISTRAŽIVANJA

Cilj istraživanja je bilo ispitivanje radne motivacije internih revizora i otkrivanja nematerijalnih faktora koji na nju utiču. Istraživanje je sprovedeno na pet profesionalnih skupova, organizovanih od strane relevantnih strukovnih udruženja u Republici Srbiji, Republici Srpskoj, Republici Hrvatskoj i Republici Sloveniji, kako sledi:

- 12. Konferencija Udruženja internih revizora Srbije (IIA Srbija), pod nazivom „Pogled unapred: Redefinisanje interne revizije za moderno doba“, održana u Beogradu 10. i 11. oktobra 2024. godine (71 popunjena anketa)
- Seminar internih revizora na temu „Globalni standardi interne revizije“ organizovan od strane Udruženja internih revizora sa sedištem u Banja Luci, održan u Banji Vrućici 28. i 29. novembra 2024. godine (22 popunjene ankete)
- 14. međunarodna konferencija Hrvatskog instituta internih revizora (IIA Hrvatska) pod nazivom „Oblikovanje budućnosti interne revizije“, održana u Petrčanim kod Zadra, od 9. do 11. aprila 2025. godine (88 popunjenih anketa)
- 14. međunarodna konferencija Slovenačkog instituta internih revizora (IIA Slovenija) pod nazivom „Interna revizija 360°“, održana na Bledu, 24. i 25. aprila 2025. godine (38 popunjenih anketa)

- Međunarodni seminar na temu „Korak dalje ka učinkovitoj primeni koncepta upravljačke odgovornosti u javnom sektoru“ u organizaciji Međunarodnog udruženja ovlašćenih internih revizora u javnom sektoru EUIAPS i SEVOI Financial Consulting, održan na Zlatiboru, u periodu od 1. do 4. jula 2025. godine (33 popunjene ankete).

Istraživanje je sprovedeno u periodu od 10. oktobra 2024. godine do 4. jula 2025. godine. Anonimna, dobrovoljna anketa, u vidu upitnika u papirnoj formi, podeljena je učesnicima koji su, u trenutku podele upitnika, bili prisutni u salama održavanja navedenih profesionalnih skupova.

Pristup navedenim trima konferencijama je bio hibridan, tako da učesnici koji su konferencije pratili ”on-line” nisu bili obuhvaćeni ovim istraživanjem. Prisustvo seminarima je bilo isključivo ”off-line”, odnosno na licu mesta, tako da su pristup anketi imali svi učesnici.

Anketa je obuhvatila osam zatvorenih pitanja, kod kojih su interni revizori zaokruživanjem birali jedan od ponuđenih odgovora. Poslednje, deveto pitanje, bilo je otvorenog tipa, odnosno omogućivalo je učesnicima da iznesu dodatni komentar, u slobodnoj formi.

Upitnik je uključio pitanja koja su se odnosila na karakteristike ispitanika (pol, godine starosti, godine radnog iskustva u internoj reviziji), zatim sektorsku pripadnost, poziciju koju obavljaju u okviru funkcije interne revizije, dalje, da li je ova funkcija uspostavljena u njihovoj organizaciji kao jedno radno mesto ili posebna organizaciona jedinica, kao i o nivou zadovoljstva poslom koji obavljaju.

Ispitujući značaj koji deset nematerijalnih faktora ima na radnu motivaciju internih revizora, primenom Likertove skale, ispitanicima je data mogućnost da izaberu jednu od pet ponuđenih tvrdnji za svaki od ispitivanih faktora.

Prikupljeno je ukupno 254 anketa na svih pet stručnih događaja, međutim, dva upitnika koja nisu bila u potpunosti popunjena su isključena iz istraživanja, tako da je u dalju obradu podataka ušao 252 anketni upitnik.

Ispitanici koji su učestvovali u istraživanju pripadaju različitim generacijskim grupama, imaju različitu dužinu radnog iskustva, sektorsku pripadnost, i rade u različitim zemljama, čime je obezbeđena heterogenost prikupljenog uzorka.

Ograničenje istraživanja se ogleda u nemogućnosti utvrđivanja tačnog udela uzorka u ukupnom skupu, odnosno u ukupnom broju internih revizora u zemljama gde su održani stručni skupovi, iz razloga nepostojanja jedinstvenih registara.

Na primer, u Republici Srbiji, na dva održana skupa, istraživanje je obuhvatilo 62 interna revizora iz javnog sektora i 42 interna revizora iz privatnog sektora.

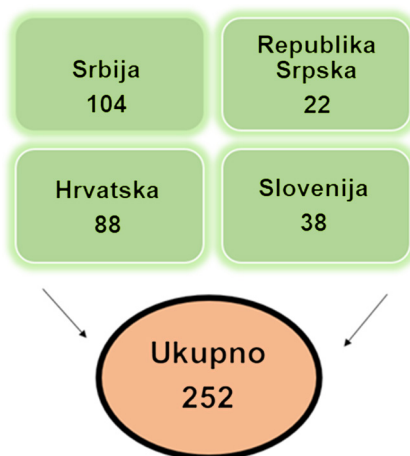
U Konsolidovanom godišnjem izveštaju za 2024. godinu, koji je izradila Centralna jedinica za harmonizaciju Ministarstva finansija Republike Srbije, navodi se da je u 2024. godini ukupan broj popunjenih radnih mesta internih revizora u javnom sektoru iznosio 618 (15). Shodno navedenom, dolazi se do zaključka da uzorak internih revizora

zaposlenih u javnom sektoru Republike Srbije obuhvaćen istraživanjem (62) predstavlja 10% ukupne populacije.

Uvidom u registar Komore ovlašćenih revizora Republike Srbije, utvrđeno da je ova institucija izdala 192 sertifikata za profesionalno zvanje "ovlašćeni interni revizor" (Komora ovlašćenih revizora, 2026). Međutim, kako ulogu internih revizora u privatnom sektoru obavljaju lica koja imaju i druge nacionalne i međunarodne sertifikate, navedeni broj sertifikata se ne može porediti sa brojem internih revizora iz privatnog sektora koji su učestvovali u istraživanju (42).

Na sledećoj slici nalazi se teritorijalni pregled ukupnog broja učesnika istraživanja, odnosno popunjenih anketa.

Slika 1. Broj popunjenih anketa



OSNOVNE KARAKTERISTIKE UZORKA

U cilju utvrđivanja osnovnih karakteristika uzorka obuhvaćenog istraživanjem, u nastavku su analizirani prikupljeni podaci koji se odnose na poziciju interne revizije u organizaciji, zatim poziciju, odnosno radno mesto ispitanika u funkciji interne revizije, kao i dužinu radnog iskustva ispitanika u profesiji.

Pozicija interne revizije u organizaciji

Prikupljeni podaci pokazuju da posebna organizaciona jedinica postoji u organizacijama kod 87% ispitanika, naspram 13% anketiranih internih revizora gde je sistematizovano jedno radno mesto. Ipak, u praksi se susrećemo sa situacijom da nisu sva sistematizovana radna mesta u jedinici interne revizije uvek popunjena, kao i da je ukupan broj zaposlenih internih revizora u jednoj organizaciji manji od 3 (15).

Imajući u vidu prirodu profesije i obavezu čuvanja podataka kojima interna revizija pristupa, možemo pretpostaviti da je rad internih revizora lakši i kvalitetniji tamo gde postoji tim, u okviru koga se mogu podeliti nedoumice po određenom pitanju, kao i koristiti ukupno znanje i veštine cele jedinice.

Pozicija ispitanika u internoj reviziji

Prikupljeni odgovori ukazuju na uravnotežen udeo učesnika ankete na različitim pozicijama u internoj reviziji. Naime, 37% ispitanika obavlja poziciju Rukovodioca odnosno Direktora interne revizije u organizaciji, zatim 31% njih je na poziciji Viši interni revizor / Samostalni interni revizor / Šef manje organizacione jedinice u okviru službe interne revizije, dok je 32% ispitanika zaposleno kao Interni revizor.

Grafikon 1. Pozicija ispitanika u internoj reviziji



Radno iskustvo ispitanika

Najveći broj učesnika u anketi, njih 40% poseduje između 11 i 20 godina radnog staža u internoj reviziji, dok 19% ispitanika obavlja posao internog revizora duže od 20 godina. Interni revizori sa radnim iskustvom do 5 godina predstavljaju 23% ukupnog broja ispitanika. Navedeni podaci pokazuju da većina ispitanika (skoro 60%) predstavlja profesionalce sa značajnim iskustvom u internoj reviziji.

NAJZNAČAJNIJI NEMATERIJALNI MOTIVATORI ZA INTERNE REVIZORE

Osnovni cilj istraživanja bio je da se ispita da li nematerijalni faktori utiču na radnu motivaciju internih revizora, kao i kojima od ponuđenih nematerijalnih podsticaja, interni revizori daju najveći značaj. Ispitanici su određivali važnost deset ponuđenih nematerijalnih faktora za njihovu radnu motivaciju. Primenom Likertove skale, za svaki nematerijalni faktor, učesnici istraživanja davali su ocenu od 1 do 5, pri čemu je 1 označavao tvrdnju da određeni faktor nije važan, dok je ocena 5 značila da je određeni nematerijalni faktor veoma važan za radnu motivaciju ispitanika.

U anketi, navedeno pitanje je bilo predstavljeno na sledeći način:

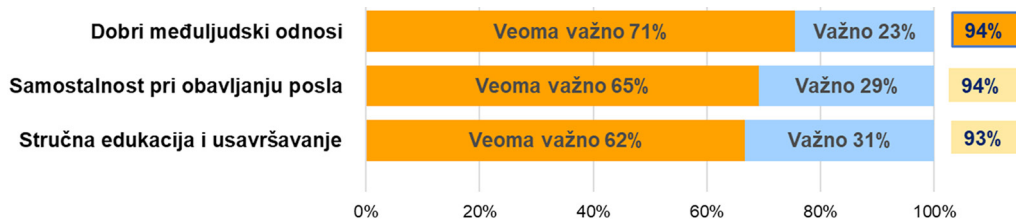
Slika 2. Pitanje broj 8 u sprovedenoj anketi

Ocenite značaj navedenih faktora na Vašu radnu motivaciju: (zaokružiti odgovor za svaku tvrdnju)					
Motivacioni faktori	Nije važno	Malo važno	Umereno važno	Važno	Veoma važno
Vrednovanje Vašeg mišljenja	1	2	3	4	5
Samostalnost pri obavljanju posla	1	2	3	4	5
Zanimljivost radnog zadatka	1	2	3	4	5
Korišćenje naprednih softverskih programa i alata u radu	1	2	3	4	5
Javna pohvala za dobro obavljen posao	1	2	3	4	5
Dobri međuljudski odnosi	1	2	3	4	5
Sigurnost posla	1	2	3	4	5
Stručna edukacija i usavršavanje	1	2	3	4	5
Fizički uslovi rada: kancelarija, oprema, nameštaj i dr.	1	2	3	4	5
Klizno radno vreme, mogućnost rada od kuće	1	2	3	4	5

Napomena: Tekst ankete je bio preveden na engleski jezik za potrebe Konferencije IIA Slovenija

Analizom ukupnih podataka prikupljenih na svih pet stručnih događaja, utvrđeno je da su za radnu motivaciju internih revizora najznačajniji sledeći nematerijalni faktori:

Grafikon 2. Najznačajniji nematerijalni motivatori za interne revizore



Dobri međuljudski odnosi

Rezultati ankete ukazuju da je ispitanicima veoma bitno zadovoljavanje socijalnih potreba, iskazanih kroz dobre međuljudske odnose na radnom mestu. Za 71% ispitanih internih revizora, dobri međuljudski odnosi su veoma važni, a za dodatnih 23% važni za njihovu radnu motivaciju. Podaci ukazuju da ovaj nematerijalni faktor utiče na radnu motivaciju kod 94% ispitanika.

Imajući u vidu da dobar deo dana provodimo u radnom okruženju, veoma je značajno na koji način će to vreme biti utrošeno. Da li će zaposleni imati osećaj prijatnosti i opuštenosti tokom rada ili će vreme na poslu provesti u grču i napetosti. Osećaj nerazumevanja i neprihvatanja od strane kolega ili nadređenih utiče kako na zadovoljstvo poslom, tako i na rezultate rada.

U literaturi se kao vidovi međuljudskih odnosa u organizaciji prepoznaju: komunikacija, timski rad, konflikti, empatija, (aktivno) slušanje, pozitivan pristup i sposobnosti lidera (Phillipa, 2022).

Pozitivan uticaj dobrih međuljudskih odnosa na produktivnost i rezultate rada, utvrđen je još početkom prošlog veka, prilikom izvođenja eksperimenata Eltona Meja u Hovtorn (eng. Hawthorne) fabrici, što je predstavljalo temelj za postavljanje teorije humanih odnosa (Anteby).

Samostalnost pri obavljanju posla

Rezultati ankete su pokazali da je samostalnost pri obavljanju posla od značaja za radnu motivaciju internih revizora. 65% ispitanika je ocenilo da je ovaj nematerijalni faktor veoma važan za njihovu motivaciju na poslu. Takođe, 29% ispitanika smatra uticaj ovog nematerijalnog faktora važnim za svoju motivaciju na radnom mestu. Navedeni procenti govore u prilog da 94% ispitanika smatra samostalnost pri obavljanju posla značajnom za njihovu radnu motivaciju.

Potreba za samostalnošću pri obavljanju posla može se povezati i sa nezavisnom organizacionom i funkcionalnom pozicijom interne revizije u organizaciji. Princip 7, Standard 7.1. Globalnih standarda interne revizije upravo propisuje zahteve i postavlja uslove pred odbor i najviše rukovodstvo za obezbeđenje nezavisnosti funkcije interne revizije i njenog rada.

Odgovornost i samostalnost u obavljanju posla se baziraju na poveravanju određenog posla i poverenju da će zadatak biti završen na adekvatan način. Poverenje je upravo odnos koji interni revizori, primenjujući principe profesije, treba da ostvare sa odborom i rukovodstvom organizacije. Shodno transformaciji uloge internih revizora u savetnike od poverenja ("trusted advisors"), organi upravljanja imaju potrebu da se oslone na njihov rad pri donošenju odluka o poslovanju.

Stručna edukacija i usavršavanje

Stručna edukacija i usavršavanje je ocenjeno kao treći po važnosti nematerijalni faktor za radnu motivaciju internih revizora koji su učestvovali u istraživanju. Od ukupnog broja učesnika 62% ocenilo je stručnu edukaciju i usavršavanje veoma važnim, a njih 31% važnim za svoju radnu motivaciju. Navedeno govori u prilog da kod 93% ispitanika navedeni nematerijalni faktor ostvaruje bitan uticaj na motivisanost internih revizora na poslu.

Pored toga što je obaveza stalnog stručnog usavršavanja propisana globalnim i nacionalnim regulatornim okvirom, ista predstavlja potrebu svakog internog revizora kako bi bio u mogućnosti da kompetentno obavlja revizorske angažmane.

„Revizori su stoga primorani da usvoje fleksibilnije, dinamičnije i sveobuhvatnije pristupe upravljanju revizorskim rizikom, kao i da kontinuirano unapređuju svoje profesionalne kompetencije.“ (Joksimović, 2025)

Visok procenat ispitanika koji je stručno usavršavanje prepoznao kao faktor motivacije, govori u prilog usaglašenosti stavova internih revizora sa principima profesije. Može se zaključiti da ispitanici obuku ne doživljavaju samo kao propisanu obavezu, već pre kao preduslov za pružanje kvalitetne usluge.

Procena kompetencija internih revizora, u skladu Okvirom kompetencija IIA, obuhvata objektivnu ocenu znanja i veština za 28 potkategorija dodeljivanjem jednog od četiri nivoa: osnovni, srednji, napredni i ekspertski (Beke-Trivunac, 2025). Učešće na konferencijama, seminarima, vebinarima i drugim stručnim skupovima u organizaciji nacionalnih, regionalnih i globalnih organizacija i udruženja interne revizije, predstavlja dobar način za unapređenje znanja internih revizora i praćenje najnovijih trendova.

Najznačajniji motivatori prema stručnim skupovima

Odgovori internih revizora prema održanim profesionalnim skupovima, pokazali su da je kao najznačajniji motivator na tri stručna događaja (Konferencija IIA Srbija, Seminar u R. Srpskoj i Konferencija IIA Hrvatska) ocenjen „Dobri međuljudski odnosi“. Na Konferenciji IIA Slovenija, prvo mesto je zauzela „Samostalnost pri obavljanju posla“, dok prema glasovima ispitanika na seminaru EUIAPS, ovaj motivator deli prvo mesto sa „Stručna edukacija i usavršavanje“.

Uticaj demografskih karakteristika ispitanika na motivaciju za rad

Upitnik je obuhvatio dva pitanja koja su se odnosila na demografske osobine ispitanika – starost i pol.

Podaci sprovedenog istraživanja pokazuju da je profesija interne revizije u većoj meri oslonjena na rad predstavnica ženskog pola, imajući u vidu učešće od skoro tri četvrtine (72%) ukupnog broja ispitanika.

Sagledavajući rezultate posebno za muškarce i žene, utvrđeno je da su obe grupe na isti način rangirale tri najznačajnija nematerijalna motivatora, koji odgovara i ukupnim podacima istraživanja, što govori u prilog da rodna pripadnost nije imala uticaj na rangiranje najznačajnijih faktora motivacije.

Ipak, ono što je primećeno jeste da se razlikuje jačina uticaja istih motivatora na radnu motivaciju muškaraca i žena internih revizora. Tako na primer, za 96% žena stručna edukacija i usavršavanje je važno ili veoma važno za njihovu radnu motivaciju, dok ovaj procenat za muškarce iznosi 87%.

U anketi, ispitanicima je bilo ponuđeno da izaberu jednu od tri generacijske grupe. Dobijeni odgovori su pokazali da je preko polovine ispitanika (56%) starosti između 30-50 godina, zatim 40% učesnika ima preko 50 godina, dok je svega 4% ispitanika mlađe od 30 godina.

Povezujući dobijene odgovore o starosti ispitanika sa najvišom ocenom koju su ispitanici dali pojedinim nematerijalnim faktorima na njihovu radnu motivaciju, dobijaju se sledeći podaci:

Kada su u pitanju poslednje dve grupe, može se zaključiti da su ispitanici ocenili tri ista motivatora od najvećeg značaja za svoju radnu motivaciju, samo je redosled drugačiji. Kod sve tri grupe među najbitnijim nematerijalnim pokretačima su navedeni dobri međuljudski odnosi i stručna edukacija i usavršavanje. Zanimljivo je istaći da je najstarija grupa ispitanika ocenila da im je stalno usavršavanje najznačajniji nematerijalni motivator.

Upoređujući dobijene podatke po grupama ispitanika, podeljenih prema demografskim karakteristikama, može se zaključiti da iste imaju delimičan uticaj na ocenu značaja nematerijalnih faktora na radnu motivaciju i to kod starijih grupa internih revizora.

Novе generacije internih revizora

Treba primetiti da je najmlađa grupa ispitanika, pored dobrih međuljudskih odnosa i stručne edukacije i usavršavanja, istakla značaj još dva najbitnija motivatora za njihovu radnu aktivnost: vrednovanje Vašeg mišljenja, i klizno radno vreme i mogućnost rada od kuće.

Iako je udeo ispitanika koji pripadaju ovoj starosnoj grupi mali u ukupnom broju učesnika, navedeno ukazuje na nove potrebe mlađih generacija, čiji će broj u radnoj snazi vremenom rasti.

Naime, procenjuje se da će udeo Generacije Y tzv. Milenijalaca (rođeni između 1983 i 1994) i Generacije Z (rođeni između 1995 i 2006) biti 74% u ukupnoj svetskoj radnoj snazi do 2030 godine. Istraživanje Deloitte-a, koje je obuhvatilo 23.482 ispitanika u 44 zemlje, ukazuje da je za navedene dve generacijske grupe najvažnije učenje i usavršavanje. Plata za njih jeste bitna ali isto tako i rad sa svrhom i blagostanje (Deloitte Global, 2025).

Treba imati u vidu da nove generacije u profesiju interne revizije donose drugačiji pristup rada, kao i da na njihovu radnu motivaciju delom utiču drugačiji podsticaji u odnosu na trenutno većinu zaposlenih internih revizora.

Predstavnici Generacije Y teže balansu posla i privatnog života, većoj nezavisnosti, i zahtevaju fleksibilno radno vreme. Generacija Z, dobro se oseća u digitalnom radnom okruženju, od svog pretpostavljenog očekuju da im bude mentor i daje brze povratne informacije ali radije u "on-line" formatu nego u ličnom susretu, preduzimaju odgovornost u ranim fazama svoje karijere i žele da rade na daljinu, sa fleksibilnim radnim okvirom (Fuchs, 2024).

U cilju privlačenja i zadržavanja novih generacija, McKinsey smatra da ponuda kompanija mladima treba da bude bazirana na fleksibilnosti, mentalnom blagostanju, benefitima koji se odnose na socijalne i zdravstvene aspekte, kao i jakom i smislenom organizacionom kulturom kompanije (Ellerbeek, 2022).

Privlačenje novih generacija u profesiju interne revizije pitanje je od značaja, kako u našoj zemlji i regionu, tako i na globalnom nivou. Upravo jedan od elemenata transformacije interne revizije do 2035 godine predstavlja jačanje kanala za privlačenje novih kadrova ("talent pipeline") (12).

Ipak, pored privlačenja novih kadrova, Rukovodioci interne revizije će morati da prilagode način upravljanja timom, uvažavajući različite generacijske karakteristike svakog internog revizora, kako bi osigurali uspešnost funkcije interne revizije.

Rad „na daljinu“ kao motivator i vid održivosti poslovanja

Nove generacije očekuju da im u kompaniji za koju rade bude obezbeđeno fleksibilno radno vreme i mesto rada, koji ujedno predstavljaju i bitan nematerijalni faktor za njihovu radnu motivaciju.

U periodu tokom i nakon pandemije zarazne bolesti Covid-19, rad od kuće je postao veoma prisutan, posebno u privatnom sektoru, u delatnostima koje to omogućavaju poput finansijskih usluga, telekomunikacija, informacionih tehnologija i dr., zadržavajući se i danas, posle šest godina. Za razliku od privatnog, u javnom sektoru rad od kuće nije široko primenjen, iako je 72% ispitanika koji rade u javnom sektoru, ovaj faktor ocenilo kao važan ili veoma važan za njihovu radnu motivaciju.

Postojanje rizika od nastanka neke nove pandemije ili klimatskih nepogoda, u vidu iznenadnih ciklonskih vetrova, poplava i požara, koji bi uticali na fizičku (ne)mogućnost odlaska na posao, prisutni su i vrlo verovatno će biti izraženiji u narednim godinama.

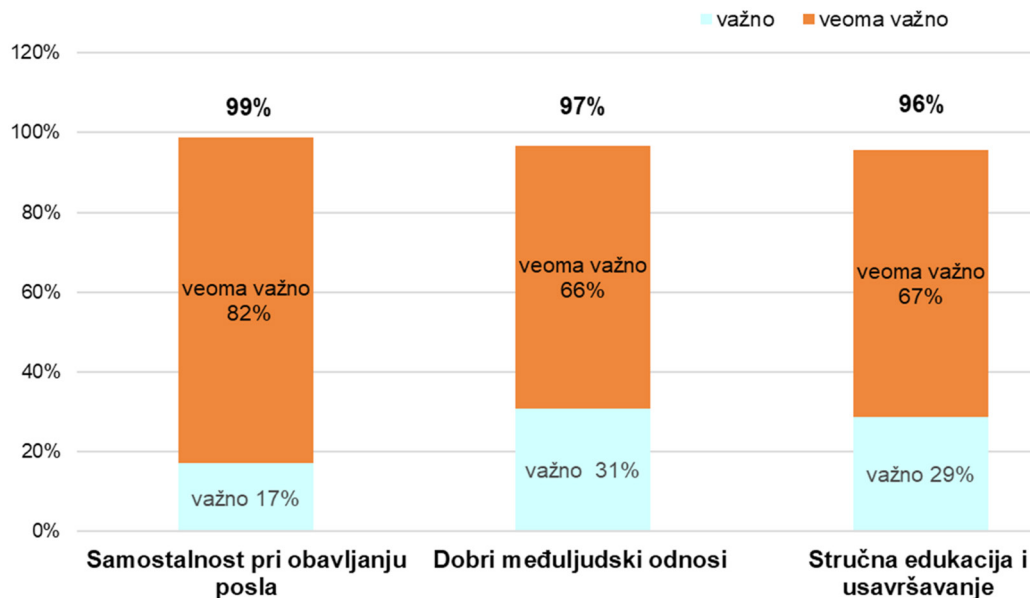
Pored toga, prema istraživanju Fondacije interne revizije o najznačajnijim rizicima u 2026. godini, geopolitička nesigurnost je rizik koji beleži najveći rast u poslednjih godinu dana (11). Sve navedeno utiče na potrebu kompanija da omoguće rad svojih zaposlenih od kuće ili sa nekog drugog udaljenog mesta.

U savremenom dobu, rad „na daljinu“ se može smatrati, pored vida nematerijalne kompenzacije, i jednom od mera za jačanje održivosti poslovanja organizacije. Zbog svega navedenog, potrebno je razmotriti uključivanje ovog podsticaja u strategiju upravljanja ljudskim resursima u internoj reviziji, kao i celoj organizaciji, ali i u plan otpornosti kompanije, što u oba slučaja jača fleksibilnost i kapacitet organizacije da odgovori na izazove savremenog poslovanja.

Motivacija Rukovodilaca interne revizije

Imajući u vidu značaj funkcije kojom upravlja na nivou organizacije, zanimljivo je bilo ispitati koja nematerijalna kompenzacija je najznačajnija za radnu motivaciju Rukovodioca/Direktora interne revizije. Dobijeni podaci pokazuju da se najznačajniji nematerijalni faktori poklapaju sa onima dobijenim na nivou celog skupa, samo sa izmenjenim redosledom. U tom smislu možemo zaključiti da pozicija u okviru funkcije interne revizije, nije imala uticaj na davanje značaja ponuđenim nematerijalnim motivatorima od stane ispitanika.

Grafikon 3. Najznačajniji motivatori za Rukovodiioce/ Direktore interne revizije



Najmanje značajni nematerijalni motivatori

Analizom odgovora dobijenih sprovedenim istraživanjem, utvrđeni su i nematerijalni motivatori koji su ocenjeni od strane ispitanika kao najmanje značajni za njihovu radnu motivaciju. Sagledavajući zbir odgovora ispitanika: "nije važno", "malo važno" i "umereno važno", sa jedne strane, i najmanji broj odgovora "veoma važno", sa druge strane, dobijeni su sledeći faktori sa najmanjim uticajem za radnu motivaciju internih revizora:

- Javna pohvala za dobro obavljen posao
- Korišćenje naprednih softverskih programa i alata u radu
- Fizički uslovi rada: kancelarija, oprema, nameštaj i dr.

Rezultati ispitanika o najmanje važnim faktorima, prema održanim stručnim skupovima, prikazani su sledećoj slici:

Slika 3. Najmanje bitni nematerijalni faktori za interne revizore prema stručnim skupovima

Konferencija IIA Srbija	Seminar Udruženja internih revizora Republike Srpske	Konferencije IIA Hrvatska I IIA Slovenija I Seminar EUIAPS
Napredni softverski programi i alati	Fizički uslovi rada	Javna pohvala

ZADOVOLJSTVO INTERNIH REVIZORA POSLOM

U cilju ispitivanja nivoa zadovoljstva internih revizora poslom koji obavljaju, učesnicima je u anketi bilo ponuđeno da izaberu jedan od sledećih odgovora: veoma zadovoljan/a, delimično zadovoljan/a i nisam zadovoljan/a.

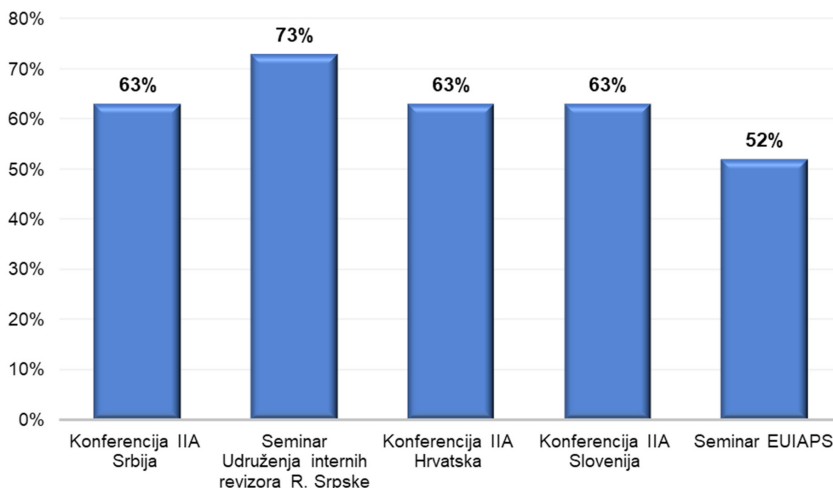
Od ukupnog broja ispitanika, najveći broj njih, tačnije 62% se izjasnilo da je veoma zadovoljno poslom koji obavlja. Oko jedne trećine ispitanika (35%) je delimično zadovoljno, dok svega 3% ispitanika (u apsolutnom broju 6) se izjasnilo da nije zadovoljno na svom radnom mestu.

Grafikon 4. Zadovoljstvo internih revizora poslom

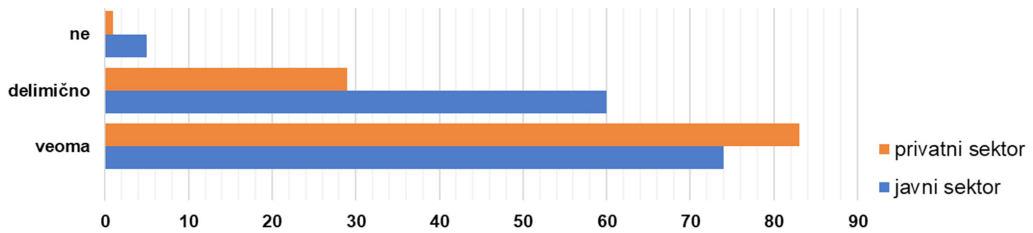


Pregledom odgovora prema stručnim skupovima, rezultati ankete pokazuju da su poslom najviše zadovoljni interni revizori koji su prisustvovali seminaru u organizaciji Udruženja internih revizora iz Banja Luke.

Grafikon 5. Procenat internih revizora koji su veoma zadovoljni svojim poslom, prema stručnim skupovima



Grafikon 6. Zadovoljstvo internih revizora poslom u javnom i privatnom sektoru



Učesnici obuhvaćeni istraživanjem, zaposleni su kako u javnom, tako i privatnom sektoru privrede. Prikupljeni podaci sa svih pet stručnih događaja, pokazuju da je 139 učesnika bilo iz javnog i 113 iz privatnog sektora, odnosno da je broj učesnika dosta uravnotežen sa malom prevagom na strani predstavnika iz javnog sektora (55%).

Analiza odgovora ispitanika govori da su interni revizori zaposleni u privatnom sektoru zadovoljniji obavljanjem posla u odnosu na svoje kolege iz javnog sektora. Preciznije, ukoliko se posmatra zastupljenost odgovora "veoma sam zadovoljan-a", isti je zabeležen kod 73% ispitanika iz privatnog sektora u odnosu na 53% internih revizora iz javnog sektora.

Navedene podatke treba uzeti uz ogradu da broj ispitanika obuhvaćenih ovim istraživanjem predstavlja tek deo ukupnog broja internih revizora u posmatranom regionu, te dobijeni podaci ostavljaju prostor za dalje istraživanje i razmatranje.

U cilju zadržavanja dobrih kadrova, menadžeri, uključujući i Rukovodioce interne revizije, mogu da obavljaju "ostajuće" (stay) intervjue, kako bi ispitali nivo zadovoljstva zaposlenih, razloga zbog kojih ostaju u firmi, kao i šta im je bitno za dalji rad.

S druge strane, u situaciji kada je neko već odlučio da ode iz firme, "odlazni" intervjui, takođe mogu pružiti dragocene uvide o organizacionoj kulturi. S tim u vezi, S. Boeri, član izvršnog odbora Evropske konfederacije instituta interne revizije (European Confederation of Institutes of Internal Auditing - ECIIA), smatra da su u praksi isti potcenjeni i neiskorišćeni, a predstavljaju jedan od najmoćnijih alata koji organizacija u ovom kontekstu poseduje (Boeri, 2026).

Ipak, sagledavajući ukupne rezultate ankete, potrebno je istaći da je upravo odgovor "veoma sam zadovoljan-a" najviše puta bio zaokružen od strane učesnika na svih pet događaja, kao i da je u oba sektora preko polovine internih revizora veoma zadovoljno svojim poslom, što govori pozitivno u prilog same profesije interne revizije.

MOTIVACIONI MIKS ZA INTERNE REVIZORE

Ukoliko kompanija želi da motiviše svoje zaposlene, odnosno omogući da oni zadovolje sve svoje potrebe, treba da primenjuje motivacioni sistem koji obuhvata kombinaciju materijalnih i nematerijalnih kompenzacija i nagrada (20).

Sprovedeno istraživanje govori u prilog da su nematerijalni faktori bitni za radnu motivaciju internih revizora. Kao najznačajniji nematerijalni motivatori, od ispitivanih deset, ocenjeni su: dobri međuljudski odnosi, samostalnost pri obavljanju posla, i stručna edukacija i usavršavanje. Ukupan procenat ispitanika koji su navedene faktore ocenili važnim i veoma važnim za svoju radnu motivaciju iznosi preko 90%.

Rezultati istraživanja su pokazali da rodna pripadnost i obavljanje rukovodeće pozicije u funkciji interne revizije nisu uticali da izbor najznačajnijih nematerijalnih motivatora bude različit u odnosu na rezultate celog skupa.

Ipak, uočena je određena razlika ocene nematerijalnih faktora od strane različitih starosnih grupa. Naime, najmlađa grupa ispitanika je istakla značaj još dva motivatora kao najznačajnija za njihovu radnu motivaciju: vrednovanje Vašeg mišljenja, i klizno radno vreme i mogućnost rada od kuće.

Generaciju "Baby boomer-a" (rođenih između 1945 i 1960) obeležilo je pojavljivanje televizora, dok Generacija Z (rođeni između 1995 i 2006) koristi "google" naočare i komunicira sa uređajima koji se drže u ruci. Navedene razlike utiču na procese zapošljavanja, upravljanja, razvoja i zadržavanja kadrova, dok se uloga rukovodioca usmerava ka mentorstvu, intelektualnom podsticanju i motivaciji zaposlenih. Sve navedeno Rukovodioci interne revizije treba da imaju u vidu kada primenjuju standard 10.2. Globalnih standarda interne revizije.

U savremenim uslovima poslovanja, fleksibilno radno vreme i rad na daljinu, pored toga što predstavljaju vid nematerijalnog podsticaja, predstavljaju meru jačanja fleksibilnosti i otpornosti organizacije.

U literaturi se mogu naći stavovi da tradicionalni principi motivacije ljudi često nisu efikasni, kao i da bitnost osećaja svrhe pozitivno utiče na radnu motivaciju i veću angažovanost (Fowler, 2017).

Na putu unapređenja strategije upravljanja ljudskim resursima i obezbeđenja većeg zadovoljstva zaposlenih na poslu, "ostajući" i "odlazeći" intervjui mogu pružiti značajne informacije menadžmentu, kao i Rukovodiocima interne revizije. Ovi intervjui ukazuju na karakteristike organizacione kulture, koja utiče na sve zaposlene, sve poslovne procese, a time i na poslovni rezultat kompanije, dok njen značaj često biva potcenjen u odnosu na uticaj koji svakodnevno ostvaruje.

U uslovima savremenog poslovanja, neophodna je briga kompanije za zaposlene. Blagostanje ljudi postaje pokazatelj zdravlja organizacije jer umorni i nepovezani ljudi ne stvaraju vrednost (23).

Rukovodioci interne revizije treba da utvrde poseban miks motivatora za svakog člana svog tima, koji pored materijalnih obuhvata i nematerijalne kompenzacije. Očekivano je da će individualan pristup svakom zaposlenom, ne samo u funkciji interne revizije, već i u celoj organizaciji, imati sve veći značaj u 21. veku za radnu motivaciju ali i rezultate poslovanja.

ZAKLJUČAK

Savremeno poslovno okruženje karakteriše pojava novih rizika i sve nestabilniji uslovi poslovanja - sve zahtevniji regulatorni okvir, primena novih tehnologija i veštačke inteligencije, geopolitička nesigurnost, klimatske nepogode ali i nedostatak kompetentne radne snage u mnogim delatnostima. Menadžmentu organizacije je potreban savetnik od poverenja u donošenju poslovnih odluka u sve kraćem vremenskom roku.

„Kvalitet interne revizije predstavlja jednu od ključnih determinanti uspešnosti savremenih organizacija i sve više se posmatra kao strateški faktor, a ne samo kao tehnički ili regulatorni zahtev.“ (18)

Imajući u vidu prethodno navedeno, može se zaključiti da je vrlo bitno da interni revizori, između ostalog, poseduju visok stepen radne motivacije kako bi pružili kvalitetne i blagovremene usluge menadžmentu.

Organizacije počivaju na ljudima. U osnovi radne motivacije nalazi se zadovoljavanje potreba zaposlenog. Plata jeste osnovni motivacioni faktor, međutim finansijske kompenzacije zadovoljavaju samo deo potreba zaposlenih.

„Da bi ostvario i svoje socijalno-razvojne potrebe, organizacija svojim zaposlenima treba da omogući ostvarenje nematerijalnih kompenzacija, nagrada i podsticaja.“ (20) U literaturi i praksi se susrećemo sa podacima da ljudi napuštaju posao zbog nematerijalnih faktora, potvrđujući njihov značaj za radnu motivaciju zaposlenih.

U novembru 2022. godine, oko 4,5 miliona zaposlenih je svojevoljno napustilo posao u Sjedinjenim američkim državama. Istražujući razloge za ”veliko osipanje” (Great Attrition), McKinsey je došao do podataka da je ”burnout” bio vodeći razlog napuštanja firmi, kao i da su zaposleni imali potrebu za unapređenjem ”ljudskih aspekata” na poslu (World Economic Forum, 2022).

U cilju ispitivanja uticaja nematerijalnih podsticaja na radnu motivaciju internih revizora, sprovedena je anonimna, dobrovoljna anketa na pet stručnih događaja koji su održani u Republici Srbiji, Republici Srpskoj, Republici Hrvatskoj i Republici Sloveniji, od oktobra 2024. godine do jula 2025. godine. Rezultati sprovedenog istraživanja govore u prilog da su nematerijalni faktori značajni za radnu motivaciju internih revizora. Kao najznačajniji nematerijalni motivatori, od ispitivanih deset, ocenjeni su: 1) dobri međuljudski odnosi, 2) samostalnost pri obavljanju posla, i 3) stručna edukacija i usavršavanje. Procenat ispitanika koji su navedene faktore ocenili važnim i veoma važnim za svoju radnu motivaciju iznosi preko 90%.

Prikupljeni podaci pokazuju da rodna pripadnost i obavljanje rukovodeće pozicije u funkciji interne revizije nisu uticali da izbor najznačajnijih nematerijalnih motivatora bude različit u odnosu na rezultate celog skupa. Ipak, za najmlađu grupu ispitanika utvrđena su još dva motivatora kao najznačajnija za njihovu radnu motivaciju: vrednovanje Vašeg mišljenja, i klizno radno vreme i mogućnost rada od kuće.

Udeo novih generacija u ukupnom broju internih revizora će u budućnosti rasti, zbog čega u okviru strategije upravljanja ljudskim resursima treba predvideti poseban

motivacioni miks za mlade interne revizore, sa posebnim akcentom na rad sa svrhom, blagostanje i fleksibilnost radnog okvira. Kako bi odgovorili na potrebe novih generacija, Rukovodioci interne revizije treba da usavršavaju svoj mentorski pristup i "meke veštine".

U savremenim uslovima poslovanja, fleksibilno radno vreme i rad na daljinu, pored uključivanja u strategiju upravljanja ljudskim resursima, kao vid nematerijalnog podsticaja, treba obuhvatiti i planom otpornosti kompanije, omogućavajući u oba slučaja veću fleksibilnost i jačanje odgovora organizacije na izazove poslovanja.

Izazov koji se postavlja pred svakog Rukovodioca interne revizije jeste da sačini motivacioni miks za svakog člana multigeneracijskog tima, uz uvažavanje specifičnosti organizacije, delatnosti poslovanja i pojedinačnih motivacionih preferencija.

„Organizacije koje raspolazu efikasnom funkcijom interne revizije percipiraju se kao pouzdanije i manje rizične, što direktno utiče na njihovu reputaciju i tržišnu poziciju, pa se interna revizija pozicionira kao faktor konkurentske prednosti i dugoročne održivosti poslovanja.“ (18)

Prepoznaju se dva izazova u upravljanju ljudskim resursima u internoj reviziji u budućnosti – privlačenje novih kadrova, a zatim njihovo zadržavanje. Upravljanje timom internih revizora, kao delom ključnih ljudskih resursa organizacije u savremenom poslovnom okruženju, treba da bude prepoznato u strategiji na nivou organizacije, sa ciljem kontinuiranog obezbeđenja dovoljnog broja kompetentnih internih revizora.

Izgradnja pozitivnog okruženja nije nešto što je "lepo imati", već predstavlja imperativ za rukovodioce koji žele da obezbede dugoročnu stabilnost, rast i konkurentsku prednost svojih organizacija (Caprino, 2013).

U budućnosti, organizacije će morati da postanu mesta šireg značenja od izvršenja zadataka, koja omogućavaju razvoj pojedinca i stvaraju odnos sa zaposlenima koji uvažava njihovu celovitost kao ljudskog bića, potrebe i želje (23).

Jedan od ciljeva sprovedenog istraživanja je bio da spoji teoriju i praktična iskustva, sa svrhom unapređenja profesije interne revizije i uslova rada internih revizora. Predstavljani rezultati i analize mogu poslužiti pri razmatranju motivacionih faktora i strategija upravljanja ljudskim resursima u internoj reviziji, uz uvažavanje činjenice da je tema radne motivacije široka i složena, sa prostorom za dalja istraživanja.

Kao zaključak se nameće da tradicionalan pristup upravljanja ljudskim resursima, pa tako i u internoj reviziji, baziran na zaradama, bonusima i pritiscima, postaje prevaziđen ustupajući mesto organizaciji u čijem središtu je razvoj zaposlenih, podržan pozitivnom organizacionom kulturom i osećajem blagostanja.

Zahvalnica

Zahvaljujem se: Udruženju internih revizora Srbije (IIA Srbija), Udruženju internih revizora iz Banja Luke, Republika Srpska, Hrvatskom institutu internih revizora (IIA Hrvatska), Slovenačkom institutu internih revizora (IIA Slovenija) i Međunarodnom udruženju ovlašćenih internih revizora u javnom sektoru (EUIAPS) na podršci u sprovođenju istraživanja i svim učesnicima u anketi.

Integrating Sustainability into Accounting through IFRS S1 and IFRS S2

Abstract: *The integration of sustainability into accounting practice represents one of the key challenges in the contemporary business environment. IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures establish a global baseline for the disclosure of sustainability-related financial information and climate-related risks and opportunities, thereby redefining the role of accounting in supporting informed economic decision-making. This review paper examines the regulatory significance of these standards and their contribution to the development of sustainability-related financial reporting. Based on an analysis of relevant academic literature, regulatory frameworks, and selected practical examples, the paper identifies key challenges and opportunities faced by accounting professionals in the implementation of IFRS S1 and IFRS S2. Particular emphasis is placed on the role of digital transformation in enhancing the quality, consistency, and reliability of sustainability-related disclosures. The paper concludes by highlighting the need for the continuous development of professional competencies and accounting information systems to ensure the effective application of the standards in support of sustainable business practices.*

Keywords: *IFRS S1, IFRS S2, sustainability, digital transformation, EU AI Act*

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INTRODUCTION

In the contemporary business environment, sustainability has emerged as one of the key determinants of success and long-term stability of economic entities. The integration of sustainability into accounting practice reflects the growing need for transparent, consistent, and reliable reporting on non-financial aspects of business operations. Modern investors, regulators, and other stakeholders increasingly demand information regarding the impact of business activities on the environment (environmental), society (social), and corporate governance (governance) — commonly referred to as ESG factors — as well as insights into the risks and opportunities arising from sustainable development strategies. In this context, traditional financial statements are no longer sufficient to provide a comprehensive picture of business performance, highlighting the need for the development and application of new accounting standards that integrate sustainability as an integral component of the reporting process.

Information on sustainability-related risks and opportunities represents valuable data for primary users of financial statements, as an entity's ability to generate cash flows in the short, medium, and long term is inextricably linked to its relationships and interactions with stakeholders, the social environment, the economic system, and natural resources throughout the entire value chain (5).

In the context of global climate change, the intensification of regulatory requirements, and the strengthening of international initiatives for sustainable development, it has become evident that business systems must undergo comprehensive transformation. In this regard, the International Financial Reporting Standards IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* and IFRS S2 *Climate-related Disclosures* represent a significant step toward the harmonization of reporting practices at the global level. Their purpose is to establish uniform sustainability reporting requirements, with a particular focus on climate-related risks, thereby enhancing the transparency and credibility of corporate reports and supporting informed investment and managerial decision-making.

The application of IFRS S1 and S2 enables entities to disclose information related to ESG policies, strategies, impacts, and identified risks in a systematic and coherent manner (17). However, the implementation of these standards in practice faces numerous challenges, including inconsistencies in methodological approaches, differences in the interpretation of specific provisions, as well as the need for additional capacities and education of accounting and reporting professionals. By introducing the concept of integrated reporting, IFRS S1 and S2 redefine the accounting paradigm and open opportunities for the improvement of accounting practice toward greater accountability, comprehensiveness, and long-term sustainability (14).

Sustainability, as a multidimensional and multidisciplinary concept, affects all aspects of accounting practice. Accordingly, the application of IFRS S1 and S2 requires the analysis of both quantitative and qualitative data, as well as the development and implementation

of advanced corporate information governance systems that enable timely, accurate, and decision-useful sustainability reporting.

The objective of this paper is to analyse the structural characteristics and innovative aspects of IFRS S1 and IFRS S2, as well as their role in the process of integrating sustainability into contemporary accounting practice. Through the synthesis of relevant academic and professional literature, regulatory documents, and practical examples from business practice, the paper critically examines the challenges and opportunities that the application of these standards presents for accounting professionals. Particular emphasis is placed on the impact of digital transformation on the implementation of the standards and its importance in the development of sustainable business models. In this way, the paper contributes to the development of the sustainability reporting ecosystem and provides both theoretical and practical foundations for the efficient and effective application of IFRS S1 and S2 within the accounting profession.

Based on this defined objective, the paper also formulates research questions that enable a deeper examination of the key dimensions of the application of these standards. In line with the overarching objective of the study, the key research questions aim to enhance the understanding of the regulatory, organizational, and technological framework for the implementation of IFRS S1 and IFRS S2. Special focus is placed on examining how these standards contribute to the quality of sustainability reporting, the challenges associated with their practical implementation, and the role of digital technologies in supporting the processes of collecting, analyzing, and disclosing ESG information. Furthermore, the study explores the readiness of economic entities to respond to the requirements of the new standards, as well as the importance of continuous education of accounting professionals for the successful operationalization of sustainability principles in reporting. This research framework enables a structured consideration of the complex interdependencies between standardization, regulatory pressure, and the transformation of accounting practice in the context of sustainable development. The proposed framework thus allows for an analytical approach to understanding the paradigm shift in contemporary accounting driven by the increasing demands for transparency and accountability in relation to sustainability.

BASIC CHARACTERISTICS OF IFRS S1 AND IFRS S2 STANDARDS

This section of the paper presents an analysis of the key characteristics of IFRS S1 and IFRS S2, which are aimed at improving sustainability and climate-related reporting. These standards constitute a foundational framework for the systematic and transparent disclosure of information related to ESG factors, aligning global requirements and standardized reporting approaches. Understanding their core elements and principles represents a necessary step for successful implementation in accounting practice, as well as for effectively responding to the challenges of the contemporary business environment, which is under

strong pressure from sustainable development imperatives. IFRS S1 and IFRS S2 were developed within the initiative to connect accounting standards and sustainability standards, with the objective of providing comprehensive, coherent, and comparable information for capital markets through a compatible and complementary approach to financial and sustainability reporting (IFRS – *Connecting IFRS Accounting and IFRS Sustainability*). The presentation of the fundamental elements of IFRS S1 and IFRS S2 contributes to a better understanding of how the sustainability reporting process can be strengthened in accordance with the contemporary international framework (12). In order to more clearly identify the specific features and mutual similarities of these standards, a comparative overview is presented in Table 1, summarizing their key characteristics. This structured overview enables more detailed analysis and facilitates understanding of their application and functionality within sustainability-related accounting reporting.

The presented table clearly highlights the specific focus areas of both standards, as well as their complementary roles within sustainability reporting. While IFRS S1 establishes general requirements and principles for sustainability disclosure, IFRS S2 addresses climate-related risks and opportunities in greater detail. This differentiation enables entities to approach sustainability challenges comprehensively through a structured and consistent framework.

The shared objective of both standards is to enhance the quality and decision-usefulness of sustainability-related information disclosed by entities. IFRS S1 provides a broader framework, while IFRS S2 deepens the understanding of specific climate-related risks and opportunities. It is important to emphasize that these standards are designed to be compatible with existing regulatory initiatives, such as the European Sustainability Reporting Standards (ESRS) and the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), thereby encouraging the harmonization of reporting practices at the global level. Understanding their interrelationship and ensuring consistent application is essential for achieving transparency, comparability, and trust in disclosed ESG information, further strengthening the role of the accounting profession in the transition toward sustainable business practices.

In line with these principles, the full and consistent application of IFRS S1 and IFRS S2 requires a comprehensive approach that integrates sustainability information into key aspects of business operations. Effective implementation of IFRS S1 and IFRS S2 entails integrated reporting that links sustainability aspects with an entity's strategy, financial position, financial performance, and cash flows. Through such an approach, entities can provide comprehensive information on how sustainability issues, including climate-related risks and opportunities (in accordance with IFRS S2), affect their business models and performance. This enables stakeholders to better understand the interdependencies between sustainability factors and financial performance, thereby promoting more informed and responsible decision-making (11). Consequently, IFRS S1 and IFRS S2 represent not only a regulatory framework but also a strategic tool for sustainability management that supports long-term value creation and trust in capital markets.

Table 1. Comparative overview of key characteristics of IFRS S1 and IFRS S2

Aspect / Characteristics	IFRS S1 – General Requirements for Disclosure of Sustainability-related Financial Information	IFRS S2 – Climate-related Disclosures	Example
Purpose	Establishes general requirements for sustainability reporting, including ESG information	Focuses on reporting climate-related risks and impacts	A company reports on ESG objectives and climate impacts on its operations
Scope of application	Comprehensive sustainability requirements, including social, environmental, and governance aspects	Specific reporting on climate change and climate-related risks	IFRS S1 covers human rights, CO ₂ emissions, and governance; IFRS S2 covers climate risks only
Target information users	Broad range of ESG factors relevant to financial reporting	Detailed data on climate risks and strategies	Investors and other users assess the sustainability of the business model
Reporting methodology	Emphasis on the linkage between sustainability, financial performance, and risks	Use of climate scenarios and quantitative indicators	ESG objectives are linked to cash flows; temperature scenario analysis is applied
Reporting obligation	Mandatory for entities subject to IFRS requirements that choose to include sustainability reporting	Complementary to IFRS S1, with a climate focus	An IFRS-reporting entity applies IFRS S1 and IFRS S2 jointly
Transparency requirements	Increased transparency through clear and consistent ESG policy disclosures	Detailed explanations of climate impacts and mitigation measures	Disclosure of emission targets, progress, and climate strategies
Implementation challenges	Alignment with existing standards and development of internal processes	Complexity of climate data collection and analysis	Cross-departmental cooperation required (e.g., finance, sustainability, IT)
Link with other standards	Integration with other global ESG standards (e.g., GRI, SASB)	Complementary to IFRS S1 and compatible with TCFD	IFRS S2 uses TCFD frameworks for climate scenario analysis
Practical application	Broad application across industries and sectors	Focus on sectors exposed to significant climate risks	IFRS S1 in retail and other industries; IFRS S2 especially in energy, mining, and aviation for emissions and climate scenarios

Source: based on IFRS S1 and IFRS S2 (IFRS 1, IFRS 2)

It is also important to note that research and application of IFRS S1 and IFRS S2 are not limited solely to sustainability reporting, but can be viewed within a broader, holistic framework of accounting science (14). To ensure high-quality and relevant reporting, improvements are required across various segments of the business process—from risk management and internal reporting to strategic decision-making and regulatory

compliance. There is a justified concern among investors that managers may possess information that is not fully available to external users (13). In this context, IFRS S1 and IFRS S2 provide a standardized framework for the disclosure of ESG information relevant to assessing the long-term sustainability of business operations (16). Accordingly, IFRS S1 and IFRS S2 can be naturally linked to numerous research topics within contemporary accounting theory and practice, further confirming their interdisciplinary value and significance for the overall corporate reporting system.

INTEGRATION OF SUSTAINABILITY INTO ACCOUNTING PRACTICE

The systematic linkage of financial and non-financial (ESG) information that is relevant for decision-making by investors, regulators, and other capital market participants represents the core of integrating sustainability into accounting practice. Unlike traditional financial reporting, which relies exclusively on financial materiality, contemporary approaches encompass a broader range of risks and opportunities that shape long-term value creation and business sustainability. In this context, the IFRS Foundation defines a conceptual framework for connecting sustainability and finance through three fundamental pillars:

1. Purpose – the clear definition of the objectives and purpose of integrated reporting, aimed at providing decision-useful information for capital allocation;
2. Standards (products, in the sense of “developed standards”) – the development of complementary standards for financial reporting (IFRS Accounting Standards) and sustainability reporting developed by the International Sustainability Standards Board (ISSB);
3. People – coordination and cooperation among regulatory bodies, companies, investors, and other stakeholders to ensure alignment and efficiency of the reporting process (7).

This framework enables consistent disclosure of ESG information within the existing financial reporting system. In practice, this implies the creation of coherent reports that integrate financial and non-financial aspects of business operations, providing a more comprehensive view of performance, risks, and long-term value of an economic entity. Based on this framework, Figure 1 illustrates how the objectives of financial reporting and sustainability reporting complement each other within a unified disclosure system.

Figure 1 demonstrates how financial and sustainability reporting frameworks complement each other in terms of purpose, standards, and participants within a unified decision-making system. It is evident from the presented framework that sustainability standards are not intended to replace existing accounting standards, but rather to function as their complementary extension. This establishes a connection between traditional financial reporting and the increasingly prominent sustainability issues, enabling report users to make sustainable and long-term-oriented decisions. In this context, economic theory increasingly

emphasizes the importance of recognizing the interdependencies between investment activities and the consumption of materials and energy as factors influencing value creation (2). In light of climate change and environmental preservation challenges, resource consumption is increasingly viewed as a limiting factor of sustainable economic growth and production. Consequently, the disclosure of sustainability-related and climate-related risk information has assumed a central position within contemporary reporting frameworks.

Figure 1. Synergy between financial reporting and sustainability-related disclosures under IFRS standards



Source: based on IFRS Standards – *Complementary and connected information* (8)

However, the integration process is not without challenges. The most significant challenges include:

- differences in regulatory requirements at the global level,
- a lack of technical capacities in small and medium-sized enterprises,
- limited availability of reliable data and methodologies for measuring non-financial performance, and
- the risk of greenwashing and fragmentation of standards.

Particular importance is attributed to the new ISSB standards – IFRS S1 and IFRS S2:

- IFRS S1 establishes general requirements for the disclosure of sustainability-related information relevant for investment decision-making;
- IFRS S2 focuses on climate-related risks and opportunities.

These standards enable structured, consistent, and comparable reporting; however, a critical challenge remains their alignment with existing frameworks such as the Global Reporting Initiative (GRI). Specifically, the IFRS approach is based on financial

materiality, whereas GRI promotes social and environmental materiality (i.e., the impact of the company on people and the environment). This divergence may lead to limitations in scope and the neglect of the broader societal context. Therefore, the concept of double materiality occupies a central position in ESG reporting (3). According to this concept, relevant information includes both: information that is significant for the company's value (financial materiality), and information that reflects the company's impact on society and the environment (impact materiality).

From the perspective of Signalling Theory, high-quality reports that integrate financial and ESG information send a positive signal to the market regarding corporate responsibility, transparency, and long-term orientation (15). This reduces information asymmetry, enhances corporate reputation, and lowers the cost of capital. Successful integration of sustainability into accounting practice depends on:

- standardization and interoperability of regulatory frameworks,
- investment in capacities for ESG data collection and validation, and
- cooperation among bodies such as the IFRS Foundation, EFRAG, GRI, and national regulators.

The integration of sustainability into accounting practice requires joint action by regulators, economic entities, the accounting profession, and the professional community, supported by the consistent application of IFRS S1 and IFRS S2 standards. Only such a coordinated approach enables users of sustainability reports to obtain a comprehensive and decision-useful view of performance, risks, and impacts. The introduction of theoretical foundations such as signalling theory and legitimacy theory, together with a stronger role of internal audit and the principles of the circular economy, further strengthens the credibility and strategic value of ESG reporting in contemporary accounting practice.

THE IMPACT OF THE EU AI ACT ON THE APPLICATION OF IFRS S1 AND IFRS S2 IN THE DIGITAL TRANSFORMATION OF SUSTAINABLE REPORTING

Digital transformation represents a key factor in the development of contemporary sustainable reporting practices, while the application of artificial intelligence (AI) is becoming increasingly prevalent in the automation and enhancement of data collection, analysis, and presentation processes. In the context of the new generation of International Sustainability Disclosure Standards (IFRS S1 and IFRS S2), digital transformation plays a crucial role in improving the processes of collecting, processing, verifying, and disclosing non-financial and ESG data. While IFRS standards have led global efforts in the standardization of financial reporting, they have not yet structurally addressed the ethical risks introduced by AI (1).

Economic entities exhibit deficiencies in strategic approaches and risk management, particularly in identifying sustainability-related risks and opportunities, as well as in fully meeting the disclosure requirements of IFRS S1. Furthermore, when presenting metrics and targets, entities often fail to clearly disclose the calculation methodologies and underlying input data used (12). In order to better understand the requirements and principles underlying IFRS S1 and IFRS S2, it is necessary to provide a more detailed presentation of their fundamental characteristics and scope. IFRS S1 and IFRS S2 form the foundation of the new architecture of sustainability reporting, and their application enables aligned, transparent, and comparable disclosure of risks and opportunities. Table 2 below provides an overview of the key characteristics of these two standards, facilitating their understanding and practical implementation.

Table 2. Objectives, scope, and key principles of IFRS S1 and IFRS S2

Standard	Objective	Scope	Key principles / content
IFRS S1	Requires an entity to disclose information about sustainability-related risks and opportunities that are relevant to users of financial statements.	Applies to the preparation and reporting of sustainability-related financial information in accordance with IFRS standards. Risks and opportunities that cannot be reasonably assessed are not included.	- Fair presentation of all material risks and opportunities- Information materiality- Reporting entity consistent with financial statements- Connected information to enhance understandability
IFRS S2	Requires disclosure of information about climate-related risks and opportunities that is useful for decision-making on resource allocation.	Applies to the entity's climate-related risks (physical and transition risks) and opportunities.	- Governance of climate-related risks and opportunities- Strategy for managing those risks- Risk management processes- Climate-related metrics and targets

Source: based on IFRS S1 and IFRS S2 (9, 10)

While IFRS S1 establishes a broader framework for the disclosure of sustainability-related information relevant to an entity's overall business operations, IFRS S2 deepens this framework through focused reporting on climate-related risks and opportunities, thereby ensuring a two-tier approach that integrates both strategic and thematic aspects of sustainability into accounting practice.

The introduction of AI systems into compliance processes related to these standards can significantly enhance reporting efficiency and quality; however, it simultaneously introduces new challenges related to accuracy, explainability, and ethical use of automated tools (4). The application of the EU AI Act within this context establishes clear standards for the development and use of AI solutions in ESG reporting, particularly in the following areas (4):

- **Data validation** – AI can automatically detect anomalies, errors, or potential fraud in ESG data, thereby increasing the reliability of IFRS S1 and IFRS S2 disclosures.

- **Transparency and explainability** – regulatory requirements under the EU AI Act ensure that AI systems are explainable, enabling users and auditors to understand how outputs are generated, in line with IFRS S1 and IFRS S2 requirements regarding calculation methodologies and data presentation.
- **Risk management** – AI tools, operating within a regulatory framework, support the identification and management of risks related to ESG reporting, reducing the likelihood of non-compliance and misconduct.
- **Ethics and data privacy** – the EU AI Act sets limitations and guidelines to protect personal data and prevent discriminatory practices in AI systems, which is particularly important for the social dimension of sustainability.

The integration of EU AI Act requirements into the application of IFRS S1 and IFRS S2 not only supports the digital transformation of sustainability reporting, but also enhances trust in the quality and credibility of non-financial disclosures, providing economic entities and regulators with a reliable tool for managing complex ESG information.

CONCLUSION

IFRS S1 and IFRS S2 standards represent a significant advancement in establishing a global regulatory framework for the integration of sustainability into contemporary accounting practice. Their application enables clearer, more transparent, and more relevant disclosure of sustainability-related and climate-related information, which is of critical importance to investors, regulators, and the wider public. IFRS S1 focuses on general requirements for sustainability reporting linked to financial aspects, while IFRS S2 places particular emphasis on climate-related risks and opportunities, responding to the growing market and societal demand for climate-responsible business practices.

This paper aimed to examine the impact of IFRS S1 and IFRS S2 on various areas of accounting research and to provide a foundation for future studies in the fields of corporate reporting and sustainability. Given that research on the application of these standards is still in its early stages and empirical evidence remains limited, the study employed a systematic review of relevant academic literature to contribute to a better understanding of the integration of financial and non-financial reporting aspects. In this way, the paper contributes to the development of accounting knowledge in the area of integrated reporting that meets the needs of investors and other stakeholders.

Furthermore, the success of implementing these standards depends on the readiness of the accounting profession to adopt new approaches and technologies, including digital transformation and regulatory initiatives such as the EU AI Act, which enhance the quality and reliability of ESG data. Nevertheless, challenges remain in the form of insufficient standardization, limited technical capacities, and the alignment of diverse regulatory requirements, necessitating ongoing cooperation among regulatory bodies, professionals, and economic entities.

IFRS S1 and IFRS S2 lay the foundations for the future development of sustainable and integrated accounting reporting, in which the accounting profession plays a crucial role in shaping practices that support long-term and sustainable business decision-making. However, challenges related to the alignment of regulatory requirements and standards, as well as technical and organizational barriers to implementation, indicate the need for further research. It is recommended that future studies conduct more in-depth analyses of specific obstacles and opportunities in implementing IFRS S1 and IFRS S2 across different industry sectors. In addition, research should explore the possibilities for harmonization and interoperability between IFRS standards and other global frameworks, such as GRI. Moreover, it is necessary to examine the practical implications and challenges of applying AI technologies in sustainability reporting, with particular emphasis on explainability and ethical considerations. Attention should also be given to the role of education and capacity building, which are essential for raising awareness and ensuring technical readiness for effective sustainable and digital reporting. Ultimately, it is clear that the integration of IFRS S1 and IFRS S2 into contemporary accounting practice, supported by appropriate technological and regulatory solutions, represents a necessary step toward more transparent and accountable business conduct in line with the principles of sustainable development.

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Integracija održivosti u računovodstvo kroz MSFI S1 I MSFI S2

Apstrakt: Integracija održivosti u računovodstvenu praksu predstavlja jedan od ključnih izazova savremenog poslovnog okruženja. Standardi MSFI S1 i MSFI S2 uspostavljaju jedinstvenu globalnu osnovu za obelodanjivanje informacija o održivosti i klimatskim rizicima i prilikama, čime se redefiniše uloga računovodstva u procesu donošenja ekonomskih odluka. Ovaj pregledni rad analizira regulatorni značaj navedenih standarda i njihov doprinos razvoju održivog finansijskog izveštavanja. Na osnovu analize relevantne naučne literature, regulatornih okvira i odabranih primera iz prakse, identifikuju se ključni izazovi i prilike sa kojima se suočavaju računovodstveni profesionalci u procesu primene MSFI S1 i MSFI S2. Poseban akcenat stavljen je na ulogu digitalne transformacije u unapređenju efikasnosti, uporedivosti i pouzdanosti izveštavanja o održivosti. U zaključku se ističe potreba za kontinuiranim razvojem profesionalnih kompetencija i unapređenjem računovodstvenih informacionih sistema, kako bi se obezbedila dosledna i efikasna primena novih standarda u funkciji održivog poslovanja.

Ključne reči: MSFI S1, MSFI S2, održivost, digitalna transformacija, EU AI Act

Challenges in Managing the Risk of Money Laundering in Healthcare Organizations

Abstract: *The health sector is one of the most organisationally complex systems, making it potentially vulnerable to various forms of financial abuse, including money laundering. This vulnerability is heightened by the complex flows of funds between healthcare institutions, insurance companies, medical equipment suppliers, and pharmaceutical companies. In this context, it is noted that healthcare organisations can be targeted by perpetrators who may engage in money laundering, among other abuses. This paper examines potential risks associated with money laundering in healthcare organisations and associated detection mechanisms. The theoretical foundations of money laundering are presented, along with examples of fraudulent activities that have facilitated it. The purpose of the paper is to analyse the money laundering phenomenon in healthcare organizations through the lens of risks and detection mechanisms. The results indicate the need for a multidisciplinary approach in combating money laundering, as well as for comprehensive risk management, including preventive and detective measures related to money laundering in healthcare organizations.*

Keywords: *money laundering, risks, prevention, detection, health care organizations*

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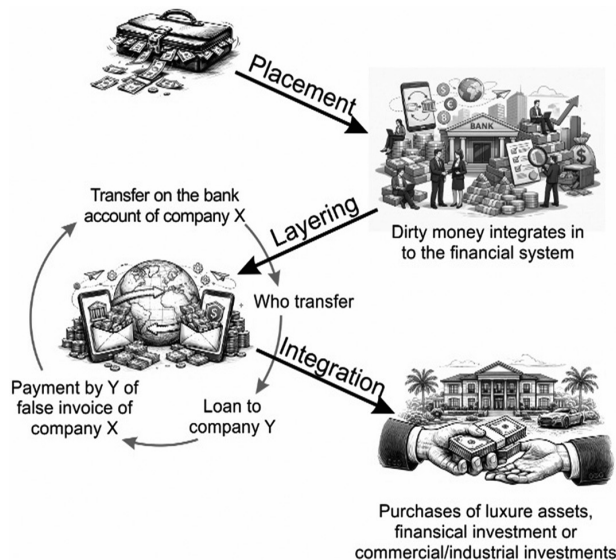
INTRODUCTION

Money laundering represents the process of concealing assets acquired through criminal activities, thereby enabling perpetrators to use such assets in legitimate business operations (10). This activity constitutes a criminal offense that is difficult both to detect and to prove. Consequently, money laundering implies a highly dangerous criminal activity with a significant degree of social harm (3). Money laundering was first mentioned in the early 1930s in the United States during the period of Prohibition, referring to the legalization of capital obtained through criminal activity, that is, the concealment of the true origin of money (7). Article 2 of the *Law on the Prevention of Money Laundering and the Financing of Terrorism* of the Republic of Serbia defines money laundering as (20):

- “the conversion or transfer of property acquired through the commission of a criminal offense;
- the concealment or misrepresentation of the true nature, origin, location, movement, disposition, ownership, or rights related to property acquired through the commission of a criminal offense;
- the acquisition, possession, or use of property acquired through the commission of a criminal offense”.

Money laundering does not represent a single act, but rather a process involving numerous techniques and consisting of specific phases. As Figure 1 illustrates, three phases are most often highlighted in connection with money laundering: the investment phase, the concealment phase, and the integration phase.

Figure 1: Phases of Money Laundering (13)



Money launderers use financial systems where there is a low risk of detection, but also those that are stable enough to guarantee safe access to their funds (13). The initial investment phase marks the start of money laundering activities, and some procedures characteristic of this phase include (9):

- Illegally acquired money is injected into the financial system by presenting it as part of the company's regular cash income;
- Formally registered companies are established that do not actually operate, but serve only to deposit cash and create the appearance of legal business;
- Large sums of money are divided into smaller amounts and deposited into accounts by different individuals to avoid control mechanisms and mandatory reporting of suspicious transactions.

Modern business operations, characterized by the increasing application of technological tools and digitalization, have led to a reduction in the use of traditional financial instruments and their replacement with new electronic payment systems. This development has resulted in contemporary, more sophisticated trends in money laundering practices (3).

This paper examines the scope of healthcare organizations as potential participants in money laundering through the identification of risks inherent to these organizations, as well as detection mechanisms based on previously known cases. Furthermore, it is not possible to discuss money laundering activities and related fraud without analyzing the known effects of money laundering on individuals and organizations involved in the operations of healthcare institutions.

In addition to the introduction, the paper is structured as follows: the first section is devoted to the analysis of the specific characteristics of the healthcare system in the context of managing the risk of money laundering, while the second section presents recommendations related to money laundering with particular reference to healthcare organizations, followed by concluding remarks.

MONEY LAUNDERING IN HEALTHCARE ORGANIZATIONS

Fraudsters continuously develop their approaches in order to exploit vulnerabilities in existing preventive measures, many of which are directed toward the healthcare sector. The number of participants in the healthcare system is large and most commonly includes (14):

- state authorities, such as the Ministry of Health and employees at all levels;
- social insurance institutions, including mandatory and private health insurance bodies;
- healthcare professionals (physicians, pharmacists) and other employees, including non-medical staff;
- users – patients; and
- suppliers (pharmaceutical industry, medical aid organizations, etc.).

Given the number of organizations involved within the healthcare system, as well as their interactions, various opportunities for fraudulent activities may arise, including money laundering. One of the largest medical fraud cases in U.S. history is the Medicare case. U.S. prosecutors stated that approximately USD 10.6 billion was billed to the federal government, primarily for urinary catheters, in a scheme carried out by international criminal actors linked to an operation based in Russia. In June 2025, the United States charged 11 individuals from the U.S., Estonia, and the Czech Republic with healthcare fraud and conspiracy to commit money laundering. The charges stemmed from a two-year investigation called “Operation Gold Rush,” the largest action of its kind by the U.S. government, in which more than 320 individuals were charged, including nearly 100 medical professionals, with total losses estimated at approximately USD 2.9 billion. According to prosecutors, the perpetrators purchased more than 30 American companies. Using the stolen personal information of over a million citizens since 2022, they have submitted billions of claims for catheters that people did not need. In response, the government implemented a “stop and catch” strategy instead of the previous “pay and chase” model (1).

Zuzek (2026) highlights key recent cases of health fraud, their legal ramifications, and regulatory responses. In one case, Victor Marion, the ringleader of a San Diego-based money laundering ring, pleaded guilty to participating in a \$42 million international fraud targeting the elderly. The operation was linked to call centres in Dubai and India targeting elderly Americans, and the scheme used fake tech support and remote access to suggest fraudulent refunds to victims, which were then channelled through a money laundering network. In another case, five Florida eye practices agreed to pay nearly \$6 million for billing unnecessary ultrasound exams as part of an illegal kickback scheme. Additionally, authorities have intensified their efforts against global money laundering. A former TD Bank employee pleaded guilty to helping move more than \$26 million from the US to Colombia by opening accounts for shell companies and accepting bribes. Officials stressed that lax controls, especially on high-value transactions with complex ownership structures, allow illicit gains to enter the legal financial system (22).

In 2004, the European Union established the European Healthcare Fraud and Corruption Network (EHFCN) to assist member states in law enforcement activities across all areas of the healthcare and pharmaceutical systems. The network is responsible for a range of activities, including combating corruption involving patients, professionals, staff/managers, and suppliers (5).

The Law on the Prevention of Money Laundering and the Financing of Terrorism, in the section concerning obligated entities, as well as the website of the Ministry of Finance within the scope of the Administration for the Prevention of Money Laundering, does not specifically recognize defined indicators for identifying suspicious transactions or reasonable grounds for suspicion of money laundering or terrorist financing in medical organizations in the Republic of Serbia (11). According to an available 2020 source of the Administration for the Prevention of Money Laundering, as many as 42 typologies of money laundering and terrorist financing have been identified in general (12). However,

the currently defined and presented typologies do not specifically include typologies related to money laundering in the healthcare sector.

Many medical organizations, or participants within the healthcare system, inform stakeholders through their reports or codes of conduct about the activities they undertake in relation to money laundering, primarily for prevention purposes. One such company is Fresenius Medical Care (Activity Code 3250 – Manufacture of medical and dental instruments and supplies), which states that it complies with anti-money laundering laws. The company defines money laundering as engaging in a transaction involving property derived from criminal activity, structuring a transaction to avoid reporting requirements intended to detect criminal conduct, or participating in transactions for the purpose of committing a criminal offense. It further states that it takes all necessary steps, including risk-based due diligence, to ensure cooperation with reputable business partners engaged in legitimate activities using funds from lawful sources (6). According to the Business Compliance Policy of Magna Pharmacia (Activity Code 4646 – Wholesale of pharmaceutical products), money laundering and terrorist financing are criminal offenses with economic consequences. The company defines money laundering as the process of concealing the unlawful origin of money or property obtained through criminal activities. It states that business operations are conducted exclusively using funds acquired legally from lawful sources. Cash transactions represent an increased risk in relation to money laundering and terrorist financing. Therefore, all cash transactions equal to or exceeding EUR 10,000 (or the equivalent value in another currency) are prohibited and may neither be accepted nor executed by the company. Accordingly, the intentional splitting of cash payments into smaller amounts is also prohibited (8).

It is also important to address the pharmaceutical system in connection with medical organizations, as it is susceptible to fraud and corruption for various reasons. In many countries, governments determine which medicines are included on reimbursement lists funded by mandatory health insurance. This means that patients do not pay directly for such medicines (they are covered through health insurance). Inclusion on such a list, particularly on a reimbursement list, may generate significant financial revenue for the manufacturer, as it guarantees the product a relatively predictable market share (21). Zirojević (2020) specifically identified the main reasons for the vulnerability of the pharmaceutical system to corruption and presented a framework for identifying vulnerabilities along the pharmaceutical value chain. He defined key decision-making points as production, registration, selection, procurement, distribution, prescribing, and dispensing of medicines. Discussing Balkan countries, the same author emphasized “that over the past decade significant changes have occurred and corruption in the pharmaceutical system has substantially decreased, largely due to international and public pressure that led to healthcare reforms and improved regulation, particularly in the area of supply chains” (21: 203).

RECOMMENDATIONS REGARDING MECHANISMS FOR DETECTING MONEY LAUNDERING

Due to the secretive nature of criminal activities, no one knows the exact amount of laundered money circulating within the international monetary system. “In 1996, the International Monetary Fund estimated that the total volume of global money laundering amounted to approximately 2 to 5 percent of the world’s gross domestic product, which, according to 1996 statistics, would represent between USD 590 billion and USD 1.5 trillion” (13). “At the global level, money laundering produces exclusively negative consequences, such as undermining the stability, transparency, and efficiency of the financial system; causing economic disturbances; jeopardizing the implementation of reforms; reducing foreign investment; and damaging a country’s international reputation” (8: 28). The 2018 National Money Laundering Risk Assessment (NMLRA) (16) found that healthcare fraud was the largest source of illicit funds in the United States, generating over USD 110 billion annually. Healthcare fraud accounts for approximately one-third of all illicit proceeds (19) laundered in the United States. Various fraud schemes are continuously committed against federal and state governments, as well as against private insurance companies, and include tax evasion and money laundering (15), (2). Illicit proceeds generated from healthcare fraud are frequently used to purchase assets. Perpetrators continuously design increasingly complex methods to conceal their fraudulent profits. All of this significantly complicates the process of managing money laundering risk within healthcare organizations. The risk of money laundering is further aggravated by complex financial flows between the state, insurers, and patients; intricate healthcare billing systems; information asymmetry between patients, physicians, and insurers; and the high level of discretion exercised by medical staff in treatment decisions. For these reasons, a holistic approach is necessary in addressing this issue, through the analysis of all relevant factors and their interactions, in order to ensure a comprehensive understanding of the functioning of the observed system. Fraud cases increase overall costs for all stakeholders within the healthcare system and undermine the long-term solvency of programs such as health insurance services and healthcare plans, which represent a particularly significant challenge for developing countries. Fraud is increasingly prevalent in the care and health services industry.

Pavlović and Laszlo Gal (2020) emphasize that in the fight against corruption, particularly in the Republic of Serbia, a fully unified systemic and multidisciplinary approach is still lacking. This fight should not involve only state authorities, such as the police, prosecution, and courts, as well as audit bodies, other government agencies, and independent institutions, but also the media and civil society organizations. Therefore, it would be unjustified to place the burden of responsibility for the success of this “fight” solely on one law or one institution (14). The same can be stated for combating money laundering and the institutions and individuals involved in preventing this activity.

Historically, money launderers have significantly outpaced the efforts of regulators, law enforcement officers, and anti-money laundering professionals attempting to prevent them

from circumventing the law. Fraud examiners should seriously consider what the future of money laundering may look like, particularly in relation to virtual currencies (17). In the area of financial fraud, attention must also be paid to different business periods, before, during, and after the COVID-19 pandemic (4). Numerous studies across various sectors have addressed this issue. According to Tie (2012), it is necessary to implement comprehensive risk management, as well as preventive and detective measures related to money laundering. Firstly, the institutional framework must be strengthened, primarily through laws on the prevention of money laundering. Additionally, judicial system personnel must be trained in the prevention, detection, investigation, and prosecution of money laundering. Awareness must be raised among financial and non-financial institutions regarding the need to accurately identify clients and their businesses, verify the information provided, and report irregular or suspicious activities. Furthermore, supervision of institutions targeted by money launderers must be increased. In the context of international activities, there is a need to expand international agreements that enable the exchange of information and the development of common strategies related to money laundering (18).

CONCLUSION

The goal of money laundering is to present illicit funds as legally acquired, integrate them into cash flows, and do so without detection by the relevant authorities. Weak legislative frameworks within healthcare organisations can result in poor outcomes and create opportunities for unethical and corrupt behaviour. Money laundering always presents a challenge and therefore a risk in this context.

An examination of available cases of fraud related to money laundering, with a focus on healthcare organisations and actors within the healthcare system, shows that various cases have demonstrated increased international and regulatory efforts against financial abuses. These cases highlight the risks posed by complex fraud networks, the need for stricter controls in the banking and healthcare sectors, and the importance of cooperation between judicial and regulatory bodies. However, the complexity of transactions in the healthcare system and the large number of institutional participants complicate the management of money laundering risks within healthcare organisations.

With the increasing digitisation of business and, more recently, the application of artificial intelligence tools, a wide range of potential risks related to money laundering has emerged. The likely future directions for money launderers will certainly include the use of new and more advanced artificial intelligence tools. At the same time, these tools can provide even better preventive and detective capabilities to investigators addressing money laundering phenomena and specific activities.

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Izazovi upravljanja rizikom od pranja novca u zdravstvenim organizacijama

Apstrakt: Zdravstveni sektor je jedan od organizaciono najsloženijih sistema, što ga čini potencijalno ranjivim na različite oblike finansijskih zloupotreba, uključujući pranje novca. Ova ranjivost je pojačana složenim tokovima sredstava između zdravstvenih ustanova, osiguravajućih društava, dobavljača medicinske opreme i farmaceutskih kompanija. U tom kontekstu, napominje se da zdravstvene organizacije mogu biti meta počinilaca koji se mogu baviti pranjem novca, pored ostalih zloupotreba. Ovaj rad ispituje moguće rizike u vezi sa pranjem novca u zdravstvenim organizacijama, kao i mehanizme za otkrivanje. Predstavljene su teorijske osnove fenomena pranja novca, zajedno sa primerima različitih prevarnih aktivnosti koje su dovele do pranja novca. Svrha rada je analiza fenomena pranja novca u zdravstvenim organizacijama kroz prizmu rizika i mehanizama za otkrivanje. Rezultati ukazuju na potrebu za multidisciplinarnim pristupom u borbi protiv pranja novca, kao i za sveobuhvatnim upravljanjem rizicima, uključujući preventivne i detektivske mere vezane za pranje novca u zdravstvenim organizacijama.

Ključne reči: pranje novca, rizici, prevencija, otkrivanje, zdravstvene organizacije

The Innovation Potential of the Republic of Serbia: A GII-Based Assessment

Abstract: *This paper examines how the components of the Global Innovation Index (GII) influence the innovation potential of the Republic of Serbia over the period 2011–2025. The analysis is conducted through a comparative study of six Central and Eastern European economies (Serbia, Romania, Bulgaria, Hungary, Slovenia, and Croatia), with the aim of identifying the key predictors of innovation potential in the selected region. In addition, a partial correlation analysis is applied to explore the relationships between GII components and GDP per capita. The findings indicate that infrastructure represents the most consistent and strongest driver of both GDP growth and innovation performance in Serbia. This differs from the top-performing countries in the region, where institutional quality and business sophistication play a decisive role in transforming innovation inputs into outputs. In contrast, investment in human capital appears to be the weakest element of Serbia's innovation system, showing no statistically significant contribution to innovation performance. Such structural imbalance suggests that Serbia's economic growth relies more on investment-driven factors rather than knowledge-based ones. The results point to the need for targeted policies focused on strengthening the institutional framework, improving business sophistication, and strategically investing in human capital, to enhance the efficiency of converting inputs into innovation outputs and to ensure sustainable, innovation-driven development.*

Keywords: *Global Innovation Index; innovation capacity; human capital; infrastructure; institutions; business sophistication; Serbia; GDP per capita; innovation efficiency*

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INTRODUCTION

Innovation capacity has become one of the key determinants of competitiveness and sustainable economic growth in the contemporary global economy. Recognizing the importance of innovation-driven development, the World Intellectual Property Organization (WIPO) has, since 2009, monitored the innovation capabilities of more than 130 countries and innovation clusters worldwide through the Global Innovation Index (GII). This composite index was developed to provide a systematic assessment of the effectiveness of policies, institutional mechanisms, and best practices that foster innovation.

The GII methodology is grounded in the internationally recognized definition of innovation provided in the *Oslo Manual*, jointly developed by Eurostat and the Organization for Economic Co-operation and Development (OECD) (OECD and Eurostat, 2018). The 2018 edition defines innovation as “a new or improved product or process (or a combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).” This definition serves as the conceptual basis for selecting and structuring the indicators included in the GII, ensuring internationally comparable measurement of innovation performance.

The Global Innovation Index (GII) assesses the innovation potential of an economy through a combination of two sub-indices: the input sub-index and the output sub-index. The input sub-index includes the economic factors that support and enable innovative activity. Its underlying idea is fairly straightforward — current investments in innovation, such as infrastructure, human capital, and a business environment that encourages innovation, create the conditions needed for new ideas to emerge. The output sub-index, on the other hand, reflects the results of these efforts, capturing innovative activity across different sectors of the economy. The overall GII score is calculated as the average of the input and output sub-indices, and it serves as the basis for ranking individual economies. A lower GII score indicates a stronger innovation and investment capacity of a given economy.

The structure of the GII consists of seven pillars. Five of these pillars—institutions, human capital and research, infrastructure, market sophistication, and business sophistication—represent the inputs that create conditions for innovation. The remaining two pillars—knowledge and technology outputs, and creative outputs—capture the results of innovation activities. Each pillar is evaluated on a scale from 0 to 100, with higher scores indicating a stronger contribution to the innovation capacity of the economy.

For Serbia, the GII results between 2011 and 2019 indicate a continuous decline in innovation capacity. However, beginning in 2020, an improvement in performance becomes evident, with the final score at the end of the observed period nearly matching the score recorded at its beginning. This paper aims to identify the pillars that have the most significant impact on the development of the innovation potential of the Republic of Serbia and to explore opportunities for improving Serbia’s GII performance.

THEORETICAL BACKGROUND

Research on innovation systems over the past two decades consistently emphasizes that a country's innovation capacity depends on a combination of institutional factors, human capital, infrastructure, market mechanisms, and business sophistication. This approach is based on studies that view innovation as the result of complex interactions between different socio-economic subsystems.

Institutions are widely recognized in literature as one of the most important determinants of innovation performance. Furman, Porter, and Stern (2002) argue that institutional quality shapes the innovation climate through regulation, the rule of law, and the stability of public policies. Similarly, Fagerberg and Srholec (2008) demonstrate that institutional capacities influence a country's ability to absorb and generate knowledge, particularly in transition economies.

Human capital and research represent the second key pillar of innovation potential. Numerous studies confirm that investments in education and research and development directly contribute to productivity growth (Filippetti & Archibugi, 2011; Krstić, 2021). Direct channels include increased worker productivity, faster technology adoption, and greater labor-market flexibility. Indirect channels include stimulating innovation, improving institutional quality, and strengthening social capital (Barro, 1991; Hanushek & Woessmann, 2015). Innovation is closely linked to tertiary education, as universities play a central role in generating research and innovation, transferring knowledge to industry, and developing a highly skilled workforce (Aghion et al., 2009). In Central and Eastern European (CEE) countries, Radosevic (2017) highlights that insufficient investment in research infrastructure, and the outflow of highly educated professionals remain major constraints on innovation development.

Infrastructure influences innovation indirectly by increasing mobility, improving logistics, and creating the necessary preconditions for innovative activity. Studies on economic growth find that infrastructure externalities are lower in more developed economies than in less developed economies (Straub, 2010). Roller and Waverman (2001) show that telecommunications infrastructure stimulates economic growth, while Vu (2011) finds that ICT infrastructure has the highest marginal effect on innovation activities. However, most authors emphasize that infrastructure operates primarily through indirect channels, such as improving the business environment and enhancing human capital (Czarnitzki & Hottenrott, 2011).

Market sophistication is identified in the literature as the most volatile element of the innovation system. In developing and transition economies, limited financial-market depth, low levels of venture-capital investment, and weak linkages between markets and innovation actors often lead to discontinuities in innovation performance (Prokop & Stejskal, 2019). This finding is particularly pronounced in the Western Balkans region.

Business sophistication is considered a key mechanism linking innovation inputs and outputs. Porter's framework of competitiveness and innovation emphasizes that technological and organizational sophistication within firms is a primary driver of innovation

outcomes (Porter, 1990). Empirical studies in the EU and CEE regions confirm that countries with stronger business sectors achieve higher scores in knowledge & technology outputs and creative outputs (Carayannis & Grigoroudis, 2016).

Finally, innovation outputs represent the most sensitive component of the innovation system. Hollanders and Es-Sadki (2017) show that outputs respond strongly to economic cycles, institutional changes, and shifts in the business environment. In the CEE region, Švarc and Dabić (2017) find that outputs are particularly vulnerable to crises and political instability, resulting in discontinuities in innovation performance.

Overall, the literature confirms that a country's innovation capacity depends on the interconnected pillars of institutions, human capital, infrastructure, markets, and the business sector.

METHODOLOGY

The assessment of Serbia's relative position in comparison with economically and institutionally similar countries is based on a comparative longitudinal analysis of the innovation performance of Serbia and selected countries in the region—Croatia, Slovenia, Hungary, Romania, and Bulgaria—over the period 2011–2025. These countries were selected due to their geographical and historical proximity to Serbia, similar development trajectories, shared institutional and economic characteristics, and their relevance as appropriate reference points for comparison.

The assessment of Serbia's relative position compared to economically and institutionally similar countries is based on a comparative analysis of innovation performance in Serbia and selected countries in the region (Croatia, Slovenia, Hungary, Romania, and Bulgaria) over the period 2011–2025. The selected countries are geographically and historically close to Serbia, with similar development paths and economic characteristics, which makes them relevant for comparison.

The study employs a comparative, descriptive-analytical methodology that links changes in GII rankings with the level of economic development and GDP growth, to evaluate Serbia's relative position within the group of comparable economies. The analysis of dynamics and the influence of innovation inputs and outputs on overall innovation capacity is conducted through visual examination of systematized data to identify patterns and compare frequencies, complemented by simple statistical techniques such as partial correlation.

The partial correlation coefficient measures the relationship between two variables while controlling for the influence of additional variables suspected to affect the relationship under examination. This approach enables the identification of the unique, isolated association between two variables. Partial correlation analysis is applied in both longitudinal and comparative frameworks to identify direct, statistically significant relationships between GDP per capita and the components of the GII, as well as among the GII pillars themselves, while controlling for the effects of other factors.

INNOVATION PERFORMANCE (GII) OF SERBIA AND REGIONAL PEER ECONOMIES

To better assess the position of the Republic of Serbia in terms of its innovation capacity, the analysis of changes in the GII was conducted for several selected countries with which Serbia has traditionally been connected: Croatia, Slovenia, Hungary, Romania, and Bulgaria. All of these countries are members of the European Union. The GII classifies countries according to the World Bank methodology into low-income, lower-middle-income, upper-middle-income, and high-income groups. Based on its GDP per capita, Serbia is categorized as an upper-middle-income economy. Romania belonged to the same group for most of the observed period, while the remaining four economies fall into the high-income group.

Changes in the GII rankings of these countries between 2011 and 2025 show that the relative positions of Serbia and Romania in the international environment have remained almost unchanged, indicating stagnation in the development of their innovation capacities. The relative positions of Bulgaria and Croatia suggest steady improvement, while the positions of Slovenia and, particularly, Hungary are significantly less favorable in 2025 compared to 2011. Overall, high-income economies tend to have more favorable conditions for developing innovation capacity, but this precondition alone is not sufficient. A clear example is Bulgaria, which has a better GII ranking than Romania, despite Romania having a higher GDP per capita.

A more detailed analysis of economies within the same income group shows that upper-middle-income economies tend to stagnate in the development of their innovation potential, while high-income economies exhibit divergent trends. Countries with the best GII rankings in 2011 show a notable deterioration in their innovation performance by 2025. A direct positive relationship between GII improvement and GDP per capita growth is observed in Bulgaria and Croatia.

Table 1: Relationship Between GII and Income Level in Selected Reference Economies

GII	Serbia	Romania	Bulgaria	Croatia	Hungary	Slovenia
Income level	Upper middle income	Upper medium income until 2022. Then, high income	High income	High income	High income	High income
2011	55	50	42	44	25	30
2025	54	49	37	40	36	35
Change	1	1	5	4	-11	-5
Interpretation of trends	Stagnation	Stagnation	Moderate improvement	Moderate improvement	Significant deterioration	Worsening
Index rasta GDPpc 2025 /2011	2,5	3,3	2,9	2,5	2,4	2,7

Note: This table illustrates the complexity of the relationship between the development of a country's innovation potential and GDP per capita growth in the observed economies.

ANALYSIS OF THE STRUCTURE OF GII COLUMNS

For the comparative analysis of the structure of input pillars (Institutions, Human Capital & Research, Infrastructure, Market Sophistication, Business Sophistication), and output pillars (Knowledge & Technology Outputs, Creative Output) of the selected economies, a visual representation of the relative position of pillar values over time was used within each economy. For every economy, the pillar with the best ranking in each year is highlighted in yellow. At the end of the process, the frequency of the best-ranked pillars was calculated. The procedure for this analysis is illustrated in Figure 1.

The results show that economies with better GII performance tend to have either better-ranked institutions (Slovenia, Bulgaria) or a better-ranked Business Sophistication pillar (Hungary). Conversely, economies with the most unfavorably ranked institutions also have the lowest GII scores (Romania, Serbia). Another significant predictor of innovation capacity is the Human Capital & Research pillar. The best-ranked human capital is found in economies with higher GII scores—Slovenia and Croatia—while the lowest rankings appear in economies with the weakest GII performance—Romania and Serbia.

Economies that prioritize infrastructure development (Romania and Serbia) exhibit the least favorable GII results in the entire sample. Infrastructure primarily affects digital readiness, logistics, and the business environment, and as such, represents a precondition for the development of innovation potential. Infrastructure is a prerequisite, but not a generator of innovation. Stable infrastructure corresponds to stable GII performance (Slovenia and Hungary), while unstable infrastructure, characterized by large oscillations, corresponds to unstable GII performance (Serbia and Romania).

The best innovation output results are observed in Slovenia, Croatia, and Bulgaria, as these economies combine strong Knowledge & Technology Outputs with strong Creativity Outputs. The strongest causal chain connects the following pillars:

Institutions + Human capital → Business sophistication → Outputi → GII.

Slovenia shows the strongest profile across all pillars, with the best inputs, outputs, and overall GII. Croatia has stable inputs and outputs and a high GII. Hungary demonstrates strong business sophistication inputs and good outputs. Bulgaria has moderate inputs but above-average outputs, indicating a high efficiency of investment in the country's economic potential, although existing data do not allow for identifying the mechanisms behind this efficiency. Romania displays weak inputs and outputs, while Serbia ranks at the bottom in both categories among the economies in this sample.

Slovenia exhibits the strongest pillar profile, with the best inputs, the best outputs, and the highest overall GII score. Croatia demonstrates stable inputs and stable outputs, resulting in a high GII ranking. Hungary shows strong performance in the Business Sophistication input and solid innovation outputs. Bulgaria has moderate inputs but surprisingly strong outputs, indicating a high level of efficiency in transforming investments into innovation results. Romania

performs poorly in both inputs and outputs, while Serbia ranks at the bottom of the sample in both dimensions. The available data, however, do not provide sufficient insight into the specific mechanisms this economy employs to achieve such a high level of efficiency.

The analysis of the GII structure reveals clear patterns that help explain the innovation potential of the observed countries. The results suggest that institutional quality and human capital are the most stable and strongest pillars of the GII score, which is in line with the dominant literature on national innovation systems. Countries with stronger institutional frameworks and more developed education and research capacities tend to achieve better innovation outcomes.

Figure 1: Best GII scores by countries, by years, total, and by pillars

Slovenia											US\$ billion
In c o m e	Year	GII	Institu t i o n s	Human c a p i t a l a n d r e s e a r c h	Infrastruc t u r e	Market s o f i s t i c a t i o n	Business s o f i s t i c a t i o n	Knowled g e a n d t e c h n o l o g y o u t p u t s	Creativit y o u t p u t s	GDP per c a p i t a l P P P \$	
HI	2011	30	29	26	27	29	60	34	32	20	27.004
HI	2012	26	25	27	27	29	60	34	27	13	29.179
HI	2013	30	25	26	29	43	34	34	34	35	28.648
HI	2014	28	23	25	34	51	36	27	36	27	27.900
HI	2015	28	29	24	36	70	35	30	22	28.373	
HI	2016	32	23	24	42	84	27	34	27	31.007	
HI	2017	32	22	24	34	82	30	43	23	31.007	
HI	2018	30	19	28	35	78	29	34	16	34.407	
HI	2019	31	20	27	37	37	27	40	24	36.746	
HI	2020	32	20	32	27	27	35	41	33	33.579	
HI	2021	32	20	28	27	71	27	32	38	38.506	
HI	2022	33	37	25	24	68	29	26	56	43.206	
HI	2023	33	38	25	20	68	26	27	48	49.968	
HI	2024	34	41	24	26	62	32	27	48	51.407	
HI	2025	35	48	26	20	63	36	27	53	55.684	
Frequency		8	4	3	-	-	-	8	7		

Croatia											US\$ billion
In c o m e	Year	GII	Institu t i o n s	Human c a p i t a l a n d r e s e a r c h	Infrastruc t u r e	Market s o f i s t i c a t i o n	Business s o f i s t i c a t i o n	Knowled g e a n d t e c h n o l o g y o u t p u t s	Creativit y o u t p u t s	GDP per c a p i t a l P P P \$	
HI	2011	44	42	43	37	79	54	57	51	19.805	
HI	2012	42	41	51	36	77	64	45	50	18.339	
HI	2013	37	48	58	32	64	48	39	52	18.099	
HI	2014	42	45	48	37	113	69	40	47	18.191	
HI	2015	40	41	47	50	68	50	44	39	18.355	
HI	2016	47	42	50	47	73	50	58	48	21.581	
HI	2017	41	42	47	33	88	53	51	43	21.581	
HI	2018	41	44	48	34	66	45	46	43	24.433	
HI	2019	44	45	50	46	71	49	49	51	26.221	
HI	2020	41	47	47	52	73	56	43	49	24.208	
HI	2021	42	46	47	29	67	65	47	54	27.681	
HI	2022	42	77	46	31	56	46	45	39	31.112	
HI	2023	44	72	44	26	48	53	33	52	37.550	
HI	2024	42	77	46	31	56	46	45	39	42.871	
HI	2025	40	65	40	16	54	53	37	44	48.811	
Frequency		4	-	11	-	-	-	8	7		

Hungary											US\$ billion
In c o m e	Year	GII	Institu t i o n s	Human c a p i t a l a n d r e s e a r c h	Infrastruc t u r e	Market s o f i s t i c a t i o n	Business s o f i s t i c a t i o n	Knowled g e a n d t e c h n o l o g y o u t p u t s	Creativit y o u t p u t s	GDP per c a p i t a l P P P \$	
HI	2011	25	31	36	39	36	30	18	16	19.764	
HI	2012	31	32	38	28	56	38	21	43	19.657	
HI	2013	31	38	37	30	87	36	13	37	19.754	
HI	2014	35	40	42	36	115	45	24	35	20.065	
HI	2015	35	40	43	43	77	57	40	36	20.817	
HI	2016	33	40	36	41	80	34	15	40	26.222	
HI	2017	39	40	42	46	91	40	33	42	26.222	
HI	2018	33	40	38	49	86	32	16	44	29.474	
HI	2019	33	41	41	40	76	33	17	38	31.903	
HI	2020	35	43	36	34	89	33	22	46	29.732	
HI	2021	34	42	36	32	65	31	20	47	32.434	
HI	2022	34	48	37	35	67	30	23	46	36.849	
HI	2023	35	47	36	42	64	30	26	38	42.132	
HI	2024	36	36	34	35	60	28	25	44	43.601	
HI	2025	36	36	33	38	49	37	26	38	46.807	
Frequency		3	1	3	-	9	12	2			

Romania											US\$ billion
In c o m e	Year	GII	Institu t i o n s	Human c a p i t a l a n d r e s e a r c h	Infrastruc t u r e	Market s o f i s t i c a t i o n	Business s o f i s t i c a t i o n	Knowled g e a n d t e c h n o l o g y o u t p u t s	Creativit y o u t p u t s	GDP per c a p i t a l P P P \$	
UM	2011	50	52	65	54	69	71	36	64	14.278	
UM	2012	52	56	67	40	63	77	46	82	12.358	
UM	2013	48	55	78	35	85	70	23	80	12.838	
UM	2014	55	59	69	50	108	99	37	67	13.396	
UM	2015	54	46	73	58	81	67	43	72	13.932	
UM	2016	48	48	73	44	77	75	42	53	20.787	
UM	2017	42	43	75	37	73	63	37	57	20.787	
UM	2018	49	48	65	38	83	55	42	61	24.508	
UM	2019	50	52	69	35	92	51	41	71	26.447	
UM	2020	46	53	76	37	83	53	28	67	24.442	
HI	2021	48	53	76	37	76	54	35	72	30.141	
HI	2022	49	75	74	33	63	51	31	57	33.833	
HI	2023	47	74	75	34	75	51	35	58	38.097	
HI	2024	48	81	70	32	67	47	38	56	41.029	
HI	2025	49	85	72	31	62	59	40	52	47.204	
Frequency		2	-	13	-	-	-	15			

Bulgaria											US\$ billion
In c o m e	Year	GII	Institu t i o n s	Human c a p i t a l a n d r e s e a r c h	Infrastruc t u r e	Market s o f i s t i c a t i o n	Business s o f i s t i c a t i o n	Knowled g e a n d t e c h n o l o g y o u t p u t s	Creativit y o u t p u t s	GDP per c a p i t a l P P P \$	
UM	2011	42	40	59	59	50	65	50	46	13.333	
UM	2012	43	46	56	47	54	84	41	49	13.563	
UM	2013	41	51	55	43	83	65	36	49	14.235	
UM	2014	44	44	61	47	97	53	38	45	14.499	
UM	2015	39	39	58	53	61	60	37	34	15.031	
UM	2016	38	38	65	55	59	45	38	29	19.097	
UM	2017	36	36	56	48	76	41	32	29	19.097	
UM	2018	37	45	63	44	62	31	28	36	21.687	
UM	2019	40	48	62	35	66	34	37	41	23.156	
UM	2020	37	48	64	30	97	40	29	37	21.742	
UM	2021	35	47	65	38	72	42	27	21	23.741	
UM	2022	37	67	68	34	62	40	30	23	25.847	
UM	2023	38	66	66	28	60	42	34	34	29.178	
HI	2024	38	83	62	22	50	44	30	27	33.780	
HI	2025	37	81	64	22	35	60	28	32	39.185	
Frequency		6	-	6	-	2	8	8			

Serbia											US\$ billion
In c o m e	Year	GII	Institu t i o n s	Human c a p i t a l a n d r e s e a r c h	Infrastruc t u r e	Market s o f i s t i c a t i o n	Business s o f i s t i c a t i o n	Knowled g e a n d t e c h n o l o g y o u t p u t s	Creativit y o u t p u t s	GDP per c a p i t a l P P P \$	
UM	2011	55	66	54	83	87	73	65	23	11.719	
UM	2012	46	71	44	63	78	86	29	44	10.661	
UM	2013	54	54	50	50	97	73	41	84	10.582	
UM	2014	67	67	59	53	134	83	44	79	11.269	
UM	2015	63	63	64	56	90	95	59	60	11.553	
UM	2016	65	65	56	56	109	84	50	82	13.671	
UM	2017	62	50	54	52	99	79	53	70	13.671	
UM	2018	55	50	58	48	101	70	50	64	15.000	
UM	2019	57	47	59	59	64	103	63	48	17.555	
UM	2020	53	45	59	44	101	64	41	66	16.207	
UM	2021	54	50	62	44	58	63	43	76	18.840	
UM	2022	55	53	52	38	83	65	42	76	21.243	
UM	2023	53	57	51	36	41	68	41	92	24.084	
UM	2024	52	67	60	20	40	63	41	85	26.074	
UM	2025	54	73	49	39	77	98	35	87	29.039	
Frequency		2	2	11	-	-	-	14	1		

Infrastructure appears as a moderate but stable factor of innovation potential, especially through digital and logistical connectivity, while market sophistication stands out as the most volatile pillar of the GII score.

Business sophistication acts as a key link between inputs and outputs. Countries with a stronger business sector and higher levels of technological and organizational sophistication tend to perform better in terms of knowledge and technology outputs, as well as creative outputs. This finding suggests that the business sector is an important driver of innovation in the region.

Overall, the data show that innovation capacity is the outcome of a broader institutional, educational, and market environment. Countries with stable institutions, strong human capital, and a developed business sector achieve higher innovation results, while weaknesses in market sophistication and institutional structures represent key obstacles to further innovation development.

PARTIAL CORRELATION ANALYSIS

The partial correlation coefficient measures the relationship between two variables while controlling for the influence of other variables suspected to affect the relationship under examination. In this way, it enables the identification of a unique, isolated association between two variables.

The analysis was conducted in three segments:

1. Partial correlation between GDP per capita and all GII components, with the aim of identifying which dimensions of the innovation system are directly associated with economic development
2. Partial correlation between Knowledge & Technology Outputs and the remaining GII components, with the aim of examining whether technology- and knowledge-based results depend on input components (institutions, human capital, infrastructure, market sophistication, business sophistication).
3. Partial correlation between Human Capital & Research and the remaining GII components, with the goal of determining whether investments in human capital and research generate innovation outputs or are primarily associated with other input pillars.

This approach enables the mapping of the structure of the innovation system and the identification of key relationships among its components.

The results of the partial correlation analysis between GDP per capita and the GII components for Serbia, Romania, Bulgaria, Hungary, Slovenia, and Croatia during the period 2011–2025 are presented in Table 1. The findings indicate the presence of statistically significant correlations between GDP per capita and all components of the

Global Innovation Index, except for Market Sophistication, Knowledge & Technology Outputs, and Creative Outputs.

A positive and statistically significant correlation exists between GDP per capita and the components Infrastructure, Human Capital & Research, and Business Sophistication. Increases in these components are accompanied by increases in GDP per capita. The highest statistically significant partial correlation coefficient is observed between GDP per capita and the Infrastructure component (0.7280). Conversely, the Institutions component shows a statistically significant negative correlation with GDP per capita.

Table 2. Partial Correlation Between GDP per Capita and the Components of the Global Innovation Index

Variable	Partial Corr.	Semipartial Corr.	Partial Corr. ^{^2}	Semipartial Corr. ^{^2}	Significance Value
ln_instit~s	-0.4855	-0.2694	0.2357	0.0726	0.0000
ln_hcr	0.4768	0.2632	0.2273	0.0693	0.0000
ln_infras~e	0.7280	0.5153	0.5301	0.2656	0.0000
ln_ms	0.0661	0.0322	0.0044	0.0010	0.5500
ln_bs	0.2992	0.1521	0.0895	0.0231	0.0057
ln_kto	-0.0868	-0.0423	0.0075	0.0018	0.4324
ln_co	-0.1275	-0.0624	0.0162	0.0039	0.2479

The values of the partial correlation coefficients between Knowledge & Technology Outputs and the other components of the Global Innovation Index clearly indicate their association with Business Sophistication. The positive and statistically significant correlation between these two components suggests that investments aimed at achieving knowledge- and technology-based results are a prerequisite for attaining business sophistication, which enhances the market competitiveness of products and services. However, the correlations between Knowledge & Technology Outputs and the remaining components are not statistically significant.

Table 3. Partial Correlation Between Knowledge & Technology Outputs and the Remaining Components of the Global Innovation Index

Variable	Partial Corr.	Semipartial Corr.	Partial Corr. ^{^2}	Semipartial Corr. ^{^2}	Significance Value
ln_gdp	-0.0868	-0.0719	0.0075	0.0052	0.4324
ln_instit~s	-0.1294	-0.1076	0.0167	0.0116	0.2408
ln_hcr	-0.0437	-0.0360	0.0019	0.0013	0.6933
ln_infras~e	0.0432	0.0357	0.0019	0.0013	0.6963
ln_ms	0.1229	0.1021	0.0151	0.0104	0.2654
ln_bs	0.4377	0.4014	0.1916	0.1611	0.0000
ln_co	-0.0737	-0.0609	0.0054	0.0037	0.5052

The values of the partial correlation coefficients between Human Capital & Research and the other components of the Global Innovation Index are presented in Table 3.

The results of the partial correlation analysis between Human Capital & Research and the other GII components show that a positive and statistically significant correlation exists with the component Institutions and Business Sophistication. In the observed countries, the development of institutions is associated with improvements in human capital and research. Likewise, investments in human capital and research activities are linked to advancements in business sophistication.

The statistically significant negative correlation between Human Capital & Research and the Infrastructure component indicates that higher investments in infrastructure are accompanied by reduced investments in human capital. However, Human Capital & Research is not statistically significantly correlated with Knowledge & Technology Outputs or Creative Outputs, suggesting that investments in human capital and research activities are not followed by increases in knowledge, technology, or creativity-based results.

Table 4. Partial correlation between Human capital and research and other components of the Global Innovation Index

variable	Partial Corr.	Semipartial Corr.	Partial Corr. ²	Semipartial Corr. ²	Significance Value
ln_gdp	0.4768	0.3351	0.2273	0.1123	0.0000
ln_instit~s	0.3518	0.2321	0.1237	0.0539	0.0010
ln_infras~e	-0.3654	-0.2425	0.1335	0.0588	0.0006
ln_ms	-0.1506	-0.0941	0.0227	0.0089	0.1716
ln_bs	0.2935	0.1897	0.0862	0.0360	0.0067
ln_kto	-0.0437	-0.0270	0.0019	0.0007	0.6933
ln_co	-0.0051	-0.0031	0.0000	0.0000	0.9634

STRUCTURAL DRIVERS AND CONSTRAINTS OF SERBIA'S INNOVATION SYSTEM (2011–2025)

The analysis of pillar-level trends in Serbia from 2011 to 2025 shows that the Infrastructure pillar is the most stable and exhibits continuous improvement throughout the period. GDP per capita growth is strongly associated with infrastructure. The most important structural problem is the negative correlation between GDP growth and human capital. Human capital does not contribute to innovation outputs, indicating that the system does not convert education into innovation. As a result, Serbia produces fewer innovation outputs relative to its level of innovation investments.

Although GDP grows strongly, innovation outputs do not follow this trajectory. The trend in the scores of the two output pillars shows that the key structural problem lies in the conversion of inputs into outputs. The trends of the innovation pillars in the Republic of Serbia are presented in Figure 1.

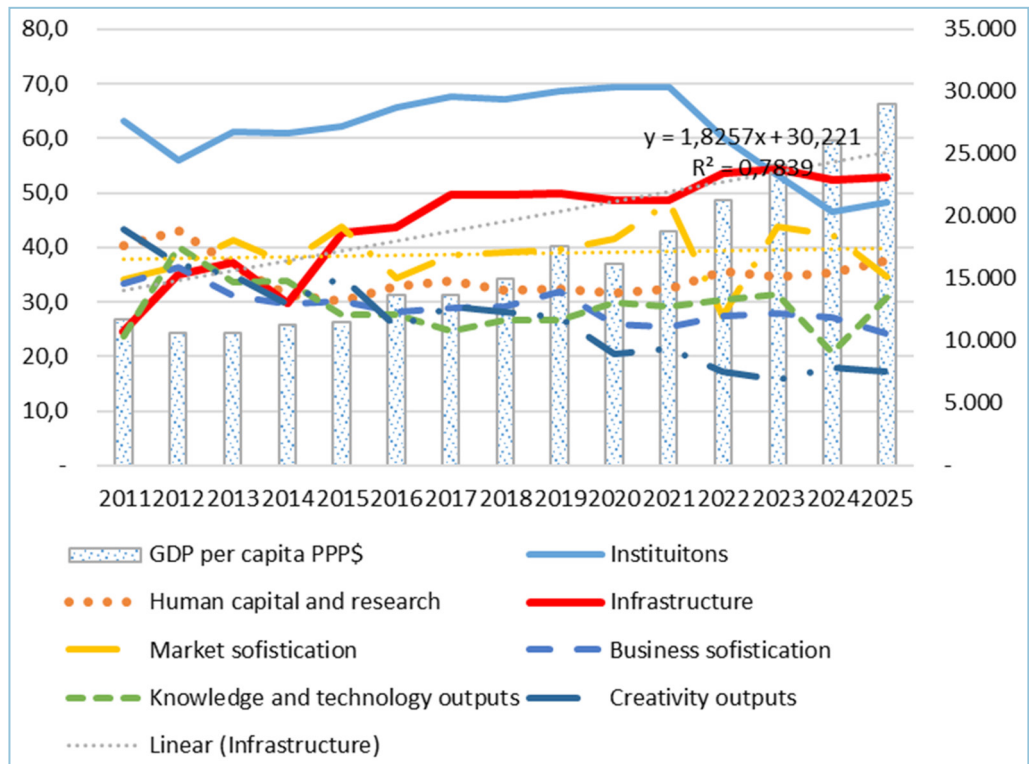
The results show that infrastructure is the most important pillar of innovation potential and a key driver of GDP growth in Serbia. Its role goes beyond simply providing physical and digital capacity. Investments in infrastructure create conditions for a more efficient

flow of information, lower transaction costs, and faster diffusion of technology, which indirectly affects other innovation inputs and outputs.

In contrast, human capital appears to be the weakest element of innovation potential. The indicators suggest that it does not show significant growth, nor does it have a statistically significant impact on innovation performance. The development of human capital seems to be more a result of new investments in the Serbian economy (Beke-Trivunac & Peković, 2022). In this context, underdeveloped human capital acts as a limiting factor, reducing the effects of both infrastructure and other inputs.

The analysis of innovation outputs in the region — both knowledge and creative dimensions — confirms that they largely rely on infrastructure and institutions. Weak institutional development and the lack of contribution from human capital point to a structural imbalance in the innovation system, where results are achieved despite, rather than because of, education and workforce capacities.

Figure 2. Trend of Innovation Capacity Pillars in the Republic of Serbia



Note: Pillar values range from 0 to 100. Higher values indicate better performance. (Source: Authors)

Although GDP shows steady growth, innovation potential does not follow the same trend. This divergence suggests that growth is driven more by investment than by

outputs based on knowledge, skills, and creative capacity. It also points to the limited sustainability of the current growth model and the need for strategic measures aimed at strengthening human capital as a fundamental factor in the development of Serbia's innovation potential.

CONCLUSION

The Global Innovation Index (GII) ranks economies according to their innovation potential. This composite index was developed to measure the effectiveness of specific policies, best practices, and mechanisms that support innovation. It evaluates innovation capacity through two sub-indices: the input sub-index, which includes the economic factors that enable and support innovation activities, and the output sub-index, which reflects innovation outcomes. Economies with stronger institutional frameworks and more developed education and research capacities tend to achieve better innovation results.

The assessment of Serbia's relative position in comparison with economically and institutionally similar countries is based on a comparative longitudinal analysis of the innovation performance of Serbia and selected countries in the region—Croatia, Slovenia, Hungary, Romania, and Bulgaria—over the period 2011–2025.

The findings show that economies with the highest innovation potential base their performance mainly on the pillars of Institutions and Business sophistication (Slovenia, Hungary, Croatia, and Bulgaria). In terms of GDP, these economies belong to the high-income group, meaning they have a high GDP per capita. Countries with a stronger business sector and higher levels of technological and organizational sophistication achieve better results in knowledge and technology outputs as well as creative outputs, confirming the central role of the business sector in driving innovation in the region. The importance of this pillar is particularly visible in the investment potential of Hungary.

Economies classified as upper middle-income (Romania in the period 2011–2023 and Serbia) place the greatest emphasis on infrastructure development. However, infrastructure represents a precondition rather than a direct driver of innovation potential, which is reflected in the lower innovation performance of these countries.

The results of the analysis based on partial correlation coefficients indicate that an increase in GDP per capita is associated with improvements in infrastructure, human capital and research, and business sophistication. There is a positive and statistically significant correlation between Knowledge and technology output and Business sophistication. Improvements in human capital and research activities are also significantly related to the development of institutions and business sophistication, but they are not accompanied by a corresponding increase in knowledge-, technology-, and creativity-based outputs.

The very low ranking of the Institutions and Business sophistication pillars for Serbia suggests that further improvement in its innovation potential depends on faster institutional development and a higher level of technological and organizational sophistication

in the business sector. According to annual GII reports, Serbia is typically assessed as an economy whose investment potential is in line with its level of economic development (GDP). In that sense, it can be expected that future GDP growth will also contribute to the improvement of its innovation potential.

POLICY RECOMMENDATIONS

To address the identified structural weaknesses and enhance Serbia's innovation capacity, several policy priorities are recommended, including strengthening institutional quality (especially, fostering institutional mechanisms that support collaboration between government, academia and industry), enhancing business sophistication (especially, introducing incentives for R&D investment), prioritize human capital development (especially, reforming education and training systems to align skills with innovation-driven economic needs), and improve input-output conversion efficiency (especially, involve the private sector in innovation governance to ensure policy relevance).

LIMITATIONS

Several limitations should be acknowledged when interpreting the findings, especially, a limited sample of countries and the absence of efficiency metrics, as the study does not evaluate how effectively countries convert innovation inputs into outputs.

FUTURE RESEARCH DIRECTIONS

To deepen understanding of innovation system dynamics, future research should consider including additional CEE and EU economies for more robust comparative insights, integrating innovation efficiency measures, and exploring causal mechanisms, using micro-level data, by incorporating firm-level or researcher-level datasets to understand micro-drivers of innovation.

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Inovacioni potencijal Republike Srbije: Procena zasnovana na GII

Apstrakt: Ovaj rad ispituje učinak komponenti Globalnog inovacionog indeksa (GII) na inovacioni potencijal Republike Srbije, za period 2011–2025. Ispitivanje se odvija uporednom analizom šest ekonomija Centralne i Istočne Evrope (Srbija, Rumunija, Bugarska, Mađarska, Slovenija i Hrvatska), radi identifikacije ključnih predikatora inovacionog potencijala za izabranu regiju, i parcijalnom korelacionom analizom, radi identifikacije ključnih odnosa između komponenti GII između BDP-a po glavi stanovnika. Rezultati pokazuju da je infrastruktura najstabilniji i najsnažniji pokretač rasta BDP-a i inovacionih rezultata u Srbiji, za razliku od najbolje ocenjenih zemalja u okruženju u kojima stubovi institucija i poslovne sofisticiranosti imaju presudnu ulogu u konverziji inovacionih inputa u outpute. Nasuprot tome, investiranja u ljudski kapital čine najslabiju kariku inovacionog sistema Republike Srbije, bez statistički značajnog doprinosa inovacionim performansama. Ovakva strukturna neravnoteža ukazuje da se ekonomski rast Srbije zasniva na investicionim, a ne na znanjem zasnovanim faktorima. Rezultati ispitivanja ukazuju na potrebu za ciljanim politikama usmerenim na jačanje institucionalnog okvira, unapređenje poslovne sofisticiranosti i strateško ulaganje u ljudski kapital, kako bi se povećala efikasnost pretvaranja inputa u inovacione rezultate i obezbedio održiv, inovaciono zasnovan razvoj.

Ključne reči: Globalni inovacioni indeks; inovacioni kapacitet; ljudski kapital; infrastruktura; institucije; poslovna sofisticiranost; Srbija; BDP per capita; inovaciona efikasnost.

Ethical Principles and Standards of Professional Conduct in Public Administration: A Case Study in Serbia

Abstract: *This paper aims to review the results on awareness and the presence of ethical principles in public administration. The findings serve as indicators of the behaviour of public officials. The results help determine whether ethical norms are adequately represented in formal terms. The study also examined claims regarding whether the functioning of operations within public administration is possible if there is no consistent application of ethics and no effective institutional oversight. The conclusion reached is that strengthening the ethical culture in public administration - through education and the accountability of public officials - represents a key prerequisite for building high-quality professional relationships. More specifically, this contributes to improving the quality of public services and increasing employee satisfaction. Conducting operations without an ethical foundation is not advisable in public administration, as it affects the overall quality of work relationships and employee satisfaction. A proposed direction for further analysis would be examining the impact on employees' work attitudes when ethical principles are not applied.*

Keywords: *public administration, ethics, standards of professional conduct, case study, Serbia*

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INTRODUCTION

Ethical principles and standards of professional conduct play an important role in improving the quality, transparency, and accountability of public administration. Ethical behavior in public institutions contributes not only to effective organizational performance, but also to employee satisfaction, public trust, and the quality of public services (Bogdanović, 2023). For this reason, research on employees' perceptions of ethical behavior and professional standards in public administration has become increasingly important. Research conducted in public institutions should ensure anonymity and voluntary participation in order to protect employees and encourage honest responses. Anonymous surveys reduce fear of criticism from management and enable employees to express their opinions about workplace conditions, interpersonal relations, and ethical challenges more freely (Sever Mališ et al., 2012). Such an approach is consistent with both domestic and international ethical research standards.

Ethics represents a system of moral values and principles that guide human behavior, while professional ethics refers to standards and rules of conduct within the workplace. In public administration, ethical principles are regulated through laws, codes of conduct, and institutional procedures that define the responsibilities of public servants and ensure professionalism, integrity, and accountability (Vasiljević, 2016). Previous studies have shown that factors such as leadership, employee education, career development, and organizational culture significantly influence the development of ethical behavior in public institutions (Vukotić et al., 2019).

At the same time, public administration employees are often exposed to ethical challenges, including workplace pressure, discrimination, mobbing, and inconsistent application of professional standards (Fatić, 2014). Ethical principles should therefore not remain only formal rules, but should guide everyday professional conduct and decision-making processes (Škandro & Trifković, 2021). Recent research in Serbia indicates that employees are generally familiar with ethical principles, although unethical behavior and insufficient institutional supervision are still present in practice (Šarkić, 2025).

The aim of this paper is to examine the role of ethical principles and standards of professional conduct in public administration, as well as the challenges related to their practical implementation. The study combines theoretical analysis with empirical research conducted through an anonymous survey among employees in a public sector institution in Belgrade, Serbia. A total of 100 employees participated in the survey process, while 78 completed questionnaires were included in the analysis.

The paper is organized into three sections. The first section presents the theoretical framework and literature review related to ethics and professional conduct in public administration. The second section explains the methodology and demographic structure of the sample, together with the results related to employees' knowledge and application of ethical principles. The third section presents and discusses the findings of the case study. Finally, the conclusion highlights the importance of strengthening ethical awareness, institutional supervision, and organisational responsibility in order to improve the quality of public administration and employee satisfaction.

THEORETICAL FRAMEWORKS AND LITERATURE REVIEW

The field of public administration provides a broad basis for analyzing organizational behavior, professional standards, and ethical principles in public institutions. Public administration includes state bodies and institutions responsible for managing public affairs in the interest of the state and its citizens (Marčetić, 2006). Its functioning is based on the protection of the public interest, equal treatment of citizens, and accountability in decision-making processes (Rawls, 1971).

Public administration operates within a hierarchical organizational structure characterized by formal authority, institutional supervision, and clearly defined responsibilities, which corresponds to Weber's bureaucratic model of organization (Weber, 1978). However, deviations from established legal and ethical principles may negatively affect institutional performance and public trust (Bulatović & Korac, 2014).

Theoretical discussions on ethics have long emphasized the importance of moral behavior and professional responsibility. Aristotle viewed ethics as a practical philosophy focused on the development of virtue and moral character (Babić-Avdispahić, 1995). In contrast, deontological ethics, particularly Kant's approach, emphasizes duty, legality, and adherence to rules as the foundation of ethical behavior (Kant, 1993). These philosophical perspectives remain relevant in contemporary public administration, where ethical conduct is closely connected with professionalism, responsibility, and service to the public interest.

Within public administration, managers and human resource departments play an important role in promoting ethical standards, employee education, and organizational satisfaction (Krčalo & Džafić, 2018). Institutional behavior is regulated through formal and informal norms that shape professional relations and everyday administrative practice (Krčalo & Zolota, 2013). Ethical codes in public administration are generally based on principles such as legality, independence, objectivity, integrity, responsibility, and respect for diversity and professional conduct.

Recent studies have increasingly focused on the relationship between ethics and organizational performance. Research shows that ethical behavior contributes to trust, cooperation, and organizational stability among employees (Ferasso et al., 2025). Ethical standards improve institutional functioning and support effective communication, professional integrity, and responsible decision-making processes (Mihajlović & Stojanović, 2010). However, formal ethical rules alone are not sufficient to ensure ethical behaviour in practice.

The effective implementation of ethical standards depends largely on organizational culture, leadership, continuous employee education, and institutional support (Latta & Clotney, 2020). Organizations that actively promote transparency, responsibility, and ethical awareness are more likely to create a work environment in which ethical behavior becomes part of everyday professional practice (Lešić, 2025; Kudra, 2025). In this context, ethics should not be understood only as a formal legal obligation, but also as a practical framework guiding professional conduct and decision-making.

Modern public administration faces additional ethical challenges related to bureaucratization, administrative pressure, and digital transformation. Excessive administrative control may create institutional burdens without significantly improving the quality of public services (Marčetić, 2013). At the same time, the development of digital administration requires new ethical standards related to transparency, accountability, and equal access to public services (Anshar & Ifing, 2025).

Employees in public administration are expected to respect equality, avoid discrimination, and act in accordance with legal and institutional regulations that protect citizens' rights and the public interest (Rawls, 1971). Compliance with these standards preserves institutional integrity and contributes to public trust in administration (Weber, 1978). Ethical behavior in public administration therefore represents a connection between philosophical principles and practical institutional action (Kikovski, 2025).

Contemporary management approaches emphasize the importance of balancing formal regulations with the development of ethical organizational culture and professional autonomy among employees (Denhardt & Denhardt, 2015). Employees who are familiar with organizational procedures, workplace responsibilities, and legal regulations are more likely to contribute to efficient, transparent, and responsible institutional functioning (Masnica, 2019).

Case study research in public administration provides valuable insight into employees' perceptions, attitudes, and experiences regarding ethical behavior within institutions (Ljubojević, 2021). Existing literature indicates that there is still insufficient research offering practical recommendations for improving ethical standards and addressing shortcomings in organizational practice (Lešić, 2025). Therefore, further empirical research is necessary to better understand the challenges related to the implementation of ethical principles in public administration.

METHODOLOGICAL FRAMEWORK AND DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

Research Design

This study employed a quantitative, cross-sectional survey design within a single-case study framework in a public sector institution in Belgrade, Serbia. The research focused on examining employees' perceptions of ethical principles and standards of professional conduct in public administration.

The survey was conducted anonymously in order to encourage honest responses and reduce the possibility of bias or discomfort among participants. Personal data such as names and surnames were not collected, and participation in the research was entirely voluntary. Prior to data collection, informed consent was obtained from all participants in accordance with domestic and international ethical research standards. The study was approved by the relevant Institutional Review Board (IRB).

Participants and Sample

A total of 100 employees from a public administration institution participated in the survey process. After the initial review of responses, 22 questionnaires were excluded from the analysis due to incomplete or invalid data. The final sample therefore consisted of 78 valid questionnaires.

The excluded questionnaires were removed for several reasons:

- 7 questionnaires were incomplete, with a significant number of unanswered questions;
- 3 responses did not meet the predefined participation criteria related to employment status, length of service, or belonging to the target group;
- 4 questionnaires contained illogical or contradictory answers;
- 2 questionnaires showed uniform response patterns (“straight-lining”), indicating insufficient attention while completing the survey;
- 6 responses were identified as duplicates and excluded to preserve data validity.

Although 22 questionnaires were excluded, the remaining sample provided sufficient data for the analysis of employees’ perceptions regarding ethical principles and professional conduct in public administration.

Research Instrument and Data Collection

Data were collected using a purpose-designed questionnaire created and distributed through the Qualtrics online survey platform. The questionnaire included closed-ended and semi-open questions related to:

- knowledge of ethical principles and codes of conduct,
- perceptions of unethical behavior in the workplace,
- application of ethical standards in practice,
- and challenges related to ethics in public administration.

Closed-ended questions enabled structured statistical analysis, while semi-open questions allowed respondents to express their personal opinions and experiences regarding ethical behavior and professional standards.

The questionnaire was distributed anonymously via e-mail, allowing employees to complete it independently and without external influence. The use of the Qualtrics platform facilitated data collection, organization, and export for further statistical processing.

The research was conducted between August 6, 2025, and February 1, 2026. The sample represented approximately 15% of employees within the observed organizational unit of public administration.

Research Questions

The main research question of this study was:

- To what extent are employees in public administration familiar with ethical principles and standards of professional conduct?

In addition to the main research question, the study examined:

- employees' knowledge of ethical codes,
- perceptions of unethical behavior in the workplace,
- the practical application of ethical principles,
- and the main challenges related to the implementation of ethics in public administration.

The research also aimed to identify possible measures for improving ethical awareness, professional responsibility, and institutional support within public administration.

CONCEPTUALIZATION AND DESIGN OF THE SURVEY QUESTIONNAIRE

During the research process, attention was paid to achieving balanced representation across sectors within the observed public administration institution. Such an approach enabled a more comprehensive understanding of employees' perceptions regarding ethical standards and professional conduct within the organizational structure. The survey questionnaire was designed to examine employees' attitudes toward ethical principles and standards of professional behavior in public administration. The questionnaire was developed in accordance with the research objectives, focusing on:

- knowledge of ethical principles,
- the practical application of ethical standards,
- perceptions of unethical behavior,
- and challenges related to the implementation of ethics in public administration.

The questionnaire consisted of several thematic sections. The introductory section included optional demographic questions intended to provide a general overview of the respondent structure.

The remaining sections were organized as follows:

- the first section examined employees' familiarity with ethical principles and codes of conduct in public administration;
- the second section focused on the application of ethical standards in everyday professional activities;

- the third section addressed perceptions of unethical behavior within the organization;
- the fourth section examined the main challenges in implementing ethical standards, including insufficient education, lack of supervision, and organizational pressures.

Both closed-ended and semi-open questions were used in order to collect quantitative data while also allowing respondents to express personal views and experiences. Special attention was devoted to the clarity and comprehensibility of the questions in order to minimize the possibility of misinterpretation and increase response reliability. The study was based on the understanding that ethical principles in public administration include legality, impartiality, transparency, professionalism, responsibility, and protection of the public interest. Ethical conduct in public institutions is essential for strengthening citizens' trust in public administration and improving institutional accountability.

Although the sample size represents a limitation of the study, the research provides useful empirical insight into the implementation of ethical principles in public administration. The findings may serve as a basis for future research in other public institutions and organisations, particularly in studies examining ethical leadership, organisational culture, and professional responsibility.

The use of survey research as a methodological instrument enabled the collection of relevant information regarding employees' perceptions and experiences related to ethics in public administration. Previous studies have also emphasised the importance of ethical leadership and its influence on organisational responsibility and human resource management (Azhar, Iqbal, & Imran, 2025).

SURVEY RESULTS OF CASE STUDY IN PUBLIC ADMINISTRATION

The survey results indicate that employees perceive insufficient control and supervision as one of the main challenges in the implementation of ethical standards in public administration. Approximately 40% of respondents identified the lack of internal control mechanisms, supervision, or auditing procedures as a significant factor contributing to inconsistent ethical behavior within the institution.

According to respondents' perceptions, stronger institutional supervision and clearer monitoring procedures could contribute to more consistent implementation of professional standards and ethical conduct. At the same time, organizational pressures were identified as a less frequent, but still relevant challenge, reported by 12% of respondents. The findings also suggest that some employees primarily focus on fulfilling operational tasks and professional obligations, while ethical standards are not always perceived as an essential aspect of everyday work. Nevertheless, respondents generally recognized the importance of ethical behavior, professional communication, and respectful interpersonal relations within public administration.

The results indicate that employee satisfaction tends to be higher in organizational environments where professional standards, ethical conduct, and positive workplace relations are consistently promoted by management. In contrast, lower levels of satisfaction were associated with perceived absence of ethical behavior, inadequate communication, and poor professional relations among employees and supervisors. As previously described in the methodology section, the research was conducted anonymously and with the informed consent of both employees and management representatives. Participation in the survey was voluntary and did not affect employees' professional status or workplace responsibilities. The consents obtained were aligned with domestic and international ethical research standards. The results of the study are presented in the following graphs and tables, which illustrate employees' attitudes toward ethical principles and standards of professional conduct in public administration. Regarding gender structure, the sample consisted of 42 male respondents (53.8%) and 36 female respondents (46.2%).

In terms of work experience:

- 15 respondents (19.2%) had up to 5 years of work experience;
- 27 respondents (34.6%) had between 6 and 10 years of experience;
- 25 respondents (32.1%) had between 11 and 20 years of experience;
- 11 respondents (14.1%) had more than 20 years of work experience.

With respect to job position:

- 42 respondents (53.8%) occupied operational (non-managerial) positions;
- 36 respondents (46.2%) held managerial positions.

The structure of the sample, including gender, years of work experience, and job position of the respondents, is presented in Table 1.

Table 1. Sample Structure of Respondents

Variable	Category	Number (N)	Percentage (%)
Gender	Male	42	53.8%
	Female	36	46.2%
Work experience	Up to 5 years	15	19.2%
	6–10 years	27	34.6%
	11–20 years	25	32.1%
	Over 20 years	11	14.1%
Job position	Operational	42	53.8%
	Managerial	36	46.2%

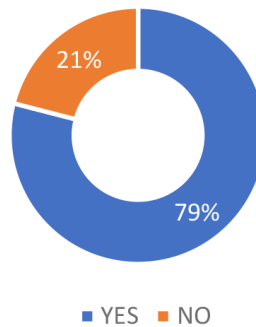
Source: *Author*

The survey results indicate that the majority of respondents are familiar with ethical principles in public administration. Specifically, 79% of respondents stated that they understand the concept of ethics and recognize the importance of ethical principles

and standards of professional conduct within public administration. In contrast, 21% of respondents reported limited familiarity with ethical principles or believed that such principles are insufficiently implemented in practice. These findings suggest that, although ethical awareness is generally present among employees, a significant proportion of respondents still lack sufficient understanding of ethical standards and their practical application in public administration.

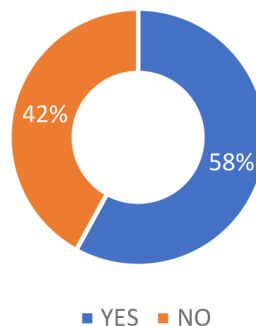
Graph 1 presents respondents' answers regarding their familiarity with ethical principles in public administration.

Graph 1. Familiarity with ethics in public administration



The application of ethical principles in practice is presented in Graph 2. The results show that 58% of respondents believe that ethical principles are consistently applied in public administration, while 42% consider their application to be inconsistent. These findings indicate that challenges related to the implementation of ethical standards are still present within public administration. The results suggest a need for additional employee education, stronger institutional support, and clearer mechanisms for monitoring compliance with ethical standards and professional conduct.

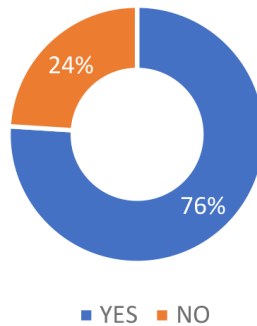
Graph 2. Applied ethical behavior in management



The presence of unethical behavior is presented in Graph 3. The results indicate that 76% of respondents reported the existence of unethical behavior within public administration,

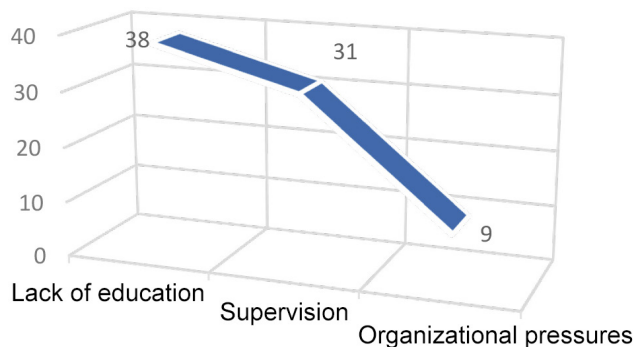
while 24% of respondents did not perceive such behavior. These findings suggest that a significant proportion of employees perceive unethical practices in the workplace, which may indicate the need for strengthened institutional control, education, and reinforcement of ethical standards. In numerical terms, 59 respondents reported the presence of unethical behavior, while 19 respondents did not identify such practices. Overall, the results point to differing perceptions among employees regarding the extent to which ethical standards are applied in practice.

Graph 3. Presence of ethical and unethical behavior



Graph 4 presents respondents' perceptions of the main obstacles to the implementation of ethical principles in public administration. The results show that 49% of respondents (38 individuals) identified insufficient education as the primary challenge in applying ethical standards. This is followed by 40% of respondents (31 individuals) who indicated a lack of adequate supervision and monitoring of employees' work as a significant factor contributing to weaknesses in ethical practice. Finally, 12% of respondents (9 individuals) identified organizational pressure as the main obstacle to the consistent application of ethical principles. Overall, the findings suggest that insufficient education and inadequate supervision are perceived as the most important barriers to effective implementation of ethical standards in public administration.

Graph 4. The biggest problem in the application of ethics



DISCUSSION AND INTERPRETATION

The results of the study indicate that, although a majority of employees are familiar with ethical principles, their consistent application in practice remains limited. The main challenges identified - insufficient education and inadequate supervision - support theoretical assumptions that the existence of formal ethical codes alone is not sufficient to ensure ethical behavior without effective implementation mechanisms.

The theoretical framework of this study is grounded in deontological ethics (Kant, 2008), virtue ethics (Aristotle, 2009), theories of justice and public interest (Rawls, 1971), bureaucratic organization theory (Weber, 1978), and contemporary approaches to public administration such as the New Public Service model (Denhardt & Denhardt, 2015). These theoretical perspectives collectively emphasize the importance of duty, institutional responsibility, fairness, and public service orientation in shaping ethical behavior in public administration. The findings of the survey suggest a discrepancy between awareness of ethical principles and their practical implementation. While 79% of respondents reported familiarity with ethical standards, 42% indicated that these principles are not applied consistently in practice. In addition, 76% of respondents reported the presence of unethical behavior in their work environment, which further highlights challenges in the practical enforcement of ethical norms.

Regarding specific influencing factors, insufficient education (49%) and weak supervision (40%) were identified as the most significant barriers to the effective implementation of ethical principles. Organizational pressures (12%) were also reported, although to a lesser extent. These findings suggest that ethical behavior in public administration depends not only on individual awareness, but also on institutional capacity, leadership, and control mechanisms.

Overall, the results indicate that effective implementation of ethical standards requires a combined approach, including clear codes of conduct, continuous employee education, effective supervision, and consistent application of disciplinary and organizational procedures. Strengthening these mechanisms may contribute to improving ethical behavior and professional standards in public administration. The concept of transparency and access to information in public administration is grounded in legal frameworks such as the Law on Free Access to Information of Public Importance, which defines information of public interest as any information held by public authorities and related to their work that is relevant to citizens. In this context, public administration operates under continuous public scrutiny, which places additional responsibility on employees to act in accordance with legal and ethical standards.

Public sector employees are increasingly expected to uphold principles of transparency, accountability, and professional integrity, while also being aware that their work is subject to public oversight. Previous studies confirm that ethical leadership and organizational support contribute significantly to employee commitment and ethical behavior in public institutions (Hakimi, 2025; Alherz & Hadi, 2025). The literature further emphasizes that

ethical principles are essential for ensuring trust between citizens and public institutions. Business and administrative ethics are therefore not only normative frameworks but also practical mechanisms that support responsible decision-making, transparency, and long-term organizational effectiveness (Aleksić, 2007; Gluhaković, 2021). In public administration, this includes responsiveness to citizens' needs, legal compliance, and protection of employee rights through institutional mechanisms such as internal reporting systems and designated oversight bodies.

The findings of this study align with previous research highlighting the importance of organizational responsibility and ethical leadership in promoting ethical behavior. The presence of institutional mechanisms for reporting unethical conduct, including protection against discrimination and workplace abuse, is an important component of ethical public administration systems. Contemporary literature also highlights the increasing importance of digital transformation in public administration. While technological development can enhance transparency and efficiency, it also introduces new ethical challenges related to data management, accountability, and organizational responsibility (Musri, 2022; Grigalashvili, 2025; Mišić et al., 2025; Vataman & Tofan, 2025). Accordingly, ethical frameworks must adapt to technological changes in order to ensure responsible governance in digital environments.

Ethical leadership has been widely recognized as a key factor in improving organizational performance, employee satisfaction, and institutional reputation. Studies show that organizations that integrate ethical principles into their strategic and operational processes achieve higher levels of trust, commitment, and effectiveness (Lisse, 2017; Chayabutra & Ueasangkomsate, 2025).

Within this context, ethical codes serve as important guiding instruments for decision-making and professional conduct. However, their effectiveness depends on consistent implementation, organizational culture, and employee awareness (Krakan, 2024). In addition, ethical considerations are increasingly relevant in areas such as recruitment, negotiation, public relations, and human resource management, where professional decisions have direct ethical implications (Čabarkapa, 2015; Kvesić, 2024; Milas, 2012). The results of this study confirm that ethical principles in public administration are generally recognized as important, but their consistent application in practice remains a challenge. This suggests a gap between formal ethical frameworks and everyday organizational behavior. Similar findings have been reported in previous studies, which highlight the need for continuous education, stronger institutional support, and effective monitoring mechanisms.

Although the number of respondents in case study research is often limited, such studies provide valuable exploratory insights into organizational behavior and employee perceptions. Rather than limiting their relevance, case studies contribute to a deeper understanding of specific institutional contexts and can serve as a foundation for further, more extensive research. Overall, the findings suggest that strengthening ethical awareness, improving organizational mechanisms, and ensuring consistent application of ethical standards are essential for enhancing public trust and the quality of public administration.

CONCLUSION

This study examined employees' perceptions of ethical principles and standards of professional conduct in public administration. The findings indicate that, although employees are generally familiar with ethical principles, their consistent application in practice is not always ensured. The identified challenges suggest a gap between theoretical knowledge of ethics and its practical implementation in the workplace. The results highlight the importance of strengthening ethical awareness, improving organizational culture, and ensuring continuous education and effective monitoring mechanisms. These factors are essential for enhancing professional behavior, improving the quality of public services, and strengthening citizens' trust in public administration institutions. The study also indicates that ethical behavior should be understood both as an individual responsibility and an institutional value embedded in organizational processes, including human resource management, decision-making, and strategic planning. Promoting professional integrity is therefore crucial for the functioning of modern public administration and broader societal trust (Franeta, 2025).

Practical Implications

The findings suggest that public administration institutions should focus on developing clear ethical guidelines, continuous training programs, and stronger supervisory mechanisms. Strengthening ethical culture within organisations may contribute to more consistent application of professional standards and improved employee awareness of ethical responsibilities.

Limitations and Future Research

This study has certain limitations, primarily related to the sample size and the use of a single-case study design. Future research should include a larger number of participants and multiple public administration institutions in order to improve generalizability. It is also recommended that future studies apply mixed methods approaches to gain a more comprehensive understanding of ethical behavior in practice.

Further research could also include comparative analyses across different public administrations and longitudinal studies that would examine changes over time, particularly following the implementation of organizational improvements aimed at strengthening ethical standards.

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Etički principi i standardi profesionalnog ponašanja u javnoj upravi, studija slučaja u Srbiji

Apstrakt: Ovaj rad ima za cilj da prikaže rezultate istraživanja o nivou svesti i prisutnosti etičkih principa u javnoj upravi. Nalazi služe kao pokazatelji ponašanja državnih službenika. Rezultati pomažu u utvrđivanju da li su etičke norme adekvatno zastupljene u formalnom smislu. Studija je takođe ispitivala tvrdnje o tome da li je funkcionisanje procesa u javnoj upravi moguće ukoliko ne postoji dosledna primena etike i efikasan institucionalni nadzor. Zaključak istraživanja jeste da jačanje etičke kulture u javnoj upravi — kroz edukaciju i odgovornost javnih službenika — predstavlja ključni preduslov za izgradnju kvalitetnih profesionalnih odnosa. Konkretno, to doprinosi unapređenju kvaliteta javnih usluga i povećanju zadovoljstva zaposlenih. Obavljanje poslova bez etičke osnove nije preporučljivo u javnoj upravi, jer utiče na ukupni kvalitet radnih odnosa i zadovoljstvo zaposlenih. Predloženi pravac za dalja istraživanja jeste ispitivanje uticaja na radne stavove zaposlenih u situacijama kada se etički principi ne primenjuju.

Ključne reči: javna uprava, etika, standardi profesionalnog ponašanja, studija slučaja, Srbija.

The Impact of Audit on Company Performance

Abstract: *The aim of this research is to examine the impact of financial statement auditing on company profitability, measured by return on assets (ROA), while identifying the key determinants of financial performance in companies operating in Sector C – Manufacturing and Sector G – Trade in the Republic of Serbia, during the period 2023-2024. The research hypothesis was formulated that the audit of financial statements has a positive effect on company profitability. A multiple regression model was applied to assess the effects of selected independent variables on the dependent variable ROA. The analysis includes variables reflecting the key characteristics of companies' size, current liquidity, indebtedness, the share of fixed assets, and the existence of a financial statement audit. The dataset analyzed comprises 200 observations, with sectors selected due to their significant role in the overall economic structure of the country. The results indicate that current liquidity, indebtedness, and financial statement auditing have a statistically significant positive effect on company profitability. In contrast, company size and the share of fixed assets do not exhibit a statistically significant impact on ROA. The findings suggest that efficient management of liquidity and financial structure, as well as transparency in financial reporting through auditing, represent key factors for improving profitability in the observed sectors. The results are relevant for company managers, investors, creditors, and policymakers, as they demonstrate that audited financial statements strengthen the confidence of external users of financial information, thereby enhancing the quality and reliability of business and investment decision-making in the contemporary business environment of the Republic of Serbia.*

Keywords: *audit, profitability*

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INTRODUCTION

Financial statements represent a key source of information for investors and other users of financial data in the process of making economic decisions. Their importance lies not only in providing insight into the current financial position of a company but also in serving as a basis for assessing future performance and business sustainability. The quality and reliability of financial statements have a direct impact on investment decisions and the allocation of capital in the market (9).

The audit of financial statements is one of the key mechanisms of modern corporate governance, contributing to the increased credibility of financial information. Its primary role is to provide independent, objective, and professional verification of accuracy, reliability, and fair presentation of financial information contained in a company's financial statements. In developed capital markets, auditing plays a crucial role in reducing information asymmetry between management, as the internal holder of information, and external users of financial statements, thereby contributing to greater transparency. From the perspective of agency theory, auditing is viewed as an instrument that mitigates conflicts of interest between owners of capital (principals) and management (agents) by increasing the level of control and verification of financial reporting (16). In this context, the external auditor is responsible for assessing whether the financial statements fairly reflect the financial position, business results, and cash flows of the company, in accordance with relevant accounting standards and regulatory requirements.

Users of audit reports include a wide range of stakeholders, such as investors, creditors, analysts, management, employees, state institutions, and regulatory bodies (34). Investors rely on audited financial statements as a basis for capital allocation decisions, while creditors use them to assess credit risk and the solvency of companies. Regulatory authorities and market supervisors use auditing as an important instrument for maintaining the stability of the financial system and protecting the public interest. Given the heterogeneity of users and the importance of the information provided by financial statements, auditing emerges as a key mechanism for ensuring their reliability. Its role is primarily reflected in the independent and objective assessment of the accuracy and truthfulness of financial statements, thereby ensuring greater transparency of business operations. In this way, auditing contributes to reducing information asymmetry between companies and external users, improving the quality of economic decisions. By increasing the credibility of financial statements, auditing reduces investor risk perception, which may lead to a lower cost of capital, improved access to external financing, and a stronger market position for companies. Thus, auditing assumes a broader economic function, as it not only verifies financial statements but also strengthens the trust of external users and contributes to more efficient market functioning.

Companies operate in competitive market conditions with the primary goal of achieving positive financial results, that is, generating profit that ensures long-term sustainability, development, and the ability to respond to market demands. Profitability represents the ability of a company to generate revenue exceeding total expenses, measuring the

efficiency of resource use in the process of generating profit. Profitability is influenced by a wide and complex set of internal and external factors. Among the most significant internal factors are company size, liquidity measures, indebtedness indicators, asset structure, growth, investments, company age, productivity, and lagged profitability, (26)(45) (38), while external factors most commonly discussed in the literature include market conditions, the development of the financial market, macroeconomic conditions (inflation, financial crises, instability), the tax system, and interest rates (40). Given that many of these determinants can be identified and quantified based on financial statement data, the availability of high-quality and reliable financial information is a key prerequisite for their adequate assessment and analysis by both internal and external stakeholders. In this context, the quality of financial reporting represents one of the essential prerequisites for sound decision-making within companies and among external users of information. A particularly important determinant among these factors is the audit of financial statements, as a mechanism that enhances their credibility and transparency. By increasing the credibility of financial statements, auditing strengthens the trust of investors and creditors, reduces risk perception, and facilitates access to external financing, which indirectly contributes to improved business performance.

Accordingly, audited financial statements possess a higher level of reliability and credibility, which may contribute to a more favorable position of companies in the capital market and better financing conditions. In this context, audit quality plays a significant role in shaping the decisions of financial statement users, with auditors being responsible for ensuring quality in accordance with professional auditing standards (12). Conversely, companies whose financial statements are not audited face a higher degree of information uncertainty. Although unaudited statements do not necessarily imply inaccuracy, they indicate a greater risk of potentially incorrect or insufficiently verified information, which may negatively affect risk perception and the decisions of external users.

The aim of the paper is to examine whether the existence of a financial statement audit affects company profitability. The research will examine whether companies whose financial statements are audited achieve better performance, measured through profitability indicators, compared to companies whose financial statements are not subject to the audit process.

LITERATURE REVIEW

Company performance represents a key indicator of business success and provides investors with insight into the overall financial and operational condition of a firm. It also serves as a “snapshot” of economic stability and managerial performance. (3) In this context, performance refers to the results achieved by individuals or organizational units within their responsibilities and competencies, in the function of achieving corporate objectives (43). From a theoretical standpoint, performance reflects a company’s ability

to efficiently combine and manage available resources in order to achieve and maintain competitive advantage in the market. Accordingly, a higher level of performance indicates that a company uses its resources successfully and rationally, ensuring greater efficiency and effectiveness in operations.

Within the measurement of business performance, profitability occupies a central position as one of the most important financial indicators of corporate success. The most commonly used profitability indicators in empirical research are Return on Assets (ROA) and Return on Equity (ROE), while some studies also use Earnings per Share (EPS) as an additional measure of profitability from the perspective of market value. (17)(18)(9) EPS is calculated as the ratio of net income minus preferred dividends to the weighted average number of ordinary shares outstanding. However, the literature emphasizes that EPS should be observed in combination with other financial indicators and ratios to ensure a more complete and reliable assessment of a company's financial position and overall performance (17) (18). ROE expresses the ratio of net income after taxes to total equity, indicating the efficiency of capital management and the company's success in creating value for shareholders. The literature notes that ROE may be influenced by financial leverage and capital structure, which is why it is recommended to observe it in combination with other profitability indicators to obtain a more objective picture of corporate performance. (9) Return on Assets (ROA) enables the assessment of resource management efficiency and the quality of managerial decisions (41). This indicator expresses the ratio of net income after taxes to total assets (17) (18), and the literature emphasizes that ROA directly reflects a company's ability to generate profit through efficient use of available resources (5) (18). Due to its relative stability and lower sensitivity to accounting distortions compared to other profitability indicators, ROA is widely used in empirical studies as a primary measure of financial performance (42) (19). Therefore, ROA, as the most relevant indicator for explaining firm value (6), will be used as the basis for further profitability analysis.

Based on previous empirical and theoretical research, audit quality is most commonly examined through several dimensions: auditor independence, audit firm tenure, audit firm size, audit fees, and regulatory mechanisms such as mandatory audit firm rotation. These aspects of audit quality are analyzed in the context of their impact on various indicators of corporate performance, most commonly profitability measures such as ROA, ROE, EPS, and cost of capital as an indicator of investor risk perception.

A study conducted in Korea (24) examines the effects of mandatory audit firm rotation on the perceived quality of auditing and investor decision-making, with a particular focus on its impact on the cost of capital as a measure of market risk perception. The aim was to determine whether mandatory rotation increases perceived auditor independence and contributes to more efficient capital market resource allocation. The study analyzes the relationship between mandatory rotation and cost of capital for the period 2006–2008 on a sample of 191 observations. The results show that mandatory rotation reduces the cost of capital, indicating that investors react positively to auditor changes and incorporate this information into their decisions.

The study examining the impact of audit quality on company performance in Malaysia (36) represents an extension of previous research on audit firm rotation, as it incorporates audit fees as an additional indicator of audit quality alongside rotation. The aim of the research was to analyze the influence of these factors on the performance of companies listed in Malaysia during the period 2003–2012. The empirical analysis was conducted on a sample of 542 companies using OLS regression and lagged regression models. Audit fees and audit firm rotation were used as independent variables, while return on assets (ROA) served as the key accounting-based measure of profitability (with Tobin's Q included as an additional market-based measure). The results show no consistent statistically significant relationship between audit quality indicators and ROA, although the baseline model reveals a negative association between audit fees and ROA, whereas in lagged models this relationship becomes positive but remains weak.

Moutinho and Cerqueira (27) analyzed the relationship between audit fees and firm performance using a sample of U.S. publicly listed companies for the period 2000–2008. Their findings indicate a negative relationship between audit fees and firm performance, with evidence that changes in audit fees reflect changes in financial and operational performance, confirming their role as indicators of performance trends.

Regarding audit firm rotation, Sayyar et al. (36) report that the results suggest a negative or statistically insignificant effect on firm performance, implying that auditor changes do not necessarily contribute to improved business outcomes. Instead, continuity in the auditor–client relationship may offer certain advantages through the accumulation of client-specific knowledge. These findings complement previous research on auditor rotation, indicating that the effects of audit quality on firm performance depend on the selected indicators, and that incorporating audit fees as an additional dimension allows for a more comprehensive understanding of the relationship between audit quality and economic outcomes.

The study (9) examines the impact of audit committee independence, as an element of auditing practices, on corporate financial performance. The aim of the research was to determine the extent to which audit independence contributes to improving company profitability, measured through ROA and ROE. The analysis was conducted on a sample of listed companies from the three most developed Eurozone countries—Germany, France, and Italy—covering the period from 2009 to 2019. The methodological approach was based on OLS regression estimates, with audit committee independence treated as the key independent variable, while ROA and ROE were used as measures of financial performance. The results show that audit committee independence has a positive effect on company profitability, with the effect being more pronounced for ROA than for ROE.

The study (7) examines the impact of financial reporting quality and audit quality on the investment efficiency of companies in the Gulf Cooperation Council (GCC) countries. The aim of the research was to determine whether the quality of financial reporting contributes to more efficient investment allocation, as well as whether audit quality has a direct and moderating effect on this relationship. For the purposes of empirical analysis, data

on financial reporting and auditors were obtained from the DataStream database, along with the financial statements of 150 companies covering the period from 2012 to 2015. Financial reporting quality and audit quality were treated as key independent variables, with audit quality operationalized through audit firm size, while the dependent variable was investment efficiency. Although audit firm size is frequently used as a proxy for audit quality, the literature emphasizes that this indicator has certain limitations and may not fully reflect actual audit quality (37). The results show that financial reporting quality has a significant and positive effect on investment efficiency, whereas audit quality does not exhibit a statistically significant direct or moderating effect. These findings further highlight the need to employ a broader set of audit quality indicators when analyzing its influence on economic decision-making.

The study (19) examines the impact of audit quality on the financial performance of listed insurance companies in Nigeria, with particular focus on audit fees, audit independence, and audit firm size. The aim of the research was to analyze how different elements of audit quality influence company profitability, measured through return on assets (ROA) as the key indicator of financial performance in the insurance sector. The empirical analysis covers a sample of 22 listed insurance companies for the period 2017–2021, using secondary data, descriptive statistics, and multiple regression analysis. Audit fees, audit independence, and audit firm size were treated as the key independent variables, while ROA was used as the measure of financial performance. The results show that audit fees have a significant positive effect on ROA, and that audit independence also contributes positively to profitability, although to a lesser extent. In contrast, audit firm size exhibits a statistically significant negative effect on ROA, indicating that larger audit firms do not necessarily contribute to better financial outcomes. These findings complement previous discussions on the role of audit firm size and audit committee independence in economic decision-making, confirming their important implications in this context.

The study (18) examines the relationship between audit quality and corporate financial performance in Nigeria, measured through return on assets (ROA) and earnings per share (EPS). The aim of the research is to analyze the impact of audit quality components on financial performance, while assessing both short-term and long-term effects. The empirical analysis is based on secondary time-series data for the period 1981–2021, using a case study of First Bank of Nigeria. For the purposes of the analysis, the ARDL and DOLS econometric methods were applied. The key independent variables included auditor independence, audit tenure, and audit firm size, while ROA and EPS were used as the dependent variables. The results show a stronger relationship between audit quality and ROA compared to EPS. Auditor independence and audit tenure do not have a statistically significant effect on ROA, whereas audit firm size exhibits a statistically significant negative effect. In the case of EPS, audit firm size has a statistically significant positive effect, while the other variables are not statistically significant. Overall, the findings indicate that audit quality has a significant short-term and long-term impact on ROA, while no stable long-term effect is observed for EPS.

The study (16) shows that the audit committee and audit independence have a significant effect on the quality of financial statements. The aim of this research was to examine the impact of the audit committee and audit independence on financial reporting quality, while including audit quality as a moderating variable. The study was conducted in Indonesia on a sample of 120 financial statements of manufacturing companies listed on the Indonesia Stock Exchange for the period 2019–2023. Multiple regression analysis was applied, with the audit committee and audit independence treated as independent variables, financial reporting quality as the dependent variable, and audit quality—measured by the engagement of Big Four audit firms—included as a moderating variable. The results indicate that both the audit committee and audit independence have a positive and statistically significant effect on the quality of financial statements, while audit quality does not have a significant moderate role in this relationship.

The study (13) examines the extent to which the audit of ESG reports influences the quality of ESG ratings, with particular emphasis on the reliability and transparency of non-financial information used by rating agencies in assessing corporate sustainability. The aim of the research was to determine whether the existence of external assurance of ESG reporting contributes to the stability and credibility of ESG ratings, especially in the context of corporate scandals. The analysis was conducted on a sample of 71 corporate scandals that occurred between 2007 and 2017, using data from the Thomson–Eikon database. The methodological approach involved comparing changes in ESG ratings before and after the disclosure of negative events, applying multivariate analysis and controlling firm characteristics. The key variable observed was the change in ESG rating, with the sample divided into companies with audited and unaudited ESG reports. The results show that, following the disclosure of scandals, there are no significant changes in ESG ratings at the aggregate level; however, companies without ESG assurance experience a statistically significant deterioration in their ESG ratings. In contrast, firms whose ESG reports were audited do not exhibit pronounced negative rating adjustments. These findings indicate that ESG assurance enhances the reliability and stability of ESG information, strengthening its credibility in the eyes of the market and rating agencies.

DESCRIPTION OF THE SAMPLE AND RESEARCH METHODOLOGY

The aim of this research is to examine whether the audit of financial statements contributes to achieving higher company profitability. In line with the stated objective, the following research hypothesis is defined:

- H1:** The audit of financial statements has a positive effect on company profitability, measured by return on assets (ROA).

In addition to the main objective, the research aims to identify other key determinants of corporate financial performance in order to understand the broader context in which auditing affects profitability.

A multiple regression model was applied to test the determinants influencing company profitability, measured through return on assets (ROA). The data used in this research refer to a sample of companies from the Republic of Serbia operating in Sector C – Manufacturing and Sector G – Trade, for the period 2023–2024. These sectors were selected because they represent the most prevalent sectors in Serbia in terms of the number of active enterprises. According to the Statistical Office of the Republic of Serbia, Sector C included 30,156 companies in 2023, decreasing to 29,879 in 2024. Similarly, Sector G recorded a slight decline from 65,183 companies in 2023 to 65,015 in 2024, indicating a downward trend in the number of active business entities during the observed period. (33)

The research was conducted using available financial statement data from the Serbian Business Registers Agency database (1), which includes balance sheets, income statements, and other relevant information on companies operating in the Republic of Serbia. The sample consists of 100 companies, resulting in a total of 200 observations for the two observed years. Of the total number of observations, 124 refer to companies whose financial statements were subject to independent audit, while 76 refer to companies not subject to mandatory audit. Data processing and model development were performed using the statistical software SPSS version 23.

The analysis of key determinants of profitability in the observed sectors is based on return on assets (ROA) as the dependent variable. The independent variables include company size, current liquidity, indebtedness (measured as the ratio of debt to equity), the share of fixed assets in total assets, and the existence of a financial statement audit. These variables represent relevant and frequently used determinants in empirical literature that may significantly influence company profitability.

Table 1: Determinants of Profitability

Determinant	Calculation
Company size	Natural logarithm of total assets
Current liquidity	Current assets / Current liabilities
Indebtedness	Total liabilities / Equity
Share of fixed assets	Fixed assets / Total assets
Audit	Dummy variable: 1 = audited company; 0 = unaudited company

Source: *Authors*

Company size can be measured using various indicators such as total assets, sales revenue, or number of employees. In this research, company size is measured as the natural logarithm of the book value of total assets. Larger companies not only achieve higher business volume and greater revenue-generating capacity but also have better access to financial markets (39), and lower borrowing costs (44). Therefore, company size is expected to have a positive effect on profitability. However, previous research is

not unanimous: while Isik et al. (21), John and Adebayo (22), and Doğan (15) found a positive effect, Niresh and Thirunavukkarasu (29) and Kartikasari and Merianti (23) reported a negative relationship.

Current liquidity indicates a company's ability to settle short-term obligations using its short-term assets. In this study, liquidity is measured as the ratio of current assets to current liabilities (current ratio). Financially stable companies typically maintain this ratio at or above 1.0. The ability to meet short-term obligations is an important element of financial stability, and may significantly influence overall performance. Previous studies show mixed results: Doğan (15), Saleem and Rehman (35), and Madushanka and Jathurika (25) found a positive relationship between liquidity and profitability, while Akbar and Fauziah (4) and Alarussi and Alhaderi (2) found no statistically significant effect.

Indebtedness represents the extent to which a company uses external financing in its capital structure and can be measured through various indicators, such as the ratio of total liabilities to equity or total debt to total assets. In this research, indebtedness is defined as the ratio of total debt to total assets. Empirical findings suggest that the relationship between indebtedness and profitability is nonlinear and follows an inverted U-shape. Higher indebtedness may negatively affect profitability due to increased financing costs and financial risk. Conversely, debt can serve as an important source of capital for investment, which—if efficiently allocated—may improve performance. Empirical results are mixed: Doğan (15) and Pattitoni et al. (31) found a negative relationship, while Kartikasari and Merianti (23), Bortych (8), and Mpanju (28) found a positive effect.

The share of fixed assets reflects the structure of a company's assets and is defined as the ratio of fixed assets to total assets. Higher values indicate a larger share of long-term assets, which may limit financial flexibility and reduce the efficiency of working capital use. Empirical literature does not provide a uniform conclusion: some studies confirm a positive effect of tangible assets on profitability, suggesting that a higher share of fixed assets may reduce financing costs and improve performance (20). Conversely, Chukwu and Egbuhuzor (10) show that the effect depends on asset structure—machinery and equipment may have a positive effect, while land and buildings may have a negative effect on ROA. Other studies (Osei & Appiah (30); Derbali (14) find no significant relationship, while Pratheepan (32) reports a negative and significant effect, suggesting that excessive investment in fixed assets may reduce efficiency. Companies oriented towards R&D and innovation tend to achieve higher profitability.

Audit of financial statements represents an external control mechanism aimed at increasing the reliability and credibility of financial reporting. In this research, audit is treated as a dummy variable, where a value of 1 indicates that the company is subject to independent audit, and 0 indicates that it is not. Audit is expected to positively influence profitability by improving financial reporting quality, reducing information asymmetry, and increasing investor confidence.

Multiple Regression Model

To identify the key determinants and their impact on financial performance, the following multiple regression model is specified:

$$ROA_{it} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon_i$$

Where:

- ROA_{it} – Dependent variable
- β_0 – Model constant
- β_1 – Coefficients of independent variables
- X_1 – Company size
- X_2 – Current liquidity
- X_3 – Indebtedness
- X_4 – Share of fixed assets
- X_5 – Audit of financial statements
- ε – Error term with normal distribution
- i – Company ($i = 1, \dots, N$)
- t – Time period ($t = 1, \dots, T$)

RESULTS AND DISCUSSION

The empirical analysis of the selected variables includes descriptive statistics, a correlation matrix, and multiple regression analysis.

Descriptive statistics for the dependent and independent variables included in the developed model are presented in Table 2.

Table 2: Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Dev.
ROA	200	-0.476	0.6474	0.058	0.116
Company size	200	0.693	9.293	5.123	1.401
Current liquidity	200	0.183	25.098	3.183	4.112
Indebtedness	200	0.028	3.554	0.505	0.368
Share of fixed assets	200	0.229	0.691	0.461	0.133
Audit	200	0	1	0.62	0.487

Source: Authors

The above results indicate that the sample of companies from the manufacturing and trade sectors includes both profitable and unprofitable firms during 2023–2024, given that the minimum ROA value is –47.6%, while the maximum reaches 64.74%. The average

ROA is 0.0578, meaning that companies, on average, generate 5.78% net income relative to total assets. Considering the benchmark ROA value ($\geq 10\%$), it can be concluded that these companies did not achieve an acceptable return on assets during the observed period, suggesting that future development and stability will require greater focus on improving this indicator. The average current liquidity ratio is 3.18, which aligns with the benchmark value (≥ 2). This indicates that the companies were liquid, possessing current assets 3.18 times higher than current liabilities. However, liquidity values range widely—from 0.18 to 25.09—indicating significant differences in short-term financial stability. The average indebtedness ratio (debt to equity) is 0.505, indicating a moderate level of debt usage and relatively stable financial structure, with moderate variability (0.368). The share of fixed assets ranges from 0.229 to 0.691, with an average of 0.46, meaning that companies, on average, have less than 50% fixed assets in total assets, implying a higher share of inventories, receivables, cash, and other liquid assets.

Table 3: Correlation Matrix

	ROA	Size	Liquidity	Indebtedness	Fixed assets	Audit
ROA	1	0.234	0.035	0.147	0.071	0.366
Size	0.234	1	-0.077	0.029	-0.031	0.441
Liquidity	0.035	-0.077	1	-0.431	0.040	-0.014
Indebtedness	0.147	0.029	-0.431	1	0.068	-0.109
Fixed assets	0.071	-0.031	0.040	0.068	1	0.020
Audit	0.366	0.441	-0.014	-0.109	0.020	1

Source: Authors

The correlation results indicate weak to moderate relationships among the variables. The strongest positive correlation is between audit and ROA ($r = 0.366$), suggesting that audited companies achieve higher profitability. A positive and statistically significant correlation is also found between company size and ROA ($r = 0.234$), and between indebtedness and ROA ($r = 0.147$), although these relationships are weaker. No correlation exceeds 0.7, indicating no multicollinearity concerns.

Table 4: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
1	0.441	0.195	0.174	0.1054

Source: Authors

Table 5: ANOVA Test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.522	5	0.104	9.389	0.000
Residual	2.156	194	0.011		
Total	2.678	199			

Source: Authors

The correlation coefficient ($R = 0.441$) indicates a moderate relationship between the independent variables and ROA. The coefficient of determination ($R^2 = 0.195$) shows that the model explains 19.5% of the variation in profitability, while the remaining 80.5% is influenced by factors not included in the model. The adjusted R^2 (0.174) indicates slightly lower explanatory power, accounting for the number of predictors.

The ANOVA results show that $\text{Sig.} < 0.05$, indicating that the independent variables (audit, indebtedness, liquidity, company size, and fixed assets) jointly have a statistically significant effect on ROA.

Table 6: Multiple Regression Results

Variable	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
Constant	-0.100	0.041	—	-2.421	0.016	—	—
Size	0.007	0.006	0.082	1.138	0.256	0.796	1.257
Liquidity	0.004	0.002	0.151	2.101	0.037	0.804	1.243
Indebtedness	0.078	0.023	0.246	3.396	0.001	0.791	1.265
Fixed assets	0.038	0.056	0.044	0.672	0.503	0.986	1.014
Audit	0.085	0.017	0.358	4.927	0.000	0.787	1.270

Source: Authors

VIF values are below 5, indicating no multicollinearity issues.

Based on the significance values (Sig.), it is possible to identify the independent variables that have a statistically significant effect on profitability measured by ROA. The regression results presented in Table 6 indicate that the proposed model is statistically significant at the 5% level ($p < 0.05$). Current liquidity, indebtedness, and the audit of financial statements emerge as variables with a positive and statistically significant impact on ROA. In contrast, company size and the share of fixed assets exhibit positive but statistically insignificant effects, suggesting that their contribution to explaining variations in profitability within this model is not empirically confirmed.

INTERPRETATION OF KEY FINDINGS

Company size. Company size shows a positive but statistically insignificant effect on profitability ($p > 0.05$), indicating that within the observed sample of firms from Sector C – Manufacturing and Sector G – Trade, its influence is not empirically confirmed. Although the literature often emphasizes that larger firms benefit from certain advantages—such as economies of scale, more efficient resource utilization, more developed distribution channels, and better access to financing—the results of this study suggest that these advantages do not necessarily translate into higher profitability. In the sectors under consideration, profitability may be more strongly influenced by other factors, such as managerial efficiency, cost structure, competitive pressures, or market-specific characteristics, which diminish the importance of firm size as a determinant of financial performance. This

finding indicates that firm size, although potentially relevant, is not a decisive factor in explaining variations in profitability measured by ROA within the analyzed sample, which is consistent with the findings of Niresh and Thirunavukkarasu (29) and Kartikasari and Merianti (23).

Current liquidity. Has a positive and statistically significant effect on ROA. Efficient liquidity management supports operational continuity, timely settlement of obligations, and financial flexibility. This is crucial in both manufacturing (production cycles) and trade (inventory turnover). The result aligns with Doğan (15), Saleem & Rehman (35), and Madushanka & Jathurika (25). The results of the study indicate that current liquidity, measured by the current ratio, has a statistically significant positive effect on the profitability of the observed companies ($p < 0.05$). In the manufacturing sector, an adequate level of liquidity ensures uninterrupted financing of the production cycle, the procurement of raw materials, and the maintenance of operational efficiency. In the trade sector, liquidity is particularly important due to the need for continuous inventory replenishment and the alignment of cash flows between the collection of receivables and the settlement of payables to suppliers. Effective liquidity management contributes to improved financial performance, which is consistent with previous empirical findings confirming a positive and statistically significant relationship between liquidity and profitability, including the studies of Doğan (15), Saleem and Rehman (35), and Madushanka and Jathurika (25).

Indebtedness. The results of the study indicate that indebtedness, measured as the debt-to-equity ratio, has a statistically significant effect on the profitability of companies in the manufacturing and trade sectors. The positive and statistically significant effect of indebtedness can be interpreted through the fact that the use of debt provides firms with additional funds to finance operating and investment activities, which may enhance operational efficiency and increase returns on total assets. This effect is particularly evident in the manufacturing sector, where substantial investments in production capacity and working capital are required, as well as in the trade sector, where debt is often used to finance inventory and maintain business continuity. The obtained result is consistent with the assumptions of the trade-off theory, which posits that debt can positively contribute to firm performance as long as the benefits of the tax shield and external financing outweigh the costs of indebtedness. It can also be partially linked to the pecking order theory, according to which firms resort to external borrowing when internal funds are insufficient to meet business needs. Overall, the findings suggest that indebtedness, when used efficiently, can represent an important factor in improving firm profitability in both sectors, which aligns with numerous previous empirical studies confirming the positive effect of an adequate level of debt on financial performance, including the studies of Kartikasari and Merianti (23), Bortych (8), and Mpanju (28).

Share of fixed assets. The share of fixed assets, as an indicator of asset structure defined by the ratio of fixed to total assets, does not exhibit a statistically significant effect on firm profitability measured by ROA in this study. Although a higher share of fixed assets may signal more intensive investment in long-term capacity, it may simultaneously limit

financial flexibility and affect the efficiency of working capital utilization, particularly under conditions of fluctuating demand and strong competitive pressures. However, in the manufacturing and trade sectors—where operational efficiency, working capital management, and market dynamics play a more prominent role, this indicator does not show a direct or statistically confirmed effect on profitability. This finding is consistent with the studies of Osei and Appiah (30) and Derbali (14).

Audit. The audit of financial statements shows a statistically significant effect on firm profitability measured by ROA within the manufacturing and trade sectors ($p = 0.000$). This result indicates that the existence of an audit represents an important determinant of the financial performance of the observed companies, which is consistent with the relevant literature emphasizing that audit quality, namely, the fact that financial statements are audited—can contribute to improving corporate financial performance. The positive and statistically significant effect of auditing can be explained by its contribution to enhancing the reliability, transparency, and credibility of financial reporting, which in turn strengthens the confidence of investors, creditors, and other external users of financial information. Under such conditions, companies with audited financial statements have easier access to external financing and more favorable business conditions, which may be reflected in their profitability. In the manufacturing and trade sectors, where financial decisions are often conditioned by the availability of external financing and the reliability of information, auditing may have a particularly pronounced role in strengthening financial discipline and improving overall profitability.

CONCLUSION

The results of the empirical analysis confirm that certain determinants have a statistically significant effect on the profitability of the observed companies. Current liquidity shows a statistically significant and positive impact on ROA, indicating that adequate liquidity management contributes to maintaining business continuity, reducing the risk of illiquidity, and improving financial performance. Indebtedness, measured as the ratio of debt to equity, also has a statistically significant positive effect on profitability, suggesting that the use of debt can support more efficient financing of business and investment activities and increase returns on assets, provided that borrowing costs are managed effectively. On the other hand, company size and the share of fixed assets do not show statistically significant effects on profitability. These results indicate that, within the analyzed sectors, neither company size nor asset structure represents a key determinant of financial performance measured by ROA. Although theory often emphasizes that larger companies and a higher share of fixed assets may contribute to economies of scale, more efficient resource utilization, and more stable operations, the findings of this research suggest that such effects are not empirically confirmed in the observed sample.

A particular focus of this study was placed on financial statement auditing as a determinant of profitability, for which a positive and statistically significant effect was identified.

The empirical findings indicate that audited financial statements contribute to greater transparency, reliability, and credibility of financial reporting, thereby reducing information asymmetry between companies and external users of financial information. A higher level of reliability in financial reporting strengthens the confidence of external users—primarily investors and creditors—which is reflected in a more favorable position of companies in the capital market and the ability to secure better financing conditions. In this context, audit quality plays an important role in shaping the decisions of financial statement users, with investors more likely to invest in companies whose financial statements are audited compared to those that are not. Although unaudited financial statements do not necessarily contain inaccurate information, they carry a higher level of risk and informational uncertainty, further emphasizing the importance of auditing in economic decision-making. Therefore, it can be concluded that auditing, by enhancing transparency and trust, contributes to improving overall financial performance.

This research has certain limitations that also represent directions for future studies. First, the research is geographically limited to the Republic of Serbia and focuses only on two sectors—manufacturing and trade. Additionally, the analysis is based exclusively on data available in financial statements published by the Serbian Business Registers Agency (SBRA), which may limit the scope of available information. Future research should include a broader set of profitability determinants and expand the concept of auditing by incorporating additional dimensions such as audit firm size and independence, audit tenure, audit fees, and mandatory audit firm rotation. It is also recommended to apply additional measures of profitability to obtain a more comprehensive picture of financial performance. This study provides an empirical foundation for future research examining the relationship between financial statement auditing and corporate financial performance across different dimensions of profitability.

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Uticaj revizije na performanse poslovanja preduzeća

Apstrakt: Ovo istraživanje ispituje uticaj revizije finansijskih izveštaja na profitabilnost preduzeća, meren povraćajem na ukupnu imovinu (ROA) uz identifikovanje ključnih determinanti finansijskih performansi preduzeća iz sektora C – prerađivačka industrija i sektora G – trgovina u Republici Srbiji u periodu 2023-2024 godine. Istraživačka hipoteza je da revizija finansijskih izveštaja ima pozitivan uticaj na profitabilnost preduzeća. Modeoml višestruke regresione analize ispitani su efekti nezavisnih varijabli na zavisnu varijablu ROA. Nezavisne varijable odražavaju ključne karakteristike preduzeća - veličinu, likvidnost, zaduženost, učešće stalne imovine i postojanje revizije finansijskih izveštaja. Podaci obuhvataju 200 opservacija. Rezultati pokazuju da likvidnost, zaduženost i revizija finansijskih izveštaja imaju statistički značajan pozitivan uticaj na profitabilnost preduzeća. Veličina preduzeća i učešće stalne imovine ne pokazuju statistički značajan uticaj na ROA. Dobijeni nalazi ukazuju da efikasno upravljanje likvidnošću i finansijskom strukturom, kao i transparentnost finansijskog izveštavanja kroz reviziju, predstavljaju ključne faktore unapređenja profitabilnosti u posmatranim sektorima. Rezultati su od značaja za menadžere, investitore, kreditore i donosioce ekonomskih politika, jer ukazuju na doprinos revidiranih finansijskih izveštaja jačanju poverenja eksternih korisnika finansijskih informacija, čime se unapređuje kvalitet i pouzdanost donošenja poslovnih i investicionih odluka u savremenom poslovnom okruženju u Republici Srbiji.

Ključne reči: revizija, profitabilnost.

Crowdfunding as an Alternative Source of Financing

Abstract: *Crowdfunding represents a model of collective financing of various types of corporate projects, as well as projects initiated by public and non-governmental organizations. Over the past decade, significant financial resources have been allocated worldwide through this model, funding a wide range of projects, from traditional profit-oriented corporate ventures to initiatives led by local governments, individuals, or even informal groups aimed at addressing public needs. Investor motivations vary considerably, ranging from profit generation, through non-profit financing in the form of interest-free loans, to purely donation-based contributions. This model of financial resource allocation has recently and cautiously emerged in our region. Considering the characteristics of the local economy, project availability, and investor capacity, it is important to support financing through this mechanism. This model also represents a means of fostering overall community development, facilitating the allocation of financial resources and transforming money into capital. The aim of this paper is to expand knowledge about crowdfunding, with particular emphasis on its potential and the challenges that accompany it.*

Keywords: *Crowdfunding, financing, financial opportunities*

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INTRODUCTION

Recognized worldwide as an alternative means of attracting idle capital, crowdfunding has emerged relatively cautiously in Serbia. It is considered an alternative model because it does not rely on traditional financing mechanisms such as founders' or family equity, borrowed funds in the form of bank loans, state subsidies and grants, conventional debt or equity instruments in financial markets (bond and stock issuance), or standard contractual business arrangements such as joint ventures or private borrowing. In a way, this is beneficial given the shallowness of the domestic financial market, the low number of registered transactions and daily trading volumes on the stock exchange, and the need to complement the financial market, in a broader sense, with new modes of attracting available capital.

Crowdfunding represents "the efforts by entrepreneurial individuals and groups to finance their ventures, projects, and ideas by drawing on relatively small contributions from a relatively large number of individuals using the Internet, without standard financial intermediaries" (23), or "open calls through the Internet for the provision of financial resources either in the form of donation or in exchange for a future product or some other reward to support initiatives for specific purposes" (7). In essence, it is a model that enables a large number of individuals with limited financial capacity to invest via electronic platforms to acquire capital or shares in a company (32).

Crowdfunding is an innovative method of external, non-bank financing for entities requiring pre-financing or recapitalization. What distinguishes it from traditional financial instruments and arrangements is the large number of investors, i.e., financiers, networked via the Internet on electronic platforms that fund a wide range of projects, ideas, or profit-oriented ventures. It is recognized as a financing method whereby an entrepreneur sells a certain amount of shares or bonds to a group of small investors through an open call on Internet-based platforms (2). In the business sector, it plays a significant role in financing startups and small enterprises, while in the civil sector, it is used to fund diverse projects, ranging from civil society initiatives and public infrastructure to personal needs and even highly innovative or revolutionary ideas.

From the perspective of the crowd, crowdfunding represents a dynamic shift in the way individuals utilize financial opportunities (20). These authors emphasize that crowdfunding empowers individuals to actively participate in shaping the business success of innovative projects and initiatives in accordance with their own values and interests (15). Luczak and Senkus (20) note that the motivations of crowd investors range from a desire to be part of something new and revolutionary to participation in the realization of goals they are passionate about. This democratization of financing diversifies investment portfolios and strengthens the sense of community and collaboration among investors aligned on a common idea.

As a specific fundraising mechanism, crowdfunding has a long history in financing the arts, charitable activities, and political campaigns. Many well-known projects today were financed through small individual contributions from numerous donors. Researchers Kuppuswamy & Bayus (19) highlight notable examples such as the translation of Homer's *Iliad*

from Ancient Greek into English, Mozart's piano concertos, and the Statue of Liberty. This diversity in the orientation and type of funded projects, along with the large number of mutually anonymous investors or financiers with varying motivations and expectations, represents a distinctive feature of crowdfunding and remains an enigma for many economists educated in the previous millennium.

The origins of crowdfunding are often traced back to the first successful online campaign in 1997, when the British band Marillion raised funds from its fans for an overseas tour (1). By 2003, musicians were already able to raise funds for production, tours, and artistic projects through the ArtistShare platform. The most well-known electronic platforms emerged in 2008 and 2009, while the growth of the crowdfunding industry was further accelerated by the Global Financial Crisis of 2008, which left many entrepreneurs and young companies searching for alternative sources of financing (27). As noted by other researchers (13), following earlier applications in artistic projects, crowdfunding has evolved toward financing socially oriented ideas, entrepreneur-initiated projects, and small business ventures.

Market crises, driven by globalization processes, have significantly constrained access to capital for small and medium-sized enterprises. Consequently, these entities are seeking alternative ways to strengthen their financial capacity. Anikin and Platasov (5) argue that in the era of a cyclical economy, the ability to attract financial resources for sustaining and developing SME operations becomes crucial. They note that in the early stages of business development, firms require different financial instruments compared to later stages, when operations are established, and financial statements reflect consistent positive results. In constrained financing conditions, small enterprises become increasingly interested in alternative non-bank financing models, particularly when these are more accessible and involve a sufficient number of potential investors not constrained by strict banking procedures.

Unlike traditional models, crowdfunding is open to everyone, as noted by Blohm et al. (8). Its activity has grown with the emergence of Web 2.0, leading to the distribution of entrepreneurial finance and the rise of a new class of investors - "customer-investors" (3). It is important to introduce this form of financing to the academic community and promote it in order to motivate individual investors to allocate surplus funds into projects that could not be promoted or financed through traditional methods.

The paper is structured as follows. In addition to the introduction, the first section examines the mechanism of crowdfunding. The second section focuses on a discussion of investment risks, the issue of information asymmetry, and the importance of electronic platforms. This is followed by concluding remarks.

CROWDFUNDING PROCESS

The process of raising financial resources for various ideas, campaigns, and projects is carried out through electronic services, i.e., platforms that provide options for obtaining funding as well as guidance on organizing investment campaigns, to attract a large

number of potential investors. In this process, three main participants can be identified: fundraisers (i.e., capital seekers), platforms, and investors (31). Achieving a balance between the interests of capital seekers and investors is considered a key challenge for the platform itself (6).

Entrepreneurs, as capital seekers, launch their crowdfunding campaigns by uploading video presentations and other materials to electronic platforms. Through targeted email outreach and social media posts, they influence investor sentiment. Researchers (7; 23) note that different communication strategies used in campaign presentation increase the likelihood of successful funding, while others observe that many financiers and/or investors are willing to provide feedback and advice to entrepreneurs regarding their campaigns.

There are four main types of crowdfunding, classified according to the purpose of the funds and the returns to investors:

1. Donation-based crowdfunding is the most well-known type. It involves collecting funds from a large number of individual donors, usually to achieve specific social goals, without any expectation of financial return. Civic crowdfunding occurs when individuals are unable to obtain bank loans or secure funding through other means. They present their personal cases on electronic platforms, and the funds raised are typically used for debt repayment or refinancing (e.g., housing loans), healthcare expenses, or children's education.
2. Lending-based crowdfunding is the most commonly used type, enabling small and medium-sized enterprises to raise the necessary funds for profit-oriented ventures and business development. In the Netherlands, for example, as much as 89% of crowdfunding takes the form of loans.
3. Equity-based crowdfunding involves the sale of ownership stakes through shares or equity participation. It is less popular than lending-based crowdfunding due to the difficulty of valuing shares, which stems from challenges in estimating future business performance and profitability.
4. Reward-based crowdfunding is a model in which the funded entity does not necessarily provide monetary returns but offers non-financial rewards to contributors. It is commonly used to finance creative projects, artistic events, and startups. Rewards may include concert or movie premiere tickets, meet-and-greet opportunities with actors or musicians, limited-edition items, promotional recognition, or early access to prototypes (18; 23).

Machanda and Muralidharan (21) observe that these forms of crowdfunding represent a promising alternative to traditional modes of startup financing. In contrast, other researchers (14) highlight the significant challenges faced by startup entrepreneurs in securing capital, largely due to the inflexibility of banks and their rigid procedures, which tend to exclude startups from lending because of high credit risk and insufficient collateral. A common approach to early-stage startup financing involves personal funds of

founders, as well as contributions from family, friends, and fools (FFF), along with business angels (9). Traditional bank financing typically becomes available only in later stages of a startup's development (28).

But why do Bruton et al. (9) include “fools” alongside founders, family, and friends – who are traditionally recognized as early financiers? Patel (26) provides the answer by emphasizing that investing in startups is inherently high-risk. According to his research, approximately 90% of all startups fail. In principle, startups are newly established companies that primarily drive innovation. Their core objective is the economic exploitation of innovations with real market applications and demand. By providing funding to startups that are perceived as more likely to succeed, crowd investors (often referred to as the “crowd”) contribute to the advancement of innovation. The issue of promoting innovation through crowdfunding, particularly the selection of innovative companies by small investors, has been widely studied. Hoque (16) highlights the importance of mitigating adverse selection among available projects seeking funding.

INVESTMENT RISKS, INFORMATION ASYMMETRY, AND ELECTRONIC PLATFORMS

When discussing investment risk, potential investors are significantly exposed to this type of risk, particularly because the information necessary for decision-making is typically available only on electronic platforms. A key problem faced by potential investors in startup companies is the absence of published financial statements from previous years, which prevents any meaningful investment analysis. The existing information asymmetry between potential investors and startup management reduces the ability to accurately assess investment risk (4). Some researchers (11; 12) emphasize this information asymmetry as a serious and often insurmountable barrier faced by startups in their efforts to raise capital. External stakeholders do not possess nearly the same level of information as founders or management within the startup, whether related to market conditions or the personal capabilities and competencies of founders and employees. Family members and friends of startup founders are typically well informed about the founders' business capabilities and the realism of their expectations, which is not the case for external parties, who consequently face greater difficulty in making investment decisions.

Theoretical contributions (1) address the issue of information asymmetry and the limited availability of relevant financial reporting data to potential investors, while also emphasizing the lack of regulation in this area, which further complicates the investment process. The position of investors in the decision-making process is particularly unfavorable, as they lack access to timely and reliable information, thereby narrowing their range of viable choices. As a result, potential investors often rely on the credibility of platform administrators and their evaluations of startup business plans seeking funding (29).

When discussing the issue of global regulatory gaps, it is evident that the lack of regulation is most pronounced in reward-based crowdfunding, whereas equity crowdfunding exhibits a somewhat higher level of regulation. However, comparative studies across different regions indicate that regulatory frameworks vary significantly from country to country. A major risk for investors, as highlighted by regulators, lies in the possibility that online platforms may present overly optimistic evaluations of certain projects or ideas, thereby attracting financially and investment-inexperienced individuals (25).

As an alternative, non-bank and non-market source of financing, crowdfunding has proven to be a frequent and efficient method for funding startups. The development of information and communication technologies enables faster access to relevant information and facilitates quicker capital allocation from the perspective of investors. At the same time, it allows startups to disseminate information about their projects more rapidly and to secure the necessary funding within shorter timeframes. Examining the sector of small and micro enterprises, researchers (5) note that such entities are often economically inefficient, undercapitalized, and characterized by limited financial potential and restricted access to capital. These companies face considerable difficulties in obtaining bank loans, which further increases the relevance of crowdfunding as a viable financing option. Although such firms are not necessarily startups and may have been operating for several years, it is evident that they can also benefit from crowdfunding mechanisms. The expansion of internet technologies supports the promotion and diffusion of crowdfunding as a financing and investment model, alongside relatively less restrictive regulatory requirements imposed on capital-seeking firms (10).

At the technical core of crowdfunding as an alternative financing mechanism are online platforms operating over the Internet. These platforms compete with one another in the market while striving to support the effective promotion of projects and ideas. Simultaneously, they aim to provide potential investors with as much relevant information as possible, recognizing that investors may lack sufficient financial expertise. Within this competitive environment, platforms seek to ensure transparent and efficient communication between investors and capital-seeking companies. To achieve this, many platforms are integrated with social media networks (24), enabling their clients to gain broader visibility through the dissemination of viral content (7). In assessing the performance of crowdfunding platforms, researchers (2) document their operational mechanisms, scope of activities, and key success factors.

As previously noted, platforms aim to satisfy both parties in this business relationship and to successfully conclude the financing of a project or idea, which represents a successful outcome for the platform itself. They provide guidance and recommendations to both sides. For capital-seeking companies, platforms assist in shaping and structuring the proposed idea into a viable project, defining the launch strategy, and increasing visibility, while also offering best-practice recommendations based on prior experience. Platforms selectively list projects that demonstrate higher probabilities of success, thereby directing investor attention toward more promising opportunities and reducing the risk of unsuccessful investments (17). According to global industry reports, the number of

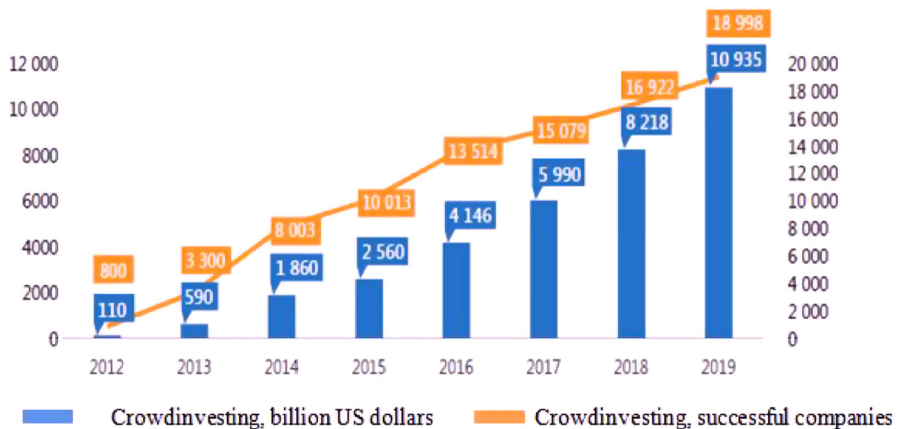
crowdfunding platforms has steadily increased over time, exceeding 1,200 in 2015 (22) and surpassing 1,250 in 2018 (30).

There are also operational differences among platforms. Some require that funds be returned if the amount raised falls below the initially targeted level specified in the investment memorandum, to prevent project failure due to insufficient capital. Others allow capital retention even when funding targets are not fully met (10).

Governments are increasingly attempting to regulate this domain through national legal frameworks. Key regulatory concerns include the prevention of fraud and whether platform owners should be allowed to invest in projects listed on their own platforms. While arguments exist on both sides, reports such as CAMAC (10) support the position that platform owners should not be permitted to invest in listed projects, as this could lead to preferential treatment and unequal conditions in attracting capital.

At the macroeconomic level, it is evident that certain countries have recognized crowdfunding as a mechanism for capital allocation and for mobilizing idle financial resources. This contributes not only to increased capital circulation but also to the strengthening of national financial markets and overall economic performance. Consequently, they are making efforts to support the creation of new platforms or enhance existing ones with additional functionalities. For instance, in 2021, officials in Dubai supported the creation of the “Dubai Next” crowdfunding platform, which is expected to facilitate the allocation of available financial resources.

Figure 1: Global Trends in Crowdfunding Investments



Source: *What is Crowdfunding? The portal of the crowd-services CROWDSOURCING.*
Retrieved from http://crowdsourcing.ru/article/what_is_the_crowdfunding/2017

According to the *Global Crowdfunding Report* published by Massolution (33), expectations indicate that by early 2026, crowdfunding companies assisting both investors in selecting investment opportunities and capital seekers in designing campaigns will continue to grow. The global market size has reached USD 20.34 billion, with a projected

annual growth rate of 17.1%, and is expected to rise to USD 44.75 billion by 2030, representing a substantial allocation of financial resources. Blohm et al. (8) describe crowdfunding as a rapidly growing alternative financing model with substantial growth potential. At the same time, consulting firms anticipate high double-digit growth rates, in some cases even approaching annual growth of 100%.

Recent data for 2024 indicate that the North American region dominates the global crowdfunding market with a 31% market share, while lending-based crowdfunding accounts for 60% of total crowdfunding revenues. On the other hand, the Asia-Pacific region represents the fastest-growing crowdfunding market.

At the level of the European Union, Regulation (EU) 2020/1503 has been adopted, enabling the smooth operation of crowdfunding service providers across the EU. Such cross-border financing and investment enable faster resource allocation and lower transaction costs associated with these investment arrangements.

Although it can be argued that crowdfunding in the Republic of Serbia is still in its early stages, two crowdfunding conventions have already been held. Data presented at these events indicate that in 2017, approximately \$700,000 was invested through crowdfunding, which the authors consider an encouraging sign. Despite repeated announcements of legislative initiatives by the National Bank of Serbia, acting as the regulator, no final legal framework governing this segment has yet been adopted. Since the draft law was prepared in 2021 and later reviewed for compliance in 2024, it has still not been submitted to the National Assembly for adoption.

As of early 2024, the draft law has been undergoing harmonization with other laws and bylaws, as well as alignment with the provisions of EU Regulation 2020/1503. The legal framework is based on the Action Plan for the Development of the Startup Ecosystem in Serbia (2024) and the Law on Digital Assets (2020). Currently, a crowdfunding platform named “Dobri dabar”, operating since 2022, is available in Serbia and is primarily oriented toward financing projects of general social interest.

CONCLUSION

Many theorists, researchers, and practitioners have, over recent decades, been engaged in identifying new models for financing profitable ventures. The objective of the profession has been to develop mechanisms capable of responding to current challenges and enabling business and other entities to overcome financing constraints. In the past decades, companies have faced a series of unfavorable political, economic, epidemiological, and social crises and disruptions, all of which have significantly reduced their financial capacity. Each of these circumstances has affected companies to a greater or lesser extent, but unfortunately always in the same negative direction. This confirms the well-known economic notion that “things tend to move from bad to worse”, thereby intensifying the focus on finding alternative ways to secure the necessary capital. Each of these

circumstances has motivated the profession, academia, and regulators to identify flexible and timely responses to current market conditions and the ongoing need for capital. As capital has become increasingly mobile and has been transferred across geographically distant regions in search of higher returns due to globalization processes, national economies have encountered financing problems, particularly for small and micro enterprises, as well as newly established startups, which are typically innovative and knowledge-based companies, along with various profit-oriented and non-profit projects and ideas.

An alternative and innovative model for financing projects, ideas, and campaigns in their early stages is crowdfunding. Although it has been present in the Republic of Serbia for less than a decade, and although the total volume of financing through this model remains relatively modest, the authors are encouraged by the fact that it exists, is operational, and shows strong potential as an alternative mechanism for the allocation of financial resources, given the characteristics of the national financial market and associated country risks. It is noteworthy that there is a wide variety of projects and ideas seeking funding, as well as a broad base of individual investors, which increases the likelihood of faster capital mobilization. A particularly important feature of crowdfunding is the absence of a minimum capital threshold, allowing small individual investors to participate in various projects and to diversify their investments, which represents one of the most effective approaches to managing investment risk.

It can be expected that crowdfunding will continue to grow in scale in the future, accompanied by an increasing number of investors and projects or ideas seeking funding. It is already present in all European countries and in the Asia-Pacific region, demonstrating continuous annual growth. Following the 2008 financial crisis and the collapse of banks, the introduction of stricter lending regulations, and the advancement of information and communication technologies, this alternative financing model has been recognized and accepted as successful, particularly due to its ability to overcome the financing challenges faced by small and micro enterprises and startups. These entities are now able to secure the necessary funds for profitable ventures through digital platforms, while individuals can support initiatives aimed at strengthening local civil society or infrastructure. Crowdfunding initially emerged among startups, innovative companies, and knowledge-based enterprises, but has expanded to reach investors who would not have been accessible through traditional financing methods, thereby making investment opportunities available to a wider range of individual investors with varying financial capacities.

This financing model provides investors with access to a broad range of projects, campaigns, and ideas available on platforms, offering different levels of investment potential and returns, thereby transforming smaller or larger amounts of idle capital into active investment capital. The diversity of available projects enables potential investors to select those they believe in, those aligned with their personal preferences, or those that are socially acceptable, based on expected returns or individual inclinations.

Certain interpretations suggest that this model may be competitive with traditional financing mechanisms, and in some cases even perceived as unfair competition. Another

important question is whether it truly represents competition or rather complements traditional financial mechanisms. There is undoubtedly a risk that professional investors may be discouraged from investing if there is a possibility that a “crowd”, that is, a group of small anonymous investors, may enter the capital structure of a target company. A large number of small shareholders may later create administrative challenges in corporate governance, requiring additional time and effort to restructure ownership.

The advantages of this model are largely derived from the shortcomings of traditional financing mechanisms. Lengthy banking procedures, restrictions on financing certain industries, and unequal treatment of standard and VIP clients, among other factors, have contributed to increased interest in crowdfunding. As an internet-based platform model with a large base of investors and projects, which responds quickly to inquiries and connects both sides while efficiently allocating available funds, it enables both entrepreneurs and social activists to more easily obtain the capital they need.

From a macroeconomic perspective, all “idle” capital that remains unused and generates opportunity costs for its holders becomes activated and begins to create new value. In this way, national financial markets are strengthened, economic growth is enhanced, and national wealth increases, even in cases of financing non-profit ideas and campaigns, as these also contribute to social welfare and development.

An additional dimension of crowdfunding is its educational function. Through its presence on the Internet, it provides people with opportunities to develop their entrepreneurial spirit and to allocate surplus financial resources into profitable ventures or socially beneficial campaigns, rather than immediate personal consumption or passive savings in an environment of increasing global monetary expansion. The model also encourages inexperienced investors to select and support ideas, programs, or campaigns that align with their personal preferences and motivations. Furthermore, the availability of diverse ideas on platforms encourages individuals to design their own programs, products, or campaigns that address the needs of local or regional communities.

Taking all of the above into account, the authors expect the crowdfunding trajectory to follow a positive exponential path in the future, establishing it as a primary option for entrepreneurial financing of various projects, both profit-oriented and non-profit.

There is a noticeable lack of domestic academic publications on this highly relevant topic, particularly in light of the anticipated economic challenges driven by rising energy and fuel prices, which are strongly inflationary and may lead to broader economic instability. The purpose of this paper is to bring this topic closer to the professional and academic communities, as well as to a wider audience that may participate on one or both sides of crowdfunding platforms. In the future, this research may be expanded to cover industry-specific applications of crowdfunding and further developed in the domain of investment risk management, which represents one of the most critical issues, especially given the relatively underdeveloped national financial market, various business risks, and often restrictive lending practices imposed by commercial banks, which will be the focus of the authors’ future work.

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“Crowdfunding” kao alternativni izvor finansiranja

Apstrakt: “Crowdfunding” predstavlja model grupnog finansiranja različitih tipova kompanijskih ili projekata javnih i nevladinih organizacija. U svetu su, deceniju unazad, alocirana značajna finansijska sredstva na taj način, a tipovi finansiranih projekata su najrazličitiji: od klasičnih profitno motivisanih kompanijskih projekata, do projekata lokalne samouprave, pojedinaca ili čak neformalnih grupa pojedinaca, koji su okrenuti zadovoljenju javnih potreba. S druge strane, motivi investitora su veoma različiti: od profita, preko neprofitnog finansiranja u vidu beskamatne pozajmice, pa sve do donatorskog finansiranja. Ovaj model alokacije finansijskih resursa bojažljivo je stigao i u naš region. Grupno finansiranje različitih tipova investicija u Srbiji nema dugu tradiciju. Ipak, imajući u vidu lokalnu ekonomiju, dostupnost projekata i kapacitet investitora, potrebno je podržati finansiranje na ovaj način. Svakako i ovo je vid za razvoj celokupne zajednice koji potpomaže alokaciju finansijskih resursa i od novca stvara kapital. Cilj rada jeste da proširi znanje o „Crowdfunding“-u, posebno ukazujući na njegov potencijal i izazove koji ga prate.

Ključne reči: Crowdfunding, finansiranje, finansijske mogućnosti

ESG Criteria and Corporate Financial Sustainability: An Analysis of the Role, Transparency, and Risk of Greenwashing

Abstract: *This paper analyses the role of ESG (Environmental, Social, Governance) criteria in the context of corporate financial sustainability, with particular emphasis on the phenomenon of greenwashing. The aim of the study is to examine the extent to which the application of ESG principles contributes to long-term business stability, as well as to identify the challenges associated with their implementation. The methodological approach is based on the analysis of relevant scientific and professional literature, combined with a comparative review of various theoretical and practical perspectives. The results indicate that the consistent application of ESG criteria can enhance reputation, reduce risks, and improve financial performance, while inadequate or superficial implementation creates room for greenwashing and undermines investor trust. It is concluded that transparency is a key factor in achieving genuine sustainability and credibility in ESG reporting.*

Keywords: *ESG criteria, financial sustainability, greenwashing, corporate governance, sustainable business*

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INTRODUCTION

In recent years, financial sustainability has evolved from a marginal issue into a key factor for the long-term survival and success of companies. This shift has been driven by the growing awareness of the need to address environmental, social, and governance challenges faced by modern society. Continuous pressure from investors, regulators, consumers, and other stakeholders has led to environmental, social, and governance (ESG) criteria taking a central role in evaluating corporate performance.

ESG criteria represent a holistic approach that enables the assessment of companies across three key dimensions: environment, social responsibility, and governance. In the environmental domain, attention is given to how companies manage carbon emissions, utilize natural resources, and assume responsibility in combating climate change. The social dimension includes the evaluation of working conditions, respect for human rights, and diversity and inclusion among employees, as well as the broader societal impact of products and services on the communities in which companies operate. Governance criteria, on the other hand, focus on the quality and transparency of corporate governance, business ethics, board structure, and anti-corruption practices.

The growing importance of ESG criteria has been driven by global trends promoting greater corporate responsibility. One of the key changes is reflected in shifting investor preferences. In the past, investors primarily sought to maximize short-term financial returns. Today, however, they are increasingly inclined toward investments that generate both financial returns and positive social and environmental impacts. This shift has led to the growth of socially responsible investments and sustainable investment funds, which increasingly incorporate ESG factors into their decision-making processes. A growing body of research suggests that integrating ESG principles into corporate strategies can provide a competitive advantage, including greater resilience during crises, improved access to capital, and reduced operational costs.

Companies that implement ESG standards often achieve better outcomes in risk management. Firms with strong environmental sustainability policies tend to be better prepared for stricter regulations related to emissions and resource consumption, enabling them to avoid penalties and, in some cases, benefit from government incentives. On the other hand, companies that prioritize employee well-being and adopt inclusive policies are generally more successful in retaining talent, which in the long run contributes to higher productivity and lower employee turnover costs.

Despite these advantages, it is important to note that the adoption of ESG criteria also entails certain challenges. This is particularly relevant for companies operating in resource-intensive sectors or in developing economies, where ESG regulations are not yet sufficiently developed. Many companies face difficulties in balancing short-term profitability with the growing pressure to adopt responsible practices that require significant initial investments. However, by overcoming these obstacles and adopting long-term ESG-oriented strategies, companies can improve their reputation and strengthen relationships with

stakeholders. Moreover, they often achieve leadership positions in the market. Companies that adopt sustainable and transparent practices tend to demonstrate greater resilience during crises, as evidenced during major global events such as the COVID-19 pandemic. During this period, companies with well-implemented ESG policies adapted more easily and maintained more stable operations, thereby minimizing negative financial impacts.

It is also important to emphasize that the ESG approach plays a significant role in strengthening corporate responsibility in relation to climate change, one of the greatest environmental challenges of the 21st century. Many companies increasingly recognize the inevitability of transitioning to a low-carbon economy (20). At the same time, this transition presents opportunities for innovation and industry leadership. Numerous large corporations have publicly committed to reducing emissions and achieving carbon neutrality. Companies are aware that failure to take proactive measures may result in falling behind in a market where both consumers and investors are paying increasing attention to ESG factors (3).

From a regulatory perspective, ESG criteria are becoming an integral part of legal frameworks across different regions of the world. In Europe, the Sustainable Finance Disclosure Regulation (SFDR) has introduced new requirements for ESG reporting. In the United States, the Securities and Exchange Commission (SEC) requires publicly listed companies to provide greater transparency regarding climate-related risks. These changes are not only aimed at improving transparency and comparability but also reflect a new perception of the role of companies in society.

From a global standpoint, the pressure to align business practices with the United Nations Sustainable Development Goals (SDGs) represents an additional driver for the adoption of ESG criteria. The SDGs provide companies with a framework to measure their contribution to addressing global challenges such as poverty, climate change, quality education, and gender equality. Companies that align their objectives with the SDGs not only contribute to a more equitable and sustainable world but also enhance their reputation and stakeholder relationships. In the long term, this alignment can have a positive impact on financial performance.

The aim of this paper is to analyze the role of ESG criteria in shaping corporate financial sustainability. Special attention is given to the risks associated with greenwashing practices and the challenges companies face in implementing sustainable business models. In order to better understand the interdependence between non-financial performance and long-term economic value, a synthesis of existing theoretical and empirical findings is conducted.

Given the clearly defined objective, the main research question is: how do ESG criteria influence corporate financial sustainability, and to what extent does greenwashing undermine the credibility of ESG reporting and market perception?

The contribution of this paper lies in the integration of various theoretical approaches that link ESG criteria, corporate governance, and financial performance. Additionally, the paper identifies key contradictions in the literature, particularly in the context of the conflict between short-term profitability and long-term sustainability. It also highlights research gaps related to the standardization of ESG reporting and the authenticity of sustainable practices.

METHODOLOGICAL FRAMEWORK OF THE RESEARCH

This paper represents a narrative literature review based on the analysis of relevant scientific and professional sources in the fields of ESG criteria, financial sustainability, and greenwashing practices. The aim of the methodological approach was not to conduct a formal systematic review, but rather to synthesize key theoretical perspectives, current research findings, and dominant thematic trends in contemporary literature.

The literature was collected from electronic databases, including Scopus and Web of Science, using keywords such as: ESG criteria, greenwashing, financial sustainability, sustainability, ESG reporting, and corporate governance, both individually and in various combinations.

The analysis included studies published in the period from 2010 to 2025, with particular emphasis on recent research reflecting current trends in corporate reporting and sustainable business practices. The selection of studies was based on their relevance to the research topic, academic validity, and citation frequency in the scientific literature.

The analytical approach was qualitative, involving thematic categorization of the identified studies into several key areas: the role of ESG criteria in financial sustainability, the issue of greenwashing, the conflict between short-term and long-term business objectives, the costs of transitioning to sustainable models, and the transparency of corporate governance.

This approach enabled the identification of key patterns in the literature, as well as the recognition of research gaps relevant for the further development of this field.

AUTHENTICITY OF ESG REPORTING AND THE PHENOMENON OF GREENWASHING

Greenwashing represents a highly complex phenomenon that not only affects a company's credibility but also undermines the trust of consumers and investors in ESG reports (12, 33). Studies indicate that companies resort to greenwashing due to pressure from financial markets to demonstrate short-term results (12). This pressure leads many companies to embellish their reports. Instead of investing in genuinely sustainable practices, some companies choose to modify their disclosures in order to meet the expectations of consumers, investors, and other stakeholders, thereby creating a gap between what is reported and what is actually practiced.

On the other hand, some studies emphasize that greenwashing constitutes a marketing strategy designed to capitalize on the growing demand for sustainable products and services (16, 39). This is particularly evident in the energy sector and the fast-moving consumer goods sector (32). In this context, companies respond to investor pressure; however, greenwashing is also driven by the perception that portraying a "green image" can attract more investors and generate higher revenues. Such practices not only erode trust in companies but also contribute to broader confusion regarding which companies are genuinely committed to sustainability.

With regard to regulatory frameworks for ESG reporting, the literature presents divergent views. Some studies suggest that appropriate regulation and increased transparency in ESG reporting can mitigate greenwashing practices (9, 15). Conversely, other research indicates that, despite stringent regulations, companies continue to find ways to manipulate information (26). Therefore, although regulation plays a crucial role in enhancing the reliability of reports, it may be insufficient if companies do not adopt a genuinely ethical approach to sustainability. A review of the literature also shows that greenwashing may be encouraged by the lack of clear standards in ESG reporting (28, 34). The problem is further exacerbated by the diversity of approaches and metrics used to measure environmental and social impacts, which leads to confusion. This, in turn, enables some companies to overstate their sustainability performance without being detected.

An additional factor facilitating the presentation of exaggerated information is the lack of external auditing, particularly in areas where regulatory frameworks are weak or underdeveloped. Moreover, some studies argue that the authenticity of ESG reporting does not depend solely on the existence of clear standards but also on the organizational culture within the company itself (7). When sustainability is perceived merely as a bureaucratic requirement or a market trend, companies tend to adopt a superficial approach to ESG criteria rather than integrating them into their core corporate strategy. This ultimately leads to the emergence of greenwashing practices, as companies seek to satisfy external expectations without implementing substantive changes in their operations.

Furthermore, when examining the relationship between greenwashing and governance structures, it can be observed that companies with strong governance frameworks and transparent internal control mechanisms are less likely to engage in greenwashing (36). This is because management in such companies is more committed to accountability and long-term value creation. This finding challenges the notion that greenwashing is purely an external strategy and highlights the importance of strengthening internal governance as a means of ensuring the authenticity of ESG reporting.

It is also important to emphasize that greenwashing can influence the perception of financial markets (27). When investors detect greenwashing practices, they may “penalize” companies by reducing their market value. This creates an incentive for companies to be more transparent and authentic in their ESG reporting, as the reputational risk associated with greenwashing can have significant financial consequences. It can therefore be concluded that this perspective introduces an economic dimension that adds a new level of complexity to the debate on the authenticity of ESG reporting.

INTERTEMPORAL CONFLICT: SHORT-TERM PROFITABILITY VERSUS LONG-TERM SUSTAINABILITY

The primary objective of companies is to maximize shareholder value, which has traditionally been interpreted as the imperative to achieve the highest possible financial returns

within the shortest possible time frame (24). Consequently, investments in sustainability—often associated with additional costs and delayed returns—are perceived as obstacles to achieving this objective. In many industries, such a short-term-oriented approach has been dominant, particularly in those characterized by rapid production cycles and high expectations of immediate profitability (e.g., retail and technology sectors).

This perspective reflects the dominant paradigm of shareholder capitalism, in which company value is measured exclusively through financial performance, while the social and environmental contexts of business operations are largely neglected. In the literature, this approach is often interpreted as establishing a dichotomy between sustainability and profitability, representing one of the central points of ongoing academic debate.

In contrast, literature also presents an alternative theoretical framework through the concept of shared value (11, 30, 41). This concept seeks to establish a link between a company's economic success and its positive impact on the environment and society. Companies that integrate sustainability principles into their strategies not only contribute to environmental protection and the improvement of social conditions but are also better positioned to achieve long-term economic value (41). In this context, the initial costs associated with sustainability should not necessarily be viewed as a burden but rather as investments that generate long-term economic benefits. This challenges the assumption of an inherent trade-off between short-term profitability and sustainability.

Such a perspective introduces significant theoretical shifts, primarily by redefining the relationship between economic and non-economic objectives, suggesting that they are not necessarily competing but potentially complementary. However, the question remains to what extent this concept can be applied in industries facing strong pressure for short-term performance.

This issue is further reinforced by arguments suggesting that excessive focus on short-term returns may undermine corporate resilience and ultimately jeopardize long-term financial performance (1, 5). Companies that sacrifice sustainability for immediate gains are significantly more exposed to future risks, including regulatory sanctions, reputational damage, and increased exposure to operational and financial risks (5). In this sense, sustainability is increasingly viewed in contemporary literature not merely as an ethical or philanthropic choice, but as a strategic tool for risk management and long-term value creation. Rather than being optional, it is seen as a rational risk management strategy that enhances a company's adaptability and resilience in conditions of market turbulence and global crises.

Accordingly, the focus of analysis in the literature is shifting from a normative to a strategic level. This implies that sustainability becomes an integral component of risk management and long-term value creation, rather than an additional obligation. Implicitly, this challenges the short-term logic of profit maximization, highlighting its negative externalities.

The debate between Freeman and Friedman provides a deeper, normatively grounded philosophical insight into the nature of this conflict (17, 19). According to Friedman, a company has only one social responsibility—to maximize profits for its shareholders. He further argues that any shift toward sustainability or social responsibility objectives represents a distraction that may reduce economic efficiency (19). In contrast, Freeman

developed stakeholder theory, according to which companies must consider the interests of all relevant stakeholders in their decision-making processes—not only shareholders, but also employees, local communities, and the environment (17). Although this approach may initially appear normatively idealistic, it has gained substantial theoretical and practical recognition in recent decades, partly due to growing societal expectations for companies to operate more responsibly and sustainably.

The juxtaposition of these perspectives clearly highlights the theoretical divide between the shareholder and stakeholder models of corporate governance. The former prioritizes financial efficiency, while the latter introduces a multidimensional approach to value that encompasses social and environmental dimensions (25). Based on the above, it can be concluded that the conflict between short-term profitability and long-term sustainability is not necessarily inherent. Rather, it may arise from dominant governance paradigms and decision-making time horizons. Therefore, future research, as well as business practice, should focus on developing integrative models that enable the simultaneous achievement of economic and social objectives.

HIDDEN COSTS OF THE TRANSITION TO SUSTAINABLE BUSINESS MODELS

The transition to sustainable business models entails significant organizational and financial costs, particularly in relation to employee training and the adaptation of internal processes. An additional challenge is employee resistance to change, which can increase overall implementation costs and slow down the transition process. Companies therefore face the challenge of ensuring that all employees accept and adhere to new corporate objectives. The process of retraining and developing organizational awareness represents a complex and financially demanding component of the transition (2).

Regulatory costs constitute one of the key factors shaping the dynamics of the transition toward sustainable business models. The adoption of stricter sustainability standards at both national and international levels often requires unplanned operational adjustments and additional financial investments. The literature indicates that small and medium-sized enterprises are particularly affected by the increase in administrative costs associated with regulatory compliance (10). This results in additional financial burdens that are often not anticipated at the initial stages of the transition process (18).

In addition, it is important to highlight differences in the perception of the long-term profitability of sustainable business models. Empirical studies suggest that such models can generate returns on investment through improved operational efficiency and enhanced customer loyalty. However, these benefits are often neither immediately measurable nor visible in the short term (31, 40). The transition itself may take several years before tangible effects become evident, which creates significant pressure on short-term financial performance and may negatively influence investor perception (14, 37, 45).

Furthermore, the literature suggests that the costs of transforming supply chains toward more sustainable alternatives are often systematically underestimated. Companies also face significant challenges in identifying suppliers that meet new sustainability standards. This frequently leads to increased input costs and short-term supply disruptions (22, 43).

TRANSPARENCY OF CORPORATE GOVERNANCE AND THE QUALITY OF ESG PRACTICES

The results of a study conducted by Tamimi and Sebastianelli, which examines the level of transparency among companies included in the S&P 500 index, indicate that corporate governance practices are the most transparent compared to environmental and social dimensions (46). The study shows that factors such as gender diversity on the board of directors and CEO duality have a direct impact on ESG reporting outcomes (4, 38). Empirical findings further suggest that larger companies tend to achieve higher levels of transparency. This underscores the importance of corporate governance and ESG disclosure in enabling a more comprehensive evaluation by stakeholders.

The governance dimension represents a fundamental pillar of ESG transparency, as the quality of governance structures directly influences the scope and reliability of disclosed information. This confirms that without a strong system of corporate governance, full transparency in other ESG dimensions cannot be achieved. However, the literature frequently criticizes approaches that focus solely on the quantity of disclosures without considering the quality and reliability of ESG data (6, 21). One proposed solution is the application of mathematical models that integrate these factors, allowing for a more precise assessment of transparency. According to such models, many publicly listed companies have not yet developed standardized and reliable systems for measuring ESG transparency (6). This results in significant inconsistencies in the comparability of corporate reports.

These findings point to a major methodological challenge in contemporary ESG reporting, namely that the sheer volume of disclosed information does not guarantee its relevance or credibility. Consequently, the focus is shifting toward the development of more sophisticated metrics that incorporate qualitative aspects of reporting.

Furthermore, ESG transparency not only improves public perception but also increases firm value by reducing information asymmetry between investors and companies (49). Empirical studies indicate that ESG transparency can positively influence market valuation, as reflected in indicators such as Tobin's Q. It is argued that companies with higher levels of transparency enjoy greater investor trust, which is reflected in higher market valuations (49). These findings suggest that transparency is not merely a normative imperative but also a mechanism for value creation, thereby reinforcing the integration of ESG principles into corporate strategic management.

However, it is important to note that the literature does not present a unified view regarding the positive effects of ESG transparency. Some studies show that, although transparency is crucial for attracting capital, it may also have a negative impact on firm valuation

(8). These results indicate that higher levels of ESG transparency in certain sectors may be associated with lower market valuations, suggesting a reverse market reaction in industries with high ESG risks. In such cases, transparency may reveal weaknesses rather than strengthen investor confidence (14).

These findings highlight the contextual nature of ESG transparency, where its effects are conditioned by industry characteristics and the level of risk exposure. In this sense, transparency can function as a two-way signal, simultaneously enhancing trust while exposing vulnerabilities.

The literature also identifies management tenure as an additional influencing factor (35). It is argued that managers with longer tenures are more likely to adopt conservative and less transparent ESG reporting strategies. Conversely, changes in management often lead to improvements in the quality of ESG disclosures, suggesting that governance structures tend to increase transparency in order to enhance market perception (23).

These findings confirm the importance of internal organizational dynamics in shaping ESG practices, indicating that transparency is not solely driven by external pressures but also by leadership changes and strategic priorities. In this context, ESG transparency represents a multidimensional phenomenon determined by a combination of governance structures, regulatory frameworks, market expectations, and industry-specific characteristics. Therefore, future research should focus on developing integrated models that simultaneously capture both quantitative and qualitative aspects of transparency, as well as their differentiated effects on corporate performance.

MULTINATIONAL COMPANIES AND WORKING CONDITIONS IN GLOBAL SUPPLY CHAINS

Research indicates that many companies, particularly in the textile and food industries, have adopted sustainable sourcing practices. However, these measures remain limited, as they often cover only a small number of key inputs and suppliers (48). Many companies focus primarily on ensuring minimum labor rights and compliance with national legislation. Nevertheless, such voluntary initiatives fail to comprehensively address systemic issues in global supply chains. These findings point to a selective implementation of sustainable practices, which represents a significant ESG risk for companies. Focusing on the most visible segments of the supply chain may lead to reputational and regulatory consequences, especially when hidden issues at lower tiers become subject to public or investor scrutiny.

When examining labor management strategies, it is important to note that they are often based on the relationship between multinational companies and consumers, rather than between workers and the company itself. This structure creates a so-called governance vacuum, increasing both operational and reputational risks for multinational corporations. In such cases, actual working conditions remain largely outside effective oversight, resulting in limited control over ESG performance at lower levels of the supply chain. At

the same time, many multinational companies avoid direct responsibility for poor working conditions in these segments. This consumer-oriented approach reduces the capacity of voluntary initiatives to substantially improve labor conditions in global supply chains (13). It highlights a structural problem of accountability, where formal compliance with standards does not necessarily translate into substantive improvements in working conditions.

This paper builds on existing literature to suggest that inadequate working conditions in global supply chains constitute a significant social risk within the ESG framework. Phenomena such as forced labor further increase reputational and regulatory risks, which may have direct implications for a company's market value and access to capital. It is important to emphasize that supply chains cannot be separated from issues of labor exploitation, particularly in the case of forced labor (29). Within supply chains, market dynamics often incentivize inadequate working conditions, and contemporary labor practices such as modern slavery are deeply embedded in the business models of multinational corporations (44). The persistence of such conditions in many cases highlights the gap between corporate social responsibility standards and actual business practices. This suggests that the problem lies not only in the implementation of standards but also in the underlying logic of global production systems that generate and reproduce inequalities.

From the perspective of global production networks, the relationships between multinational companies and workers are crucial for understanding labor inequalities within supply chains (42). When companies relocate production beyond national borders, the bargaining power of workers in production facilities diminishes, leading to further deterioration of already precarious working conditions. These findings indicate a power asymmetry within global supply chains, enabling the transfer of ESG risks to lower tiers while limiting the accountability of lead firms.

These findings indicate that inequalities within supply chains are not incidental, but structurally embedded, requiring deeper institutional and regulatory interventions.

The literature also examines the role of the International Labour Organization (ILO) in global labor governance, noting that the expansion of supply chains has weakened traditional models of state-based labor regulation (47). The inability of states to effectively enforce labor laws within global supply chains has created a need for new governance models. In this context, international actors such as the ILO could play a leading role in defining standards for improved working conditions. However, this approach faces significant challenges due to power asymmetries within supply chains.

Based on the above, it can be concluded that multinational companies play an ambivalent role. Although they formally promote sustainability and responsible practices, their operational strategies often contribute to the reproduction of problematic working conditions. Therefore, future efforts should focus on strengthening accountability mechanisms across the entire supply chain, with particular emphasis on lower tiers where the risks of exploitation are the highest.

CONCLUSION

This paper aims to provide a critical analysis of the relationship between ESG criteria and the financial sustainability of companies, with a particular focus on the implications of greenwashing practices. The findings indicate that ESG criteria are not merely a peripheral aspect of corporate governance, but rather a key framework shaping long-term resilience, access to capital, and the market valuation of companies.

The literature review confirms that the consistent integration of ESG principles contributes to improved risk management, reduced information asymmetry, and increased investor confidence. However, these effects are neither universal nor automatic. Their realization depends on the depth of ESG implementation, the institutional environment, and the quality of corporate governance. These findings challenge the simplified assumption of a linear and unambiguous positive impact of ESG factors on financial performance.

The paper particularly emphasizes that greenwashing represents a structural problem within the contemporary ESG framework, rather than an isolated issue of individual companies. The lack of standardized metrics, fragmented regulatory regimes, and limited external verification create opportunities for companies to instrumentalize ESG narratives. Such practices enable reputational positioning without substantive changes in business models. Greenwashing not only undermines the credibility of individual reports but also destabilizes investor trust in ESG as an evaluation system.

The contribution of this paper lies in the systematization and critical reinterpretation of existing theoretical and empirical findings, with particular emphasis on identifying key contradictions in the literature. The study highlights the tension between short-term profitability and long-term sustainability, as well as the contextual nature of ESG transparency effects. Additionally, it problematizes current approaches to measuring ESG performance and points to the need for developing integrated models that simultaneously capture both quantitative and qualitative dimensions of sustainability.

A limitation of the paper stems from its methodological nature and reliance on secondary sources, without empirical validation of the presented claims. Despite these limitations, the paper provides a relevant analytical framework that can serve as a foundation for future empirical research.

Future research should focus on the quantitative testing of the relationship between ESG performance and financial outcomes, the development of standardized and comparable indicators of ESG transparency, as well as a deeper analysis of institutional and governance determinants of ESG authenticity.

In conclusion, ESG criteria have the potential to redefine the paradigm of corporate governance and company valuation, but only with improvements in regulatory frameworks, the standardization of reporting, and a clear distinction between genuine sustainability and its symbolic representation.

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ESG kriterijumi i korporativna finansijska održivost: Analiza uloge, transparentnosti i rizika od „grinvošinga“

Apstrakt: Ovaj rad analizira ulogu ESG (Environmental, Social, Governance) kriterijuma u kontekstu korporativne finansijske održivosti, sa posebnim naglaskom na fenomen „grinvošinga“ („zelenog pranja“). Cilj studije je da se ispita u kojoj meri primena ESG principa doprinosi dugoročnoj stabilnosti poslovanja, kao i da se identifikuju izazovi u vezi sa njihovom primenom. Metodološki pristup zasniva se na analizi relevantne naučne i stručne literature, kombinovanoj sa uporednim pregledom različitih teorijskih i praktičnih perspektiva. Rezultati pokazuju da dosledna primena ESG kriterijuma može poboljšati reputaciju, smanjiti rizike i poboljšati finansijske performanse, dok neadekvatna ili površna primena stvara prostor za „grinvošing“ i podriva poverenje investitora. Zaključeno je da je transparentnost ključni faktor u postizanju istinske održivosti i kredibiliteta u ESG izveštavanju.

Ključne reči: ESG kriterijumi, finansijska održivost, „grinvošing“, „zeleno pranje“, korporativno upravljanje, održivo poslovanje

Identification and Prevention of Financial Fraud in the Digital Environment

Abstract: *With the increase in the number of financial frauds in the digital environment, through new technologies and the use of social engineering methods, understanding, identifying and preventing financial frauds in the digital environment is of particular importance. The most common frauds based on social engineering are elaborated and explained, with a focus on phishing frauds. The most common types of financial fraud in the digital environment are indicated, as well as how to protect yourself from them and what preventive measures to take. This paper aims to explain the most common and most dangerous financial frauds in the digital environment, with a special emphasis on phishing fraud and its forms and types. A simulation of a phishing attack is presented in detail under strictly controlled conditions and under clearly defined rules. The goal of this phishing campaign is to demonstrate how scammers attempt to manipulate the victim and exploit their social status, coupled with ignorance, to obtain financial data for financial gain.*

Keywords: *financial fraud, scam, phishing, security, finance*

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INTRODUCTION

Today is characterized by a rapid rise in the digitalization of a large number of financial services. Banking services, electronic payments, online trading and financial applications have become an integral part of everyday life. However, in parallel with these processes, new risks are emerging that threaten financial security, among which financial fraud in the digital environment, such as card fraud, cryptocurrency fraud and phishing scams, occupies a special place.

Unlike traditional forms of financial fraud, digital financial fraud takes place in a virtual environment and relies on the misuse of information systems, digital communication channels and user data. They include various forms of illegal activities, such as identity theft, phishing attacks, payment card misuse, unauthorized access to accounts and manipulation of digital transactions. Timely and accurate recognition of such fraud is of utmost importance, as it allows for timely protection and reduction of financial losses of organizations and individuals. The study of financial fraud in the digital environment stems from the fact that, despite their technological aspect, these illegal activities are based on financial transactions and the acquisition of illegal property benefits. Digital technologies in this context represent a means of execution, while the essence of the problem is of a financial nature and insufficient awareness of financial security in the digital environment. Successfully detecting and proving financial fraud in a digital environment requires an integrated approach, which involves close cooperation between financial and computer forensics.

The profound changes brought about by the digitalization of business have affected all segments of the financial system, particularly the methods of detecting and preventing financial fraud. In an era where data represents the most valuable resource, modern technological tools such as artificial intelligence, blockchain, and digital forensics are indispensable in identifying irregularities and reconstructing financial flows (8). Despite the efforts of regulators or management, fraud continues to occur, causing significant financial losses and undermining the reputation of companies. Financial fraud and misconduct share numerous common characteristics, yet each illicit act has its own specific features. They may be committed by different individuals, across various departments, and can occur in companies of different sizes (9).

PHISHING: A SOCIAL ENGINEERING TECHNIQUE IN CYBER FRAUD

Phishing is an attack in which a malicious attacker attempts to steal money or personal information from a user by tricking the user into unknowingly providing them with personal information, passwords, or payment card numbers. *It* is a specific type of financial fraud via electronic mail, or e-mail. By *impersonating* or falsely representing a trusted entity (bank, financial institution, government institution, reputable merchant, etc.) via an electronic communication channel, the victim is tricked into entering personal information.

A type of fraud that aims to collect and misuse confidential user data, such as bank account numbers, social media passwords, or email access, is called phishing (1). Phishing can also be defined as a form of social engineering in which an attacker attempts to fraudulently obtain sensitive information, such as usernames, passwords, and credit card details, by posing as a trusted entity in an electronic communication (2).

Social engineering is a type of psychological manipulation, where a person is lured into taking actions that they would never take under standard circumstances, i.e. revealing personal or sensitive data. It can be said that social engineering is a type of cyber attack, because it uses modern technology, techniques and the Internet as a communication channel. Phishing certainly stands out as the most widespread and dangerous form of social engineering.

We often talk about software vulnerabilities. The human equivalent of software vulnerabilities is emotions. When faced with a frightening scenario, people very often react impulsively, “on the spot”, and only think later. It is precisely on this “vulnerability” that hackers base social engineering techniques with which they carry out successful cyber-attacks (3).

Before carrying out a phishing attack, the victim is thoroughly investigated. All information that can be of help to the attacker is collected, so that his attack looks as convincing as possible and is as successful as possible. Almost everything is investigated, where the potential victim works, what accounts he uses, in which banks he has accounts, who he hangs out with, where he shops, what he uploads to social networks, etc. By possessing this information, a message with convincing content is created. This phishing message is mostly disturbing or captivating in nature.

A captivating message is usually based on information about the victim’s interests. Based on this information, a message with convincing content is created, with which the victim will be captivated, and an offer that almost anyone would accept in real circumstances, and rarely would anyone refuse. The content of the message, in this case, is that a free trip, mobile phone, plane ticket, car, money from a prize game, etc. has been won. To claim the prize that the victim supposedly won, it is most often necessary to click on a link and enter account credentials or payment card details to supposedly pay out the prize. The link is most often disguised through link shorteners (such as: *bit.ly*, *cutt.ly*, *skr.rs*, *short.io*, *tinyurl.com* ...) and its authenticity cannot be determined at first glance.

A distress message has the same sequence of steps as a charming message. The difference from charming phishing messages is that in this case, the user is frightened and intimidated. This causes a rash and quick reaction in the victim. Such messages instil fear, tension, cause a sense of urgency and create panic. A sense of urgency is often created, and the victim is rushed to enter the data as soon as possible. In this way, the victim is left with very little time to think rationally and carefully review the authenticity of the message. The most common content of such messages is that the user is running out of time to perform an action, and if they do not enter the requested data immediately, someone else will take over their account and will never recover it. Also, tricks are used that their account is compromised, blocked or disabled and if they do not immediately confirm their identity and

enter the data, they will lose all the money in the account, which they will never be able to recover. Unfortunately, out of fear that this will actually happen, many people fall for these phishing messages and enter their personal banking information and passwords. The data is then forwarded to a malicious attacker who misuses it in the same way.

Due to its high efficiency, phishing is the most popular form of cybercrime. Cybercriminals are successful because they research their victims thoroughly beforehand. They usually pretend to be reputable companies, financial institutions, friends or acquaintances, and carry out the attack using email, text messages (SMS), direct messages on social networks or in video games.

CONDUCTING EXPERIMENTAL PHISHING RESEARCH AND ANALYZING THE RESULTS

For the purposes of implementing and conducting experimental phishing research, a platform for training and simulating phishing attacks, called *Gophish*, will be used. The platform is *open-source*, which means that the source code is publicly available and can be used, revised, modified, and shared for free. This refers to software whose source code is available under *the open source* license, which means it is free, and therefore a great opportunity for those who want to further develop this project (4). In this way, you can both contribute to the community and encourage innovation and improvements in this domain.

Gophish The platform is primarily intended for educational phishing simulations, as it allows for testing in a strictly controlled environment and under clearly defined conditions, how resistant individuals or groups in organizations are to so-called “phishing”. *Gophish* is written using the *Go programming language* and is designed to be easy to install, use, and administer, with clear and intuitive steps, without complex infrastructure or configuration (5).

DEFINING EXPERIMENT GOALS AND RULES OF ENGAGEMENT (SE-ROE)

Before any research or experiment is started, whether in part or in whole, it is necessary to establish the rules of engagement for social engineering. *Engineering Rules of Engagement* (SE-ROE), which will be presented below.

The goal of the research is to educate and raise awareness among individuals about security in the digital environment, as well as the threats that manifest in various forms every day. Consent to conduct the research was obtained from the registered owner of the domain name, izradawebsajtova.com. Consent was obtained in written and oral form and published on a privileged page at the following address: <https://izradawebsajtova.com/saglasnost>. The password for opening protected content on the page is: “*admin*” (in lowercase, all connected, in Latin).

The research focuses on simulating the implementation of phishing attacks on participants' financial information, including the simulation of theft of payment card data, the purpose of which is to determine the vulnerability of participants to this type of attack and subsequent education with the aim of preventing bad actions and never repeating them. The research is conducted strictly under controlled conditions with the full written consent of the owner. Strict conditions for conducting phishing research have been defined, with the confirmation of the owner, including a list of email addresses that will be presented in Table 1.

Table 1.

Serial number	Email address to be used for the experiment	Owner approval to participate in the experiment
1	aleksandar@izradawebsajtova.com	APPROVED
2	misa@izradawebsajtova.com	APPROVED
3	marija@izradawebsajtova.com	APPROVED
4	dragana@izradawebsajtova.com	APPROVED
5	tamara@izradawebsajtova.com	APPROVED

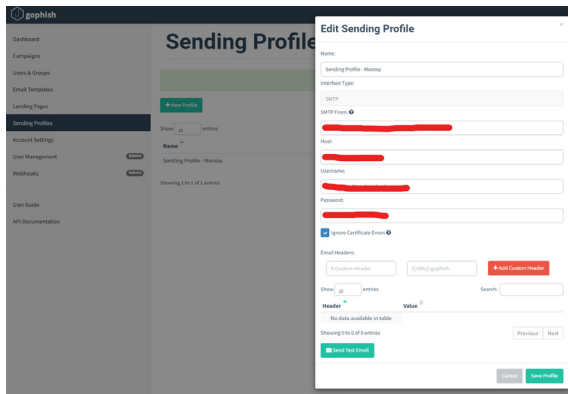
The survey will be conducted exclusively on approved email addresses from the table. The duration of the survey will be exactly three days, and potentially entered data will not be collected, shared or processed. The completion of the survey includes informing participants about the results of the survey, along with the preparation of educational content with the aim of raising awareness about security in the digital environment and providing advice on recognizing threats.

The following activities are permitted within the experiment: simulating phishing emails to approved email addresses, using realistic but fake email message templates, and tracking technical indicators such as email opens and clicks to enter data for statistical and educational purposes. All other activities not explicitly listed as permitted activities are considered prohibited activities.

PHISHING ATTACK SIMULATION IN A CONTROLLED ENVIRONMENT

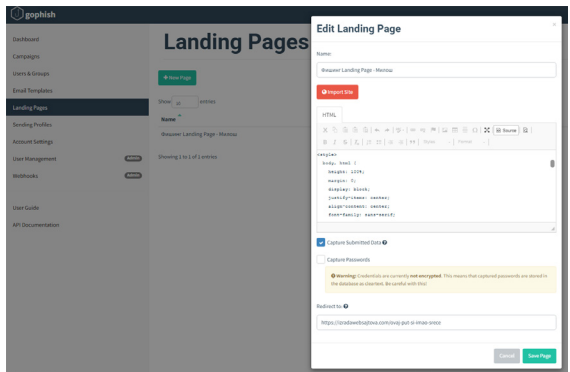
We'll start with the section called *Sending Profiles*, in which we configure the email address that we will use for sending and that will be displayed to recipients.

The *GoPhish environment* you set up only works on your local network and is not accessible from the internet, which means that the full potential of the tool will not be available to email recipients on another network. To overcome this problem, we will connect *Cloudflare* tunnel and thus avoid restrictions and add a domain for the phishing page.

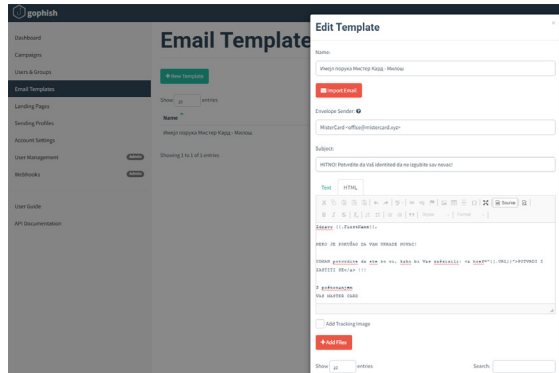


```
Administrator: Command Prompt - cloudflared-windows-amd64.exe tunnel --url http://localhost:8083
C:\Users\User>
C:\Users\User>cd C:\Users\User\Downloads\Gophish - CloudFlare
C:\Users\User\Downloads\Gophish - CloudFlare>cloudflared-windows-amd64.exe tunnel --url http://localhost:8083
2026-01-07T12:37:45Z INF Thank you for trying Cloudflare Tunnel. Doing so, without a Cloudflare account, is a quick way to experiment and try it out. However, to use Cloudflare Tunnel in production, you must create a Cloudflare account and agree to the Cloudflare Online Services Terms of Use (https://www.cloudflare.com/website-terms/), and Cloudflare reserves the right to investigate your use of Tunnel. You should use a pre-created named tunnel by following: https://developers.cloudflare.com/cloudflare-one/connections/connect-apps
2026-01-07T12:37:45Z INF Requesting new quick Tunnel on trycloudflare.com...
2026-01-07T12:37:50Z INF | Your quick Tunnel has been created! Visit it at (it may take some time to be reachable):
2026-01-07T12:37:50Z INF | https://begins-cingular-college-fires.trycloudflare.com
2026-01-07T12:37:50Z INF -----
2026-01-07T12:37:50Z INF Cannot determine default configuration path. No file [config.yml config.yaml] in [~/cloudflared ~/.cloudflare-warp ~/cloudflare-warp]
2026-01-07T12:37:50Z INF Version 2025.11.1 (Checksum 412f9b24de6681a455564651524f167b0ce29a4cc648709dea7af93cd37ed99)
2026-01-07T12:37:50Z INF GOOS: windows, GOVersion: go1.24.9, GOArch: amd64
2026-01-07T12:37:50Z INF Settings: map[ha-connections:1 protocol:quic url:http://localhost:8883]
```

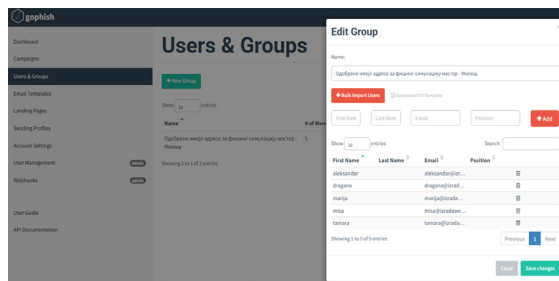
Creating a Phishing *Landing Page* page using *custom* code is the most important part, which defines the appearance of the phishing page. It is also possible to insert a page from a website using *Import Site*, in which only the URL to the specific page that will be automatically cloned is specified. In this example, we have chosen our own code that we have added and adapted the structure for the needs of the project. The entered data is used exclusively for statistical purposes. If the research participant clicks on the data entry button, they are redirected to a page that informs them that they were lucky this time, because this is a test.



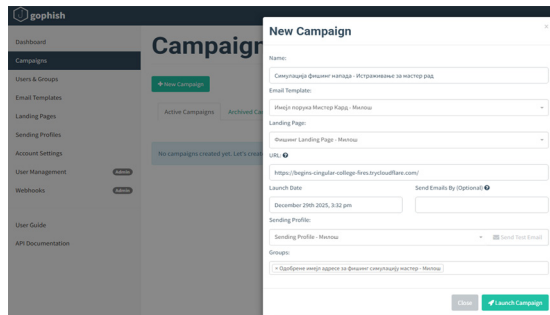
The content of the email message is created using an *Email Template*. Here, a *distressing message* is created that forces urgency and CloudFlare's public is entered. domain.



The first thing you can notice is that instead of *Master Card* It says *MisterCard* in the sender's name. If you pay closer attention, you can see that the sender's email address is `office@mistercard.xyz` where the name contains the Latin letter "l" instead of the letter "i" and it comes from the domain `m i stercard.xyz` which resembles `mastercard.com` domain. Handcrafted *Landing The Page* page is only visible when the campaign is launched, and only using the *Go* variable `{{.URL}}`, through which each link can be viewed separately.



Email addresses that have received consent and approval to participate in the phishing survey have been added to the *Users & Groups* section as a separate group. After the preparation and setup are complete, we begin creating a phishing email campaign.



Phishing messages will be sent according to the specified criteria, and the results will be analyzed after three days.

Details

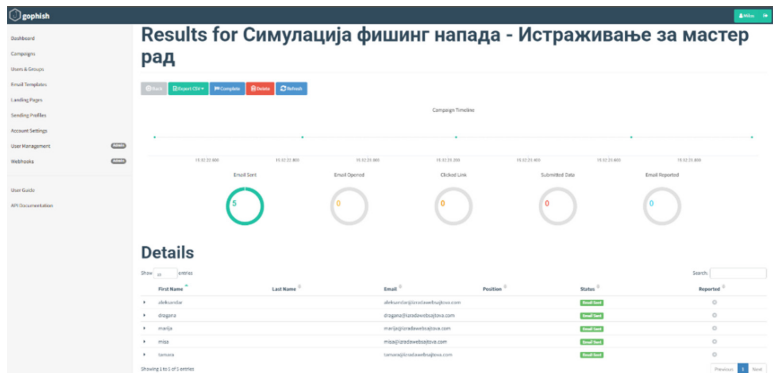
Show entries Search:

First Name	Last Name	Email	Position	Status	Reported
▶ aleksandar		aleksandar@izradawebsajtova.com		Email Sent	0
▶ dragana		dragana@izradawebsajtova.com		Email Sent	0
▶ marija		marija@izradawebsajtova.com		Email Sent	0
▶ misa		misa@izradawebsajtova.com		Email Sent	0
▶ tamara		tamara@izradawebsajtova.com		Email Sent	0

Showing 1 to 5 of 5 entries Previous **1** Next

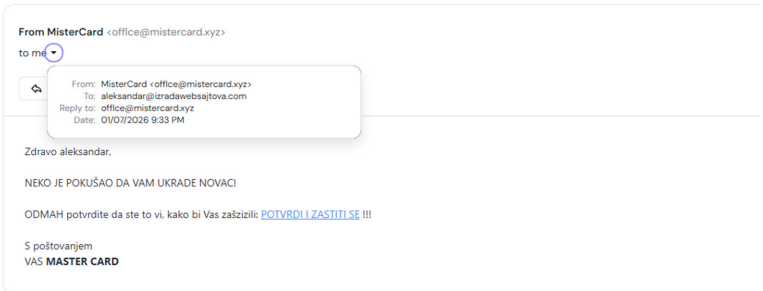
ANALYSIS OF RESULTS

In the following image, we can see that the emails were successfully delivered to all 5 email addresses, but none of the emails has been opened yet. In the image below, we can also see what the email message that the survey participants received looks like.



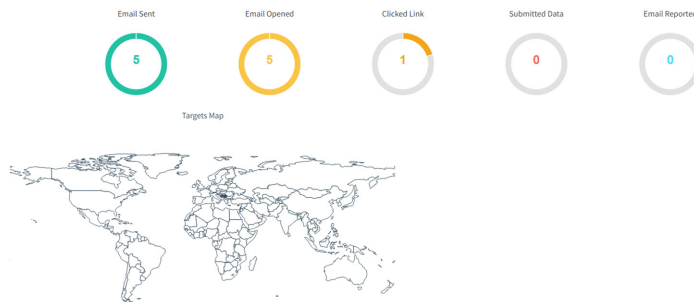
← [Email Icon] [Share Icon] [Trash Icon] [Summarize]

HITNO! Potvrdite da Vaš identited da ne izgubite sav novac!



After a certain period of time, we obtained the results presented in the following figure.

It is clearly visible that all participants in the survey opened the email message and that only one person clicked on the link. In the more detailed survey results, we can also see which person clicked on the link, from which operating system and at what time. On the world map, in the survey results view, we can see the location of participants who opened the email message by country, and that is only Serbia. It is important to note that the person who clicked on the link did not enter any data.



The results of the conducted phishing attack simulation show the real state of the participants' level of awareness of financial security in the digital environment. The goal of this activity is to raise individual awareness of financial fraud in the digital environment and indirectly raise the awareness of the wider social community. The results obtained serve as a basis for further improving the general awareness of society about financial security on the Internet, while indirectly strengthening the culture of safe behavior in the digital environment. Given that only one person clicked on the link and no one entered sensitive data, this research has relatively good indicators.

PROTECTION AND PREVENTION MEASURES

To protect ourselves from a potential fraud or threat, it is necessary to know the threat, because if we do not know what we are defending ourselves against, we will not know in any way or how to protect ourselves from it. In this regard, emphasis is placed on education and training on the types and methods of fraud in the digital environment, which are almost always focused on finances, as the main motive for the attack. Training and education of individuals, along with comprehensive awareness-raising of society about the risks of digital fraud, is one of the key elements of strategic protection in the modern financial environment.

In the case of phishing, it is always recommended to:

- Checking the email address from which the message was sent.
- It is advisable to always double-check, especially if there is a sense of urgency or urgency, which is a basic signal for something suspicious.

- If you suspect the legitimacy of an email message, contact the institution (for example, a bank) and verify it further.
- never send passwords, personal or banking information via a form sent from a suspicious email address.
- Use the usual procedure to update your details, as the bank will never request details of personal/confidential data via email.

In certain situations, it can be difficult to recognize a phishing attack, as the messages are crafted to appear authentic, so the first step in defense is to be aware of the possibility of fraud. To be on the safe side, you should not rush to open attachments in the message, click on links, or send a reply. Characteristics that may indicate a phishing scam are shown in the image below, and they are attachments and links, spelling errors, and unnecessary urgency regarding the verification of the email address or other personal information (1).

Instructions for safe use of ATMs:

- When entering your PIN at an ATM, cover the keypad from view.
- A PIN code is a personal identification number that no one should know.
- Keep the PIN code separate from the card.
- Do not allow an unknown person to assist with a transaction.
- Regularly check your payment card statement and transactions.
- Check for suspicious physical attachments at the ATM.
- Make sure you take your card out of the ATM before you leave.
- If the ATM holds your card, notify the bank immediately.
- Block a lost or stolen payment card immediately and report it to the bank.

The financial institution that has made the most progress in this area and stands out from the rest for investing in education and developing guidelines and methodologies for handling security incidents is *Société Générale Bank*. CERT *Societe Generale*, in collaboration with CERT *aDvens*, developed *Incident Response Methodologies (IRM) 2022*, a collection of practical guidelines for handling security incidents (6). The publicly released documentation contains operational procedures used in various types of security incidents, providing standardized methodologies for CERT teams.

The Financial Institutions ICT Incident Response Team (FIN-CSIRT), as the first sectoral CERT in the country, enables the formalization of cooperation between financial institutions and other relevant stakeholders in the country and abroad, with the aim of creating more efficient cyber resilience of the entire financial sector of our country. FIN-CSIRT leads efforts to create a secure environment for users of financial services in Serbia. Another important goal of the Financial CERT is to raise awareness among users of financial services with the aim of providing better information and creating a safe and reliable digital environment for all categories of users of financial services (7).

CONCLUSION

User education and awareness-raising should not be seen as a one-time activity, but as a dynamic and continuous process that must keep pace with the rapid development of digital technologies and the evolution of fraud methods in the modern environment. The digital transformation of financial services has brought numerous advantages in terms of efficiency and speed of financial transactions, but at the same time has brought and significantly increased the exposure of financial systems to various forms of digital threats.

Financial fraud in the digital environment represents one of the most significant security challenges of the modern financial sector, and it is necessary to view it through the prism of financial security and risk management. It is not enough to simply install a program that will provide a minimum of protection, which in most cases is only apparent protection. No software solution will fully protect us from all types of malicious activities, because they are much more imaginative today than before, so that they provoke our reaction, so that we unconsciously perform an action that we would never do under normal circumstances. The first line of defense is, first of all, a person (user) as a trigger for actions. Therefore, it is necessary to invest in understanding financial fraud in the digital environment, as a step towards further progress of the individual as a user and the community as a whole. What is current today as a method of attack may be modified or replaced by another method in the near future.

The point is not to invest in software that will provide permanent protection, but rather to invest in educating people. Given that digital finance is now an indispensable part of our everyday lives, raising awareness about the security of digital finance is an imperative for a society striving for development. When talking about protection and security risks, it must be remembered that it is a constant struggle between those who try to exploit loopholes and commit abuses by using human emotions, empathy and fears on the one hand, and those who create mechanisms for education, training and defense on the other.

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Identifikovanje i prevencija finansijskih prevara u digitalnom okruženju

Apstrakt: Porastom broja finansijskih prevara u digitalnom okruženju, posredstvom novih tehnologija i upotrebom metoda socijalnog inženjeringa, od posebnog značaja se izdvaja razumevanje, identifikovanje i prevencija finansijskih prevara u digitalnom okruženju. Razrađene su i objašnjene najčešće prevare zasnovane na socijalnom inženjeringu i fokusom na fišing prevare. Ukazano je na najčešće vrste finansijskih prevara u digitalnom okruženju, kao i kako se od njih zaštititi i koje preventivne mere preduzimati. Ovaj rad ima za cilj da objasni koje su najučestalije i najopasnije finansijske prevare u digitalnom okruženju, sa posebnim akcentom na fišing prevare i njegove pojavne oblike i vrste. Detaljno je prikazana simulacija fišing napada u strogo kontrolisanim uslovima i pod jasno definisanim pravilima. Cilj ove fišing kampanje je da se demonstrira način na koji prevaranti pokušavaju da manipulišu žrtvom i iskoriste njenu socijalnu notu, u sprezi sa neznanjem, da bi se domogli finansijskih podataka s ciljem da ostvare finansijsku korist.

Gljučne reči: finansijske prevare, prevara, fišing, bezbednost, finansije.

Trends in the Development of Internal Audit by Sectors in the Republic of Serbia

Abstract: *This paper presents the trends in the development of internal auditing in the Republic of Serbia. From a theoretical perspective, the development trends are presented through a comparative overview of the basic specificities of legal regulations related to internal auditing within organizations from the real sector, banking sector, insurance sector, public sector, and leasing sector. The practical part of the paper presents an analysis of the trend in issued certified internal auditor certificates in the period from 2008 to 2025. In addition, an analysis of certified internal auditors according to the specific sectors in which they are employed is provided. The largest number of certified internal auditors are employed within the real sector, which also corresponds to the distribution of organizations according to the mandatory establishment of internal auditing.*

Keywords: *internal auditing, certified internal auditor*

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INTRODUCTION

Internal auditing plays a key role in modern business operations, as it provides an independent assessment and assurance that business processes, controls, and risk management activities are implemented effectively and in compliance with standards, laws, and other regulations. Observing the scope of internal auditing activities, it can be noted that its scope is exceptionally broad compared to other types of auditing, and therefore internal auditing is of great importance in ensuring the continuity of an organization's operations. According to the 2024 definition of Institute of Internal Auditors, internal auditing represents the independent and objective provision of assurance and consulting services aimed at adding value and improving organizational operations. Internal auditing assists organizations in achieving their objectives through a systematic and disciplined approach to evaluating and improving corporate governance processes, risk management processes, and internal control systems (4). The definition itself implies that internal auditing may review the entirety of corporate governance processes, risk management processes, and elements of internal control systems. In addition to conducting these audit activities, which belong to assurance services, internal auditing may also provide consulting services. Internal auditing established in this manner represents a prerequisite for improving business performance and contributes to strengthening confidence in the organization, both among employees and among external stakeholders, including investors, creditors, and regulatory bodies.

Internal auditing has numerous specific characteristics from the perspective of the subject of auditing and the purpose of its existence within organizations. Internal auditors also play an important role in the control and evaluation of financial statements. Their independent assessment ensures that financial data are accurate, complete, and compliant with relevant standards and regulations. This is particularly important for publicly traded companies and entities subject to regulatory requirements, since inaccurate or fraudulent financial reporting may have serious consequences for a company's reputation and financial position. The role of internal auditing in ensuring compliance of business operations with laws and regulations is also of great importance. Internal auditors assess whether an organization complies with all legal and regulatory requirements, thereby reducing the risk of penalties, legal consequences, and reputational damage. One of the key contributions of internal auditing is ensuring integrity and ethics in business operations. The role of internal auditing is not only to identify irregularities, but also to develop awareness of ethical business conduct and integrity within the organization. This is especially important for developing a corporate culture that promotes transparency and accountability at all organizational levels.

Internal auditing assists management and boards of directors in making better decisions through the provision of reports and recommendations. Internal audit reports and recommendations provide valuable insights into business processes and support strategic decision-making aimed at the long-term growth and stability of the organization.

The importance of internal auditing has also been recognized through legal regulations that prescribe its mandatory establishment within certain organizations. In addition to the legal obligation to establish internal auditing, it is necessary for internal auditors to be properly trained in order for internal auditing to adequately respond to all requirements and fulfill the purpose of its existence. This means that the importance of the internal auditing profession has been recognized at both the global and local levels through the mandatory introduction of regulations regarding the certification of certified internal auditors.

The main objective of this paper is to provide an overview of the current state and development of the internal auditing profession in the Republic of Serbia in accordance with the certification of certified internal auditors. First, an overview of internal auditing regulations specific to Serbia is presented. Thereafter, data on the number and trends of certified internal auditors from 2008 to 2025 are presented at both the aggregate level and according to specific business sectors. The data used in the research were collected from the publicly available database of the register of certified internal auditors maintained by the Chamber of Authorized Auditors.

SPECIFICITIES OF THE LEGAL REGULATION OF INTERNAL AUDITING IN SERBIA

The specificity of the legal regulation of internal auditing in Serbia is reflected in the fact that this area is regulated by a number of different laws applied depending on the business sector. Each of these regulations governs specific requirements and obligations related to internal auditing in accordance with the characteristics of a particular industry. In addition to the mandatory application of professional standards prescribed by the Institute of Internal Auditors, legal regulations also define issues such as the obligation to establish internal auditing, its scope of work, the minimum number of employees engaged in internal auditing activities, reporting dynamics, lines of responsibility, and other organizational and functional matters. The legal regulation of internal auditing in Serbia may be observed through the following areas:

- legal regulation at the level of companies
- legal regulation at the level of banks
- legal regulation at the level of insurance companies
- legal regulation at the level of public sector entities
- legal regulation at the level of leasing companies

According to the Law on Companies (6), internal auditing must be established in public joint-stock companies, while limited liability companies, general partnerships, and limited partnerships are not obliged to establish internal auditing. At least one internal auditor must be employed in a public joint-stock company. At the level of the internal audit function, a

head of internal audit is appointed, who informs and reports on the activities of internal auditing to the audit committee, board of directors, or supervisory board (depending on the organizational structure of the company). According to the aforementioned law, the responsibilities of internal auditing include compliance reviews, supervision of the implementation of accounting policies and financial reporting systems, control of risk management systems, monitoring business operations from the perspective of the corporate governance code and providing recommendations for the improvement of company policies and procedures.

Figure 1. Legal regulation in the field of internal auditing in Serbia
(modified according to Peštović et al., 2024)



Internal auditing in banks represents a legal obligation in accordance with the Law on Banks (5). Every bank is required to establish an internal audit function, whereby at least one person must be engaged in internal audit activities and possess an appropriate professional qualification prescribed by the Law on Auditing. The appointment of the head of internal audit falls under the authority of the bank's management board.

The head of internal audit has a significant role in the organization and functioning of this function. Their responsibilities include the development of the internal audit methodology, adoption of internal working instructions, determination of methods and deadlines for preparing and submitting reports to competent authorities, as well as defining procedures for monitoring the implementation of recommendations and measures aimed at eliminating identified irregularities. The head of internal audit regularly reports on the results of internal audit activities to the bank's management board.

The law also prescribes the minimum scope of activities that internal auditing in banks must perform. Primarily, internal auditing evaluates the adequacy and reliability of internal control systems, as well as the effectiveness of the bank's compliance function. Furthermore, its task is to ensure the timely identification and control of risks to which the bank is exposed.

In addition, internal auditing identifies weaknesses in the bank's operations and employee performance, determines cases of non-fulfillment of obligations and abuse of authority, and proposes measures for eliminating identified irregularities and preventing their recurrence. Internal auditors regularly hold meetings with the management board and the committee responsible for monitoring the bank's operations, while reports on implemented activities are periodically submitted to these bodies for the purpose of monitoring and improving bank operations.

In accordance with the Law on Insurance (7), all insurance companies in the Republic of Serbia are obliged to establish and ensure the uninterrupted functioning of internal auditing. The law prescribes that internal auditing must have at least one full-time employed internal auditor, thereby ensuring continuity in supervision and control of operations.

The scope of internal auditing activities in insurance companies encompasses a wide range of activities aimed at improving the security and efficiency of operations. Its primary role is the continuous monitoring, control, and improvement of operational systems within the insurance company. Particular importance is attached to the assessment of risk management systems, including both existing and potential risks to which the company may be exposed. Furthermore, internal auditing evaluates the adequacy and reliability of internal control systems, verifies the implementation of risk management procedures and processes, controls accounting procedures and the organization of accounting activities, as well as the reliability, accuracy, and timeliness of financial reports and management information. Based on identified findings, internal auditing provides opinions, recommendations, and proposals for measures aimed at eliminating irregularities and improving existing procedures and operating systems.

Internal auditing is accountable to the supervisory board of the insurance company, to which it regularly submits quarterly and annual reports. This reporting obligation represents one of the specific features of the legal regulation of internal auditing in the insurance sector. In addition, the law prescribes the content of these reports in order to ensure continuous monitoring of the quality of internal audit activities.

The establishment and functioning of internal auditing within public sector entities are regulated by the Law on the Budget System (9), as well as by the Rulebook on Common Criteria for Organizing, Standards and Methodological Guidelines for the Operation and Reporting of Internal Auditing in the Public Sector, together with other relevant regulations (3). Article 85 of the Law on the Budget System (9) prescribes the obligation to establish internal auditing within public sector entities. Internal auditing of public sector entities is directly accountable to the head of the public sector entity.

Internal auditing within public sector entities may be organized in several ways. The first model involves the establishment of a separate, functionally independent organizational unit within the public sector entity, directly accountable to the head of the institution. The second possibility is the establishment of a joint internal audit unit by two or more public sector entities based on a mutual agreement and with the approval of the Central Harmonization Unit. The third model implies that the internal audit of one public sector entity may, based on an agreement and with prior approval of the Central Harmonization Unit, perform internal audit activities for another public sector entity as well. The following model assumes that the internal audit function may also be performed by the internal audit unit of the competent direct beneficiary of public funds. Finally, the fifth model prescribes that if conditions for organizing internal auditing in any of the aforementioned ways do not exist, these activities may be performed by an internal auditor employed by the public sector entity or by a person contracted to perform internal auditing activities.

Due to the large number of public sector entities, the criteria for the mandatory establishment of internal auditing are prescribed in detail. Thus, all public sector entities employing more than 500 employees are obliged to organize internal auditing. Furthermore, direct beneficiaries of the budget of the Republic of Serbia that have indirect budget beneficiaries within their jurisdiction must establish a separate functionally independent internal audit unit, except for those having the status of bodies within another direct budget beneficiary. Regardless of the number of employees and other criteria, separate functionally independent internal audit units must obligatorily be established by the National Assembly, the High Judicial Council, ministries, the Republic Health Insurance Fund, the Republic Pension and Disability Insurance Fund, the National Employment Service, and others.

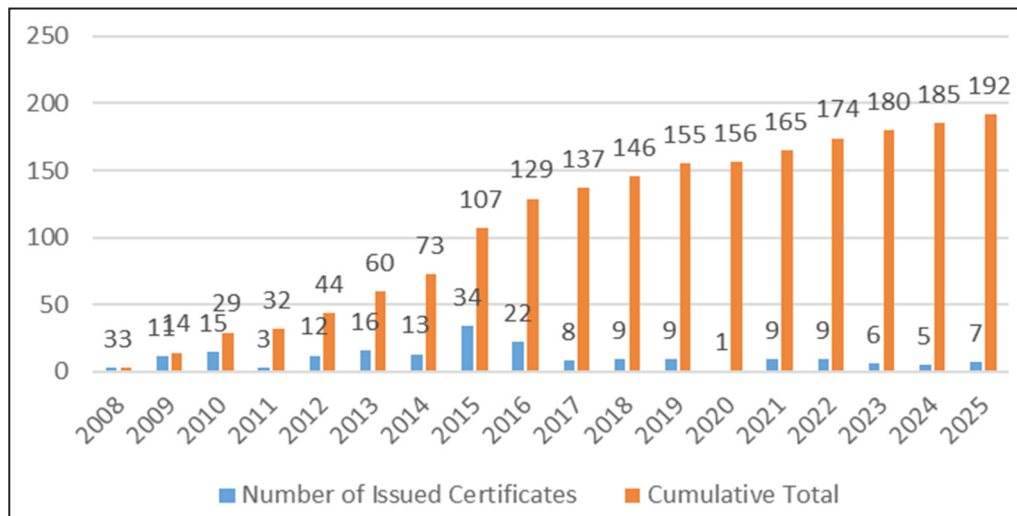
Internal auditing in the public sector is focused on evaluating financial management and control systems, risk management systems, compliance of operations, reliability of financial reporting, protection of assets, and other aspects defined by the Rulebook on Common Criteria for Organizing, Standards and Methodological Guidelines for the Operation and Reporting of Internal Auditing in the Public Sector. Unlike companies in the real sector, where only one internal auditor is required, internal auditing in the public sector must employ at least three internal auditors. One of these persons performs the function of the head of the internal audit unit.

According to the Law on Financial Leasing (8), the establishment of internal auditing in leasing companies (financial leasing providers) is mandatory in the Republic of Serbia. A specific feature of this regulation is that it also prescribes that the leasing provider may entrust internal audit activities to another entity within the financial sector headquartered in the Republic of Serbia. Accordingly, internal auditing within leasing companies in the Republic of Serbia may be internally organized (the internal auditor is employed within the leasing company) or entrusted to another entity from the financial sector (outsourcing). The main purpose of establishing internal auditing within leasing companies is the protection of business operations, risk control, prevention and detection of irregularities, ensuring lawful operations, and ensuring the security and quality of reporting to the National Bank of Serbia.

ANALYSIS OF TRENDS IN THE NUMBER OF CERTIFIED INTERNAL AUDITORS IN SERBIA

Data on the number of issued “Certified Internal Auditor” certificates in Serbia for the period 2008–2025 indicate a gradual but uneven development of the internal auditing profession within the domestic institutional and business environment. Observed through a time series, a pronounced growth trend in the total number of certified internal auditors can be identified, with the cumulative number increasing from only 3 certificates in 2008 to a total of 192 certificates by the end of 2025.

Figure 2. Number of issued Certified Internal Auditor certificates and cumulative total in the period from 2008 to 2025



In the initial phase of the observed period (2008–2011), the annual number of issued certificates was relatively low and unstable. Following the modest beginning with 3 certificates in 2008, a more significant increase occurred in 2009 and 2010 (11 and 15 certificates, respectively), which may indicate growing recognition of the importance of internal auditing and the strengthening of regulatory requirements in the field of business management and control.

The period from 2012 to 2016 was characterized by more stable and intensive growth, with a particularly pronounced increase in 2015, when as many as 34 certificates were issued, representing the highest annual value during the entire observed period. This finding may be interpreted as a consequence of increased requirements for the establishment of internal audit functions, particularly within the public sector, as well as the growing importance of compliance with international standards of professional internal auditing practice. During this period, the cumulative number of certified auditors nearly doubled.

After 2016, a phase of slower but continuous growth can be observed. The annual number of certificates generally ranged between 6 and 9, indicating market stabilization and the attainment of a certain level of professional maturity. An exception was recorded in 2020, when only 1 certificate was issued, which may be associated with the consequences of the COVID-19 pandemic, limitations in the organization of training and examinations, and the overall slowdown in professional activities.

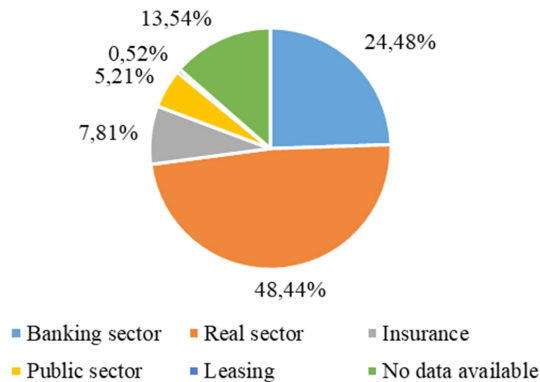
In the post-pandemic period, a stagnation in the certification of internal auditors in Serbia has been observed. In 2025, 7 certificates were issued. This may indicate that the internal auditing profession in Serbia has reached a certain level of institutional consolidation, with the number of new certificates increasing at a more moderate pace.

The presented data confirm that the development of the internal auditing profession follows broader changes in the systems of corporate governance, financial control, and regulatory frameworks. Generally observed, the growth in the number of certified professionals may be considered an indicator of the strengthening of the professionalization of internal auditing, the improvement of internal control systems, and increased awareness of the importance of risk management within organizations. At the same time, fluctuations in the annual number of issued certificates indicate the sensitivity of this process to economic, institutional, and social factors.

ANALYSIS OF TRENDS IN THE NUMBER AND REPRESENTATION OF INTERNAL AUDITORS BY SECTOR

The following figure presents data on the distribution of certified internal auditors according to the sectors in which they are employed.

Figure 3. Distribution of certified internal auditors by sector



The analysis of the structure of certified internal auditors according to business sectors indicates significant differences in the representation of internal auditing among various segments of the economy and public system in the Republic of Serbia. Out of a total of 192 certified internal auditors, the largest number originates from the real sector, followed by the banking sector, while the remaining sectors are considerably less represented.

The highest share is recorded in the real sector, with 93 certified internal auditors, accounting for 48.44% of the total number. This finding indicates that nearly half of all certified internal auditors are employed in companies operating outside the financial sector, including manufacturing, trade, service, and other non-financial companies. Such dominance may be explained by the increasing need to strengthen internal control systems, risk management, and corporate governance in private companies, particularly in a large number of enterprises that are legally required to establish internal auditing. In addition,

the requirements of foreign investors, international business standards, and the need for more efficient resource management contribute to the greater engagement of internal auditors within this sector.

The banking sector ranks second, with 47 certified internal auditors, representing 24.48% of the total number. The banking sector has traditionally been the area in which internal auditing is institutionally the most developed due to the high level of regulatory requirements, strict supervision, and a pronounced need for risk control. Through its regulatory framework, the National Bank of Serbia requires a developed system of internal control, risk management, and a functional internal audit system, which explains the significant presence of certified professionals in this sector. Although banks are subject to the strictest internal auditing requirements, their percentage share remains lower than that of the real sector, which may be explained by the smaller number of banking institutions compared to the total number of companies operating within the real sector.

The insurance sector accounts for 15 certified internal auditors, or 7.81%. Although insurance companies also operate in a highly regulated environment and are obliged to establish internal audit functions, their number is considerably lower compared to the banking sector. The reason for this may be the smaller number of insurance companies operating on the market, as well as differences in the organizational structure and size of these institutions.

It is also characteristic that, although there is a separate certification for internal auditors in the public sector, as many as 10 internal auditors operating within the public sector possess the “Certified Internal Auditor” designation. These data should be interpreted together with the data on “Certified Internal Auditors in the Public Sector” in order to draw adequate conclusions.

The leasing sector has the lowest representation, with only 1 certified internal auditor, accounting for 0.52% of the total number. Financial leasing providers are legally required to establish internal auditing in accordance with the Law on Financial Leasing, although they also have the possibility of outsourcing internal audit activities to other financial institutions. According to data from the National Bank of Serbia, there are currently 13 leasing companies operating in Serbia, one of which is undergoing liquidation proceedings. The figure of only one certified internal auditor within leasing companies should be interpreted with caution, considering that the register of issued certificates contains an additional 26 certificates without information regarding the sectors in which their holders are employed, as well as the fact that internal auditing may be externally outsourced.

Figure 4 presents the number and structure of issued certificates within the real sector.

Based on the available data, it can be observed that out of the total of 93 issued certificates in the field of internal auditing, the highest representation is recorded in auditing firms and companies from other areas of the real sector, where 45 certificates were identified in each category, together accounting for as many as 90 out of the total 93 certificates. Such a distribution indicates that the internal audit function is equally significant both in professional auditing organizations and in large business entities operating outside the financial sector.

Figure 4. Structure of certified internal auditors within the real sector



With regard to other areas of the real sector, internal auditing is most commonly represented in companies operating in industries of particular economic and regulatory importance, such as coffee production, the pharmaceutical industry, the oil and gas sector, as well as companies providing gambling and betting services. A common characteristic of these industries is the high level of business risk, complex business processes, significant financial turnover, and pronounced legal obligations regarding business control. For this reason, the legislative framework often requires the establishment of internal audit functions as a mechanism for monitoring business compliance, managing risks, and protecting company assets.

On the other hand, only three certified internal auditors are employed in accounting and consulting firms, representing a negligibly small share within the overall structure. Such findings may indicate that these firms primarily focus their core business activities on providing external services to clients, such as accounting advisory, tax planning, and consulting services, while the need for formally organized internal auditing within the firms themselves is significantly lower, as is the scope of internal audit services they provide to other companies.

CONCLUSION

Internal auditing in the Republic of Serbia is comprehensively regulated through a number of laws in accordance with the specific characteristics of the operations of different organizations. Through legal regulation, mandatory certification, and continuous professional education, the quality of internal auditing activities is improved. Only a properly established internal audit function is capable of responding to broad organizational requirements and fulfilling the purpose of its existence.

Internal auditing in the Republic of Serbia may be considered a relatively young profession compared to internal auditing professions that were intensively developed during the second half of the twentieth century. Although it is a young profession, it has demonstrated a significant growth trend. The growth trend in the cumulative number of certificates confirms the gradual strengthening of the internal audit function in Serbia, while variations in

annual values indicate the need for further improvement of professional education, regulatory support, and promotion of the importance of internal auditing within the modern business environment. According to the data of the Chamber of Authorized Auditors, there are currently 192 certified internal auditors in Serbia. Nearly half of the certificates relate to certified internal auditors employed in the real sector, while almost one quarter relates to the banking sector. Such a distribution also reflects the representation of organizations that are legally obliged to establish internal auditing in the Republic of Serbia.

The internal auditing profession is significantly improved through the continuous education and professional certification of internal auditors. Certification enables auditors to acquire specialized knowledge in the areas of risk management, internal controls, corporate governance, and compliance of business operations with regulations. Through professional training and development, internal auditors keep pace with changes in legislation, international standards, and modern auditing methods, thereby contributing to the higher quality performance of their duties. Professional certification simultaneously increases the credibility of and confidence in the work of internal auditing, both within organizations and among external stakeholders. The importance of internal auditors' competencies has also been recognized in the contemporary literature. According to Beke-Trivunac and Jeremić (1), the Institute of Internal Auditors issued the Global Practice Guide: Internal Audit Competency Framework in 2025, defining the competencies required for modern internal auditors according to different areas and functions. In this way, education and certification contribute to strengthening the role of internal auditing as an important instrument for improving business operations and organizational governance.

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Trendovi razvoja interne revizije po sektorima u Srbiji

Apstrakt: U radu su prezentovani trendovi razvoja interne revizije u Republici Srbiji. Sa teorijskog aspekta trendovi razvoja prezentovani su kroz komparativan prikaz osnovnih specifičnosti zakonskih regulativa koje se odnose na internu reviziju na nivou različitih organizacija iz realnog sektora, sektora bankarstva, osiguranja, javnog sektora i lizinga. U praktičnom delu prezentovana je analiza trenda izdatih sertifikata ovlašćenih internih revizora u periodu od 2008. do 2025. godine. Takođe, prezentovana je analiza sertifikata ovlašćenih internih revizora prema pojedinim oblastima u kojima su interni revizori zaposleni. Najveći broj ovlašćenih internih revizora zaposlen je u okviru realnog sektora, što odgovara i rasporedu organizacija prema obaveznosti uspostavljanja interne revizije.

Ključne reči: interna revizija, ovlašćeni interni revizor.

Digital Guardian of Finance: The Role of Artificial Intelligence (AI) in Banking and Fraud Detection

Abstract: *The rapid growth of digital transactions and the increasing complexity of financial fraud have intensified the need for advanced detection and prevention mechanisms in modern banking. Artificial intelligence (AI) has become a key transformative force, reshaping traditional control, auditing, and risk management systems by enabling real-time processing of large and complex datasets. This paper examines the role of AI in the banking sector, with a particular focus on its application in fraud detection and prevention. It analyzes the most commonly used AI techniques—machine learning models, anomaly detection systems, and predictive analytics—and evaluates their contribution to improving the accuracy, speed, and overall effectiveness of risk management processes. The paper also explores the integration of AI into banking operations, highlighting both practical benefits and implementation challenges, including algorithmic transparency, data quality, cybersecurity risks, regulatory compliance, and the growing reliance on automated decision-support tools. The findings indicate that AI significantly enhances the ability of financial institutions to identify suspicious activities at an early stage, reducing potential losses and strengthening system resilience. However, the full potential of AI can be realized only through a balanced approach that combines technological innovation with robust regulatory oversight and continuous human supervision.*

Keywords: *artificial intelligence (AI), banking, financial fraud, fraud detection and risk management*

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INTRODUCTION

The modern financial and banking sector is experiencing a rapid and ongoing digital transformation driven by the widespread adoption of advanced technologies such as artificial intelligence (AI), big data analytics, and automated decision-making systems. The increasing volume of digital transactions, expansion of online banking services, and growing interconnectedness of global financial markets have significantly improved operational efficiency, but have also intensified the complexity, scale, and sophistication of financial fraud.

Recent institutional reports from organizations such as ACFE, ECB, EBA, FSB, and BIS indicate that while the relative fraud rate in digital payment systems remains low, the absolute financial losses continue to be substantial due to the high transaction volume in modern financial ecosystems. At the same time, fraud schemes are becoming more technologically advanced, requiring financial institutions to move beyond traditional rule-based monitoring and adopt more adaptive and intelligent solutions.

In this context, artificial intelligence has emerged as a key enabling technology in the modernization of banking systems (Sharma, P., 2024), (Onyshchenko, O., Ternovska, V., & Kovalov, V., 2025). Its ability to process large and complex datasets, identify hidden patterns, and detect anomalies in real time has significantly enhanced the capabilities of financial institutions in fraud detection, risk management, and regulatory compliance. As evidenced in recent studies, AI is increasingly integrated into core banking operations, including transaction monitoring, customer behavior analysis, and predictive risk assessment.

However, despite its significant advantages, the implementation of AI in the financial sector also introduces important challenges. These include issues related to algorithmic transparency, data quality and availability, cybersecurity risks, regulatory compliance, and the growing reliance on automated decision-making systems. Furthermore, international regulatory bodies emphasize that the increasing complexity introduced by AI may amplify systemic risks if not properly governed.

The aim of this paper is to analyze the role of artificial intelligence in modern banking, with a particular focus on its application in the detection and prevention of financial fraud. The study also examines the associated challenges and limitations of AI implementation, highlighting the need for a balanced approach that integrates technological innovation with robust regulatory oversight and human supervision in order to ensure financial stability and system resilience.

METHODOLOGY AND LITERATURE REVIEW

This study adopts a qualitative research design, incorporating descriptive and comparative analytical methods. The primary objective of the methodology is to examine the role of artificial intelligence (AI) in the banking sector, with a specific focus on its application in the detection and prevention of financial fraud (Zainal, A., 2023).

The research is based on systematic content analysis of relevant academic literature, institutional reports, and industry publications related to AI applications in financial services. Particular attention is given to studies addressing machine learning techniques, anomaly detection systems, and predictive analytics models, which are widely applied in modern banking environments for fraud identification and risk assessment.

A comparative analytical approach is also applied to evaluate the effectiveness of traditional rule-based fraud detection systems in relation to modern AI-driven solutions (Chilukala, R., 2025), (Gentyala, R., 2023). This allows for the identification of key advantages and limitations of both approaches, particularly in terms of detection speed, accuracy, scalability, and their contribution to overall risk management efficiency.

The study is conceptual and theoretical in nature and does not include primary empirical data collection. Therefore, the findings are derived from the synthesis and interpretation of existing knowledge, supported by internationally recognized institutional sources and academic research.

Contemporary literature consistently emphasizes the increasing importance of artificial intelligence in the financial sector, particularly in banking operations and fraud detection systems (Johora, F. T., et. al., 20224) (Narender, M., & Anand, A. J., 2025). Recent studies indicate that AI-based solutions significantly outperform traditional rule-based systems in identifying suspicious transactions, primarily due to their ability to learn from large datasets and detect complex behavioral patterns.

Machine learning literature highlights the relevance of both supervised and unsupervised learning approaches, with a strong focus on anomaly detection techniques that are particularly effective in identifying unusual financial activities (Usmani, U. A., Happonen, A., & Watada, J., 2022, July), (Husnaningtyas, N., & Dewayanto, T., 2023). These models are widely implemented in banking systems to enhance transaction monitoring and improve fraud prevention mechanisms.

International financial institutions, including the Bank for International Settlements (BIS) and the Financial Stability Board (FSB), emphasize that while AI improves risk management efficiency and supports more advanced supervisory capabilities, it also introduces new challenges. These include increased system complexity, dependency on data quality, and issues related to transparency and explainability of algorithmic decision-making.

In addition, regulatory and academic discussions frequently refer to the “black box” problem in AI systems, where the decision-making process of complex models is difficult to interpret. This presents significant challenges for auditors, regulators, and compliance officers, particularly in highly regulated financial environments.

Overall, the literature suggests that artificial intelligence has a strong transformative potential in banking and financial fraud detection. However, its effective implementation requires a balanced framework that integrates technological innovation with regulatory oversight, ethical considerations, and human expertise.

DATA SOURCES

This study relies exclusively on secondary data obtained from credible academic, institutional, and industry sources related to artificial intelligence applications in banking and financial fraud detection. The selection of data sources was guided by relevance, reliability, and methodological robustness, with emphasis on recent publications from 2024 to 2026.

Firstly, statistical and analytical data on financial fraud and cybercrime were derived from internationally recognized institutions. Reports from the Association of Certified Fraud Examiners (ACFE), including *Report to the Nations* and the *Anti-Fraud Technology Benchmarking Report (2026)*, were used to provide global insights into fraud trends, financial losses, and the adoption of anti-fraud technologies. Additional cybersecurity-related insights were obtained from Europol, particularly the Internet Organised Crime Threat Assessment (IOCTA), which analyzes emerging cyber threats affecting financial institutions. Complementary data on payment fraud trends in the European financial system were sourced from reports by the European Central Bank (ECB).

Secondly, institutional reports related to financial stability, banking supervision, and digital transformation were obtained from the Bank for International Settlements (BIS) and the Financial Stability Board (FSB). These sources provide key insights into systemic risk, regulatory frameworks, and the impact of AI-driven innovation on global financial stability and central banking functions.

Thirdly, technical datasets relevant to machine learning and AI-based fraud detection were considered to support the theoretical analysis of algorithmic performance. These include publicly available datasets such as the Kaggle Credit Card Fraud Detection dataset and the IEEE-CIS Fraud Detection dataset, which are widely used for evaluating model accuracy, precision, recall, and anomaly detection capabilities in academic research.

Finally, industry reports from leading consulting and financial technology organizations, including Deloitte, PwC, and McKinsey & Company, were used to complement institutional data with practical insights into real-world AI implementation. These reports provide evidence on the effectiveness of AI systems in reducing fraud losses, improving transaction monitoring, and enhancing compliance with anti-money laundering (AML) regulations.

Overall, the integration of institutional reports, academic research, technical datasets, and industry analyses ensures a comprehensive and multi-perspective understanding of artificial intelligence applications in modern banking and financial fraud detection.

RESULTS OF THE RESEARCH

The analysis is based on data obtained from relevant international financial institutions and regulatory bodies covering the period 2024–2026. The selected sources provide a comprehensive overview of current developments in financial fraud, digital transformation in

banking, and the increasing role of artificial intelligence (AI) in enhancing risk management and fraud detection systems.

In recent years, the financial sector has undergone significant technological change driven by digitalization, data-driven decision-making, and the rapid adoption of AI-based solutions. These developments have not only improved operational efficiency but have also introduced new challenges related to cybersecurity, fraud sophistication, and regulatory compliance. As a result, institutions such as ACFE, ECB, EBA, BIS, and FSB have increasingly focused on evaluating both the benefits and risks associated with emerging technologies.

The following section presents the empirical findings derived from these institutional reports. The results are structured thematically, focusing on fraud prevention technologies, payment fraud trends in the European financial system, systemic risks and financial stability considerations, as well as the broader implications of AI and big data technologies in modern financial infrastructure.

According to the Association of Certified Fraud Examiners (2026) Anti-Fraud Technology Benchmarking Report, the adoption of advanced technologies has become a key factor in reducing financial losses caused by fraud. The findings indicate that artificial intelligence, machine learning, and data analytics are currently the most widely used technological solutions in fraud detection systems. In particular, more than 70% of large financial institutions have already implemented AI-based tools within their fraud prevention frameworks.

The report shown on Table 1 further highlights that the integration of AI technologies significantly improves the speed and efficiency of fraud detection, enabling financial institutions to identify suspicious activities in near real time and thereby reduce potential financial losses. However, despite these advantages, organizations continue to face important implementation challenges. The most frequently reported issues relate to the quality and availability of data, as well as difficulties in integrating AI systems with existing legacy banking infrastructures.

Table 1: Anti-fraud technologies and outcomes (ACFE, 2026)

Indicator	Result
Most used technologies	AI, machine learning, data analytics
Organizations using AI for fraud detection	Over 70% of large institutions
Effect of AI systems	Faster detection and reduced financial losses
Main challenge	Data quality and system integration

Source: *Author own elaboration, based on data*

The 2026 ACFE report confirms that AI is becoming a standard tool in fraud detection systems across financial institutions.

The joint report by the European Central Bank and the European Banking Authority (2024) on Table 2 provides detailed insights into payment fraud trends within the European Economic Area. The findings indicate that, although the relative fraud rate in

payment transactions remains very low at approximately 0.002%, the overall financial impact is still substantial due to the extremely high volume of digital payments processed across the EU. As a result, total annual losses from payment fraud are estimated at around €4.3 billion.

The report further shows that the most common form of fraud in the digital payment environment is card-not-present fraud, which primarily occurs in online transactions where physical card verification is not possible. In response to this growing risk, regulatory measures such as Strong Customer Authentication (SCA) have been implemented across the EU financial system. These measures have contributed to a noticeable reduction in certain types of fraud, particularly those involving unauthorized access and payment initiation.

Table 2: Payment fraud in the EU (ECB/EBA, 2024)

Indicator	Value
Total annual losses	~€4.3 billion
Fraud rate in transactions	~0.002%
Most common fraud type	Card-not-present (online fraud)
Effect of Strong Customer Authentication (SCA)	Reduction of certain fraud types

Source: *Author own elaboration, based on data.*

Overall, the ECB and EBA findings suggest that while regulatory frameworks have been effective in limiting fraud rates, the scale of digital transactions continues to make payment fraud a significant financial and operational risk for the banking sector.

The Financial Stability Board (2025) emphasizes the growing impact of digital transformation and AI-driven innovation on global financial stability. The report Table 3 shown highlights that the rapid expansion of artificial intelligence and fintech solutions is fundamentally reshaping the structure of the financial system. While these innovations significantly improve efficiency, speed, and accessibility of financial services, they also introduce new layers of complexity. Particularly, the findings indicate the increase of systemic risk as a result of greater technological interdependence and the growing reliance on automated decision-making systems. This heightened complexity requires stronger governance mechanisms, especially in the areas of artificial intelligence oversight and cybersecurity regulation.

Table 3: Key financial stability trends (FSB, 2025)

Area	Finding
Digital innovation	Rapid growth of AI and fintech solutions
Systemic risk	Increasing complexity of the financial system
Regulatory focus	AI governance and cybersecurity

Source: *Author own elaboration, based on data.*

Furthermore, the report stresses that financial stability in the modern environment is increasingly dependent on the ability of regulatory institutions to effectively monitor and control emerging technologies. Although AI contributes to improved efficiency and

risk management, it simultaneously increases exposure to systemic vulnerabilities if not properly regulated.

Overall, the FSB concludes that digital innovation represents both an opportunity and a challenge, requiring a balanced approach between technological advancement and regulatory control.

The report by the Bank for International Settlements (2024) stresses that central banks must prepare for the profound impact of artificial intelligence on the economy and the financial system. The findings indicate that AI is increasingly influencing core functions of the financial infrastructure, including monetary policy formulation, banking supervision, and market operations.

In particular, the report Table 4 highlights that artificial intelligence enhances data-driven decision-making processes within monetary policy by enabling more accurate and timely analysis of large and complex datasets. In the area of banking supervision, AI contributes to more efficient and automated risk monitoring, allowing regulators to detect potential vulnerabilities in financial institutions at an earlier stage.

Table 4: Impact of AI on the financial system (BIS, 2024)

Area	Impact of AI
Monetary policy	Enhanced data-driven decision-making
Banking supervision	Automated risk monitoring
Financial stability	Increased need for regulatory frameworks
Market efficiency	Faster information processing

Source: *Author own elaboration, based on data*

At the same time, the implementation of AI increases the need for robust regulatory frameworks, as the growing reliance on algorithmic decision-making introduces new forms of systemic risk. Additionally, AI improves market efficiency by enabling faster processing and dissemination of financial information, which can enhance liquidity and price discovery mechanisms.

Overall, the BIS emphasizes that artificial intelligence is fundamentally reshaping the structure and functioning of the financial system, and therefore requires continuous adaptation of regulatory and supervisory approaches.

The Bank for International Settlements (2025) Project Symbiosis explores the application of artificial intelligence and big data technologies in enhancing financial transparency and sustainability reporting. The Table 5 project highlights the growing role of advanced data analytics in improving the quality, accessibility, and reliability of financial and non-financial information used in decision-making processes.

In particular, the findings show that big data analytics significantly contribute to improved data transparency by enabling the processing and integration of large and complex datasets from multiple sources. Artificial intelligence models further enhance analytical capabilities by supporting more accurate and advanced risk prediction, allowing financial institutions and regulators to identify potential vulnerabilities at an earlier stage.

Additionally, the project emphasizes the relevance of AI in the context of environmental, social, and governance (ESG) frameworks, where it supports enhanced monitoring of supply chains and sustainability-related indicators. AI-driven systems also facilitate more efficient financial oversight through automated data evaluation processes, reducing the reliance on manual reporting and increasing overall efficiency. Project Symbiosis demonstrates that the application of artificial intelligence and big data extends beyond traditional banking functions, playing an increasingly important role in financial transparency, regulatory compliance, and sustainability reporting.

Table 5: AI and big data applications (Project Symbiosis, 2025)

Area	Result
Big data analytics	Improved data transparency
AI models	Advanced risk prediction capabilities
Sustainability (ESG)	Enhanced supply chain monitoring
Financial oversight	Automated data evaluation

Source: *Author own elaboration, based on data*

The findings show that the period 2024–2026 is characterized by the rapid expansion of artificial intelligence in the financial sector. While ACFE (2026) confirms the growing role of AI in fraud prevention, ECB/EBA (2024) highlight significant financial losses despite low fraud rates, and BIS (2024–2025) together with FSB (2025) emphasize systemic transformation and regulatory challenges.

Overall, AI significantly improves fraud detection and risk management capabilities, but it also increases the complexity of the financial system, requiring stronger regulatory oversight and continued human supervision.

DISCUSSION

The results of this study indicate that artificial intelligence (AI) is becoming a transformative force in the financial and banking sector, particularly in the area of fraud detection and risk management. Across all analyzed sources from 2024 to 2026, a consistent pattern emerges: AI technologies significantly enhance the speed, accuracy, and efficiency of detecting financial irregularities, while simultaneously reshaping the structure of financial systems and regulatory practices.

Findings from the Association of Certified Fraud Examiners (2026) demonstrate that AI, machine learning, and data analytics are increasingly integrated into fraud detection frameworks, with more than 70% of large institutions already using such technologies. This confirms that AI is no longer an experimental tool but has become a standard component of modern anti-fraud systems. However, the same findings highlight persistent challenges related to data quality and system integration, suggesting that technological adoption alone is not sufficient without proper infrastructure and governance.

Similarly, data from the joint report of the European Central Bank and the European Banking Authority (2024) show that although fraud rates in the European payment system are relatively low, the total financial impact remains substantial due to the high volume of digital transactions. This highlights a key paradox of digital banking: increased efficiency and accessibility are accompanied by expanded exposure to cyber-enabled fraud risks. The effectiveness of Strong Customer Authentication (SCA) demonstrates that regulatory measures can reduce certain types of fraud, but they cannot fully eliminate emerging threats.

The analysis of the Financial Stability Board (2025) further expands the discussion by emphasizing that digital transformation and AI adoption increase systemic complexity within the financial system. While AI improves operational efficiency, it also introduces new forms of interconnected risk, requiring enhanced governance structures. This indicates that financial stability is increasingly dependent not only on economic factors but also on technological resilience and regulatory adaptability.

The report from the Bank for International Settlements (2024) reinforces this perspective by showing that AI is reshaping core financial functions, including monetary policy, banking supervision, and market efficiency. The increasing reliance on data-driven decision-making improves analytical precision, but also raises concerns regarding transparency, accountability, and algorithmic risk. These findings suggest that central banks and regulators must continuously adapt their supervisory frameworks to keep pace with technological change.

Furthermore, Project Symbiosis (BIS, 2025) extends the scope of AI application beyond traditional banking functions, demonstrating its relevance in sustainability reporting, ESG monitoring, and financial transparency. This indicates that AI is evolving into a cross-sectoral technology with implications not only for financial performance but also for broader economic and environmental governance.

Overall, the findings suggest that AI presents a dual effect: on one hand, it significantly strengthens fraud detection, risk management, and financial efficiency; on the other hand, it increases systemic complexity and regulatory challenges. This duality highlights the necessity of a balanced approach that combines technological innovation with strong regulatory oversight and human supervision.

While AI is clearly a key driver of innovation in modern banking, its successful implementation depends on addressing critical issues such as data quality, model transparency, cybersecurity risks, and regulatory coordination.

CONCLUSION

This study analyzed the growing role of artificial intelligence (AI) in the financial and banking sector, with a particular focus on fraud detection, risk management, and financial stability. Based on secondary data from leading international institutions covering the period 2024–2026, the research confirms that AI has become a key technological driver of transformation in modern banking systems.

The findings show that AI significantly improves the efficiency and accuracy of fraud detection processes by enabling real-time data analysis, pattern recognition, and anomaly detection. Evidence from the Association of Certified Fraud Examiners (2026) indicates widespread adoption of AI-based tools across financial institutions, while data from the European Central Bank and the European Banking Authority (2024) confirm that digital payment systems, although highly efficient, remain exposed to substantial fraud-related financial losses.

At the same time, the analysis highlights that the integration of AI into the financial system introduces new challenges. Reports from the Financial Stability Board (2025) and the Bank for International Settlements (2024–2025) emphasize increased systemic complexity, regulatory pressure, and the need for enhanced governance frameworks. Issues such as algorithmic transparency, data quality, cybersecurity risks, and dependency on automated decision-making systems remain key limitations in the full adoption of AI technologies.

Furthermore, Project Symbiosis (BIS, 2025) demonstrates that the application of AI extends beyond traditional banking functions, contributing to improved financial transparency, sustainability reporting, and ESG monitoring. This confirms that AI is evolving into a cross-sectoral technology with broad economic and regulatory implications.

Overall, it can be concluded that artificial intelligence represents a fundamental innovation in the financial sector, offering significant benefits in terms of efficiency, risk reduction, and fraud prevention. However, its successful and sustainable implementation requires a balanced approach that integrates technological advancement with strong regulatory oversight, institutional coordination, and continuous human supervision.

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Digitalni čuvar finansija: Uloga veštačke inteligencije (AI) u bankarstvu i otkrivanju prevara

Apstrakt: Brzi rast digitalnih transakcija i sve veća složenost finansijskih prevara povećali su potrebu za naprednim mehanizmima za njihovo otkrivanje i sprečavanje u savremenom bankarstvu. Veštačka inteligencija (VI) postala je ključna transformativna tehnologija koja menja tradicionalne sisteme kontrole, revizije i upravljanja rizicima, omogućavajući obradu velikih i kompleksnih skupova podataka u realnom vremenu. Ovaj rad ispituje ulogu VI u bankarskom sektoru, sa posebnim fokusom na njenu primenu u detekciji i prevenciji prevara. Analiziraju se najčešće korišćene tehnike VI — modeli mašinskog učenja, sistemi za detekciju anomalija i prediktivna analitika — i ocenjuje se njihov doprinos unapređenju tačnosti, brzine i efikasnosti procesa upravljanja rizicima. Rad takođe razmatra integraciju VI u bankarske operacije, ističući praktične koristi, ali i izazove primene, uključujući transparentnost algoritama, kvalitet podataka, sajber-bezbednosne rizike, regulatornu usklađenost i rastuću zavisnost od automatizovanih sistema podrške odlučivanju. Nalazi pokazuju da VI značajno poboljšava sposobnost finansijskih institucija da rano identifikuju sumnjive aktivnosti, smanjujući potencijalne gubitke i jačajući otpornost sistema. Ipak, njen puni potencijal može se ostvariti samo kroz uravnotežen pristup koji kombinuje tehnološke inovacije, adekvatan regulatorni nadzor i kontinuirani ljudski nadzor.

Ključne reči: veštačka inteligencija (AI), bankarstvo, finansijske prevare, detekcija prevara, upravljanje rizicima.

Integration of Emerging Technologies in Financial Reporting and Auditing

Abstract: *This paper analyzes how digital innovations, including blockchain, artificial intelligence (AI), fintech solutions, and big data analytics, contribute to enhancing transparency, efficiency, reliability, and accuracy in financial reporting and auditing processes. The research is based on secondary data analysis, comparative methodology, and an exploratory comparative correlation framework derived from relevant scientific literature, institutional reports, and international databases related to digital transformation in accounting and auditing systems. The analysis focuses on conceptual relationships between digital technology adoption, audit quality, financial reporting efficiency, and financial transparency. The comparative findings indicate strong positive relationships between the implementation of emerging technologies and improvements in auditing effectiveness, financial transparency, and reporting efficiency. The study also identifies important challenges associated with digital transformation, including insufficient technological infrastructure, limited institutional readiness, regulatory constraints, and inadequate digital competencies among financial professionals. The findings provide implications for future research, institutional development, and the modernization of auditing and financial reporting systems.*

Keywords: *financial reporting, auditing, blockchain, artificial intelligence, fintech*

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INTRODUCTION

Financial reporting and auditing play a crucial role in ensuring transparency, accountability, and efficiency in modern business systems (IAASB, 2020). In today's increasingly digitalized business environment, these processes are undergoing significant transformation due to emerging technologies that fundamentally reshape how financial information is recorded, processed, analyzed, and verified across organizational systems (Moll & Yigitbasioğlu, 2019). This transformation is particularly evident in the growing shift from traditional, manual accounting procedures toward automated, data-driven, and real-time reporting systems that improve both speed and reliability of financial information. The agricultural sector represents a specific and highly complex environment where financial reporting is often exposed to high levels of uncertainty, seasonality effects, and information asymmetry between producers, financial institutions, and external stakeholders. In such conditions, auditing becomes essential not only for ensuring the credibility of financial statements but also for reducing perceived risk and supporting informed investment and credit decisions (OECD, 2020). Additionally, agribusiness enterprises are particularly vulnerable to external shocks such as climate variability, market price fluctuations, and supply chain disruptions, which further increases the importance of reliable financial reporting systems. These challenges are closely linked to broader sustainability and environmental management issues, which are increasingly recognized as critical factors in rural and tourism-based economic systems (Đurić et al., 2025). Emerging technologies such as blockchain, artificial intelligence (AI), and fintech solutions are increasingly integrated into modern accounting and auditing systems, enabling a shift toward more transparent and efficient financial ecosystems. Blockchain technology ensures immutable, time-stamped, and transparent transaction records, significantly reducing the risk of manipulation and enhancing traceability throughout the financial reporting chain (Dai & Vasarhelyi, 2017). Artificial intelligence contributes to audit transformation by improving efficiency, enabling predictive analytics, and supporting automated anomaly detection in large and complex datasets, which enhances both audit quality and coverage (Issa et al., 2016). Fintech tools further strengthen financial reporting systems by enabling real-time data processing, improving access to financial services, and enhancing the overall speed and accuracy of financial monitoring and reporting processes (Demirgüç-Kunt et al., 2018). Together, these technologies contribute to the development of continuous auditing and real-time assurance systems, which significantly improve decision-making processes for managers, investors, and regulators. They also facilitate better integration between financial reporting systems and operational data, allowing for more dynamic and responsive financial management practices in both corporate and agribusiness environments.

However, despite global technological advancements and increasing adoption in developed economies, the implementation of these technologies in transition economies remains limited. This limitation is primarily driven by infrastructural constraints, insufficient institutional readiness, and weak regulatory frameworks that are not fully adapted

to digital financial ecosystems (OECD, 2020; Moll & Yigitbasioglu, 2019). In addition, low levels of digital literacy among stakeholders and limited access to advanced technological infrastructure further slow down the adoption process, particularly in rural and less developed regions where agribusiness activities are concentrated. These characteristics are particularly evident in rural and agribusiness systems in Serbia, where organizational, human resource, and innovation challenges significantly affect business performance and reporting practices (Ilić et al., 2022; Ilić & Đukić, 2020). The paper does not analyze individual company financial statements but rather examines the broader implications of emerging technologies for financial reporting and auditing systems in agribusiness enterprises in Serbia.

LITERATURE REVIEW

The literature on digital transformation in accounting and auditing highlights a fundamental shift from traditional manual systems toward automated, data-driven, and continuously operating digital environments (Appelbaum et al., 2017). This transition is not only technological, but also organizational, as it changes the nature of auditing procedures, professional judgment, and the role of accountants in increasingly complex information systems.

Blockchain technology is widely recognized as one of the most disruptive innovations in financial reporting and auditing, as it enhances transparency, traceability, and trust in financial reporting systems (Dai & Vasarhelyi, 2017; Schmitz & Leoni, 2019). By enabling decentralized and immutable record-keeping, blockchain reduces dependency on intermediaries, minimizes the risk of data manipulation, and strengthens the overall integrity of financial information. Recent studies also emphasize its potential for enabling continuous audit trails and real-time verification of transactions (Coyné & McMickle, 2017; Casino et al., 2019).

Artificial intelligence is increasingly applied in audit analytics, risk assessment, and fraud detection processes. AI-based systems enable auditors to process and analyze large and complex datasets more efficiently than traditional methods, while also improving the accuracy of anomaly detection and predictive risk modeling (Issa et al., 2016; Vasarhelyi et al., 2015). In addition, machine learning algorithms are increasingly used to identify patterns in financial data that may indicate fraud or reporting inconsistencies, thereby enhancing audit quality and effectiveness (Alles, 2015; Sun, Sun, & Strang, 2018). Fintech innovation contributes significantly to improved financial inclusion, real-time data processing, and broader access to financial services, particularly for small and medium-sized enterprises (SMEs) that often face barriers in traditional financial systems (Demirgüç-Kunt et al., 2018; Belleflamme et al., 2014). Fintech platforms also facilitate faster credit scoring, automated lending decisions, and improved integration between financial institutions and clients, thereby reducing transaction costs and increasing efficiency in financial intermediation (Gomber et al., 2018). In the context of agribusiness SMEs, innovation performance and project-based management approaches play a crucial role in improving

competitiveness and adaptability to modern financial and technological trends (Ilić et al., 2024). In addition, studies focusing on rural development and tourism highlight the importance of human resource management, user satisfaction, and sustainable project organization in rural regions, which directly influences financial performance and reporting practices in agribusiness (Ilić et al., 2025; Ilić et al., 2022). Big data analytics further transforms auditing by enabling predictive models, continuous auditing approaches, and enhanced decision-support systems in financial reporting environments (Appelbaum et al., 2017; Vasarhelyi et al., 2015). Sustainability challenges in rural and tourism-based destinations further emphasize the need for integrated management approaches that combine environmental protection, economic performance, and stakeholder satisfaction. Recent studies highlight that inadequate sustainability management practices and weak institutional support represent major barriers to long-term development in local economies (Đurić et al., 2025). Through the integration of large-scale structured and unstructured data, auditors are able to move from periodic audits toward real-time assurance models, which significantly improves the timeliness and reliability of financial oversight. This shift also supports a more proactive approach to risk management and compliance monitoring in complex organizational environments (Joksimović et al., 2026).

METHODOLOGY

The research is based on secondary data analysis and a comparative methodological approach, drawing on relevant academic literature, institutional reports, and international databases. The study examines global practices related to the digitalization of financial reporting and auditing, with particular emphasis on emerging technologies such as blockchain, artificial intelligence (AI), and fintech solutions (OECD, 2020). These sources provide both the theoretical and empirical foundation for understanding how digital transformation reshapes accounting and auditing systems in developed and transition economies. The empirical segment of the research relies on secondary data collected from international institutional reports, scientific studies, and comparative indicators concerning digital transformation in accounting and auditing systems. The analyzed sample consists of comparative findings and indicators extracted from OECD reports, World Bank databases, IAASB publications, and relevant scientific literature addressing the implementation of blockchain technologies, artificial intelligence, fintech solutions, audit quality, financial transparency, and financial reporting efficiency in agribusiness and SME sectors. Serbia is used as the contextual framework for examining the opportunities and limitations of digital transformation within agribusiness financial reporting and auditing systems in transition economies.

The research applies a descriptive and analytical approach in order to evaluate the impact of blockchain, AI, and fintech solutions on audit quality, financial reporting efficiency, transparency of financial information, risk management, and decision-making

processes within organizations (Kokina et al., 2017; Dai & Vasarhelyi, 2017). Special attention is given to the relationship between technological adoption and the modernization of financial control mechanisms in contemporary auditing environments.

In addition to qualitative analysis, the study incorporates a comparative correlation analysis of key variables associated with digital transformation in financial reporting and auditing systems. The examined variables include the level of adoption of digital technologies, financial reporting efficiency, audit quality, and financial transparency. The variable “digital technologies adoption” refers to the implementation level of blockchain systems, artificial intelligence tools, fintech platforms, and digital accounting solutions identified in previous empirical studies and institutional reports. “Financial reporting efficiency” includes indicators related to reporting speed, timeliness, data accuracy, and the reduction of manual processing activities. “Audit quality” refers to the reliability, traceability, accuracy, and effectiveness of audit procedures supported by digital technologies, while “financial transparency” includes the availability, consistency, credibility, and traceability of financial information provided to stakeholders. The selected variables were operationalized through qualitative scaling and comparative evaluation of technological adoption and financial reporting performance indicators identified in previous studies. Since the research has an exploratory character and relies on secondary comparative data rather than primary empirical surveys, the comparative correlation analysis is primarily used to assess the direction and intensity of relationships between observed variables and to identify conceptual associations that support the theoretical framework of the study, rather than to establish causal relationships. The methodological approach enables the integration of existing theoretical knowledge with comparative indicators derived from secondary sources, providing a broader understanding of the influence of technological innovation on financial reporting and auditing practices in agribusiness systems. Such an approach is particularly suitable for exploratory and theoretical research focused on the transformation of auditing in conditions of rapid digitalization and technological development.

- HI:** There is a positive relationship between the adoption of emerging digital technologies (blockchain, AI, and fintech) and the improvement of audit quality and financial reporting efficiency in agribusiness enterprises.

Correlation Analysis

Sample and Data Sources

The research sample is not based on individual company financial statements, but on comparative secondary indicators and findings derived from previously published scientific studies, institutional reports, and international databases related to digital transformation in accounting and auditing. The analyzed sources include OECD reports, IAASB publications, World Bank databases, and scientific studies published in internationally indexed

journals during the period 2015–2025. The selected literature and reports were chosen according to their relevance to financial reporting digitalization, auditing modernization, blockchain implementation, artificial intelligence in auditing, and fintech development in agribusiness and SME sectors.

Serbia is used as a contextual framework for discussing the challenges and opportunities of digital transformation in agribusiness financial reporting and auditing systems within transition economies. In order to examine the relationship between digital transformation factors and audit and financial reporting quality, a comparative correlation analysis was conducted. The analysis focuses on the interdependence between key variables, including the level of adoption of emerging technologies (blockchain, artificial intelligence, and fintech solutions), financial reporting efficiency, audit quality, and financial transparency. The objective of this analysis is to determine whether and to what extent technological advancement is associated with improvements in financial reporting and auditing outcomes. A conceptual comparative correlation framework, based on findings reported in previous empirical and institutional studies, was used to assess the direction and intensity of relationships between the selected variables. This approach is commonly applied in exploratory studies dealing with digital transformation, accounting modernization, and technology-based auditing environments (Appelbaum et al., 2017; Vasarhelyi et al., 2015). The analysis is based on secondary and comparative data derived from relevant academic literature, international institutional reports, and existing empirical studies covering the period of rapid technological development in accounting and auditing systems. By relying on secondary sources, the study enables a broader comparative perspective across different institutional contexts, particularly between developed economies and transition countries (OECD, 2020). The purpose of the comparative correlation analysis is not only to identify conceptual relationships between variables, but also to support the theoretical assumption that digital transformation contributes to improved audit quality, increased transparency, and greater efficiency in financial reporting systems.

This approach allows for the integration of comparative reasoning with conceptual analysis, which is particularly relevant in exploratory studies of emerging technologies in auditing. The conducted comparative correlation analysis examines the relationships between digital transformation factors and key indicators of financial reporting and auditing quality. In line with the methodological framework presented earlier, the analysis focuses on four core variables: digital technologies adoption, financial reporting efficiency, audit quality, and financial transparency. The results of the comparative correlation framework are presented in Table 1. The matrix shows strong positive relationships between all observed variables, indicating that higher levels of digital technology adoption are consistently associated with improvements in financial reporting and auditing outcomes.

The strongest relationship is observed between digital technologies and audit quality ($r = 0.88$), indicating that the adoption of emerging technologies such as blockchain, artificial intelligence, and fintech solutions is conceptually associated with improvements in the

accuracy, reliability, and effectiveness of audit processes. A very strong positive relationship is also identified between digital technologies and financial transparency ($r = 0.86$), suggesting that increased technological adoption contributes to greater openness and traceability of financial information. Financial reporting efficiency is likewise strongly associated with digital technologies ($r = 0.84$), confirming that digital transformation contributes to faster, more accurate, and more timely financial reporting processes. Additionally, audit quality and financial transparency demonstrate a strong mutual relationship ($r = 0.85$), indicating that improvements in audit processes contribute to more transparent financial reporting systems. Overall, the comparative correlation framework confirms a consistent pattern of positive relationships among all observed variables, supporting the assumption that digital transformation positively influences both financial reporting efficiency and audit quality in contemporary business environments.

Table 1. Comparative correlation framework based on secondary literature findings

Variables	Digital technologies	Financial reporting efficiency	Audit quality	Financial transparency
Digital technologies	1.00	0.84	0.88	0.86
Financial reporting efficiency	0.84	1.00	0.81	0.79
Audit quality	0.88	0.81	1.00	0.85
Financial transparency	0.86	0.79	0.85	1.00

Source: Authors' conceptual synthesis based on comparative findings from relevant scientific literature and institutional reports (Appelbaum et al., 2017; Vasarhelyi et al., 2015; OECD, 2020; Dai & Vasarhelyi, 2017)

RESULTS

The comparative analysis of relevant scientific literature and institutional reports indicates that blockchain technology contributes significantly to improving transparency and traceability of financial transactions, thereby reducing the risk of manipulation and reporting errors (Dai & Vasarhelyi, 2017; Schmitz & Leoni, 2019). Artificial intelligence contributes to enhanced audit efficiency through automated data analysis, anomaly detection, and predictive analytical capabilities, which improve audit accuracy and reduce manual workload (Issa et al., 2016; Appelbaum et al., 2017). Fintech solutions are associated with improved speed, accessibility, and real-time monitoring of financial information, enabling more efficient financial reporting and decision-making processes (Demirgüç-Kunt et al., 2018).

The comparative correlation framework indicates strong positive relationships between digital technologies and key indicators of financial reporting and auditing performance. The strongest relationship is identified between digital technologies and audit quality ($r = 0.88$),

suggesting that the adoption of technologies such as blockchain and artificial intelligence is associated with improvements in audit accuracy, reliability, and procedural effectiveness. A strong positive relationship is also observed between digital technologies and financial reporting efficiency ($r = 0.84$), indicating that digital transformation contributes to faster and more accurate financial reporting processes. Furthermore, financial transparency demonstrates strong relationships with both audit quality ($r = 0.85$) and digital technologies ($r = 0.86$), confirming that technological adoption contributes to greater transparency and traceability of financial information. Overall, the comparative findings support the assumption that emerging technologies play a significant role in improving auditing processes and financial reporting quality in contemporary business environments.

DISCUSSION

The findings of this exploratory and comparative analysis indicate that emerging technologies are reshaping auditing practices and financial reporting systems by transforming traditional, periodic, and manual procedures into more continuous, automated, and data-driven processes. The reviewed literature and comparative findings suggest that blockchain, artificial intelligence (AI), and fintech solutions collectively contribute to improved audit quality, enhanced financial transparency, and increased reliability of financial reporting systems (Dai & Vasarhelyi, 2017; Issa et al., 2016). These technologies enable improved traceability of financial transactions, support real-time data verification, and reduce the likelihood of human error and data manipulation, thereby strengthening the credibility of financial information provided to stakeholders. In addition, the integration of these technologies supports the development of continuous auditing systems, where financial information can be monitored more efficiently and in shorter reporting intervals. This transformation represents a significant evolution in the auditing profession, as auditors increasingly rely on advanced analytics, automated systems, and technology-supported decision-making tools in audit procedures. The analysis is particularly relevant in the context of agribusiness systems, where innovation management, organizational efficiency, and strategic project management significantly influence business transparency and financial performance (Ilić et al., 2019; Ilić et al., 2023).

However, despite the identified advantages, the comparative findings also indicate several important limitations and implementation challenges, particularly in developing and transition economies. These challenges include insufficient digital infrastructure, limited regulatory adaptation, inadequate institutional readiness, and insufficient digital competencies among accounting and auditing professionals (OECD, 2020; Moll & Yigitbasioglu, 2019). Such limitations slow down the adoption of advanced digital technologies and contribute to disparities between developed and transition economies in terms of financial reporting modernization and audit innovation. Furthermore, sustainability and organizational challenges in rural regions additionally complicate the implementation of modern

financial and auditing systems, as economic, environmental, and institutional factors must be addressed simultaneously (Đurić et al., 2025). The reviewed studies also suggest that the successful adoption of digital audit technologies depends significantly on institutional support, organizational capacity, and the overall level of digital maturity within organizations (Appelbaum et al., 2017; Vasarhelyi et al., 2015). Organizations with higher levels of technological integration appear more capable of utilizing advanced auditing technologies, while less digitally developed entities often face barriers related to implementation costs, resistance to organizational change, and a lack of specialized personnel. Similar challenges are evident in rural regions of Serbia, where investment capacity, institutional support, and sustainable development remain important determinants of business modernization and digital transformation (Stojanović et al., 2017; Ilić et al., 2020). Overall, the findings suggest that emerging technologies offer substantial potential for improving audit effectiveness and financial reporting quality, but their successful implementation depends on broader institutional, organizational, and technological conditions within the business environment.

CONCLUSION

The findings of this exploratory and comparative study indicate that emerging digital technologies have an increasingly important role in the modernization of financial reporting and auditing systems, particularly within agribusiness environments and transition economies. The conducted analysis suggests that blockchain technology contributes to improved transparency, traceability, and reliability of financial transactions, while artificial intelligence enhances auditing efficiency through automated data processing, anomaly detection, and advanced analytical capabilities. In addition, fintech solutions support faster financial reporting processes, improved accessibility of financial information, and more efficient financial monitoring and decision-making practices. The integration of these technologies contributes to the transformation of traditional auditing and accounting systems into more automated, continuous, and data-driven models of financial management and assurance. Such transformation improves the quality, consistency, and timeliness of financial reporting processes while simultaneously strengthening transparency and reducing operational and informational risks within financial systems. The comparative findings further indicate that digital transformation has the potential to significantly improve audit quality, financial transparency, and reporting efficiency, particularly in business environments characterized by increased market uncertainty, complex operational structures, and growing demands for accountability and real-time financial information. In this context, the modernization of financial reporting and auditing systems represents an important factor for strengthening business stability, improving investor confidence, and enhancing the overall quality of financial governance. For transition economies such as Serbia, the implementation of emerging technologies in auditing and financial reporting

requires a coordinated and long-term development approach. The successful adoption of digital technologies depends not only on technological availability but also on the level of institutional readiness, regulatory adaptation, organizational capacity, and professional competencies within accounting and auditing systems. Therefore, strengthening digital infrastructure, improving legal and regulatory frameworks, and investing in education, professional training, and digital competencies of financial professionals represent essential prerequisites for successful digital transformation.

The study indicates that the implementation of advanced digital technologies in agribusiness systems remains associated with numerous challenges, including insufficient technological infrastructure, limited financial resources, uneven digital development, and the lack of unified institutional databases and standardized digital reporting practices. These limitations are particularly evident in rural and less developed regions, where organizational and technological capacities are often insufficient for rapid digital integration. This study also has several important methodological limitations. The research is based primarily on secondary data, comparative literature analysis, and conceptual comparative indicators rather than on primary empirical data collected directly from agribusiness enterprises in Serbia. Consequently, the findings should be interpreted as exploratory and indicative rather than fully generalizable. In addition, the comparative correlation framework used in the analysis is intended to identify conceptual relationships between variables and does not establish direct causal relationships between technological adoption and auditing performance indicators. Despite these limitations, the study contributes to the existing literature by integrating perspectives from financial reporting, auditing, digital transformation, and agribusiness management within the context of a transition economy. The paper additionally highlights the growing importance of digital technologies in improving financial governance, operational efficiency, and transparency in modern business systems. Future research should focus on conducting primary empirical studies based on company-level datasets, surveys, and advanced quantitative methods in order to provide more precise measurements of the impact of emerging technologies on financial reporting and auditing performance in agribusiness enterprises. Further studies may also examine differences in digital adoption between rural and urban business environments, as well as the role of institutional support and regulatory harmonization in accelerating digital transformation processes within transition economies.

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Integracija novih tehnologija u sisteme finansijskog izveštavanja i revizije

Apstrakt: *U radu se ispituje kako digitalne inovacije, uključujući blokčejn, veštačku inteligenciju (AI), fintech rešenja i analitiku velikih podataka, doprinose poboljšanju transparentnosti, efikasnosti, pouzdanosti i tačnosti u procesima finansijskog izveštavanja i revizije. Istraživanje se zasniva na sekundarnoj analizi podataka, komparativnoj metodologiji i istraživačkom komparativnom korelacionom okviru, koji je izveden iz relevantne naučne literature, institucionalnih izveštaja i međunarodnih baza podataka vezanih za digitalnu transformaciju u računovodstvenim i revizorskim sistemima. Analiza se fokusira na konceptualne odnose između usvajanja digitalne tehnologije, kvaliteta revizije, efikasnosti finansijskog izveštavanja i finansijske transparentnosti. Usporedni rezultati ukazuju na snažne pozitivne veze između implementacije novih tehnologija i poboljšanja u efektivnosti revizije, finansijske transparentnosti i efikasnosti izveštavanja. Rad takođe identifikuje važne izazove povezane sa digitalnom transformacijom, uključujući nedovoljnu tehnološku infrastrukturu, ograničenu institucionalnu spremnost, regulatorna ograničenja i neadekvatne digitalne kompetencije među finansijskim profesionalcima. Nalazi pružaju implikacije za buduća istraživanja, institucionalni razvoj i modernizaciju sistema revizije i finansijskog izveštavanja.*

Ključne reči: *finansijsko izveštavanje, revizija, blokčejn, veštačka inteligencija, fintech.*

Exports of Agricultural Products as a Factor of Macroeconomic Stability in Serbia

Abstract: *This paper examines agricultural exports as a driver of Serbia's macroeconomic stability, focusing on the European Union (EU) as the main market, export structure, and gross value added (GVA). Results confirm agriculture's importance for foreign trade and GDP, but also highlight challenges such as volatility, low share of processed products, and strict EU standards. Modernization, higher processing levels, and integration into global value chains are essential for sustainable growth.*

Keywords: *agriculture, export, macroeconomic stability, European Union, gross value added, competitiveness*

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INTRODUCTION

Agriculture represents important sectors of the Serbian economy and plays a significant role in the country's economic development. Favorable natural conditions, fertile land, and a long tradition in food production enable the production of various agricultural products with considerable export potential. Therefore, the agricultural sector represents an important part of the national economy and a significant factor in the development of rural areas (Kovačević and Jeločnik, 2022).

In the context of globalization, international trade has become increasingly important for the development of national economies. Exports represent one of the key factors of economic growth, as they contribute to increased foreign exchange earnings, strengthening the competitiveness of the domestic economy, and improving integration into international economic flows. In this context, the export of agricultural products represents an important segment of Serbia's foreign trade and a significant source of foreign exchange inflows (EU in Serbia, 2025).

Agri-food products account for a significant share of Serbia's total exports, with cereals, fruits, and food industry products holding a particularly important position. Among the most important export products are maize, wheat, raspberries, and apples, which occupy a significant place on international markets. Through the export of these products, the agricultural sector contributes to reducing the trade deficit and strengthening the stability of the country's foreign trade balance.

However, despite its significant export potential, the Serbian agricultural sector also faces numerous challenges. The most important problems include a low level of product processing, underdeveloped logistics, farm fragmentation, and limited capacities for placing higher value-added products on international markets. As a result, a large share of exports still consists of primary agricultural products, while products with a higher level of processing have a smaller share in the overall export structure.

The competitiveness of agricultural products on international markets depends on various economic and institutional factors, such as product quality, production costs, logistics, and food safety standards. In modern international trade, marketing, product branding, and the development of e-commerce are becoming increasingly important, as they facilitate easier access to international markets and strengthen the market position of domestic products.

One of the important goals of Serbia's economic policy is the development of the agricultural sector and the increase of agricultural exports. The Draft Strategy for Agricultural and Rural Development of the Republic of Serbia for the period 2026–2034 envisages modernization of production, strengthening competitiveness, and increasing exports as important goals of agricultural development (Ministry of Agriculture, Forestry and Water Management, 2026).

The aim of this paper is to analyze the importance of agricultural exports for the macroeconomic stability of Serbia, as well as to examine the key factors influencing the competitiveness of the domestic agricultural sector on international markets.

RESEARCH METHODOLOGY

The theoretical part of the research is based on the study of literature related to international trade, agricultural economics, and the competitiveness of the agricultural sector.

The empirical part of the paper is based on the analysis of secondary statistical data obtained from relevant national and international sources, including publications of state institutions, reports on agricultural development, and databases related to foreign trade. The analyzed data include the value of agricultural exports, the export structure by product groups, and the most important export markets.

Descriptive statistical and comparative analysis methods were applied in order to identify the main trends in the export of agricultural products from Serbia during the observed period. The data are presented in the form of tables and figures to provide a clearer presentation of the research results.

The paper also applies the content analysis method, which includes the examination of relevant professional papers and strategic documents in the fields of agriculture and international trade. The combination of theoretical and empirical analysis enables the formulation of relevant conclusions regarding the importance of agricultural exports for the macroeconomic stability of Serbia.

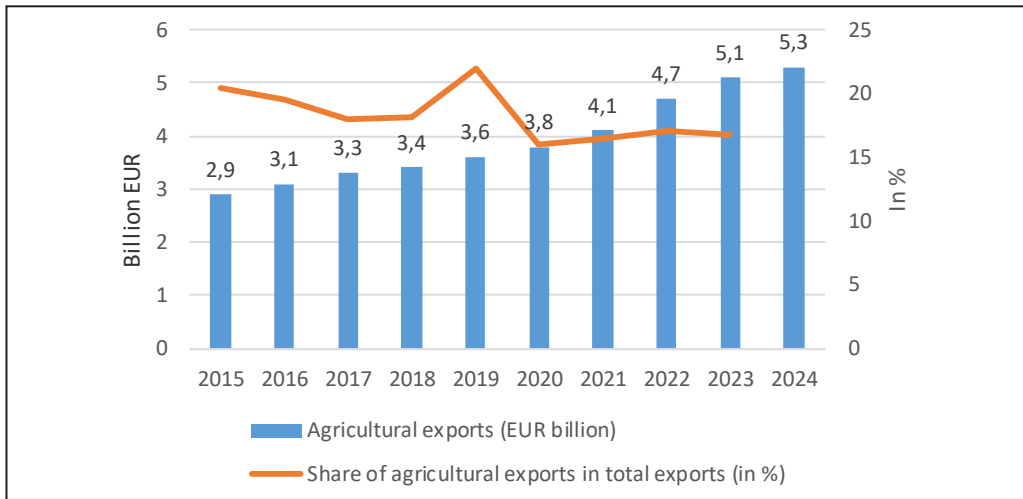
ANALYSIS OF THE SERBIAN EXPORTS OF AGRICULTURAL PRODUCTS

The agri-food sector plays a significant role in the country's overall exports and contributes to the stability of the foreign trade balance (Kovačević and Jeločnik, 2022). The movement of agricultural exports in Serbia over the period 2015–2024 is presented in the following Figure 1.

A continuous upward trend in the Serbian export of agricultural products can be observed throughout the entire period under review (Figure 1). Exports increased from approximately EUR 2.9 billion in 2015 to around EUR 5.3 billion in 2024, indicating an almost twofold increase in export values. The growth was gradual between 2015 and 2020 (from EUR 2.9 to EUR 3.8 billion), while its dynamics accelerated after 2020, particularly in the period between 2021 and 2022 (from EUR 4.1 to EUR 4.7 billion). The highest export values were recorded in the last three years of the analyzed period (2022–2024), suggesting a strengthening of the export performance of Serbia's agricultural sector. Overall, the trend is steadily upward, without significant declines, indicating increasing competitiveness and the growing importance of the agricultural sector in Serbia's foreign trade.

To assess the importance of the agricultural sector for Serbia's overall foreign trade and its contribution to the country's macroeconomic stability, it is also necessary to analyze the share of agricultural exports in Serbia's total exports. Data on the share of agricultural exports in Serbia's total exports during the period from 2015 to 2024 are presented in Figure 1.

Figure 1. Agricultural Export Trends in Serbia (2015–2024)



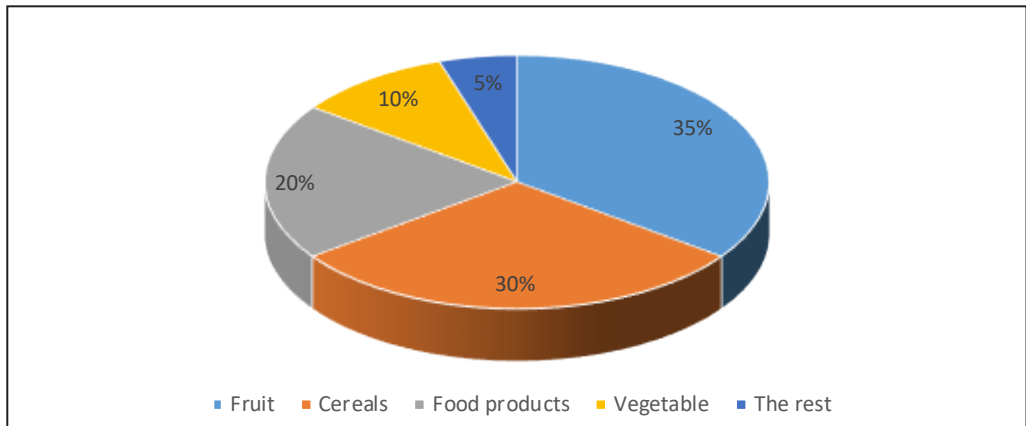
Source: Author's calculation based on data from the Statistical Office of the Republic of Serbia and available literature.

It can be observed that agricultural exports account for a significant share of Serbia's total exports throughout the observed period (Figure 1). The share of agricultural exports generally ranged between 15% and 22% of the country's total exports, confirming the importance of the agricultural sector for generating foreign exchange earnings and maintaining the stability of Serbia's foreign trade balance. It is particularly important that the agricultural sector maintained a relatively stable share in total exports even during periods of significant economic and market changes, indicating its important contribution to the country's macroeconomic stability. Such export dynamics confirm that agriculture plays an increasingly important role in generating foreign exchange earnings and contributes to the country's macroeconomic stability.

The structure of Serbia's agricultural exports indicates the dominance of cereals, fruits, and food industry products. Among the most important export products are maize, wheat, raspberries, and apples, which account for a significant share of Serbia's total agricultural exports.

The structure of agricultural exports by main product categories is presented in Figure 2.

Figure 2 shows that fruits account for the largest share of Serbia's agricultural exports, followed by cereals, while processed products and vegetables have a smaller share in the overall export structure. This relatively low share of higher value-added products indicates a limited level of development of the domestic agro-industry and an underutilized potential for generating additional value. Empirical evidence suggests that processed products account for approximately one quarter of total exports, while its dominant share is still made up of primary products at lower stages of processing and with lower added value (Živanović, 2019).

Figure 2. Structure of Agricultural Exports in Serbia (in %)

Source: Author's calculation based on available literature and statistical data.

Such an export structure has multiple negative implications. First of all, it reduces overall export profitability, as raw materials typically achieve lower prices on international markets, while also increasing vulnerability to price fluctuations and external shocks. At the same time, reliance on primary product exports constrains the development of the processing industry, slows technological progress, and limits employment opportunities in higher value-added sectors. An additional challenge is reflected in international competition, as Serbia competes in the segment of raw materials with significantly larger producers, where it cannot achieve a substantial advantage based on production scale. Therefore, a key development challenge lies in transforming the export structure toward a higher share of final and differentiated products, which would enhance resilience, competitiveness, and the long-term sustainability of the country's agricultural sector.

Fruit production plays a particularly important role in Serbia's agricultural exports. Serbia is one of the world's leading exporters of raspberries, while other fruit products such as apples, plums, and sour cherries also account for a significant share of exports. These products enjoy stable demand on international markets and represent one of the most important segments of agricultural exports (EU in Serbia, 2025).

In addition to fruit production, cereals – primarily maize and wheat – also make a significant contribution to exports. These products play an important role in regional and international trade, and their production is relatively stable compared to other agricultural sectors. However, cereal exports mainly consist of primary products with lower added value, which highlights the previously mentioned need for further development of processing stages and increased competitiveness.

The geographical structure of Serbia's agricultural exports indicates that the European Union represents its most important export market for agricultural products. In addition to the EU, a significant share of exports is directed toward countries in the region and other international markets. In general, signed trade agreements and the process of European

integration facilitate access to these markets and contribute to the growth of agricultural exports (AgroNews, 2025).

Despite the country's considerable export potential, the structure of agricultural exports reveals certain weaknesses. A large portion of exports consists of primary products with relatively low added value, while products with a higher degree of processing account for a smaller share. Such a structure limits the potential for increasing export revenues and highlights the need for the development of the food industry and greater investment in processing.

The competitiveness of domestic agricultural exports also depends on the development of marketing and modern sales channels. Product branding, promotion on international markets, and the development of e-commerce can contribute to a stronger market position of domestic products and increased export performance. These aspects are becoming increasingly important in the context of global competition and represent a key direction for the further development of the agricultural sector.

The development of marketing and distribution channels represents one of the key factors in improving the export of agri-food products in Serbia. Nikolić and Popović (2016) emphasize that efficient marketing channels play a crucial role in linking supply and demand, as well as in overcoming structural imbalances in the agricultural products market. At the same time, underdeveloped distribution and logistics systems, along with a large number of intermediaries, increase costs and reduce the competitiveness of domestic products on international markets. Contemporary approaches indicate that the development of integrated and efficient marketing channels, along with the professionalization of sales activities and the strengthening of producer organizations, represents a key prerequisite for increasing exports and enhancing the international competitiveness of Serbia's agricultural sector.

It can be concluded that the agricultural sector represents a significant segment of Serbia's foreign trade and an important factor of its macroeconomic stability. However, further development of agricultural exports requires improvements in the export structure, an increase in the level of processing, and the strengthening of competitiveness on international markets.

EXPORT OF AGRICULTURAL PRODUCTS FROM SERBIA TO EU COUNTRIES

The export of agricultural products from Serbia to the European Union represents a key segment of the country's agricultural foreign trade and accounts for a significant share of Serbia's total exports. The European Union has traditionally been the most important market for Serbian agri-food products, accounting for approximately 50% of the country's total agricultural exports. The value of agri-food exports to the EU market has recorded continuous growth during the observed period.

The main export categories to the EU market include fruits, cereals, and products with a lower level of processing, while in recent years a gradual increase in exports of processed products, such as frozen fruits, juices, and canned food, has also been observed. This

export structure indicates the importance of developing the food processing industry, marketing activities, and efficient distribution channels, as the competitiveness of domestic products on the EU market largely depends on product quality, standardization, and the organization of product placement.

Exports of agricultural products to the EU market face numerous challenges arising from strict quality and food safety standards imposed by the European Union, including HACCP and Global G.A.P. standards. These requirements involve additional investments in production, processing, and quality control, which may represent a limiting factor for small producers (EU in Serbia, 2025).

Competition on the EU market is extremely intense due to the presence of numerous producers from EU member states and other exporting countries. Besides price competitiveness, increasing importance is attached to product quality, packaging, standardization, and branding. Available data indicate that Serbia's agri-food exports have recorded stable growth, suggesting that the domestic agricultural sector is gradually strengthening its competitive position on the international market (Science–Industry Cooperation Council, 2024; Nova Ekonomija, 2025).

An important factor influencing exports is also the institutional framework, particularly trade relations between Serbia and the European Union. The Stabilisation and Association Agreement provides preferential access to the EU market and contributes to export growth, while simultaneously requiring the alignment of domestic production with European rules and standards (EU in Serbia, 2025).

In modern business conditions, digitalization and the development of e-commerce are becoming increasingly important. Modern distribution channels enable producers to gain easier access to the EU market, reduce distribution costs, and improve communication with customers, which may further contribute to export growth and strengthen the market position of domestic products.

It can be concluded that the export of agricultural products from Serbia to the European Union represents an important factor in the development of the domestic agricultural sector and a significant source of foreign exchange earnings. Further export growth will depend on increasing the level of processing, improving product quality, developing marketing activities, and efficiently adapting domestic production to the requirements of the European Union market.

MACROECONOMIC IMPORTANCE OF AGRICULTURE IN SERBIA

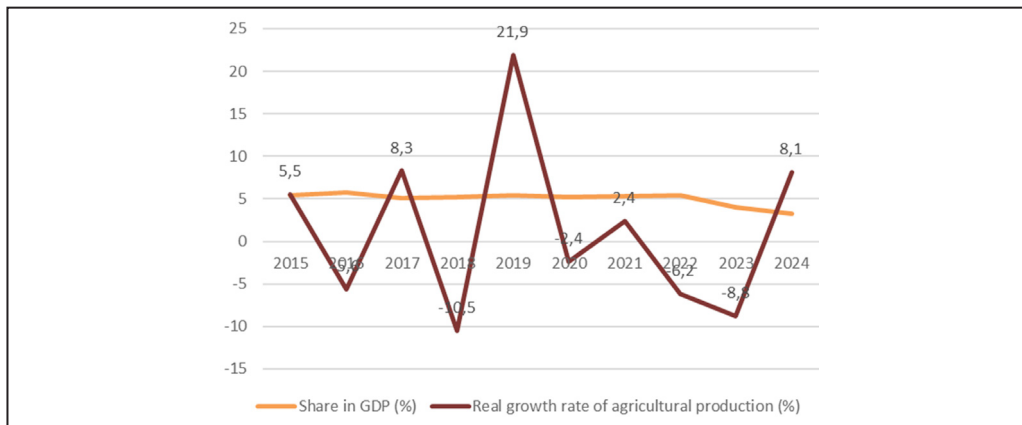
Agriculture represents one of the key sectors of the Serbian economy, not only in terms of food production but also regarding the overall macroeconomic stability. Its role is reflected in its contribution to gross domestic product (GDP), employment in rural areas, and the generation of foreign exchange earnings through the export of agri-food products (EU in Serbia, 2025). Therefore, the analysis of gross value added (GVA) in agriculture and its

share in GDP is of particular importance for assessing the overall economic position of this sector. The movement of gross value added in agriculture, its share in GDP, and growth rates over the period 2015–2024 are presented in Figure 3.

The growth rate refers to the real growth rate of agricultural production according to the data of the Statistical Office of the Republic of Serbia (Statistical Office of the Republic of Serbia, 2026). During the observed period, the share of agriculture in GDP ranged between approximately 3% and 6%, which confirms its importance in the structure of the national economy, while also indicating a certain level of instability. These fluctuations depend on climatic conditions, yields, and overall agricultural production, which directly affect the value of agricultural gross value added.

The movement of agricultural GVA shows pronounced variations throughout the observed period. The highest growth was recorded in years with more favourable agro-climatic conditions, while its declines are characteristic of years with less favourable weather conditions, such as droughts or other natural disasters (Statistical Office of the Republic of Serbia, 2026). Such trends indicate a high dependence of the agricultural sector on natural factors, which represents one of the main challenges for its further development.

Figure 3. Share of Agricultural GVA in GDP and Real Growth Rate of Agricultural Production in Serbia (2015–2024)



Source: Compiled by the author, based on data from the Republic Institute of Statistics, *Economic Accounts of Agriculture in the Republic of Serbia 2014-2024*.

Considering the presented growth rates, it can be concluded that agriculture in Serbia is characterized by pronounced volatility, with noticeable alternations between periods of growth and decline (Statistical Office of the Republic of Serbia, 2026). This instability may have a significant impact on overall economic stability and food security, particularly given the role of agriculture in food supply and exports. Despite this, agriculture remains one of the key pillars of the Serbian economy, with potential for further development through the modernization of production, increased efficiency, and a higher level

of product processing. Figure 3 illustrates the trend in the share of gross value added in agricultural production in the country's GDP, as well as its growth rate over the period 2015–2024, highlighting its pronounced volatility and sensitivity to climatic conditions, market disruptions, and changes in agricultural policy, which significantly influence overall macroeconomic trends in Serbia during the observed period. The graphical representation also indicates a slight decline in the share of agricultural gross value added in GDP, suggesting a gradual relative decrease in the importance of this sector within the overall economic structure of the country, despite its traditional significance.

Based on the above, it can be concluded that agriculture plays a significant role in Serbia's macroeconomic stability, but that its contribution is subject to considerable fluctuations. The further development of this sector requires investments in technology, improvements in risk management, and the strengthening of its market position in order to ensure greater stability and sustainable growth in the future.

CONCLUSION

Based on the conducted analysis, it can be concluded that agriculture represents an important factor of Serbia's macroeconomic stability, primarily through its contribution to foreign trade, foreign exchange earnings, and the country's gross domestic product. The research results indicate that the value of Serbia's agricultural exports recorded stable growth during the period from 2015 to 2024, increasing from approximately EUR 2.9 billion to around EUR 5.3 billion. At the same time, the European Union represents the most important export market for Serbian agri-food products, accounting for approximately half of the country's total agricultural exports.

The export structure is characterized by the dominance of primary agricultural products, particularly cereals and fruits, among which maize, wheat, raspberries, and apples occupy a prominent position. Although this export structure generates significant foreign exchange inflows, it also indicates an insufficient level of product processing and a limited share of higher value-added products in total exports. Therefore, the further development of the agricultural sector requires strengthening the food processing industry, increasing the level of product processing, and improving the competitiveness of domestic products on international markets.

The research results also indicate that the development of marketing, product branding, logistics, and modern distribution channels plays a significant role in increasing the competitiveness of Serbian agricultural products. Particular importance is attached to quality standardization and harmonization with European Union market requirements, as well as the development of e-commerce and modern logistics systems.

The analysis of macroeconomic indicators shows that agriculture has a significant but variable contribution to Serbia's gross domestic product. Fluctuations in gross value added and growth rates indicate a strong dependence of the sector on climatic conditions and

other external factors. Nevertheless, the agricultural sector remains one of the important pillars of the domestic economy and possesses significant potential for further growth and development.

Based on the above, it can be concluded that the further development of Serbia's agricultural exports depends on the modernization of production, an increased level of processing, improvements in product quality, and the strengthening of the international competitiveness of the domestic agricultural sector. These measures may contribute to more stable export growth, higher added value, and the long-term macroeconomic stability of the country.

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Izvoz poljoprivrednih proizvoda kao faktor makroekonomske stabilnosti Srbije

Apstrakt: Ovaj rad razmatra izvoz poljoprivrednih proizvoda kao pokretač makroekonomske stabilnosti Srbije, sa posebnim naglaskom na Evropsku uniju (EU) kao glavno tržište, strukturu izvoza i bruto dodatu vrednost (BDV) u poljoprivredi. Rezultati potvrđuju značaj poljoprivrede za spoljnu trgovinu i bruto domaći proizvod (BDP), ali ističu i izazove poput volatilnosti proizvodnje, niskog učešća prerađenih proizvoda i strogih standarda EU. Modernizacija, viši nivo prerade i integracija u globalne lance vrednosti predstavljaju ključne preduslove za održiv rast.

Ključne reči: poljoprivreda, izvoz, makroekonomska stabilnost, Evropska unija, bruto dodata vrednost, konkurentnost.

Portret dragog mi prijatelja Otila

**Povodom knjige Sretena Ćuzovića Otila:
Prizma i ogledalo. Putovanje – knjiga II.
Izdanje autora, Kragujevac, 2024.**

Riječi i svjedočanstva njegovih prijatelja, kolega, saradnika, studenata, zavičajaca, drugova, predstavnika vjerskih organizacija iskazani u knjizi «Prizma i ogledalo», najbolje oslikavaju da se radi o jednom gorostasu, vanserijskom profesoru, dobro namjernom čovjeku, odanom prijatelju i saradniku, naučnom radniku posvećenom profesiji, ali i domaćinu privrženom porodici, prijateljima i zavičaju.

Sa zadovoljstvom sam pročitao knjigu *Prizma i ogledalo (Putovanje knjiga II)*, autora Sretena Ćuzovića, i napisao prikaz njegove automonografije.

Moju pažnju su, već na samom početku, privukli oni dijelovi knjige u kojima se prizma ličnih stavova, emocija i iskustava prelama sa realnim doživljajima jednog vremena, koje kao i svako vrijeme, nosi svoje izazove i iskušenja. Zbog toga ovaj posao nisam doživio ni kao zadatak ni kao obavezu, već kao potrebu da svojim osvrtom na tekst osvjetlim i onaj dio ličnosti autora koji je meni, kao njegovom poznaniku i prijatelju, privukao posebnu pažnju.

Naravno, prije nego što sam se latio pera, uporedio sam svoj stav sa onim što su drugi prije mene rekli o Sretenu, ali ne u namjeri da tuđi doživljaj utkam u svoj lični, već da tražeći mjesta spajanja zajednička svim njegovim biografima i kritičarima, u potpunosti ispoštujem principe objektivnosti i realnosti, kojima je i autor uvijek težio.

Na to autorovo traganje za istinom i realnošću upućuje i riječ «ogledalo» data u nazivu knjige, kojom on osvjetljava sva svoja putovanja kaldrmom života, posmatrajući kao u ogledalu, dakle introspektivno, svoje korake, od onih prvih i nesigurnih, do onih koji su bili usmjeravani snagom Putovođe. Bila je to staza satkana od mnogo iskušenja, padanja i ustajanja, uzdizanja i uzrastanja, suočavanja sa sobom i sa drugima, ali sve to je na životnoj mapi kojom je hodio profesor Ćuzović ostavilo dubok i neizbrisiv trag.

Profesora Ćuzović sam upoznao prije 30 godina na jednoj konferenciji posvećenoj kvalitetu. Već tada smo shvatili da dijelimo iste vrijednosti, ali i iste specifičnosti i karakteristike gorštačke prirode, svojstvene dinarskom tipu čovjeka.

Prof. dr Sreten Ćuzović je prije više od 50 godina otišao iz mjesta Otilovići kraj Pljevalja. Bio je to pohod ka znanju, ali pohod u kome se nije smjelo nikad ostaviti i zaboraviti

ono znanje koje stekao u svom domu i svom rodnom mjestu. Zato je on na svoj put ka nauci, na tu trnovitu stazu kojom se odvažno zaputio, ponio svoje Otiloviće, svjestan još tada velike istine da ako zaboravi vrijednosti kojima je zadojen, neće mu se vrata istinskih životnih vrijednosti nikada i nigdje otvoriti. O tome najbolje svjedoči činjenica da je svoj rodni kraj utkao i u svoje ime, zbog čega je ne samo među prijateljima, već i među širim krugom ljudi, poznat kao Otilo.

Sreten je, poput pčele koja znatiželjno i strpljivo kupi med, ne zaobilazeći nijedan kvalitetan plod, ni jednu jedinu dragocjenost, već iz svakog cvijeta crpeći njegove najveće darove, znatiželjno i uporno iz svake knjige, svakog susreta i svakog iskustva, sakupljao najveće dragocjenosti vremena, smještene na vrelima znanja.

Pored radova koje je izlagao na konferencijama na kojima smo zajedno učestvovali, mene je posebno dojmila njegova monografija. Ona je bila prava rijetkost u tom vremenu, a izašla je pod nazivom *Naučno-tehnološki progres u trgovini (informatika, elektronika, kvalitet, ISO 9000, ISO 14000)*.

Profesor Ćuzović je išao ispred svoga vremena. To je, sa jedne strane blagoslov, sa druge teret života. Ono što se u svijetu smatra najvećim bogatstvom, za čim se traga i izuzetno vrednuje, na našem se podneblju najčešće ne prašta. Onaj ko ne ide u korak s vremenom, već par koraka ispred njega, gotovo uvijek izaziva podozrenje. Ta njegova sposobnost činila je da prije ostalih osjeti šta nosi novi dan, kud vodi koji put, čime se osvjetljava koja staza. Pri tome, nikad istinu nije skrivao, već je njom i drugima osvjetljavao put, i to ne da bi se istakao i stavio ispred drugih, već da bi im pomogao da se na vjetrometini ne izgube.

Iz naših sam prepiski prepoznao njegovu sklonost ka poeziji, u tom pomalo skrivenom dvanestercu, iz koga ponekad zaikri deseterački zvuk gusala uz koje je rastao. Nije se osvrtao na one koji i dan-danas vjeruju da se sa guslama ne može u Evropu, jer je znao da se u Evropu ne ide obezličen i obezglavljen, već noseći u rukama dragocjenosti dobijene kao kulturno nasljeđe svojih predaka.

Riječi i svjedočanstva njegovih prijatelja, kolega, saradnika, studenata, zavičajaca, drugova, predstavnika vjerskih organizacija iskazani u knjizi «Prizma i ogledalo», najbolje oslikavaju da se radi o jednom gorostasu, vanserijskom profesoru, dobronamjernom čovjeku, odanom prijatelju i saradniku, naučnom radniku posvećenom profesiji, ali i domaćinu privrženom porodici, prijateljima i zavičaju.

Teško je sve što je o njemu rečeno sažeti u nekoliko rečenica, ali svi su u jednom saglasni, da je profesor Ćuzović vizionar sa posebnom snagom inventivnosti, promoter, primalac i davalac, integrator koji znanje brzo prevodi u mudrost. Oni koji ga bliže poznaju znaju da je on i pjesnički nadahnut romantičar, koji uz sve svoje kvalitete ostaje skroman i smiren. On je čovjek koji potvrđuje da je moguće u svemu napredovati i sve unapređivati na putu ka poslovnoj izvrsnosti. To nije nimalo teško, svjedočiće nam i on, samo ako posedujete snagu intelektualnog kapitala, a upravo ta snaga iz njega uvijek zrači.

Sreten je bio i ostao orao. On je orao iz poznate priče «Orao i vrana», na koju nas i veliki Njegoš upućuje, opisujući načine na koje vrana pokušava napasti orla. Ona mu slijeće na grbu i ujeta ga za vrat. Orao ne troši vrijeme niti energiju na nju, već uzlijeće visoko, dok

vrana, težeći da ga dostigne, ostaje bez kisaonika i pada. Upravo se na taj način profesor Ćuzović uzdizao, pa ga zato vrane, ma kako uporne bile, ni u jednoj situaciji ne poraziše.

Žedan saznanja, on i dan-danas permanentno uči, zbog čega sam sebe opisuje sintagmom “Večiti učenik škole života”. To je ujedno i njegova pouka svijetu, koja u vremenu kada se istinsko znanje sve manje cijeni, dobija posebnu težinu. Ćuzovićev istraživački duh ima snagu da sve oko sebe povezuje i spaja, nikad ne razgrađuje.

Uvijek, a danas posebno snažno, odzvanjaju riječi koje je profesor Ćuzović upućivao studentima. Za studente valja učiniti sve, govorio bi, jer su oni elita društva. Pružiti im kvalitet savremenih teorijskih znanja i testirati ih na poligonu, tj. u praksi. Neće zvučati akademski neodmjereno i ishitreno, ako kažemo da mi to umijemo i znamo.

Sreten je, već sam istakao, pupčanom vrpcom vezan za zavičaj. Njegova neizmjerena ljubav prema Otilovićima i Pljevljima kod njega uvijek rađa osjećaj duga zavičaju. Klasičnom kibernetском logikom on kazuje da čovjek mora da putuje ka cilju, isključivo i samo ako zna odakle je pošao. Nažalost, današnjica to ne prepoznaje. Zato je često u našim prijateljskim razgovorima umio reći da „ga bole sve rane roda našeg“.

Istraživački je tražio i svoje porijeklo. Prepoznaje se, upravo kroz njegovu duhovnu snagu i usmjerenost ka životnoj vertikali, da je izdanak loze patrijarha Varnave i porodične svešteničke tradicije. Često za sebe u šali kaže da je nesuđeni pop, jer je kod čuvenog popa Kezovića položio pojanje.

Na kraju ove monografije se nalazi bogat i izuzetno plodonosan bibliografski prikaz profesora Ćuzovića. Proučavajući bibliografiju, nije teško zaključiti da je profesor Ćuzović spajao ekonomiju, tehničke nauke, informatiku, kvalitometriju, zaštitu životne sredine, poslovnu izvrsnost sve u duhu poštovanja principa - holos. Zato on neprestano traži istinu u logici i činjenicama, a ne u karikaturama.

Kako je svaki dan našeg života jedna minijatura, ova automonografija predstavlja maraton u vremenu i prostoru - lični albumi jednog rijetkog čovjeka (putnika/putovođe) i njegovih saputnika, prijatelja, zavičajaca, studenata. Njihovu riječ i njihova zapažanja u ovom instant vremenu s posebnom pažnjom treba pročitati. To nije samo Sretenova lična uspomena, već i svjedočanstvo o vremenu koje je oblikovalo njega, ali je u on oblikovao druge.

Ova automonografija je svojevrstni pomenik “Putovanju - putniku/putovođi” u kojem se prepliću neka zajednička sjećanja, i u potpunosti definiše portret dragog mi prijatelja Otila.

Sretenje Gospodnje,
Lj.G. 2026

Prof. dr Zdravko Krivokapić

Portrait of My Dear Friend Otilo

**On the Book by Sreten Ćuzović Otilo:
Prism and Mirror. Journey – Book II.
Author's Edition, Kragujevac, 2024**

The words and testimonies of his friends, colleagues, associates, students, compatriots, acquaintances, and representatives of religious organizations, presented in the book *Prism and Mirror*, portray a man of remarkable stature: an exceptional professor, a well-intentioned individual, a devoted friend and collaborator, a scholar dedicated to his profession, and at the same time a family-oriented man deeply attached to his family, friends, and homeland.

I read with great interest and genuine pleasure the book *Prism and Mirror (Journey – Book II)* by Sreten Ćuzović and undertook to write a review of his autobiographical monograph.

From the very beginning, my attention was drawn to those parts of the book where the prism of personal attitudes, emotions, and experiences intersects with the realities of a particular time, which, like every era, brings its own challenges and trials. For this reason, I did not approach this task merely as an obligation, but rather as a need to illuminate, through my reflections, that dimension of the author's personality which, as his acquaintance and friend, particularly attracted my attention.

Before putting my thoughts on paper, I compared my impressions with those of others who had written about Sreten, not in order to incorporate their perspectives into my own, but rather to identify common points shared by his biographers and critics, thus respecting the principles of objectivity and realism to which the author himself has always aspired. This search for truth and reality is also reflected in the very title of the book, particularly in the word *mirror*, through which the author reflects on his journey along the cobbled paths of life, observing his own steps introspectively—from the first hesitant ones to those guided by the strength of a higher purpose. It was a path marked by numerous trials, falls and rises, challenges and growth, self-reflection and encounters with others. All these experiences left a deep and lasting imprint on the life journey of Professor Ćuzović.

I first met Professor Ćuzović thirty years ago at a conference dedicated to quality management. Even then, we realized that we shared similar values, as well as certain traits characteristic of the rugged temperament typical of the Dinaric cultural milieu.

More than fifty years ago, Professor Sreten Ćuzović left Otilovići near Pljevlja. It was a journey toward knowledge, but also one in which he never abandoned the values and wisdom acquired in his home and birthplace. Thus, as he embarked upon his scientific path, he carried Otilovići with him, aware of the profound truth that forgetting one's roots means losing access to genuine life values. This is further illustrated by the fact that he incorporated his homeland into his own identity, becoming widely known among friends and acquaintances simply as Otilo.

Like a bee patiently gathering nectar, drawing from each flower without overlooking any valuable source, Sreten collected knowledge from books, encounters, and life experiences, always seeking the most valuable insights offered by each moment.

In addition to the papers he presented at conferences we attended together, I was particularly impressed by his monograph *Scientific-Technological Progress in Trade* (informatics, electronics, quality, ISO 9000, ISO 14000), which represented a rare and forward-thinking contribution at the time.

Professor Ćuzović has always been ahead of his time. This is both a blessing and a burden. What is often recognized as a great advantage elsewhere is not always appreciated in our environment. Those who move several steps ahead frequently provoke skepticism. Yet his ability enabled him to sense new developments, anticipate emerging paths, and illuminate directions for others. He never concealed the truth, but shared it openly—not to distinguish himself, but to help others navigate uncertain circumstances.

Through our correspondence, I also recognized his inclination toward poetry, occasionally expressed in subtle rhythmic patterns reminiscent of traditional epic verse accompanied by the gusle. He paid little attention to those who believed that tradition and modernity were incompatible, understanding instead that authentic cultural identity represents a valuable contribution rather than an obstacle.

The testimonies presented in *Prism and Mirror* consistently portray a man of exceptional stature—an outstanding professor, a devoted friend, a committed scholar, and an individual deeply attached to his family and homeland.

Although it is difficult to summarize everything said about him in just a few sentences, all agree that Professor Ćuzović is a visionary distinguished by creativity and inventiveness—an integrator who transforms knowledge into wisdom. Those who know him closely also recognize a poetically inspired romantic, modest and composed despite his many accomplishments. He demonstrates that continuous progress toward excellence is possible through intellectual capital, a strength that radiates from his personality.

Sreten has always remained an eagle—the eagle from the well-known story *The Eagle and the Crow*, also referenced by Njegoš. While the crow attempts to attack the eagle, the eagle simply rises higher until the crow can no longer follow. In a similar way, Professor Ćuzović has consistently risen above challenges.

Driven by a thirst for knowledge, he continues to learn and often describes himself as “the eternal student of the school of life.” This philosophy represents his enduring message.

He has always emphasized the importance of students, considering them the elite of society, advocating for high-quality theoretical education combined with practical application.

Deeply connected to his homeland, he nurtures a strong sense of responsibility toward Otilovići and Pljevlja. Guided by a form of cybernetic reasoning, he emphasizes that one must know where one comes from in order to understand where one is going.

He also explored his origins, recognizing spiritual roots connected with Patriarch Var-nava and a family tradition of priesthood. He often jokingly remarks that he might have become a priest, having studied traditional chanting under a respected cleric.

The monograph concludes with an extensive bibliography, reflecting Professor Ćuzović's interdisciplinary work spanning economics, technical sciences, informatics, quality management, environmental protection, and business excellence, all guided by a holistic approach.

As each day of life represents a miniature, this autobiographical monograph becomes a marathon across time and space—an album of memories of a remarkable individual and his companions, friends, students, and compatriots. It stands not only as a personal testimony, but also as a reflection of the era that shaped him and which he, in turn, helped shape.

This autobiographical monograph ultimately represents a tribute to a journey and a traveller, offering a complete portrait of my dear friend Otilo.

Feast of the Presentation of the Lord,
A.D. 2026

Prof. dr Zdravko Krivokapić

NAUČNA POLITIKA ČASOPISA

Časopis REVIZOR objavljuje radove iz oblasti društvenih nauka, a izuzetno i iz drugih naučnih oblasti, ako je tema rada povezana sa tematikom finansija, rizika i kontrola, računovodstva, forenzike i revizije. Navedene teme mogu da se obrađuju sa stanovišta mikro i makro ekonomije (ocena rizika iz okruženja), i sa različitim pristupom, kao što su upravljanje organizacijom, menadžment, komunikacija, odgovornosti prema društvenoj zajednici, odgovornosti prema prirodnom okruženju, i slično. Finansija, rizici i kontrole, računovodstvo, forenzike i revizija nerazdvojno su vezane sa svakim oblikom organizacije u svim delatnostima i svim vidovima svojine, tako da je tema o svakoj od njih pokrivena naučnom politikom časopisa. Sve vrste naučnih i stručnih radova značajano doprinose vrednosti časopisa.

U časopisu se objavljuju sve vrste radova: originalni naučni radovi, pregledni radovi, prethodna saopštenja, stručni radovi, prikazi i osvrti i slično.

Časopis REVIZOR izlazi kvartalno, u kontinuitetu od 1997. godine i tradicionalno je prisutan u naučnoj i stručnoj javnosti u zemlji i regionu. Interesovanja za časopis iskazana preko društvenih i naučnih mreža poazuju da je zadnjih nekoliko godina zapažen rast ugleda časopisa i u međunarodnom okruženju.

- **Naučno polje:** Društveno humanističke nauke.
- **Naučne oblasti:** Ekonomija i organizacione nauke
- **Uže naučne oblasti:** Poslovna ekonomija; Upravljanje organizacijama; Finansije; Računovodstvo; Revizija; Forenzika; Poslovno pravo (u kontekstu revizije i finansijskog izveštavanja).

SCIENTIFIC POLICY OF THE JOURNAL

The journal REVIZOR publishes papers in the field of social sciences, and exceptionally in other scientific fields, if the topic is related to finance, risk and control, accounting, forensics, and auditing. These topics may be addressed from the perspective of micro and macroeconomics (e.g., environmental risk assessment) and through various approaches, such as organizational management, communication, social responsibility, environmental responsibility, and similar frameworks. Finance, risks and controls, accounting, forensics, and auditing are inextricably linked with every form of organization across all industries and types of ownership, meaning that each of these topics falls within the journal's scientific scope. All types of scientific and professional papers contribute significantly to the journal's value.

The journal publishes all categories of work: original scientific papers, review articles, preliminary communications, professional papers, reports, commentaries, and similar contributions.

REVIZOR is published quarterly and has been continuously issued since 1997, maintaining a strong presence in the scientific and professional community both domestically and in the region. Interest expressed through academic and professional networks in recent years shows that the journal's reputation has also grown internationally.

- **Scientific field:** Social Sciences and Humanities
- **Scientific disciplines:** Economics and Organizational Sciences
- **Narrower fields:** Business Economics; Organizational Management; Finance; Accounting; Auditing; Forensics; Business Law (in the context of auditing and financial reporting)

OSNOVNE INFORMACIJE O ČASOPISU

REVIZOR

*Časopis za upravljanje organizacijama,
finansije i reviziju*

Časopis REVIZOR, od 2023. godine, izdaje Naučno društvo za upravljanje organizacijama iz Beograda. Naučna i izdavačka politika časopisa usklađene su sa ciljevima i zadacima Naučnog društva. Časopis je osnovan 1997. godine od strane Instituta za ekonomiku i finansije, a prvi broj časopisa izišao je 1998. Prvi i dugogodišnji urednik časopisa bio je profesor dr Stanoje Vukić.

UREĐIVAČKE POLITIKE

Uređivačke politike časopisa usklađene su sa Pravilnikom o kategorizaciji i rangiranju naučnih časopisa („Službeni glasnik RS“ broj 159 od 30. decembra 2020.).

Uputstvo za autore navodi se u svakom broju časopisa.

Časopis objavljuje originalne naučne i pregledne naučne radove i stručne radove koji su dobili pozitivna mišljenja recenzentata. Svaki autor snosi moralnu i etičku odgovornost za podatke objavljene u radu.

Glavni urednik i članovi uređivačkog odbora dužni su da preduzmu sve razumne mere da recenzenti ostanu anonimni tokom i nakon procesa evaluacije u skladu sa procedurom. Spisak recenzentata se daju u prvom broju časopisa iz svake kalendarske godine.

BASIC INFORMATION ABOUT THE JOURNAL

REVIZOR

*Journal of Organization Management,
Finance and Auditing*

The journal REVIZOR (Journal of Organization Management Finance and Auditing) has been published by the Scientific Society for Organization Management from Belgrade since 2023. The journal was founded in 1997 by the Institute for Economics and Finance, and the first issue was published in 1998. The first and long-time editor of the journal was Professor Dr. Stanoje Vukić.

EDITORIAL POLICIES

The editorial policies of the journal are aligned with the Regulation on Categorization and Ranking of Scientific Journals („Službeni glasnik RS“ No. 159 of December 30, 2020).

Instructions for authors are provided in every issue of the journal.

The journal publishes original scientific and review scientific papers and professional papers that have received positive reviews from reviewers. Each author bears moral and ethical responsibility for the data published in the paper.

The editor-in-chief and members of the editorial board are obliged to take all reasonable measures to ensure that reviewers remain anonymous during and after the evaluation process, in accordance with the

Recenzenti su dužni da stručno i u zadatim rokovima dostave glavnom uredniku ocenu vrednosti i tačnosti istraživanja.

U svom radu, redakcija primenjuje Committee on Publication Ethics (COPE) Smernice (COPE Guidance) koje se bave osnovne politike i prakse koje su potrebni časopisima i izdavačima da bi se dostigli najviši standardi etike objavljivanja (COPE Guidance dostupne su na: <https://publicationethics.org/>)

ORIGINALNOST RADA I BORBA PROTIV PLAGIJATA

Uz rad, autori dostavljaju i izjavu o autorstvu i autorskim pravima, kojom potvrđuju da je rad njihovo originalno delo.

U slučaju da redakcija časopisa sama ili posredstvom recenzenata otkrije da je rad koji je predat za objavljivanje plagijat, u prvom narednom broju časopisa biće objavljena informacija o tome da je odnosi autor predao rad koji je plagijat, i biće navedeno originalno delo iz kog je plagijat uzet. Takođe, radovi istog autora neće se ubuduće objavljivati u ovom časopisu.

Po potrebi, biće obavешteni autor originalnog rada i redakcija časopisa u kome je taj rad objavljen.

procedure. The list of reviewers is published in the first issue of the journal each calendar year.

Reviewers are obliged to provide a professional and timely evaluation of the value and accuracy of the research to the editor-in-chief.

In its work, the editorial board applies the Committee on Publication Ethics (COPE) Guidelines, which address the basic policies and practices needed by journals and publishers to achieve the highest standards of publishing ethics (COPE Guidelines available at: <https://publicationethics.org/>).

ORIGINALITY OF WORK AND FIGHT AGAINST PLAGIARISM

Authors submit a statement of authorship and copyright along with their work, confirming that the work is their original creation.

If the journal's editorial board, either independently or through reviewers, discovers that the submitted work is a plagiarism, the information about the author submitting a plagiarized work will be published in the next issue of the journal, along with the reference to the original work from which the plagiarism was taken. Additionally, works by the same author will no longer be published in this journal.

If necessary, the author of the original work and the editorial board of the journal in which the original work was published will be notified.

UPUTSTVA AUTORIMA

Radove pripremiti u skladu sa sledećim uputstvom:

RUKOPIS

Rukopis se predaje u elektronskom obliku (MS Word), na engleskom jeziku. Uz rad se obavezno dostavlja i pisana izjava autora o tome da je rad originalno delo. Priloze za časopis dostavljati na e-mail adresu: **casopisrevizor@outlook.com**

Uslov da rad uđe u proceduru recenziranja jeste da u potpunosti zadovoljava tehničke kriterijume koji su propisani ovim uputstvom. Dostavljeni rad mora biti lektorisan, tj. mora da zadovoljava jezičke i pravopisne standarde srpskog odnosno engleskog jezika.

Dostavljati samo članke koji nisu bili niti će biti objavljeni pre štampanja u našem časopisu. Kod posebnih slučajeva postoji mogućnost dogovora sa glavnim urednikom.

Autori dostavljaju redakciji sve identifikacione podatke o sebi.

Uređivački odbor zadržava pravo na odlučivanje o prihvatanju dostavljenog teksta za objavljivanje i redakcijske intervencije na tekstu do obima koji ne zadiru u strukturu rada.

JEZIK I OBIM RADA

Tekst se predaje na engleskom jeziku, izuzetno i na srpskom. Ako bude prihvaćen, biće objavljen na engleskom jeziku, izuzetno na engleskom i srpskom jeziku. Uređivački odbor može odlučiti da rad dostavljen na engleskom jeziku prevedu na srpski.

INSTRUCTIONS FOR THE AUTHORS

The papers are to be prepared in accordance with the following instructions:

THE MANUSCRIPT

The manuscript is submitted in electronic form (MS Word) in English. The paper should be accompanied by the written Author's Statement of originality. The papers are submitted to the following e-mail address: **casopisrevizor@outlook.com**

Precondition for the paper to be accepted for the reviewing procedure is that it fully satisfies technical criteria according to the instructions given here. The paper has to be proofread before submission and must meet the criteria regarding the language (Serbian and English) and spelling.

Submit articles which were not and will not be published before printing in our journal. In special cases, there is a possibility of agreement with the editor-in-chief.

The authors have to submit their identification data to the editors.

The editorial office reserves the right to decide on the acceptance of the submitted text for publication and editorial interventions on the text to the extent that does not interfere with the structure of the work.

LANGUAGE AND VOLUME

The text is submitted in English language, and exceptionally, in Serbian. If accepted, it will be published in English language, and exceptionally in English and Serbian. The Editorial Board may decide to translate a paper submitted in English into Serbian

Obim predloženog članka treba da bude od 12000 do 30000 znakova sa belinama. Prikazi knjiga i drugi prilozi treba da obuhvate do 6000 znakova sa razmacima. Izuzetak ide po dogovoru.

ORGANIZACIJA RUKOPISA

Članak mora da sadrži sledeće elemente i to ovim redom:

- 1. Podatke o autoru.** – Ime i prezime, zvanje (titula) autora, naziv institucije u kojoj je autor zaposlen (afilijacija); obavezno navesti e-mail adresu autora.
- 2. Naslov rada.** – Naslov treba da je jasan i precizan.
- 3. Sažetak (rezime, apstrakt).** – To je kratak informativni prikaz sadržaja članka, koji sadrži cilj istraživanja, metode, rezultate i zaključak. U pogledu obima, poželjno je da sažetak ima oko 600 slovnih mesta, uključujući i beline. Rezime se dostavlja na srpskom i engleskom jeziku. Sažetak članka treba da stoji između naslova rada i ključnih reči, nakon kojih sledi tekst članka.
- 4. Ključne reči.** – Predstavljaju termine ili fraze koji najbolje opisuju sadržaj članka. Dozvoljeno je navesti do pet reči odnosno fraza. Ključne reči se dostavljaju na srpskom i engleskom jeziku, i stoje iza sažetka pisanog na odgovarajućem jeziku.

Primer:

Ključne reči: *prihodi, kapital, eksterna revizija, interna kontrola, računovodstveni standardi.*

The paper should have between 12000 and 30.000 characters, including spaces. Book reviews and other contributions should include up to 6000 characters with spaces. The exception is by agreement.

ORGANIZATION OF MANUSCRIPT

The article must contain the following elements, in the following order:

- 1. Information about the author.** – Name and surname, title of the author, name of the institution where the author is employed (affiliation) and the author's e-mail address.
- 2. Title of the paper.** – The title should be clear and precise.
- 3. Abstract.** – This is a brief presentation of the article content, which contains the research goal, methods, results, and main conclusions. In terms of volume, it is desirable that the abstract has about 600 characters including spaces. Abstract are submitted in Serbian and English. It stands between the title and keywords, after which the text of the article follows.
- 4. Key words.** – The terms or phrases which best describe the content of the article. It is allowed to write up to five words, i.e. phrases. Keywords are submitted in Serbian and English, and are behind the abstract written in the appropriate language.

Example:

Keywords: *revenues, capital, external audit, internal control, accounting standards.*

5. **Tekst članka.** – Centralni deo predstavlja tekst članka u kojem autor uz upotrebu odgovarajuće aparature obrađuje određeni naučni problem. Tekst dostaviti kucan fontom 10; svaki novi pasus ide bez uvlačenja reda i jednim proredom se odvaja od prethodnog pasusa. Naslovi i podnaslovi su bez numerisanja, centriranja i uvlačenja. Raščlanjivanje naslova ide najdublje do tri nivoa. Različiti nivoi naslova označavaju se prema sledećem primeru:

Primer:

**PRVI NIVO NASLOVA:
BOLD, VERZAL**

Drugi nivo naslova: kurent

Treći nivo naslova: kurziv

Tabele po mogućnosti dostaviti i odvojeno u excelu.

Grafikone zajedno sa izvornim podacima, ilustracije i ostale priloge obavezno dostaviti odvojeno od teksta kao prilog tekstu koji dostavljate.

6. **Popis korišćene literature.** – Posle teksta članka, daje se popis korišćene literature i to abecednim redom po prezimenima autora. Kod navođenja korišćenih izvora od strane drugih autora obavezno je označiti izvor. Popis se daje prema niže izloženom **Uputstvu za citiranje**, s tim da se godina izdanja stavlja odmah iza imena

5. **Text of the article.** – The central part is the text of the article in which the author uses appropriate tools while processing the writing of a scientific paper. Text should be typed in font 10; each new paragraph goes without indenting and is separated from the previous paragraph by one line spacing. Titles and subtitles are without numbering, centering and indentation. Depending on the text, the titles can have different levels. Therefore, the following method is used for marking different title levels.

Example:

**FIRST LEVEL OF THE TITLE:
BOLD, UPPERCASE**

Second Level of Title: Bold, Title Case

Third level of the title: Italics, sentencecase

Tables should be submitted separately in Excel if possible.

Graphs, together with original data, illustrations and other additions must be submitted separately from the text as an attachment to the text you are submitting.

6. **List of used literature.** – After the text of the article, the list of used literature is specified in alphabetical order by authors' last name. When citing sources used by other authors, it is obligatory to indicate the source. The list is given according to the **Citation instructions**, with the year of publication coming right after the author's,

autora odnosno urednika. Na kraju navođenja članka ili rada u zborniku navode se stranice na kojima se nalazi citirani rad.

7. **Navođenje korišćene literature u tekstu.** – Korišćena literatura referiše se u tekstu stavljanjem u zagrade, a piše se prezime autora i godina izdanja, naprimjer: (Jović, 2018.), a u slučaju citata navodi se još i broj stranice (Jović, 2018: 78). Svaka referenca navodi se kao i prvi put. Ako je reč o dva autora, oba prezimena navode se u zagradama, a ako ih je više, navodi se samo prvi autor: (Jović i saradnici, 2018.). Svaka referenca mora se navesti u popisu literature.

Osnovni stil pozivanja na literaturu u tekstu prikazan je na sledećoj tabeli:

Broj autora / Author type	Navođenje u zagradi / Parenthetical citation	Narativno citiranje / Narrative citation
Jedan autor/One author	(Luna, 2020)	Luna (2020)
Dva autora/Two authors	(Salas & D'Agostino, 2020)	Salas and D'Agostino (2020)
Tri ili više autora/ Three or more authors	(Martin et al., 2020)	Martin et al. (2020)
Grupa autora sa skraćenicom/ Group author with abbreviation		
Prvo citiranje/ First citation	(National Institute of Mental Health [NIMH], 2020)	National Institute of Mental Health (NIMH, 2020)
Naredno citiranje/ Subsequent citations	(NIMH, 2020)	NIMH (2020)
Grupa autora bez skraćenice/ Group author without abbreviation	(Stanford University, 2020)	Stanford University (2020)

Izvor/Source: Official Source for APA Style The Publication Manual of the American Psychological Association, Seventh Edition (<https://apastyle.apa.org/products/publication-manual-7th-edition>).

Ne označavati posebno neke reči u radu, delove rada i slično podebljanjem, kosim slovima ili nekim drugim oblikovanjem.

i.e., editor's name. At the end of the information on an article or a paper in the collection of papers, the pages of the cited paper are given.

7. **Citing used literature in the text.** – Used literature is referred to in the text in parentheses, and the author's last name and year of publication are written, for example: (Jović, 2018), and in the case of citations, the page number is also given: Jović, 2018: 78). Each reference is given as the first time. If there are two authors, both surnames are given in brackets, and if there are more, only the first author is listed: (Jović et al., 2018). Each reference must be listed in the bibliography.

The basic style of referring to the literature in the text is shown in the following table:

Do not specifically mark some words in the paper, parts of the paper and the like in bold, italics or some other formatting.

UPUTSTVO ZA CITIRANJE

Kod navođenja korišćenih izvora drugih autora treba obavezno označiti izvor. Strogo izbegavajte fusnote.

Za oblikovanje referenci u popisu literature koristiti APA stil:

<http://www.apastyle.org>

Popis literature navodi se na kraju rada. Popis može obuhvatiti samo dela na koja se autor poziva u tekstu. Literatura se slaže po abecednom redu prezimena autora navedenih dela, bez razvrstavanja po vrstama. Podaci o delu moraju biti potpuni, u skladu s bibliografskim standardima. Ako je više radova istog autora objavljeno iste godine, uz godinu se koriste oznake „a, b, c“.

Korišćena literatura treba da ima najmanje 15 izvora za pregledne naučne radove, dok za sve ostale radove treba da ima najmanje 10 izvora. Bibliografija treba da bude novijeg datuma.

Preporučuje se da se autori pozivaju na izvore radova koji su u prethodnom periodu bili objavljeni u časopisu „REVIZOR“ (<http://revizor.casopisrevizor.rs/index.php/revizor>), kao i onim koji su navedeni u bazama referentnih naučnih časopisa.

INSTRUCTIONS FOR CITATIONS

When citing the sources used by other authors, it is necessary to specify the source. Strictly avoid footnotes.

Use the APA style to format references in the bibliography:

<http://www.apastyle.org>

The list of references is given at the end of the paper. The list can only include works that the author refers to in the text. The literature is arranged in alphabetical order of the surnames of the authors of the listed works, without sorting by types. Data on the work must be complete, in accordance with bibliographic standards. If several works by the same author were published in the same year, the marks “a, b, c” are used next to the year.

The used literature should have at least 15 sources for review scientific papers, while for all other papers there should be at least 10 sources. The bibliography should be more recent.

It is recommended that the authors refer to the sources of papers that were previously published in the journal “REVIZOR” (<http://revizor.casopisrevizor.rs/index.php/revizor>), as well as those listed in the databases of reference scientific journals.

Primeri:

Knjige: prezime, inicijali imena, godina izdanja, naslov, ime izdavača. Na isti način citiraju se štampanja izdanja i elektronska izdanja.

Jackson, L. M. (2019). *The psychology of prejudice: From attitudes to social action* (2nd ed.). American Psychological Association. <https://doi.org/10.1037/0000168-000>

Sapolsky, R. M. (2017). *Behave: The biology of humans at our best and worst*. Penguin Books.

Svendsen, S., & Løber, L. (2020). *The big picture/Academic writing: The one-hour guide* (3rd digital ed.). Hans Reitzel Forlag. <https://thebigpicture-academicwriting.digi.hansreitzel.dk/>

Poglavlja u knjigama: Koristite isti format za navođenje poglavlja i za štampana i za e-izdanja knjiga.

Ako poglavlje ima DOI, uključite DOI poglavlja u referencu iza imena izdavača. Ne navodite mesto izdavača.

Aron, L., Botella, M., & Lubart, T. (2019). Culinary arts: Talent and their development. In R. F. Subotnik, P. Olszewski-Kubilius, & F. C. Worrell (Eds.), *The psychology of high performance: Developing human potential into domain-specific talent* (pp. 345–359). American Psychological Association. <https://doi.org/10.1037/0000120-016>

Dillard, J. P. (2020). Currents in the study of persuasion. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), *Media effects: Advances in theory and research* (4th ed., pp. 115–129). Routledge.

Thestrup, K. (2010). To transform, to communicate, to play – The experimenting community in action. In E. Hygum & P. M. Pedersen (Eds.), *Early childhood education: Values and practices in Denmark*. Hans Reitzels Forlag. <https://earlychildhoodeducation.digi.hansreitzel.dk/?id=192>

Članci u časopisima: Ako članak u časopisu ima DOI, uključite DOI u referencu. Ako članak u časopisu nema DOI, alii ma URL, uključite URL članka na kraju reference.

Jerrentrup, A., Mueller, T., Glowalla, U., Herder, M., Henrichs, N., Neubauer, A., & Schaefer, J. R. (2018). Teaching medicine with the help of “Dr. House.” *PLoS ONE*, 13(3), Article e0193972. <https://doi.org/10.1371/journal.pone.0193972>

Examples:

Books: Provide the author, year of publication, title, and publisher of the book. Use the same format for both print books and ebooks.

Chapters in edited books: Use the same format for both print and ebook edited book chapters.

If the chapter has a DOI, include the chapter DOI in the reference after the publisher name. Do not include the publisher location.

Journal article: If a journal article has a DOI, include the DOI in the reference. If the journal article does not have a DOI but does have a URL, include the URL of the article at the end of the reference.

Radovi prezentovani na konferencijama: Navedite imena izlagača. Navedite pun datum konferencije. Navedite naziv prezentacije u uglastim zagrada-ma iza naslova. Opis je fleksibilan (npr. „[Sesija konferencije]“, „[Prezentacija rada]“, „[Uvodno izlaganje]“). Navedite naziv konferencije ili sastanka i njegovu lokaciju.

Objavljene disertacije ili teze: Prime-ri reference za objavljene disertacije ili teze su:

Kabir, J. M. (2016). *Factors influencing customer satisfaction at a fast food hamburger chain: The relationship between customer satisfaction and customer loyalty* (Publication No. 10169573) [Doctoral dissertation, Wilmington University]. ProQuest Dissertations & Theses Global.

Miranda, C. (2019). *Exploring the lived experiences of foster youth who obtained graduate level degrees: Self-efficacy, resilience, and the impact on identity development* (Publication No. 27542827) [Doctoral dissertation, Pepperdine University]. PQDT Open. <https://pqdtopen.proquest.com/doc/2309521814.html?FMT=AI>

Zambrano-Vazquez, L. (2016). *The interaction of state and trait worry on response monitoring in those with worry and obsessive-compulsive symptoms* [Doctoral dissertation, University of Arizona]. UA Campus Repository. <https://repository.arizona.edu/handle/10150/620615>

Evans, A. C., Jr., Garbarino, J., Bocanegra, E., Kinscherff, R. T., & Márquez-Greene, N. (2019, August 8–11). *Gun violence: An event on the power of community* [Conference presentation]. APA 2019 Convention, Chicago, IL, United States. <https://convention.apa.org/2019-video>

Izvori sa sajta Wikipedia: Koristite slede-ći format za svaku wiki stranicu.

Oil painting. (2019, December 8). In Wikipedia. https://en.wikipedia.org/w/index.php?title=Oil_painting&oldid=929802398

Conference Presentation References: Provide the names of the presenters. Provide the full dates of the conference. Describe the presentation in square brackets after the title. The description is flexible (e.g., “[Conference session],” “[Paper presentation],” “[Poster session],” “[Keynote address]”). Provide the name of the conference or meeting and its location

Published Dissertation or Thesis References: Reference examples for published dissertations or theses are:

Wikipedia Entry References: Use this format to cite any wiki page,

Naučno društvo za upravljanje organizacijama

Scientific Society for Organizational Management

Ciljevi naučnog društva:

1. Podsticanje, povezivanje i razvijanje naučnog, nastavnog i stručnog rada u oblasti upravljanja organizacijama, uključujući, ali ne i ograničavajući se na, oblasti menadžmenta, finansija, računovodstva, revizije, kontrolinga i drugih oblasti povezanih sa upravljanjem organizacijama.
2. Praktična primena naučnih saznanja iz predmetnih oblasti u rešavanju različitih pitanja povezanih sa poslovanjem preduzetnih i drugih organizacija.
3. Podsticanje razvoja i razvijanje naučne kritičke misli o pitanjima iz predmetnih oblasti.
4. Razvijanje novih metoda i tehnika stručnog usavršavanja iz predmetnih oblasti primenom savremenih informacionih tehnologija.

Rad naučnog društva odvija se kroz dve naučne oblasti

1. Naučna oblast za menadžment, finansije i kontrolu;
2. Naučna oblast za računovodstvo i reviziju.

Objectives of the Scientific Society:

1. Encouraging the connection and development of scientific, teaching, and professional work in the field of organizational management, including but not limited to areas of management, finance, accounting, auditing, controlling, and other related fields.
2. Practical application of scientific knowledge in the subject areas to solve various issues related to the operations of entrepreneurial and other organizations.
3. Encouraging the development and fostering of scientific critical thinking on issues in the subject areas.
4. Developing new methods and techniques for professional training in the subject areas using modern information technologies.

The work of the Scientific Society takes place through two scientific areas:

1. Scientific area for management, finance, and control;
2. Scientific area for accounting and auditing.



NAUČNO DRUŠTVO ZA UPRAVLJANJE ORGANIZACIJAMA
SCIENTIFIC SOCIETY FOR ORGANIZATIONAL MANAGEMENT

Josifa Marinkovića 2a, 11000 Beograd | +381 63 278 095 | E-mail: jozefina.beke@live.com

1. Autor dostavlja svoj rad (originalni ili revidirani tekst) redakciji
2. Sekretar redakcije upućuje dostavljeni rad odgovornom uredniku
3. Uredništvo vrši preliminarnu ocenu rada
4. Ako je preliminarna ocena negativna, urednik o tome obaveštava autora e mejlom
5. Rad sa pozitivnom preliminarnom ocenom dostavlja se recenzentima*
6. Recenzenti dostavljaju uredniku izveštaj o recenziji sa svojim mišljenjem
7. Urednik razmatra mišljenja recenzenata I donosi konačnu odluku**
8. Konačna odluka dostavlja se autoru i recenzentima
9. Urednik periodično izveštava članove Izdavačkog saveta o toku radova i statusu recenzija

Napomene:

* Prvi krug recenzije za originalni tekst I drugi krug recenzije za revidovani tekst.

** Konačna odluka može se doneti i nakon jednog kruga recenzije.

Svi primljeni radovi upućuju se na ocenjivanje odgovornom uredniku. Odgovorni urednik, nakon prethodne procene teksta, donosi odluke od daljnjem postupku, i to:

- a) koje rukopise odbiti,
- b) koje rukopise vratiti autoru sa sugestijama, preporukama i primedbama radi poboljšanja prije slanja u postupak recenzije,
- c) koje rukopise uputiti u postupak recenzija.

O odluci glavnog urednika autori se obaveštavaju putem emejla.

Nakon prihvatanja rada za postupak recenzije autori potpisuju Izjavu o autorstvu i autorskim pravima koju šalju redakciji. Svojim potpisom autor potvrđuje izvornost svoga priloga (rukopisa) i svoje autorstvo.

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NOVA KNJIGA

Naučno društvo za upravljanje organizacijama

MEĐUNARODNI STANDARDI ZA FINANSIJSKO IZVEŠTAVANJE U JAVNOM SEKTORU MRS JS – IPSAS

Autori: Jozefina Beke-Trivunac Gordana Vukelić

Iz predgovora

Interesovanje za primenu Međunarodnih računovodstvenih standarda za javni sektor proističe iz zahteva za visokom transparentnošću rada svih subjekata u javnom sektoru, posebno organa vlasti. Međutim, prihvatanje ovih standarda u praksi zahteva prevazilaženje brojnih prepreka usled njihove složenosti.

- Za njihovu primenu potrebni su stručnjaci koji poseduju izuzetno dobra znanja i veštine, ne samo iz oblasti finansijskog računovodstva, već i iz drugih srodnih oblasti, kao što su upravljanje finansijama, informacioni sistemi, velike baze podataka, upravljačko i forenzičko računovodstvo, i drugo. Proces sticanja ovih znanja je dugotrajan, zahtevan i skup.
- Na akademskim institucijama u našoj zemlji skoro da nema studijskog programa na kojem se ova materija celovito obrađuje. Posebno što je za kvalitetno obuku potrebno da i nastavnici na tim programima, pored akademskih zvanja, poseduju i odgovarajuća profesionalna zvanja.
- Stručni materijal za obuku treba da je jednostavan. Osnovni preduslov je kvalitetan prevod računovodstvenih standarda za javni sektor i kontinuirano ažuriranje izmena i dopuna postojećih i novih standarda. Proces prevođenja standarda zahteva prevodioce i recenzente sa dobrim poznavanjem finansijskog računovodstva.

Pri definisanju strategije za primenu MRS JS / IPSAS, neophodno je uzeti u obzir sve te činioce.

Svrha ove stručne monografije je da približi materiju MRS JS i tako pomogne u periodu izrade strategije za njihovu primenu u javnom sektoru.

Knjiga se može naručiti preko Naučnog društva za upravljanje organizacijama.

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**Osnovan 1997, s ciljem širenja
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