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TABLE OF CONTENTS

SOCIAL DEMOCRACY AND THE COVID-19 PANDEMIC. THE SOLUTIONS OF THE LEFT FOR THE SANITARY AND ECONOMIC CRISIS (SPAIN AND ROMANIA)

Eugen Gabor.....4

REDUCING THE RISK OF SUBMITTED REQUESTS FOR PROTECTION OF RIGHTS IN PUBLIC PROCUREMENT PROCEDURES, THROUGH THE IMPROVEMENT OF THE ORGANIZATION BASED ON THE ANALYSIS OF PUBLIC PROCUREMENT CASES IN THE PUBLIC UTILITY SECTOR OF BELGRADE

Marko Špiler.....17

SOLVENCY AND FINANCING OF FIXED ASSETS: THE CASE OF AGRICULTURAL ENTERPRISES IN SERBIA

**Stefan Milojević, Marko Milašinović, Aleksandra Mitrović
Snežana Knežević.....26**

FRAUDULENT FINANCIAL REPORTING FROM THE MANAGERS' PERSPECTIVE

Zdravka Petković, Stefan Milojević, Stefan Novaković Đurđica Trivunović Sajić.....35

ETHICS OF BUSINESS AND SOCIAL LEADERSHIP IN THE CORONA CRISIS

Milan Resimić.....40

THE ROLE OF ACCOUNTING INFORMATION SYSTEMS AND FINANCIAL ANALYSIS IN ENHANCING THE HUMAN RESOURCES MANAGEMENT CYCLE

Marko Špiler, Đurđica Trivunović Sajić, Stefan Milojević, Jovan Travica.....45

EVALUATION OF THE FINANCIAL PERFORMANCE OF SERBIAN DAIRY COMPANIES USING THE INTEGRATED AHP AND VIKOR METHODOLOGY FOR SUSTAINABLE COMPETITION

Stefan Milojević, Miljan Adamović, Aleksandar Grgur.....50

Social Democracy and the COVID-19 Pandemic. The Solutions of the Left for the Sanitary and Economic Crisis (Spain and Romania)

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Abstract

The ideological landscape is being influenced by the pandemic; transformations are visible in the cultural, social, and economic fields. However, there are different perspectives regarding the nature of these transformations. Some left-wing academics suggest that we are witnessing the dawn of new collectivist hegemony, inspired by Keynesian Social democratic ideas. Others are worried that right-wing populism finds in the current environment fuel for its discourse. Last, but not least, there are voices that argue that neoliberalism's resilience will facilitate its survival. Our conclusion is that the ideological hegemony of neoliberalism is not dead yet. We reached this conclusion by focusing on the Social democratic parties from two European countries: Spain and Romania. We analyzed mainly aspects linked to the manner in which these parties reacted to the sanitary and economic crises induced by the pandemic. Both parties implemented or proposed (the Spanish Socialist Party is leading a governing coalition, while the Romanian Social democratic Party is the main opposition party) Keynesian measures and rejected to some degree neovirialism, but their actions are, for the time being, not bold enough to endanger the primacy of market fundamentalist ideas. Given that we observed an ongoing crisis, our conclusions can be reshaped by future evolutions.

Keywords: COVID pandemic, economic crisis, Keynesianism, Romania, Social democracy, Spain

1. Introduction

In an article published in 2007 and named *The "rebirth of liberalism": The origins of neo-liberal ideology*, the British political scientist Rachel Turner presents the remarkable impact of the Mont Pelerin Society (MPS) on the process of building a new ideological hegemony. MPS was founded in April 1947, when 38 academics and intellectuals who fiercely opposed collectivism in all its forms (Communist and Social Democratic) met in Western Switzerland. One of the most important participants was Friedrich Hayek (1899-1992), an Austrian philosopher and economist. Hayek considered that the ascension of collectivism was enabled by the bold way in which the Socialists engaged in the battle of ideas. Therefore, collectivism can be defeated only if the Liberals dare to stubbornly build a radical project based on free trade and freedom of opportunities. Only a neoliberal utopia can stop the path towards authoritarianism built by collectivist thinkers.¹

In Hayek's vision, an example of a collectivist thought system is represented by the main ideas encompassed in the works of John Maynard Keynes.² Keynes (1883-1946), a British economist, considered himself a Liberal but advocated for a massive involvement of the state in the economic and social fields. According to him, keeping the aggregate demand at a high level through high public spending and low unemployment rates is crucial for the health of an economy, especially during periods of crisis.³ Moreover, Keynes argued that progressive taxation, with really high rates for the wealthy, is good for the economy and an effective tool for reducing the level of social inequality.⁴

Hayek labeled Keynes' theory as a great danger for democratic societies all over the world. According to him, liberticide was an unmistakable component of this theory. The Austrian economist considered that a big error committed by Keynes and other representatives of collectivist approaches was that of focusing on organizations, not on the individual. This attitude was inspired by the French tradition of liberty, which had Jean-Jacques Rousseau as the main figure. On the other hand, the British tradition of liberty, a tradition based on individualism, is the genuine one.⁵

¹ TURNER Rachel, "The "rebirth of liberalism": the origins of neo-liberal ideology", *Journal of Political Ideologies* 12 (1), pp. 69-76.

² Ibidem, p. 70.

³ KEYNES John Maynard, *Teoria generală a ocupării forței de muncă, a dobânzii și a banilor*, Publica, București, 2009.

⁴ SKIDELSKY Robert, *Project Syndicate*, „What Would Keynes Say Now?”, 20 March, 2020, <https://www.project-syndicate.org/commentary/keynes-how-to-pay-for-war-against-covid19-by-robert-skidelsky-2020-03?barrier=accesspaylog>, retrieved in June 2021.

⁵ HAYEK Friedrich, *The Constitution of Liberty. The Definitive Edition*, The University of Chicago Press, Chicago, 2011, p. 92.

Another important founding member of MPS was Ludwig von Mises⁶ (1881-1973). Von Mises, an Austrian economist and sociologist, shared with Hayek the idea that even slight doses of collectivism will certainly lead towards authoritarianism. In his opinion, American President Franklin Delano Roosevelt endangered gravely the political and economic system of his country when he introduced the leftist New Deal.⁷ According to another influential neoliberal thinker, Milton Friedman (1912-2006), this malignant process can be reversed if a few conditions are met: “*Only a crisis – actual or perceived – produces real change. When that crisis occurs, the actions that are taken depend on the ideas that are lying around.*”⁸ In other words, MPS can prepare the ground for replacing the collectivist ideological hegemony with a neoliberal one, but the actual change can take place only during a period of crisis.

In the 1970s, especially because of two oil shocks (one produced in 1973 because of the Israeli-Arab war, the other produced in 1979 because of the Iranian Islamic revolution), the economic crisis expected by Friedman and other neoliberals took place. The ideas that were lying around were those shaped by MPS. Therefore, Hayek’s utopia of a radical neoliberal society became the vision that fueled political action in numerous countries. Gradually, this vision was embraced not only by right-wing parties but also by Social democratic ones.

George Soros, an American investor born in Hungary and student of the philosopher Karl Popper, considers that this ideological hegemony, labeled by him as the *ideological imperialism of market fundamentalism* is threatening to destroy the open societies built in the second part of the 20th century. In his opinion, this glorification of individualism is increasing social inequalities and therefore is weakening democracies by putting “...*financial capital into the drivers’ seat.*”⁹ Thus, Soros sees as a necessity a new shift in the ideological spectrum.

The Dutch historian Rutger Bregman argues that this shift is about to take place. Firstly, the ideas that are lying around are no longer mainly neoliberal. Influential ideas are related to Keynesian philosophy. For example, the French economist Thomas Piketty is explaining that higher tax rates are essential for avoiding dystopian scenarios of the future¹⁰; two of Piketty’s disciples, Emmanuel Saez and Gabriel Zucman, are highlighting the importance of reducing tax evasion, a phenomenon that plagues the global economy¹¹; the Italian economist Mariana Mazzucato considers that only the involvement of the public sector can be the source of an innovation process that really serves the society¹² etc. Secondly, the COVID-19 pandemic, which started in 2020, “...*could send us down a path of new values.*”¹³

The current pandemic’s impact on the European and global political and economic landscape is a topic that generates heated debates in the public sphere. Several voices state that the sanitary crisis forces governments to favor a Keynesian approach; thus, we are witnessing the dawn of a new era of Big Government.¹⁴ Others argue that the economic and social effects of the restrictions will strengthen right-wing populism.¹⁵ Last but not least, some authors imply that the neoliberal order will survive the turmoil caused by SARS-CoV-2.¹⁶ Our paper aims to contribute to these discussions by focusing on the policies implemented/proposed by two Social democratic parties after February 2020: PSOE (the Spanish Socialist Party) and PSD (the Romanian Social Democratic Party).

We selected these cases because we analyzed their particularities in previous research and because they are different on several levels. Firstly, geographically and culturally we are focusing on different areas. Secondly, PSOE is the main party of a governmental coalition that includes a radical left-wing party (Podemos). Prime Minister Pedro Sanchez advocates for a progressive agenda meant to reshape Spanish society after almost a decade of right-wing cabinets.¹⁷ On the other hand, PSD is one of the most conservative members of the Party of European Socialists, and is currently in opposition, after dominating Romanian politics almost without

⁶ TURNER Rachel, op. cit., p. 76.

⁷ VON MISES Ludwig, *Birocrația*, Institutul Ludwig von Mises, București, 2003, p. 3.

⁸ FRIEDMAN Milton, *Capitalism and Freedom*, The University of Chicago Press, Chicago and London, 2002, pp. xiii-xiv.

⁹ SOROS George, *The Crisis of Global Capitalism. Open Society Endangered*, Little Brown and Company, London, 1998, p. xx.

¹⁰ PIKETTY Thomas, *Capitalul în secolul 21*, Litera, București, 2015.

¹¹ SAEZ Emmanuel, ZUCMAN Gabriel, *The Triumph of Injustice: How the Rich Dodge Taxes and How to Make Them Pay*, W. W. Norton & Company, Inc., New York, 2019.

¹² MAZZUCATO Mariana, *The Entrepreneurial State: debunking public vs. private sector myths*, Anthem Press, London, 2013.

¹³ BREGMAN Rutger, *The Correspondent*, „The neoliberal era is ending. What comes next?”, 14 May 2020, <https://thecorrespondent.com/466/the-neoliberal-era-is-ending-what-comes-next/61655148676-a00ee89a>, retrieved in June 2021.

¹⁴ TEMKO Ned, *Christian Science Monitor*, “Move over, markets. Big government is back”, <https://www.csmonitor.com/World/2021/0408/Move-over-markets.-Big-government-is-back>, retrieved in June 2021; PARBROOK Robin, *Schroders*, “A new economic era beckons after this crisis”, <https://www.schroders.com/en/uk/private-investor/insights/markets/a-new-economic-era-beckons-after-this-crisis/>, retrieved in June 2021.

¹⁵ BERGSEN Pepijn, *Chatham House*, “Why the Pandemic and Populism Still Work Together”, <https://www.chathamhouse.org/2020/11/why-pandemic-and-populism-still-work-together>, retrieved in June 2021; MULLER Jan-Werner, *Financial Times*, “The pandemic will strengthen smart populists”, <https://www.ft.com/content/b9aca858-c17b-4c5f-8ce2-36b982489d95>, retrieved in June 2021.

¹⁶ GALBRAITH James K., *Foreign Policy*, “The Death of Neoliberalism Is Greatly Exaggerated”, https://foreignpolicy.com/2021/04/06/death-neoliberalism-larry-summers-biden-pandemic/?fbclid=IwAR2AzCt695_5wWvin247nbRkHN1grMS8IFFN2ot-9TqlAj6sYobus4ii9y8, retrieved in June 2021; STUDEBAKER Benjamin, *Benjamin Studebaker*, “Neoliberalism isn’t Dead Yet”, <https://benjaminstudebaker.com/2020/04/06/neoliberalism-isnt-dead-yet/>, retrieved in June 2021.

¹⁷ JONES Sam, *The Guardian*, “Spanish PM unveils progressive policies to head off snap election”, <https://www.theguardian.com/world/2019/sep/03/spanish-pm-unveils-progressive-policies-to-head-off-snap-election>, retrieved in June 2021.

interruption between 2012 and 2019.¹⁸ Thirdly, Spain was more heavily affected by the COVID pandemic than Romania (this aspect is highlighted by the number of cases per million people).¹⁹ Our analysis reviews policies, policy proposals, political and electoral programs, political speeches, and debates. The conclusions reject or remodel some arguments used in the debates mentioned above.

Basically, our goal is to identify elements that prove/disprove the fact that we are witnessing the replacement of the neoliberal ideological hegemony with one that is much closer to the main lines of the Keynesian theory. We are analyzing an ongoing process, so obviously we cannot present definitive conclusions. Nevertheless, we consider that our research can add valuable information and perspectives to this topic. Future researches could have the role of completing or revising our conclusions.

2. Spain

PSOE (The Spanish Socialist Workers' Party) is the main center-left party in the Spanish political arena. Founded in 1879 and outlawed during Francisco Franco's regime (1939-1975), PSOE became a major political force in post-authoritarian Spain. Between 1982 and 1996 the country was governed by Felipe Gonzalez, the leader of PSOE. Gonzalez abandoned the Marxist path that characterized PSOE before 1975, and even mixed Keynesian economic and social policies with ones that are inspired by the neoliberal philosophy.²⁰ In other words, Felipe Gonzalez's actions reflected the emergence of the neoliberal political and economic order.

Gonzalez lost the parliamentary elections in 1996, and PSOE remained in opposition for 8 years. In 2004, the new leader of PSOE, Jose Luis Rodriguez Zapatero, became Prime Minister. Zapatero tried to move above the duality represented by Keynes' and Hayek's ideas, basing his political strategy on visions presented by authors like John Rawls (social liberalism) and Philip Pettit (civic republicanism).²¹ His mission was gravely affected by the social and economic crisis that started in 2008, and in 2011 PSOE once again returned in opposition.

In 2014 Pedro Sanchez, a 42 years old economist, became the new Secretary-General of PSOE. Sanchez brought with him not only the dynamism of youth but also a different ideological vision that was much closer to Keynesian interventionism than the ones preferred by Gonzalez and Zapatero. Moreover, he had a negative opinion about joining governing coalitions that include right-wing parties. He refused to govern alongside the main Spanish Conservative party (PP – People's Party), a decision fiercely contested by the centrist Felipe Gonzalez.²² Also, he opposed the nominalization of the Conservative Jean-Claude Juncker in the position of President of the European Commission.²³

Pedro Sanchez became Prime Minister in June 2018, after the Parliament removed through a no-confidence vote the Conservative government led by Mariano Rajoy. After he took office, Sanchez focused on collectivist social policies.²⁴ Although Felipe Gonzalez and other moderates continued to oppose him, under his leadership PSOE managed to obtain the most votes in two rounds of parliamentary elections held in 2019.²⁵ After the elections held in November 2019, PSOE formed a governing coalition with Podemos, a populist left-wing party (this decision was also criticized by Felipe Gonzalez²⁶).

The Belgian political scientist Chantal Mouffe welcomed the ascension of a party like Podemos, considering it a signal of a revival of democracy.²⁷ In her opinion, only an inclusive populist party can successfully challenge the neoliberal establishment's discourse. Obviously, this opinion was shared by the leader of Podemos, Pablo Iglesias. When in 2020 the terrible crisis brought by the COVID-19 pandemic erupted, Pedro Sanchez and Pablo Iglesias were the leaders of the Spanish government, the most left-leaning government of the country in many decades.

¹⁸ VANNIER Alexis, *The New Federalist*, "In Romania, the Liberal-Conservative Right Unseats The Liberal-Conservative Left," <https://www.thenewfederalist.eu/in-romania-the-liberal-conservative-right-unseats-the-liberal-conservative/?lang=fr>, retrieved in June 2021.

¹⁹ *Worldometer*, "COVID-19 Coronavirus Pandemic", <https://www.worldometers.info/coronavirus/>, retrieved in June 2021.

²⁰ BAN Cornel, *Ruling ideas: how global neoliberalism goes local*, Oxford University Press, New York, 2016, pp. 42-45.

²¹ KENNEDY Paul, „Phoenix from the Ashes. The PSOE Government under Rodriguez Zapatero 2004–2007: A new model for social democracy?”, in *International Journal of Iberian Studies*, Volume 20, Number 3, p. 190; MARTI Jose Luis, PETTIT Philip, *A political philosophy in public life: civic republicanism in Zapatero's Spain*, Princeton University Press, Princeton and Oxford, 2010, p. 2.

²² BURGÉN Stephen, *The Guardian*, „Spain's Socialists lift veto to allow Rajoy minority government”, 23 October 2016, <https://www.theguardian.com/world/2016/oct/23/spains-socialists-lift-veto-to-allow-conservatives-to-rule-as-minority>, retrieved in June 2021.

²³ GOTEV Georgi, *EURACTIV*, „Spanish Socialists to vote against Juncker, Canete”, 16-09-2014, <https://www.euractiv.com/section/elections/news/spanish-socialists-to-vote-against-juncker-canete/>, retrieved in June 2021.

²⁴ ZANCAYO Silvia, *El Economista*, „Sánchez prioriza la agenda social y renuncia a realizar reformas en profundidad”, 1-06-2018, <https://www.eleconomista.es/economia/noticias/9179627/06/18/Sanchez-prioriza-la-agenda-social-y-renuncia-a-realizar-reformas-en-profundidad.html>, retrieved in June 2021.

²⁵ *Historia Electoral*, „Elecciones Generales 28 de abril de 2019”, <http://www.historiaelectoral.com/e2019.html>, *Historia Electoral*, „Elecciones Generales 10 de noviembre de 2019”, retrieved in June 2021.

²⁶ *La Vanguardia*, „Felipe González critica que PSOE y Podemos se repartan primero los cargos y luego se hable de programa”, 14/11/2019, <https://www.lavanguardia.com/politica/20191114/471600848100/felipe-gonzalez-critica-psoe-podemos-repartan-cargos-programa.html>, retrieved June 2021.

²⁷ Apud MÜLLER Jan-Werner, *Ce este populismul?*, Polirom, Iași, 2017, p. 86.

The first infection with SARS-CoV-2 was confirmed in Spain on January 31, 2020.²⁸ Rapidly, the disease spread all over the country. At the beginning of March 2020, cases were appearing in every region of Spain. The government decided to impose a national lockdown on March 14, and this lockdown was tightened at the end of the month.²⁹ Drones were used to monitor the situation.³⁰ At that point, there were more than 160.000 cases and more than 8.000 deaths.³¹

It is important to mention that Spain has a universal healthcare system. A piece of legislation promoted by Felipe Gonzalez in 1986 “...guarantees universal coverage and free healthcare access to all Spanish nationals, regardless of economic situation or participation in the social security network.”³² This law fulfills an element of the Spanish constitution, approved in 1978, which states that the right to healthcare is guaranteed.³³ Gonzalez also tripled between 1982 and 1996 the healthcare budget.³⁴

After the economic crisis that began in 2008, until 2017, the healthcare budget was reduced. Things started to gradually change after Pedro Sanchez became Prime Minister. In 2020, the health budget represented 8.9% of Gross Domestic Product (GDP), a figure that is higher than the one from 2008 (8.3%), when Zapatero was Prime Minister. However, the “...per capita healthcare expenditure of 3,428 USD (PPP) in 2018, was below the OECD average of 3,994.”³⁵ As an element of comparison, Romania’s healthcare budget for 2021 is below 5% of GDP.³⁶

The PSOE-Podemos government proved very quickly that intends to fight the pandemic by strengthening the public healthcare system. It is worth noting that in the last decade in Spain the private healthcare expenditure is on the rise.³⁷ On March 16, 2020, two days after the lockdown was imposed, Salvador Illa, the Socialist health minister of Spain, declared that all hospitals and health care providers will be nationalized.³⁸

Soon it became obvious that, although a necessary step, the strengthening of the public healthcare system is not enough on its own to resolve the multiple layers of the crisis provoked by the pandemic. The lockdown was affecting economically important segments of the population. On March 17 Pedro Sanchez presented an aid package of 200 billion Euros (almost 20% of the country’s GDP), meant to keep the economy afloat. The measures linked to the package included “...loans, credit guarantees, benefits and direct aid...”.³⁹ Two weeks later, when the lockdown was tightened, recoverable paid leave was made accessible for the workers that halted their activity.⁴⁰

On April 5, the government exposed the idea of introducing a permanent basic income. The minister for economic affairs, Nadia Calvino, a close collaborator of Pedro Sanchez, stated that the measure is inevitable and it will be permanent. It was clear that the main aim of the policy was to support those who were in lower-income categories, so it wasn’t desirable to offer it a universal character.⁴¹ In June 2020 a pilot project was launched. Approximately 850.000 families (around 5% of the total) from the precariat became eligible to obtain monthly payments up to 1000 Euros. The project’s goal was to reduce the social impact of the growing unemployment that was produced by the economic crisis.⁴²

Obviously, in order to make this kind of interventionist program successful, the state has to find the proper ways of financing it. Yolanda Diaz, a Podemos MP and Minister for Labour, made on May 16, 2020, the following comments: “This pandemic has demonstrated the importance of the public sphere: our public health system, public education, as well as programs like the temporary wage subsidy scheme. This is what the public system is for — and if we are to save this country, we need tax policies that will sustain it.”⁴³ Therefore, she proposed progressive taxation of the assets that value more than 1 million Euros. According to her, this tax will bring to the budget approximately 11 billion Euros every year. This measure was seen as necessary especially because the projections

²⁸ HENRIQUEZ Josefa, GONZALO-ALMOROX Eduardo, GARCIA-GONI Manuel, PAOLUCCI Francesco, “The first months of the COVID-19 pandemic in Spain”, *Health Policy Technol.* 2020;9(4), p. 564.

²⁹ *Ibidem*, p. 565.

³⁰ PAYNE Adam, *Business Insider*, „Spain has nationalized all of its private hospitals as the country goes into coronavirus lockdown”, 16 March 2020, <https://www.businessinsider.com/coronavirus-spain-nationalises-private-hospitals-emergency-covid-19-lockdown-2020-3>, retrieved in June 2021.

³¹ *Worldometer*, “Coronavirus Spain”, <https://www.worldometers.info/coronavirus/country/spain/>, retrieved in June 2021.

³² “Overview of the Spanish Healthcare System”, *HealthManagement*, Volume 12, Issue 5/2010, <https://healthmanagement.org/c/it/issuearticle/overview-of-the-spanish-healthcare-system>, retrieved in June 2021.

³³ CHILDS David, *The Two Red Flags: European Social Democracy and Soviet Communism since 1945*, Routledge, London & New York, 2000, p. 78.

³⁴ BAN Cornel, *op. cit.*, p. 43.

³⁵ HENRIQUEZ Josefa, GONZALO-ALMOROX Eduardo, GARCIA-GONI Manuel, PAOLUCCI Francesco, *op. cit.*, p. 562.

³⁶ NEAGU Alina, *HotNews*, “Câți bani primește, de fapt, sănătatea în 2021: Scade sau nu bugetul sănătății în vremuri de pandemie?” <https://www.hotnews.ro/stiri-sanatate-24607187-grafice-cati-bani-primeste-fapt-sanatatea-2021-scade-sau-nu-bugetul-ministerului-sanatatii-vremuri-pandemie.htm>, retrieved in June 2021.

³⁷ HENRIQUEZ Josefa, GONZALO-ALMOROX Eduardo, GARCIA-GONI Manuel, PAOLUCCI Francesco, *op. cit.*, p. 562.

³⁸ PAYNE Adam, *Business Insider*, „Spain has nationalized all of its private hospitals as the country goes into coronavirus lockdown”, 16 March 2020, <https://www.businessinsider.com/coronavirus-spain-nationalises-private-hospitals-emergency-covid-19-lockdown-2020-3>, retrieved in June 2021.

³⁹ *Reuters*, “Spain approves 200 billion euro aid package for coronavirus crisis: PM”, March 17, 2020, <https://www.reuters.com/article/us-health-coronavirus-spain-aid/spain-approves-200-billion-euro-aid-package-for-coronavirus-crisis-pm-idUSKBN2142Q4>, retrieved in June 2021.

⁴⁰ *El Nacional*, “The Spanish state’s lockdown 2.0: who has to work, and who receives paid leave”, March 30, 2020, https://www.elnacional.cat/en/news/coronavirus-spain-lockdown-rules-essential_486867_102.html, retrieved in June 2021.

⁴¹ ZEBALLOS-ROIG Joseph, *Business Insider*, „Spain is moving to establish permanent basic income in the wake of the coronavirus pandemic”, 6 April 2020, <https://www.businessinsider.com/spain-universal-basic-income-coronavirus-yang-ubi-permanent-first-europe-2020-4>, retrieved in June 2021.

⁴² ARNOLD Carrie, *Nature*, “Pandemic speeds largest test yet of universal basic income”, 10 July 2020, <https://www.nature.com/articles/d41586-020-01993-3>, retrieved in June 2021.

⁴³ *Twitter*, Podemos – Yolanda Diaz, <https://twitter.com/PODEMOS/status/1261585932911861760>, retrieved in June 2021.

showed that unemployment will rise to 21%, and the GDP will decline by 13%.⁴⁴ The government raised some taxes in December 2020⁴⁵, but Podemos' proposal is yet to be implemented. In the spring of 2021, Pablo Iglesias decided to retire from politics, and it is presumed that Yolanda Diaz will play an important role in the new leadership of Podemos.⁴⁶ Therefore, she will have the opportunity to better promote this plan in the governing coalition.

Overall, it is clear that the PSOE-Podemos cabinet had a left-wing approach during the first months of the pandemic. Regarding the sanitary crisis, harsh restrictive measures were imposed. The government proved that values the protection of its citizens, rejecting a *neoviralist* approach. According to the French philosopher Jean-Luc Nancy, neoviralism is a radical contestation of the quarantine, based on the idea that we should protect the economy and achieve herd immunity, although this will endanger the lives of the sick and elder people. There are clear similarities between neoliberalism and neoviralism; both reject the ideas of solidarity and putting first the common interest.⁴⁷ Regarding the economic and social crisis, we saw above several leftist proposals. Nevertheless, we should mention that some of these proposals were not implemented, and other policies angered the trade unions.⁴⁸

In May 2020 a gradual plan of easing the lockdown restrictions began, and in June the state of alarm was removed. In July, the government focused on obtaining adequate economic and social support from the European Union. A meeting of the European Council took place between 17 and 21 July. Here, the member states negotiated not only the Multiannual Financial Framework (MFF) for 2021-2027 but also the dimensions and the goals of a recovery fund. Sanchez advocated for a "*...Recovery Fund that transforms 'our economies into much more resilient, more digital, greener and more inclusive economies', including both territorial and social cohesion among its main goals.*"⁴⁹ This position, shared by countries like Italy, Portugal, Germany or France, was opposed by countries that are much closer to a neoliberal economic vision, like The Netherlands and Austria, but also by the Scandinavian countries. In the end, a compromise was reached: the Recovery Fund's value is 750 billion Euros, but only 390 billion Euros represent grants, the rest of the amount being constituted by loans.⁵⁰ It is notable that Sanchez aggressively pursued an interventionist agenda at the European level as well.

While the statistics showed that the economy shrank by 5.2% in the first quarter of 2020 and with 18.5% in the second quarter⁵¹, the number of infections started to rise again. A state of emergency was imposed in October 2020, after Spain became the first country in Western Europe to pass one million COVID-19 cases.⁵² In this context, PSOE and Podemos prepared the state budget project for 2021 and tried to obtain support for the project in Parliament (the two parties compose a minority cabinet). Pedro Sanchez "*...proposed a boost in public spending to overcome the deep wounds caused by the coronavirus, as well as a tax hike on corporations.*"⁵³ His proposal, clearly inspired by a Keynesian economic vision, was approved by the legislative. The increase in public spending represented a counter-cyclical economic measure. The budget deficit was at high levels (11.3% of GDP), and the amount of the public debt reached 118% of GDP.⁵⁴

Overall, Spain's GDP decreased in 2020 by 10.8%, although there were signs of a recovery in the second part of the year. Unemployment reached 15.5%.⁵⁵ Nevertheless, the country's healthcare budget was increased by almost 3.1 billion Euros (151%). An important part of this increase was meant to assure the acquisition of COVID-19 vaccines. Pedro Sanchez made it very clear that he is not willing to return to the neoliberal recipe of austerity and cuts.⁵⁶

⁴⁴ GILMARTIN Eoghan, *Jacobin*, „Podemos's COVID Tax Will Make the Millionaires Pay for Spain's Recovery”, 24 May 2020, https://jacobinmag.com/2020/05/podemos-covid-tax-spain-psoe?fbclid=IwAR0mJh0GD_MaK4rTTUkCf052YjFjWw4Ln3b69EX60_W1nC2fXgTZmqaY2c, retrieved in June 2021.

⁴⁵ DOMINGUEZ Bruno, DE OTAOLA Isabel, ROGEL Davinia, OGEA Rodrigo, *Global Compliance News*, “Spain: New tax measures to end 2020”, <https://www.globalcompliancencews.com/2020/12/03/spain-new-tax-measures-to-end-202006112020/>, retrieved in June 2021.

⁴⁶ *France 24*, “After Pablo Iglesias' departure, Spain's Podemos names new head”, June 11, 2021, <https://www.france24.com/en/live-news/20210611-after-pablo-iglesias-departure-spain-s-podemos-names-new-head>, retrieved in June 2021.

⁴⁷ NANCY Jean-Luc, *Almendron*, “Du néolibéralisme au néoviralisme”, <https://www.almendron.com/tribuna/du-neoliberalisme-au-neoviralisme/>, retrieved in June 2021.

⁴⁸ ALEXE Dan, *Radio Europa Liberă România*, “Ce este „neoviralismul” și cu cine a dansat Putin la o nuntă în Austria unde a recrutat mireasa pentru Russia Today. Revista presei europene”, <https://romania.europalibera.org/a/ce-este-neoviralismul-%C8%99i-cu-cine-a-dansat-putin-la-o-nunta-%C4%83-%C3%AEn-austria-unde-a-recrutat-mireasa-pentru-russia-today-revista-presei-europene/30606500.html>, retrieved in June 2021.

⁴⁹ *Gobierno de España*, “Pedro Sánchez claims that European leaders are 'obliged to reach agreement' on Recovery Fund”, 17 July 2020, https://www.lamoncloa.gob.es/lang/en/presidente/news/Paginas/2020/20200717_recoveryfund.aspx, retrieved in June 2021.

⁵⁰ *European Council*, “Final Conclusions”, 21 July 2021, <https://www.consilium.europa.eu/media/45109/210720-euco-final-conclusions-en.pdf>, retrieved in June 2021.

⁵¹ HENRIQUEZ Josefa, GONZALO-ALMOROX Eduardo, GARCIA-GONI Manuel, PAOLUCCI Francesco, op. cit., p. 572.

⁵² *Worldometer*, “Coronavirus Spain”, <https://www.worldometers.info/coronavirus/country/spain/>, retrieved in June 2021.

⁵³ HELLER Fernando, *EurActiv*, “Spanish parliament approves 'historical' state budget for 2021”, 4 December 2020, <https://www.euractiv.com/section/economy-jobs/news/spanish-parliament-approves-historical-state-budget-for-2021/>, retrieved in June 2021.

⁵⁴ DERRIEN Guillaume, *BNP Paribas*, “Spain: 2021 budget unveiled amid health emergency”, 30 October 2020, <https://economic-research.bnpparibas.com/ecotvweek/en-US/Spain-2021-budget-unveiled-amid-health-emergency-10/30/2020,c34557>, retrieved in June 2021.

⁵⁵ *European Commission*, “Economic forecast for Spain”, 12 May 2021, https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country/spain/economic-forecast-spain_en, retrieved in June 2021.

⁵⁶ *The Corner*, “Spain's Reconstruction Budget Plan For 2021 Includes 151% More Spending On Health Care Than At Present”, 27 October 2020, <https://thecorner.eu/news-spain/spain-economy/spains-reconstruction-budget-for-2021-includes-151-more-spending-on-health-care-than-at-present/90181/>, retrieved in June 2021.

After December 2020, the vaccination campaign became one of the main priorities of the government. The cabinet set a target to fully vaccinate 5 million people until the beginning of May, and this target was reached.⁵⁷ Therefore, Pablo Sanchez decided to lift the state of emergency. As of September 16, 2021, 35.8 million Spanish citizens were fully vaccinated.⁵⁸ However, the economic situation continued to look grim; the GDP shrank 0.5% in the first quarter of 2021. Nevertheless, projections indicate that the situation will radically change until the end of the year.⁵⁹

As we mentioned in the introduction, we analyzed an ongoing situation. So far, it seems that the actions of the Spanish leftist government reflect the decline of the neoliberal ideological hegemony. However, it is obvious that some reforms are stalled, and it is important to mention that there are more than two years left from this parliamentary mandate. There is no guarantee that the cabinet will pursue an interventionist agenda until the end of its term. Projects can be blocked because of the lack of political will or can be abandoned because of unexpected negative effects. One thing is clear though, as we will observe below: the Spanish left is more eager than the Romanian one to implement a Keynesian strategy.

3. Romania

PSD (The Social Democratic Party) is the main center-left party in the Romanian political arena. The Social democrats claim that they are the direct successors of a Socialist party founded in 1893.⁶⁰ However, PSD also has organizational origins in the Romanian Communist Party (PCR)⁶¹, which outlawed Social democracy for more than 40 years (1947-1989). Founded in February 1990 as the National Salvation Front (FSN) by the former Communist dignitary Ion Iliescu, a leader of the Romanian Revolution of December 1989, the party assumed a democratic left-wing ideology in the same year.⁶² Although the social and economic strategy of Iliescu and his collaborators, strategy labeled by the Romanian economist Cornel Ban as *populist neodevelopmentalism*⁶³, had clearly a leftist interventionist component, the Party of Social Democracy in Romania (PDSR – one of the successors of FSN) was far in its first decade of existence from being an authentic Social democratic party. Ion Iliescu was the president of the country between 1990 and 1996, and for most of this period Romania was much closer to the category of hybrid regimes than to the category of liberal democracies.⁶⁴

Things gradually started to change for Romania and Romanian Social democracy after 1995-1996. PSD adopted its current name in 2001, after merging with a Social democratic party (PSDR) that was founded in 1990 by members of the inter-war Socialist movement. The Social democrats were accepted in the Party of European Socialists (PES) and in the Socialist International (SI)⁶⁵, and they had an important role in Romania's integration in NATO (2004) and the EU (2007). As time went by, PSD also transformed its social and economic philosophy. Iliescu's interventionism was sidelined, being replaced with a centrist vision inspired by the Third Way movement, created by Anthony Giddens and Tony Blair.⁶⁶ This change was reflected by policies implemented by the Social democrats between 2012 and 2015 when the cabinet was led by PSD's president, Victor Ponta.⁶⁷ After 2016, under the leadership of Liviu Dragnea, PSD moved closer to a populist path promoted by several leaders in Central and Eastern Europe (Hungary and Poland are the most notorious examples). Dragnea's tenure was also characterized by instability: between 2017 and 2019 the Social democratic cabinet was led by three different Prime ministers (Sorin Grindeanu, Mihai Tudose, Viorica Dăncilă). In May 2019 Dragnea was sentenced to prison in a corruption case, and a few months later Viorica Dăncilă was removed from office after a no-confidence vote.⁶⁸

⁵⁷ LINDE Pablo, *El País*, "España cumple una meta de vacunación por primera vez: cinco millones de personas con la pauta completa", 03 May 2021, <https://elpais.com/sociedad/2021-05-03/espana-logra-su-primer-objetivo-en-la-vacunacion-cinco-millones-de-personas-con-la-pauta-completa.html>, retrieved in June 2021.

⁵⁸ *Our World in Data*, "COVID-19 Data Explorer", https://ourworldindata.org/covid-vaccinations?country=OWID_WRL, retrieved in June 2021.

⁵⁹ BASSETTI Massimo, *Focus Economics*, "Spain: Economy swings back to contraction in Q1 amid tighter restrictions", <https://www.focus-economics.com/countries/spain/news/gdp/economy-swings-back-to-contraction-in-q1-amid-tighter-restrictions>, retrieved in June 2021.

⁶⁰ *PES activists România*, <https://pes.ro/evenimentul-125-de-ani-de-social-democratie-la-100-de-ani-de-la-marea-unire/>, retrieved in September 2021.

⁶¹ STAN Lavinia, VANCEA Diane (coord.), *România postcomunistă. Trecut, prezent și viitor*, editura Polirom, Iași, 2017, p. 198; BAN Cornel, *Dependență și dezvoltare: economia politică a capitalismului românesc*, p. 110.

⁶² RADU Alexandru, JUGĂNARU Anne, *FSN – un paradox politic: (1989-1992): România postcomunistă: O istorie a partidelor politice*, volumul I, Pro Universitaria, București, 2013, p. 39.

⁶³ BAN Cornel, *Ruling ideas: how global neoliberalism goes local*, pp. 85-89.

⁶⁴ GABOR Eugen, „România – Regim hibrid? Rolul social-democrațiilor în traiectoria unei democratizări”, *Perspective Politice*, Vol. 10, Nr. 01, An 10 (2018), p. 42.

⁶⁵ PREDĂ Cristian, *Partide și alegeri în România postcomunistă 1989-2004*, editura Nemira, București, 2005, p. 75.

⁶⁶ GEOANĂ Mircea, *Modelul social românesc: calea către o altă Românie*, Editura Economică, București, 2008.

⁶⁷ BALABAN Constantin, *Agerpres*, „Democracy Institute: Economia românească are potențialul de a deveni 'tigru' Balcanilor”, 15 octombrie 2013, <https://www.1agerpres.ro/economie/2013/10/15/democracy-institute-economia-romaneasca-are-potentialul-de-a-deveni-tigru-balkanilor-17-11-05>, retrieved in November 2018; ABRAHAM Florin, *Romania Since the Second World War. A Political, Social and Economic History*, Bloomsbury, New York, 2017, p. 178.

⁶⁸ *Digi 24*, „Moțiunea de cenzură a fost adoptată. Guvernul Dăncilă este demis”, <https://www.digi24.ro/stiri/actualitate/politica/motiunea-de-cenzura-a-fost-adoptata-guvernul-dancila-este-demis-1198789>, retrieved in September 2021.

The National Liberal Party (PNL), the main Romanian right-wing party, was the initiator of the no-confidence vote. A minority cabinet was approved by the Parliament in November 2019, and the president of PNL, Ludovic Orban, became Prime minister. In the same month, presidential elections took place. Viorica Dăncilă was defeated in the second round by the Liberal incumbent Klaus Iohannis⁶⁹ (Ion Iliescu is the only representative of PSD that managed to win presidential elections). After this defeat, Dăncilă was forced to resign as president of PSD. She was replaced by the president of the Chamber of Deputies, Marcel Ciolacu, a 52 years old jurist without a clear ideological identity.

Although in opposition, PSD remained the main force in the Romanian Parliament (the Social democrats obtained 45% of the votes in the Parliamentary elections held in December 2016), and in February 2020 managed to remove through a no-confidence vote the liberal cabinet. Therefore, when the crisis produced by the new coronavirus reached Europe, Romania was led by an interim government.

The first infection with SARS-CoV-2 was confirmed in Romania on February 26.⁷⁰ The disease did not spread in Romania as rapidly as in other European countries, like Spain or Italy. For example, Romania had 139 COVID-19 cases on March 15, 2020. On the same day, Spain had 53.120 cases and Italy had 24.762 cases.⁷¹ However, there was a growing public concern, especially because many Romanians living abroad were being gradually forced to return to Romania because the lockdown measures were destroying numerous jobs. Moreover, in March several PNL legislators were infected with SARS-CoV-2. The entire interim cabinet was quarantined after the Liberal Senator Vergil Chițac tested positive.⁷²

Before the COVID-19 crisis erupted, President Klaus Iohannis was planning to overcome the political crisis by creating the premises for calling, for the first time after 1989, snap Parliamentary elections. Therefore, the Liberal interim Finance Minister, Florin Vasile Cițu, was designated Prime Minister by Iohannis, his rejection by the Parliament being a key step towards the snap elections. However, this rejection never happened, Florin Cițu refusing the designation after it became clear that the country needs as soon as possible a stable government, and after Ludovic Orban made it clear that, as president of PNL, he needs to run this government.

On March 14, 2020, Ludovic Orban was confirmed as Prime minister for the second time by the Parliament.⁷³ Given that many PNL MP's were quarantined, PSD voted in favor of the cabinet. The Social democrats explained that the country needs a stable cabinet during a period of crisis, but pledged to continue their role as an opposition party. Marcel Ciolacu argued that the safety and the health of the Romanians are above all the political struggles, giving the impression that the nation's interests are more important than his party's interests (impression contradicted in September 2021, when PSD refused to support a no-confidence motion against the cabinet led by Florin Cițu). Indeed, given that PSD was unable to create a Parliamentary majority, the return of Ludovic Orban was the only solution for overcoming the political crisis.

Soon after this moment, Marcel Ciolacu announced that the Parliament will move all its activities online. On March 16, Klaus Iohannis announced that a state of emergency is being imposed. The Parliament approved this measure on March 19, PSD considering the measure necessary.⁷⁴ On March 22, Ciolacu declared that harsher restrictions would have been necessary. He argued that healthcare specialists, like Raed Arafat, Secretary of State at the Ministry of Internal Affairs, are not allowed to shape governmental policies.⁷⁵ We can observe that at the beginning of the pandemic, PSD was very far from adopting a neoviralist stance. However, as we will observe below, as time went by, the Social democrats sent mixed signals regarding the utility of the restrictions.

In April, when the state of emergency was extended, the Social democrats requested some social and economic measures that are in part inspired by the Keynesian economic theory. Specifically, they requested major projects of investments and payments for those who lost their jobs and for the businesses that were affected by the quarantine. Moreover, a major testing campaign was seen as the ideal tool for containing the virus.⁷⁶

⁶⁹ LUPITU Robert, *Calea Europeană*, „Alegeri prezidențiale 2019/ Rezultate finale: Klaus Iohannis – 66,09%, Viorica Dăncilă – 33,91%. Președintele participă joi la ședința CCR pentru validarea mandatului său”, 28 noiembrie 2019, <https://www.caleaeuropeana.ro/alegeri-prezidentiale-2019-rezultate-finale-klaus-iohannis-6609-viorica-dancila-3391-presedintele-participa-joi-la-sedinta-ccr-pentru-validarea-mandatului-sau/>, retrieved in April 2020.

⁷⁰ *Digi 24*, “Primul caz de coronavirus în România | Raed Arafat a dat detalii despre starea lui de sănătate: Nu prezintă simptome”, 26 February 2020, <https://www.digi24.ro/stiri/actualitate/primul-caz-de-coronavirus-in-romania-1266806>, retrieved in September 2021.

⁷¹ *Worldometer*, “COVID-19 Coronavirus Pandemic”, <https://www.worldometers.info/coronavirus/>, retrieved in September 2021.

⁷² *Digi 24*, “Guvernul și PNL intră în autoizolare după ce senatorul Vergil Chițac a fost confirmat cu coronavirus. PNL nu mai merge la consultări”, 13 March 2020, <https://www.digi24.ro/stiri/actualitate/guvernul-si-pnl-intra-in-autoizolare-1274762>, retrieved in September 2021.

⁷³ KISS Robert, *Digi 24*, “Guvernul Orban 2 a fost investit. Voturile PSD au fost decisive. Măsuri speciale pentru depunerea jurământului”, 14 March 2020, <https://www.digi24.ro/stiri/actualitate/politica/guvernul-orban-2-a-fost-investit-voturile-psd-au-fost-decisive-masuri-speciale-pentru-depunerea-juramentului-1275448>, retrieved in September 2021.

⁷⁴ *HotNews*, “Parlamentul a aprobat starea de urgență pe teritoriul României pentru 30 de zile”, 19 March 2020, <https://www.hotnews.ro/stiri-politic-23735680-parlament-proba-starea-urgenta.htm>, retrieved in September 2021.

⁷⁵ CICOVSCI Afrodita, *Adevărul*, “Marcel Ciolacu spune că PSD ar fi adoptat restricții mai drastice pentru prevenirea răspândirii Covid-19”, 22 March 2020, [adev.ro/q8kz2p](https://www.adev.ro/q8kz2p), retrieved in September 2021.

⁷⁶ *GSP*, “PSD îi pune condiții lui Klaus Iohannis: „Altfel, nu vom vota prelungirea stării de urgență!””, 14 April 2020, <https://www.gsp.ro/gsp-special/stiri-extrasport/marcel-ciolacu-presedintele-psd-cere-garantii-altfel-prelungirea-starii-de-urgenta-ar-fi-o-inconstienta-totala-595873.html>, retrieved in September 2021.

In June, after the state of emergency was lifted, Marcel Ciolacu announced that PSD supports the introduction of progressive taxation.⁷⁷ In Romania, a progressive tax was in place during the Social democratic government led by Adrian Năstase (2000-2004). Năstase, who supported PSD's ideological shift towards the political center, proposed in 2003 the implementation of a flat tax. His initiative was blocked by President Ion Iliescu.⁷⁸ As we mentioned above, Iliescu favored a populist neodevelopmentalist strategy, a strategy that was closer to Keynesian Social democracy than Năstase's centrism. However, in 2005 the right-wing cabinet led by the Liberal Călin Popescu-Tăriceanu abandoned progressive taxation. After this moment, several Social democratic cabinets refused to replace this flat tax. Therefore, Ciolacu's declaration can be seen as a step towards a clearer left-wing economic position for PSD. Obviously, there is no guarantee that PSD will truly implement a progressive taxing system if it will return to the government. For example, PSD's president Mircea Geoană announced that he supports this measure in 2009⁷⁹, while the party was member of a governing coalition, but his declaration was not followed by actions.

In the fall, the number of COVID-19 cases started to rise again. In September the number of those infected since the beginning of the crisis surpassed 100.000.⁸⁰ The beginning of the school year contributed to the aggravation of the sanitary situation. Gradually, the schools were closed and the courses were moved online. In November 2020 Klaus Iohannis announced that education will be moved online in the entire country.⁸¹ PSD criticized this decision, considering that the quality of the educational process is heavily affected by it. Obviously, the proper functioning of the public education system is an important aspect for a party that labels itself as Social democratic. However, we can observe that in October 2020 the Social democrats have a different philosophy/strategy than in March 2020. In March Marcel Ciolacu stated that the governmental restrictions, which included the suspension of in-person learning, are way too soft. In October he considered them too radical.

On September 27, 2020, local elections were organized in Romania. In the electoral campaign PSD criticized the government's approach regarding the pandemic and focused on messages that promised economic aid for those affected by the restrictions.⁸² Because of the pandemic, messages that targeted a national audience were used more often than in other electoral campaigns that preceded local elections. At the polls, PNL occupied the first position (34% of the votes), but PSD (30%) managed to win the presidency of 20 regional councils out of 41 (PNL won only 17).⁸³ For the Social democrats this was an excellent outcome, given that in the European elections held in May 2019 the party obtained only 22.5% of the votes. Moreover, in November 2019 Viorica Dăncilă obtained 22.3% of the votes in the first round of the presidential elections.⁸⁴

Parliamentary elections were scheduled for December 6, 2020. Immediately after the local elections, the Social democrats stated that, because of the pandemic, the elections should be postponed. Marcel Ciolacu declared that it's absurd to organize elections while the schools are closed.⁸⁵ We can once again observe that PSD had an ambivalent attitude regarding the restrictions. Despite Ciolacu's warnings, the elections were organized as scheduled.

In the electoral campaign, PSD once again proposed Keynesian economic measures. According to the Social democrats, the government should increase the pensions and the minimum wage. Moreover, the state should implement an ambitious program of aiding the business sector, a program meant to reduce unemployment.⁸⁶ Regarding the sanitary crisis, PSD proved once again that has an ambiguous vision. On one hand, several MDs were recruited in the party and placed on the electoral lists. Alexandru Rafila, an expert of the World Health Organization (WHO), and Adrian Streinu-Cercel, a member of the Medical Science Academy, are the

⁷⁷ HURDEA Ioana, *Aktual 24*, "PSD anunța impozit progresiv după ce va dăra guvernul. Cine muncește și castiga mai mult va fi impozitat mai mult", 28 June 2020, <https://www.aktual24.ro/psd-anunța-impozit-progresiv-după-ce-va-dăra-guvernul-cine-muncește-si-castiga-mai-mult-va-fi-impozitat-mai-mult/>, retrieved in September in 2021.

⁷⁸ BAN Cornel, *Ruling ideas: how global neoliberalism goes local*, p. 102.

⁷⁹ *Monitorul de Suceava*, "Geoană: Absența unui impozit progresiv privează economia de un stabilizator în condiții de criză", 30 June 2009, <https://m.monitorulsv.ro/Ultime-ora/2009-06-30/Geoana-Absenta-unui-impozit-progresiv-priveaza-economia-de-un-stabilizator-in-conditii-de-criză>, retrieved in September 2021.

⁸⁰ *Worldometer*, "Coronavirus Romania", <https://www.worldometers.info/coronavirus/country/romania/>, retrieved in September 2021.

⁸¹ PANTAZI Raluca, *Edupedu*, "BREAKING Klaus Iohannis: Școlile trebuie să treacă toate în online / Ludovic Orban: Aplicabilitatea acestor decizii va fi de luni", 5 November 2020 <https://www.edupedu.ro/breaking-klaus-iohannis-scolile-trebuie-sa-treaca-toate-in-online/>, retrieved in September 2021.

⁸² KISS Robert, DUȚULESCU Adriana, *Digi 24*, "ANALIZĂ Alegeri locale 2020. Ziua în care baronii PSD se tem că dispar, iar PNL își joacă guvernarea pe următorii patru ani", 25 September 2020, <https://www.digi24.ro/alegeri-locale-2020/alegeri-locale-2020-ziua-in-care-baronii-psd-se-tem-ca-dispar-iar-pnl-isi-joaca-guvernarea-pe-urmatorii-patru-ani-1373853>, retrieved in September 2021.

⁸³ MATEI Alexandra, DIACONU Miruna, ANGHEL Iulian, *Ziarul Financiar*, "Cum arată harta alegerilor locale 2020: PSD și PNL și-au împărțit țara pe din două. PSD controlează 20 de consilii județene, PNL 17, iar UDMR 4. Dar PNL a câștigat mai multe voturi. Datele parțiale arată că PNL a câștigat alegerile locale cu 34% din voturi, urmat de PSD cu 30% și de USR/PLUS cu 13%", 29 September 2020, <https://www.zf.ro/eveniment/arata-harta-alegerilor-locale-2020-psd-pnl-au-impartit-tara-doua-psd-19585469>, retrieved in September 2021.

⁸⁴ *Deutsche Welle*, "Prezidențialele din 2019: Klaus Iohannis câștigă primul tur", 10 November 2019, <https://www.dw.com/ro/preziden%C8%9Bialele-din-2019-klaus-iohannis-c%C3%A2%88%99tig%C4%83-primul-tur/a-51193123>, retrieved in September 2021.

⁸⁵ *G4Media*, "Ciolacu: Închidem școlile, dar ținem alegerile/ Asta este România normală promisă de președintele României în campania electorală", 19 October 2020, <https://www.g4media.ro/ciolacu-inchidem-scolile-dar-tinem-alegerile-asta-este-romania-normala-promisa-de-presedintele-romaniei-in-campania-electorală.html>, retrieved in September 2021.

⁸⁶ KISS Robert, *Digi 24*, "Promisiunile din noul program de guvernare al PSD: creșterea pensiilor cu încă 32% și a salariului minim cu 57%", 7 October 2020, <https://www.digi24.ro/alegeri-parlamentare-2020/promisiunile-din-noul-program-de-guvernare-al-psd-cresterea-pensiilor-cu-inca-32-si-a-salariului-minim-cu-57-1380460>, retrieved in September 2021.

most notorious examples.⁸⁷ The Social democrats tried to prove that they have the experts capable of bringing the crisis to the end in a manner that will protect the health of the Romanians without endangering their economic situation. On the other hand, PSD was also represented in the elections by Daniel Ghiță, a former kickboxer who promoted several conspiracy theories regarding the pandemic.⁸⁸ Marcel Ciolacu declared that PSD wants to represent a wide range of opinions.⁸⁹ His declaration reflects ideological and strategic heterogeneity.

PSD's proposal for the position of Prime Minister was Alexandru Rafila. In a televised debate held before the elections, PSD was represented by Rafila. He advocated for a large campaign of vaccination, and also for large public investments in education and healthcare.⁹⁰ Romania, just as Spain, has a universal healthcare system. However, as we mentioned above, Romania has a much smaller healthcare budget than Spain.

At the polls, PSD obtained the most votes (29.3%), defeating PNL (25.5%). Nevertheless, the Social democrats were not able to create a Parliamentary majority. The Liberals managed to build a governing coalition that included the right-wing Save Romania Union (USR – 15.8%) and the Democratic Alliance of Hungarians in Romania (UDMR – 5.8%). The former finance minister Florin Cîțu, a member of PNL, became Prime minister.⁹¹

In the first part of 2021, the vaccination campaign and the opening of the schools were some of the main issues on the public agenda. Regarding in-person learning, the Social democrats maintained the position adopted in the fall of 2020. PSD's leaders support the vaccination campaign, but Marcel Ciolacu declared that vaccination shouldn't be compulsory.⁹² He also accused Cîțu of being the main responsible for the failure of the vaccination campaign. Until September 16, 2021, only 27.2% of the Romanians were fully vaccinated. In Spain, the figure reached 76%.⁹³

Currently (September 2021), after most of the restrictions were lifted in May 2021, the crisis is worsening once again, the Delta variant of SARS-CoV-2 fueling a so-called fourth wave of the pandemic. However, the best ways of containing the virus are not the main subject on the public agenda; the political parties, including PSD, are focusing on a governmental crisis that erupted after the USR ministers resigned from the cabinet after a conflict provoked by the Prime minister.

4. Conclusions

We cannot claim that we have a complete accuracy of our conclusions. Firstly, as we mentioned above, we are observing an ongoing process. Secondly, in the Romanian case, we couldn't analyze policies that were implemented, given that in the period we studied the Social democrats were in opposition. Nevertheless, we consider that the information we presented is able to clarify certain aspects regarding the debates we mentioned in the introduction.

PSD proved that it's closer to the political center than PSOE. This conclusion is valid not only for the social and cultural fields but also for the economic one. The Social democrats had some ambiguous positions regarding the pandemic, and proposed some Keynesian policies, but didn't go in this direction as far as the Spanish Socialists did. PSD proposed raises of salaries and pensions, and increased budgets for healthcare and education, but was far from proposing significant tax hikes for the rich, or a permanent basic income, like PSOE and Podemos did in Spain. The Romanian Social democrats never spoke about the nationalization of the private hospitals and healthcare providers. They promoted controversial persons, like Daniel Ghiță, and they hesitated when given the opportunity of removing a Prime minister that jeopardized the health and economic security of the Romanians through his economic and sanitary policies.

Although PSOE obviously engaged on a path that resembles more clearly the Keynesian strategy of post-war Social democracy than the path of PSD, we saw above that Spanish Socialists failed until now to implement some of their most ambitious projects. Some of these projects are initiated by Podemos, and PSOE has a centrist wing that desires to contain the influence of the groups considered too radical.

⁸⁷77 PEACHEANU Gabriel, *Mediafax*, "Doctorul Streinu Cercel, candidat pentru Senat din partea PSD. Rafila deschide lista pentru deputați", 16 October 2020, <https://www.mediafax.ro/politic/doctorul-streinu-cercel-candidat-pentru-senat-din-partea-psd-rafila-deschide-lista-pentru-deputati-19670809>, retrieved in September 2021.

⁸⁸88 SAVIN Bogdan, *ProSport*, "Daniel Ghiță, despre COVID-19: „Controlul Omenirii prin Vaccinare...”", 4 August 2020, <https://www.prosport.ro/fotbal-intern/diverse/daniel-ghita-despre-covid-19-controlul-omenirii-prin-vaccinare-19072255>, retrieved in September 2021.

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⁹⁰90 COSTEA Alexandru, PAVALUCA Ioana, *Digi 24*, "LIVE TEXT Dezbateri Digi24 înainte de alegerile parlamentare din 6 decembrie", 2 December 2020, <https://www.digi24.ro/alegeri-parlamentare-2020/dezbateri-digi24-inainte-de-alegerile-parlamentare-din-6-decembrie-1411084>, retrieved in September 2021.

⁹¹91 PĂVĂLUCĂ Bianca, MATEI Cristian, IANCU Cristina, BĂRBOȘANU Ștefan, *Știrile Pro TV*, "Premierul Cîțu, după ce noul Guvern a obținut votul de investitură: "Mulțumesc și la treabă!"", 23 December 2020, <https://stirileprotv.ro/stiri/politic/noul-guvern-citu-ar-putea-fi-investit-astazi-in-plenul-reunit-al-parlamentului.html>, retrieved September 2021.

⁹²92 DITCOV Andreea, *DC News*, "PSD, împotriva vaccinării obligatorii. Ciolacu: Excluz așa ceva, nimeni nu va accepta/ Îți dai DEMISIA și pleci acasă!", 20 July 2021, https://www.dcnews.ro/psd-impotriva-vaccinarii-obligatorii-ciolacu-excluz-asa-ceva-nimeni-nu-va-accepta-iti-dai-demisia-si-pleci-acasa_829870.html, retrieved in September 2021.

⁹³93 *Our World in Data*, "COVID-19 Data Explorer", https://ourworldindata.org/covid-vaccinations?country=OWID_WRL, retrieved in September 2021.

The British historian Adam Tooze, professor at Columbia University, considers, just like Rutger Bregman, that because of the pandemic the neoliberal era is coming to an end.⁹⁴ In our opinion, it is too early to talk about a collectivist ideological hegemony. In other words, neoliberalism is not dead yet. If the Spanish Socialists will successfully implement some of their boldest projects, and other governments will follow their steps, then our conclusion will have to be revised.

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Reducing the risk of submitted requests for protection of rights in public procurement procedures, through the improvement of the organization based on the analysis of public procurement cases in the public utility sector of Belgrade

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Abstract

The process of joining the European Union, the obligation to align the legislation with the EU Directives, as well as the overall economic environment, technological development, the growth of competition, changing economic and political trends and the need for new products and services, affects the whole system to accept the need for change management in order to adapt functioning in a modern, dynamic environment. Public procurement is one of the most important legal-economic and developmental processes and is of vital importance with several aspects for each country that applies them. Also, the condition for European integration of the Republic of Serbia implies the need to harmonize Serbia's legislation with the legal system of the European Union, which in this case is the previous ones, Directive 2004/17 / EC, Directive 2004/18 / EC, as well as current directives, Directive 2014/24 / EU and Directive 2014/25 / EU). Harmonization of the Public Procurement System with the EU Directives is a process defined in the Republic of Serbia in 4 adopted laws defining the field of public procurement and as such is the basis for continuous adjustment to changes until the final harmonization, which requires changes in the organizational structure of procuring entities and bidders. The concept of change management includes elements of communication, leadership, personal training, analysis and redesign of the process, represents a key part of the management process that should ensure the survival and development of the system (Jasko O. and Petovic, 2010). Any change in the legislative framework provokes resistance among professionals, which can be individual or general, but the system must continue to improve (Melentijević Branimir, 2004). This also applies to the process of harmonization of the protection of rights in public procurement procedures, whose initial act is the Request for Protection of Rights, which initiates the procedure of protection of rights regarding the actions of the contracting authority in the specific procurement procedure (http://kjn.rs/zahtev-za-zastitu-prava/?sr_pismo=lat, 2019) and as such it is submitted to the contracting authority, and the copy is simultaneously submitted to the Republic Commission. The request for protection of rights, as a rule, stops the procedure and often slows down the Clients in the execution of entrusted tasks, which is a major systemic problem, especially when deciding on the request takes longer than the law envisaged for a period of 20 days. In this regard, this paper seeks to point out which public procurement object carries the greatest risk for filing a claim for the protection of rights, without prejudice to the purpose of the existence of a law enforcement institution, especially in the area of the fight against corruption, since public procurements have been identified as an area in where corruption is potentially high, so that the fight against irregularities in the public procurement system is considered one of the strategic goals of the public procurement reform in the Republic of Serbia (Government, 2014). Reforms are possible at the macro level by amending the law, but at the level of contracting authorities and bidders it is necessary to adapt the organization to the situation.

Keywords: public procurement, protection of rights, Republic of Serbia

1. Introduction

Publication of articles in professional journals, which publishes papers for specialists and do not ordinarily pay for contributions, may benefit a person in many ways. Such publications are likely to increase career advancement, to increase your circle of your professional acquaintances, to get feedback of your ideas, etc. Usually papers submitted to the journals are very large and many a times they are either rejected or returned with a request for major/ minor revisions. A paper is turned down for a number of reasons, which is not only due to the quality of work but also due to the quality of presentation. Although quality of work and presentation are equally important (Singh *et al*, 2002).

The introduction is the first paragraph of the paper. It often begins with a general statement about the topic and ends with a more specific statement of the main idea of your paper. The purpose of an introduction is to acquaint the reader with the rationale behind the work, with the intention of defending it. It places your work in a theoretical context, and enables the reader to understand and

appreciate your objectives. The body of the paper follows the introduction. It consists of a number of paragraphs in which you develop your ideas in detail.

- Limit each paragraph to one main idea. (Don't try to talk about more than one idea per paragraph.)
- Prove your points continually by using specific examples and quotations from your note cards.
- Use better transitional words to ensure a smooth flow of ideas from paragraph to paragraph.

The introduction should be brief relative to the rest of the paper. If the opening is inappropriately lengthy, the reader will lose interest, annoyed that you have failed to get started. Do not include unnecessary background information, especially if the professor is already conversant with the material on which you are writing. Your introductions should not exceed two pages. The purpose of the introduction is to:

- let the reader know what the topic is
- inform the reader about your point of view
- arouse the reader's curiosity so that he or she will want to read about your topic.
- to engage the reader's attention
- to identify for the reader the central issue or subject

Approaches vary widely, however the following approach can produce an effective introduction.

- Describe the importance (significance) of the work - why was this worth doing in the first place? Provide a broad context.
- Defend the model - why did you use this particular organism or system? What are its advantages? You might comment on its suitability from a theoretical point of view as well as indicate practical reasons for using it.
- Provide a rationale. State your specific hypothesis(es) or objective(s), and describe the reasoning that led you to select them.
- Very briefly describe the experimental design and how it accomplished the stated objectives.
- Use past tense except when referring to established facts. After all, the paper will be submitted after all of the work is completed.
- As always, pay attention to spelling, clarity and appropriateness of sentences and phrases.

2. REDUCING THE RISK OF SUBMITTED REQUESTS FOR PROTECTION OF RIGHTS IN PUBLIC PROCUREMENT PROCEDURES, THROUGH THE ANALYSIS OF PUBLIC PROCUREMENT CASES IN THE PUBLIC UTILITY SECTOR OF BELGRADE

The procedure of protection of rights in the Republic of Serbia is one of the key problems in the rapid implementation of public procurement procedures. The procuring entity is obliged to define the deadlines in the market research phase, which includes potential waiting periods for the decision of the Republic Commission for Protection of Rights in Public Procurement Procedures, which amount to about 40 days if we include the possibility of appealing the tender documentation and the contract award decision. In practice, these deadlines often last several months, but the procuring entity is obliged to plan the public procurement process in all phases, starting from the market research phase, procurement procedure from initial identification of needs or requests through the tender process to signing contracts and payments (CZIS, 2004 .), in which he can often use electronic means.

The introduction of electronic procurement is defined by the Law on Public Procurement of the Republic of Serbia, which regulates the system of protection of bidders' rights. The idea of pointing out the greatest risks that increase the probability that the Request for Protection of Rights will be submitted, should be important for every procuring entity, primarily in order to implement the public procurement procedure as efficiently as possible, applying the Public Procurement Law and all public procurement principles.

In that sense, an analysis should be started on a sample that can give concrete results, analyzing the time frame of at least 5 years of conducting all public procurement procedures that were the subject of protection of rights. Within this paper, a research was conducted that dealt with the impact of the subject of public procurement on the number of complaints in the procedure, i.e., the submission of requests for protection of procuring entities' rights. The research was conducted on a sample of all 13 public utility companies founded by the City of Belgrade.

Having in mind the set subject of research, and taking into account previous theoretical knowledge and practical experience in this field, the starting - general hypothesis of this paper would be (H0): The subject of the public procurement contract may be a factor influencing the submission of requests for protection of rights in the public procurement system.

Further, special and individual research assumptions are set, which should help in testing the general hypothesis. The first special hypothesis (H1): The practice of managing the public procurement system has a positive effect on reducing complaints and submitting requests for protection of rights. (H2): There is a realistic assumption that other factors such as the estimated value and the choice of criteria for the expert evaluation of bids may be a determining factor in increasing the number of procedures for the protection of bidders' rights.

Research hypotheses are defined based on a review of relevant literature and analysis of achievements in areas that are crucial for the defined subject of research, as well as based on experience in consulting practice in public procurement, analysis of publicly available data on the Public Procurement Portal of the Republic of Serbia (<http://portal.ujn.gov.rs/>) and the website of the Republic Commission for the Protection of Rights in Public Procurement Procedures (<http://kjn.rs/>), as well as direct communication with public procurement officers. Each individual procedure that was being appealed against was analyzed in detail, about which data are publicly available on the website of the Republic Commission for the Protection of Rights in Public Procurement Procedures, and

then the subject procedure and data relevant for research were checked and searched on the Public Procurement Portal of the Republic of Serbia. In accordance with that, the sample on which the examination was performed was exact and absolute (all 13 public utility companies founded by the City of Belgrade). The obtained data were analyzed in order to create conditions for testing the initial assumptions. The basic research method was the analysis of publicly available data, conducted during 2018 and 2019.

The analysis of the collected data determined the relationships between the data in order to notice the possible existence of certain rules, while the synthesis of the obtained results generated conclusions that are relevant to the subject of research. Induction, based on the rules that apply to individual phenomena, led to certain general findings in the research of the rules that affect the number of complaints in the field of public procurement, while deduction based on known general laws led to certain conclusions about individual phenomena. Then, the abstraction made it possible to observe only the general characteristics of the object under study, and the concretization indicated the characteristics of precisely determined elements by defined hypotheses, when considering their specifics.

After that, by comparing certain values and characteristics, conclusions were made about the relationships between different phenomena, which provided a basis for defining the conditions to be pursued and the decisions that lead to them. The results of the research, in addition to the textual interpretation, are accompanied by a tabular and graphical presentation, in order to enable a clearer view of the obtained conclusions.

1. IMPROVING THE ORGANIZATION IN ORDER TO REDUCE THE RISK OF NEGATIVE EFFECTS OF PROTECTION OF RIGHTS

Public procurement as part of the organization, and especially the subsystem dealing with the protection of rights, is a complex business process that cannot be simply described in time, because in addition to preparation, planning, technical development, they also contain elements of waiting deadlines, complaints, rights protection, changes etc. Therefore, it is a difficult task for the management to determine the realistic, but also the maximum and minimum necessary number of executors, so that the work can be done in the best way. Due to the inadequate structure of employees, many contracting authorities resort to outsourcing by hiring professional, public procurement experts, i.e., protection of rights, who carry out procedures instead of employees, but with the conclusion that there are few or not on the market, and sometimes they are not competent to adequately perform the tasks, due to ignorance of the technical elements of the procedure, but also of insufficient quality and experience.

Every manager, even a manager in the field of public procurement, must understand the importance of designing an organization, as a process of managerial shaping of an organization capable of implementing a defined business strategy and achieving other individual and organizational outcomes. The organization of the public procurement sector, in the field of protection of rights, as a result of current harmonization of organizational elements is not the subject of organizational design, it is the subject of reactive use of managerial authority, in order to create a relatively permanent basis for the organization, based on defining its goals, strategies and processes. The manager must be aware that a protection procedure that causes the procedure not to be carried out in the current year, may cause the funds intended for the project in question not to be in the next budget year. Therefore, he must take all steps to prevent the situation in question.

This introduces predictability in the behavior of the organization in relation to the environment, which in the procedures of complaints and protection of rights have a great influence, but also in relation to all its elements, which make up the management process. It is also very important to define the elements of the organization that will play the role of a resource during its functioning, thus forming the structure of the organization. But we must not skip the clear division of labor in both the expert and technical part of the protection of rights, division of labor and tasks to employees that will enable efficiency through the learning curve - by creating organizational and managerial structure, based on which the stability of relations between members of the organizations - organizational behavior.

Modern organizations represent a set of organized elements and relations between them, where when defining the design of the organization the following processes are referred to: choosing a strategy for the protection of rights, creating a model of organizational structure that meets the requirements depending on the subject of procurement, plan of applications, business, etc. It also refers to the processes of influencing participants and their behavior within the organization and externally, directing the flow and dynamics of transformation processes, but also control, evaluation and rewarding in accordance with the achievement of set goals.

The organizational unit for public procurement, as well as its subsector related to the protection of rights, needs to be organized in accordance with the Strategic Plan of the Company, and in that sense define the organizational structure of the sector and subsector. The organizational structure is a formal system of tasks and powers that controls how people coordinate their actions and use resources to achieve an organization's goals. But the organizational structure also refers to formalized schemes of interactions that connect tasks, technologies and people in one company. The activity of the company is especially important here, as well as the degree of exposure to the risk of desires through the protection of rights, because it will be the basis for defining the sector that deals with the activity in question.

The need of procuring entities and bidders to form the procurement sector is obvious. Over 20% of the GDP of the European Union consists of public procurement, but the largest part of the Financial Plan of each company and institution that represents the procuring entity in terms of the Public Procurement Law is realized through public procurement. Therefore, in this way we can control a number of corrupt elements and act anti-corruption by suppressing abuses. Analogously, the elements that imply the definition of

the public procurement sector are recognized, which are: specialization, decentralization, departmentalization, coordination, control, formalization.

Therefore, it is unequivocally necessary to define in the organizational structure the sectors and subsectors that will narrowly specialize in areas that are important for the business of the institution, since the division of labor creates conditions for executors within the organization to specialize in performing certain tasks and thus achieve better performance. The degree of specialization is determined by the number of different activities assigned to one executor. However, it can be determined at all levels of organization, from the individual to the entire organization, and as such the dimension can be changed at those levels, depending on where its change achieves improvements.

The importance of developing procedures for each form of business, i.e., organizational unit or sector, is unequivocal. The importance of procedures is great, both for management and employees, in terms of defining the process, control, but also defining the tasks of each employee who works on certain jobs, including public procurement. The example this paper is addressing refers to the proposal of the organizational arrangement of the organizational unit that deals with public procurement - in a medium or large company, e.g., public company. Here, it is especially important to fit the elements that cannot be strictly defined by the procedure, because each individual request for protection of rights is specific and the course of steps cannot be uniformly defined for e.g., goods, services or works.

When defining the organizational structure of the company, and based on the same procedure for an individual process in the organization, it is necessary to clearly mark the links between the process, and other processes within the organization, especially those of the input and output, which precede and exit the process itself. In that sense, it is necessary to indicate that the procurement procedure itself derives from certain procedures, as well as that it is marked within the Internal Public Procurement Act, which is specific to each procuring entity individually (bidders do not have this legal obligation), or e.g., Rules of procedure on quality, if determined by it.

Certainly, organizational structuring is the basis for setting up the process, but the importance of a scientific approach to the public procurement system should be emphasized, as well as the consistency of education and training that will improve the knowledge of professionals and make public procurement more efficient - which inevitably brings savings to the state and therefore, benefit to the entire community.

Public procurement is a living system that requires constant improvement of knowledge, and the latest changes have brought many innovations, such as for example in the field of environmental and social goals, which in the past were identified as less important for the public procurement system, i.e., not directly related to the primary goal of procuring goods, works or services in the best conditions (Arrowsmith, Horizontal policies in public procurement: a taxonomy, 2010), but as these elements are recognized and very important today, they should be incorporated into the development steps, as well as electronic public procurement, all with the aim of the overall development of the public procurement system. In particular, there is a change in the approach of the directives, from the mild relationship of Directive 2004/18 /EC, in terms of the use of environmental and social criteria, to more strictly defined subject elements with the new directives from 2014, thus incorporating social criteria (Hettne, 2013) and social puts responsibilities in front of the budget savings option (Neamtu, 2014).

Electronic public procurement is a term used to describe the use of electronic methods, most commonly the Internet, to manage transactions between competent authorities (procuring entities) and bidders (Commission, 2009).

2. RESEARCH RESULTS AND IMPLICATIONS

The technique used in this research included an analysis of all procedures for the protection of rights in public utility companies established by the City of Belgrade, in the period from 01.01.2014 to 31.12.2018. The research analyzed all 13 companies, i.e., 463 requests for protection of rights. The analysis consisted of searching all requests for protection of rights on the website of the Republic Commission for Protection of Rights in Public Procurement Procedures, and then each individual procedure and data relevant to the research was checked by searching the Public Procurement Portal of the Republic of Serbia.

The analysis collected the data shown in Table 1 - from which it can be concluded that in the period from 01.01.2014 to 31.12.2018, 463 requests for protection of rights were submitted, of which 276 requests were submitted for goods as a subject of public procurement (Table 1), 139 requests for services (Table 2) and for works 48 submitted request for protection of rights (Table 3).

Public utility companies		2014	2015	2016	2017	2018	Total
PUC "Belgrade Waterworks and Sewerage"	goods	12	19	18	13	9	71
PUC "City Markets"	goods	0	0	0	0	0	0
PUC "Belgrade Power"	goods	7	20	11	5	5	48
PUC "Public lighting"	goods	1	3	4	2	0	10
PUC "Greenery Belgrade"	goods	1	4	3	1	3	12
PUC "City sanitation"	goods	7	12	19	7	6	51
PUC "Parking service"	goods	2	0	3	1	0	6
PUC "City traffic company Belgrade"	goods	8	3	9	13	8	41
PUC "Belgrade Road"	goods	3	4	7	3	2	19
PUC "Infousing technologies"	goods	2	5	1	0	0	8
PUC "Funeral services"	goods	0	0	1	2	1	4
PC "City Housing"	goods	2	0	1	1	2	6
PUC "Veterinary services Belgrade"	goods	0	0	0	0	0	0

Table 1 – The requests for protection of rights (goods)

Public utility companies		2014	2015	2016	2017	2018	Total
PUC "Belgrade Waterworks and Sewerage"	services	4	3	4	4	5	20
PUC "City Markets"	services	1	1	2	2	2	8
PUC "Belgrade Power"	services	3	6	14	5	4	32
PUC "Public lighting"	services	0	2	1	1	1	5
PUC "Greenery Belgrade"	services	1	3	1	2	1	8
PUC "City sanitation"	services	1	0	6	0	3	10
PUC "Parking service"	services	0	3	3	0	1	7
PUC "City traffic company Belgrade"	services	2	1	2	2	2	9
PUC "Belgrade Road"	services	1	0	2	2	2	7
PUC "Infousing technologies"	services	1	3	0	0	0	4
PUC "Funeral services"	services	0	1	1	4	1	7
PC "City Housing"	services	0	2	2	3	15	22
PUC "Veterinary services Belgrade"	services	0	0	0	0	0	0

Table 2 – The requests for protection of rights (services)

From the above, we can conclude that the goods participate 59.61% in the number of submitted requests for protection of the rights of bidders in all public utility companies whose founder is the City of Belgrade, in the period from 01.01.2014 to 31.12.2018. Services make up 30.02% of all submitted requests for protection of bidders' rights in all public utility companies founded by the City of Belgrade, and works 10.37%.

Public utility companies		2014	2015	2016	2017	2018	Total
PUC "Belgrade Waterworks and Sewerage"	works	1	10	1	2	3	17
PUC "City Markets"	works	0	0	0	0	0	0
PUC "Belgrade Power"	works	0	5	5	6	1	17
PUC "Public lighting"	works	0	0	1	0	0	1
PUC "Greenery Belgrade"	works	0	0	1	1	0	2
PUC "City sanitation"	works	0	0	0	0	0	0
PUC "Parking service"	works	0	0	0	0	0	0
PUC "City traffic company Belgrade"	works	1	0	0	2	1	4
PUC "Belgrade Road"	works	0	0	0	0	0	0
PUC "Infousing technologies"	works	0	0	0	0	0	0
PUC "Funeral services"	works	0	0	0	0	2	2
PC "City Housing"	works	0	1	1	0	3	5
PUC "Veterinary services Belgrade"	works	0	0	0	0	0	0

Table 3 – The requests for protection of rights (works)

Based on the analyzed facts, we can claim that the choice of the subject of the public procurement contract affects the probability of submitting a request for protection of rights. The assumption is that they are good - as the subject of a public procurement contract, technically described in more detail, and thus defined technical specification can be the basis for filing a complaint. The complete Table 4, which defines all the requests for protection of rights, is shown below.

Public utility companies		Number of RPP by year					Total
		2018	2017	2016	2015	2014	
PUC "Belgrade Waterworks and Sewerage"	TOTAL	17	32	23	19	17	108
	goods	12	19	18	13	9	
	services	4	3	4	4	5	
	works	1	10	1	2	3	
PUC "City Markets"	TOTAL	1	1	2	2	2	8
	goods	0	0	0	0	0	
	services	1	1	2	2	2	
	works	0	0	0	0	0	
PUC "Belgrade Power Plants"	TOTAL	10	31	30	16	10	97
	goods	7	20	11	5	5	
	services	3	6	14	5	4	
	works	0	5	5	6	1	
PUC "Public lighting"	TOTAL	1	5	6	3	1	16
	goods	1	3	4	2	0	
	services	0	2	1	1	1	
	works	0	0	1	0	0	
PUC "Greenery Belgrade"	TOTAL	2	7	5	4	4	22
	goods	1	4	3	1	3	
	services	1	3	1	2	1	
	works	0	0	1	1	0	
PUC "City sanitation"	TOTAL	8	12	25	7	9	61
	goods	7	12	19	7	6	
	services	1	0	6	0	3	
	works	0	0	0	0	0	
PUC "Parking service"	TOTAL	2	3	6	1	1	13
	goods	2	0	3	1	0	
	services	0	3	3	0	1	
	works	0	0	0	0	0	
PUC "City traffic company "Belgrade"	TOTAL	11	4	11	17	11	54
	goods	8	3	9	13	8	
	services	2	1	2	2	2	
	works	1	0	0	2	1	
PUC "Belgrade Road"	TOTAL	4	4	9	5	4	26
	goods	3	4	7	3	2	
	services	1	0	2	2	2	
	works	0	0	0	0	0	
PUC "Infohousing technologies"	TOTAL	3	8	1	0	0	12
	goods	2	5	1	0	0	
	services	1	3	0	0	0	
	works	0	0	0	0	0	
PUC "Funeral services"	TOTAL	0	1	2	6	4	13
	goods	0	0	1	2	1	
	services	0	1	1	4	1	
	works	0	0	0	0	2	
PC "City Housing"	TOTAL	2	3	4	4	20	33
	goods	2	0	1	1	2	
	services	0	2	2	3	15	
	works	0	1	1	0	3	
PUC "Veterinary services Belgrade"	TOTAL	0	0	0	0	0	0
	goods	0	0	0	0	0	
	services	0	0	0	0	0	
	works	0	0	0	0	0	
Total:						463	

Table 4 - All procedures for protection of rights in the period 2014-2018 in public utility companies of the City of Belgrade

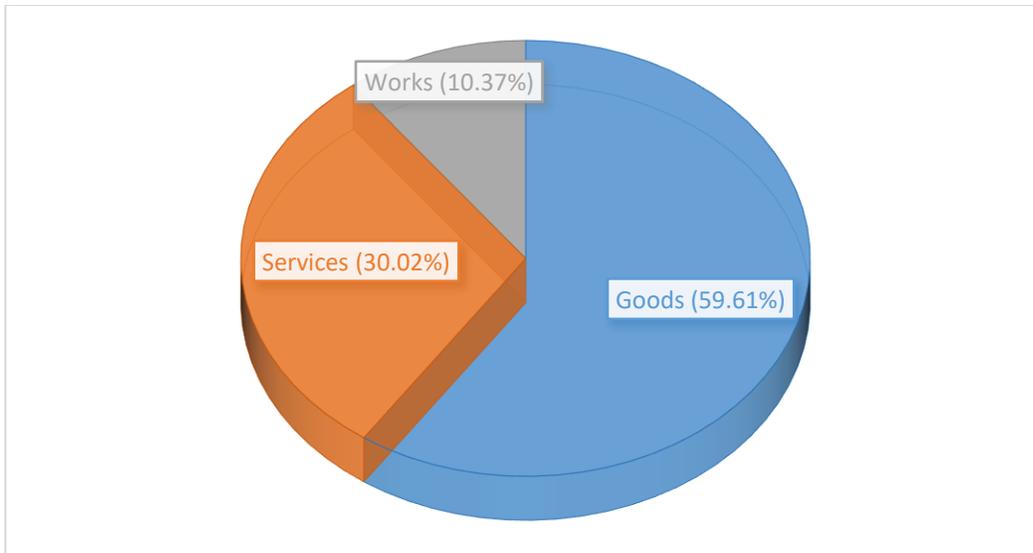


Chart 1: Number of protection procedures under the subject of public procurement contracts

In the continuation of the research, the subject of analysis was the fact that the Law on Public Procurement was amended in 2015 (before that a new law was passed in 2012), so the subject change affected the practice in public procurement procedures, but also the protection of rights, to the opinions, attitudes and practice of the competent institutions, and thus of the Republic Commission for the Protection of Rights in Public Procurement Procedures. Accordingly, we noticed that in 2014, 83 requests were submitted for the protection of the rights of bidders in all public utility companies whose founder is the City of Belgrade, in the period from 01.01.2014 to 31.12.2018. In the following 2015, that number kept the trend and we have 84 requests. But with the amendment of the Law in 2016, the number increased to 124 requests for protection of rights. Already in 2017, a high number of 111 was maintained, which is less than the previous one, but already in 2018, we have a significantly better result - 61 requests for protection of rights.

Public utility companies		2014	2015	2016	2017	2018	Total
PLC "Belgrade Waterworks and Sewerage"	TOTAL	17	32	23	19	17	108
PUC "City Markets"	TOTAL	1	1	2	2	2	8
PUC "Eelgrade Power"	TOTAL	10	31	30	16	10	97
PUC "Public lighting"	TOTAL	1	5	6	3	1	16
PUC "Greenery Belgrade"	TOTAL	2	7	5	4	4	22
PUC "City sanitation"	TOTAL	8	12	25	7	9	61
PLC "Parking service"	TOTAL	2	3	6	1	1	13
PUC "City traffic company "Belgrade"	TOTAL	11	4	11	17	11	54
PLC "Belgrade Road"	TOTAL	4	4	9	5	4	26
PLC "Infohousing technologies"	TOTAL	3	8	1	0	0	12
PLC "Funeral services"	TOTAL	0	1	2	6	4	13
PC "City Housing"	TOTAL	2	3	4	4	20	33
PUC "Veterinary services Belgrade"	TOTAL	0	0	0	0	0	0
TOTAL		61	111	124	84	83	463

Table 5 – The number of submitted requests for protection of rights by years

We come to the conclusion that the time of application of the legislative framework has a positive effect on the work of contracting authorities and those contracting authorities adopt the practice of relevant institutions, apply it adequately and thus reduce the number of complaints in public procurement procedures.

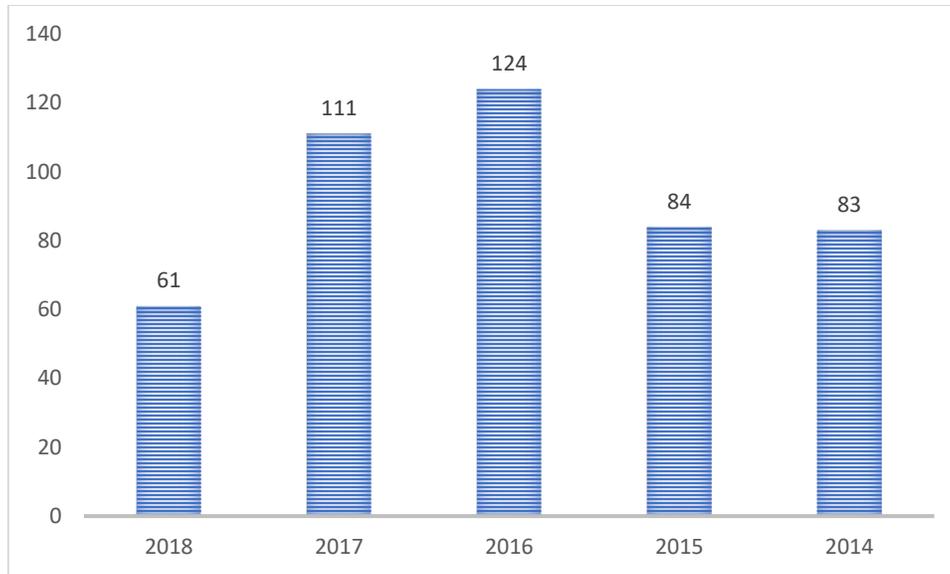


Chart 2 – The number of submitted requests for protection of rights by years

It is evident that the harmonization with the EU Directives initiates new changes in the legislative framework, so it is necessary to point out this legality, in order to help reduce the number of complaints and the efficiency of public procurement management.

What must be pointed out in the research is the fact that the subject of the public procurement contract is only one of the factors influencing the complex system of public procurement, and that in the following phases of the research elements such as additional conditions must be taken into account and the elements such as additional conditions, criteria, technical specification, deadlines and the like.

CONCLUSION

The aim of this paper is to point out the importance and complexity of protection procedures, but also to give concrete results in the field of determining the subject of public procurement contracts, which can be a factor that decisively influences the submission of requests for protection in the public procurement system. Therefore, the organizational aspect is very important because the practice of managing the public procurement system has a positive effect on reducing complaints and submitting requests for protection of rights, if the organization is adequately set up. Certainly, in addition to the subject of procurement, there are a number of factors that have an impact here, and this primarily refers to the factor of estimated value and selection of criteria for expert evaluation of bids, which are an important factor in increasing the number of procedures.

The manager of the organization, with the help of the procurement manager, must constantly work on raising awareness among employees about the risks of rigging bids in public procurement procedures, but also about the consequences of corrupt actions in the public procurement procedure. In that sense, employees, and mostly members of the Public Procurement Commission, must be trained and capable of adequate selection of conditions and criteria for evaluation and award of public procurement contracts, but also complete design of tender procedure in a way to reduce communication between participants, as well as steps to increase the number of potential bidders, but not those who negotiate, creating oligopolies.

To all this domestic tendencies should be added, as well as global tendencies that have an impact on the public procurement system - Brexit in Great Britain in terms of influence on the EU as a source of Public Procurement Directives, because when the UK repeals the European Communities Act 1972, it will no longer be obliged to follow EU procurement directives, nor will it be subject to the obligations signed by the EU on behalf of the United Kingdom in the Government's Government Procurement Agreement (GPA) and Preferential Trade Agreements (PTAs). In addition, under the 1998 Devolution Solution, public procurement responsibilities were transferred to Northern Ireland, Scotland and Wales; Therefore, internal centrifugal forces will influence the design of the UK public procurement regime after Brexit (Dawar, 2017). The changes of presidents in large countries should be added to global trends in the public procurement, supply, demand and markets sectors (Yukins C., 2017).

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Solvency and Financing of Fixed Assets: The Case of Agricultural Enterprises in Serbia

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Abstract

The aim of this paper is to examine the level and movement of solvency indicators and financing of fixed assets of agricultural enterprises in the Republic of Serbia. The research was conducted on a sample of 17 agricultural enterprises whose shares were listed on the Belgrade Stock Exchange, and their operation in the period from 2015 to 2019 was observed. Solvency is observed through solvency ratios and debt ratios, while the financing of fixed assets is observed through the ratios of financing fixed assets with equity and the ratio of financing fixed assets with long-term capital. The results of the research indicate that the largest number of observed enterprises, during the observed period, have favourable values of solvency indicators. In addition, the research established that the largest number of observed enterprises, during the period, finance not only fixed assets, but also a part of current assets from their own capital and long-term capital. During the observed time period, changes in solvency ratios and fixed asset financing ratios were not statistically significant. The results of the research can be important for the creditors of the enterprise (creditors and suppliers), the owners, the management of the enterprise, but also the entire social community.

Keywords: agricultural enterprise; solvency; fixed assets financing; joint-stock companies; Belgrade Stock Exchange; Republic of Serbia.

1. Introduction

The accounting information system, which is part of the entity's integrated management information system, provides financial information and supports the decision-making process in the context of coordination, control of organizational activities and strategic decision-making (Fitriati & Mulyani, 2020), and consists of two pillars: financial and managerial accounting. The result of the work of company managers is visible in the disclosed financial statements. As stated by Srebro et al. (2021) financial statements disclose the operations and assets for which managers are responsible in terms of whether they use them effectively in carrying out business activities. The assets of companies are classified in the balance sheet as fixed or current, and the sources of its financing as own or borrowed. Fixed assets are those that participate in business processes by gradually transferring their value to business performance and (as a rule), return to their original form in a period longer than one year, as opposed to working capital that transfers its value (as a rule) in a shorter period of one year (Žarkić Joksimović *et al.*, 2021, p. 43). Zwolak (2008, p. 22) distinguishes between passive fixed assets (buildings and structures) and active ones (machines, equipment and means of transport) as well as enlivened ones (long-term plantations) and land improvement. Consideration of the potential of fixed assets includes information related to their quantitative and qualitative impact by observing their use.

Property valuation is a relatively challenging activity, as well as a scientific discipline that has an impact on the amount of reported assets and the process of economic results (Svoboda, 2008). An important issue is the valuation of fixed assets in accounting entities that prepare financial statements in accordance with the national legislation of countries and compliance with the requirements of International Accounting Standards IAS/IFRS and US-GAAP. Further, it is necessary to keep in mind the tax regulations related to fixed assets.

In order for a profit-oriented organization to survive in the market, it must pay special attention to how the funds used to start a business and later, to reach the desired scope of business are financed. An important issue that arises in this regard is the issue of sustainability of assets, because it is inseparable from compliance with their sources of funding. In his research, Ramapini (2019) dealt with how the durability of assets affects financing. The results of his research showed that more permanent assets require larger advances, which makes it difficult to finance them, because durability affects the price of assets and therefore total funding requires more than their collateral value, and that permanent assets are more likely to be rented. When looking at the size of the company, certain specifics are noticed when it comes to financing modalities. Thus, Walker (2021) states that the small firm with annual sales

of less \$15 million, depends mainly on short-term trade credit and bank credit and non-traditional long-term financing such as owners' personal investments, informal investment, and venture capital.

One of the goals of accounting is the quantitative identification of the financial structure and property situation of the company in order to determine the investment in assets according to the purpose and sources of funds by ownership and maturity, as well as the structure of assets and their sources. All this is important for determining how financially stable and solvent a company is (Mitrović & Knežević, 2020, p. 59). Cassar (2004, p. 261) points out that financial capital is one of the necessary resources for starting a business and the subsequent operation of a company. One of the sources of financing fixed assets is long-term debt. The optimal debt is not noticeable, but it can be estimated from the data (Matemilola & Ahmad, 2014, p. 409). In this context, it is pointed out that Booth *et al.* (2001) use three measures of debt ratio namely: total debt ratio, long-term book debt ratio, and long-term market debt ratio. However, the same authors emphasize that long-term debt ratios of developing countries are lower compared to developed countries.

In order to make adequate business decisions, which will aim to improve the business of the enterprise, and thus the business of the entire sector, it is necessary to get acquainted with the way of doing business and the results of the enterprise. One way to do that is to analyse the financial statements of the enterprise, using certain techniques. The subject of this paper is the analysis of solvency and the manner of fixed assets financing of agricultural enterprises in the Republic of Serbia whose shares are listed on the Belgrade Stock Exchange. The research covered 17 enterprises, observing their business in the period from 2015 to 2019. Financial reports contain useful information on the financial performances and the prospect of companies for stakeholders in the financial market (Jan, 2018). The aim of this paper is to determine the tendencies in the movement of solvency and financing of fixed assets of agricultural enterprises in the Republic of Serbia that are organized as joint-stock companies.

The paper consists of four sections. Following the introductory considerations, in which the business of agricultural enterprises in the Republic of Serbia is described, there is a section in which the research methodology is described. The results of the research are presented in the third section. In the fourth part, concluding remarks are presented, and the limitations from which the directions of future research arise are identified.

2. Materials and Methods

Solvency ratios measure a firm's ability to survive over a long period (Weygandt *et al.*, 2009), i.e., they indicate the firm's ability to meet long-term liabilities, including interest (Robinson *et al.*, 2015). Solvency analysis, unlike liquidity analysis, is of a long-term nature, which makes it a less precise but more comprehensive analytical measure (Subramanyan & Wild, 2008). Solvency analysis can also be found under the analysis of long-term investment risk (investment), which indicates that existing and potential investors and long-term creditors (i.e., buyers of bonds and long-term lenders) are most interested in this aspect of the analysis (Malinić *et al.*, 2019). The most commonly used solvency ratios are equity to total debts ratio and total debt to total assets ratio (Figure 1).

The solvency ratio is the ratio between the equity and the total liabilities of the enterprise. According to Obradović and Karapavlović (2017), the use of this indicator is based on the importance of equity for the security of the enterprise, where a ratio of less than 1 indicates insufficient security, while a ratio above 1 indicates security above normal.

The debt ratio, as the ratio between total liabilities and total assets, shows which part of the funds comes from borrowed sources (short-term and long-term). The high value of this indicator indicates that most of the enterprise's assets come from debt, which can be a risky financial structure, as the debtor is in danger of not being able to pay the related interest costs or to repay the principal of the debt. On the other hand, the low value of this indicator may indicate a conservative financing strategy using only equity to finance assets. Creditors prefer the value of this indicator to be lower or within normal limits, which is logical if we keep in mind that it means a higher degree of protection for them if the enterprise finds itself in financial trouble.

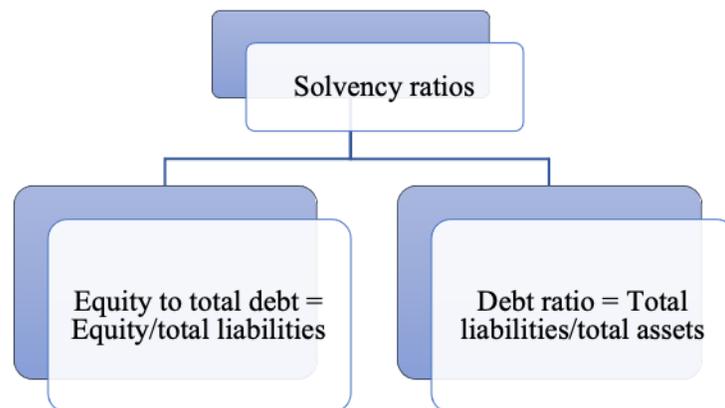


Figure 1. Solvency ratios.

The analysis of fixed asset financing is a useful tool in assessing the financial position of an enterprise, which should reveal the extent to which it is financed by equity and total long-term capital (Bogićević *et al.*, 2021). The key indicators of financing fixed assets are the ratio of financing fixed assets with equity and the ratio of financing fixed assets with long-term capital (Figure 2).

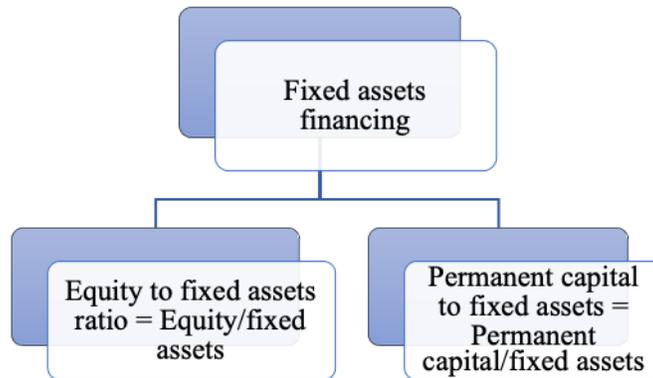


Figure 2. Fixed assets financing.

The ratio of fixed assets to capital reflects the extent to which fixed assets, as the riskiest part of assets, are financed by equity (Malinić *et al.*, 2019), while the ratio of fixed assets to long-term capital indicates the extent to which fixed assets are financed by long-term capital (equity and long-term borrowed capital).

The analysis of solvency and financing of fixed assets was conducted on a sample of enterprises whose shares are listed on the Belgrade Stock Exchange within Sector A—Agriculture, Forestry, and Fisheries, and which are registered with the Business Registers Agency under group 0111—Growing cereals (except rice), legumes, and oilseeds in the period from 2015 to 2019. Out of 21 enterprises whose shares were listed on 31 December 2020 on the Belgrade Stock Exchange (Belgrade Stock Exchange, 2020), further research covered 17 enterprises. Namely, the research did not include one enterprise that had a loss above the amount of capital during all five observed years, as well as three enterprises that did not have publicly available correct financial reports on the official website of the Business Registers Agency. Obradović *et al.* (2021) also point out the problem of public unavailability of financial reports of enterprises from the Belgrade Stock Exchange. Bearing in mind that financial statements are a key source of information on the enterprise’s operations, individual financial statements were used as a source of data for research purposes. More specifically, data from the enterprise’s balance sheet were used.

The IBM SPSS Statistics Version 24 statistical package was used for statistical data processing. To determine whether the changes in the solvency ratio and financing of fixed assets during the observed time period were statistically significant, the Friedman test was used. The mentioned test was used for the reason that the data used in the analysis deviate from the normal schedule. In cases where the Friedman test determines the existence of statistically significant differences between the solvency indicators and the financing of fixed assets between the observed years, it is necessary to conduct subsequent tests between significant years. In that case, it is necessary to conduct individual Wilcoxon rank tests, with Bonferroni correction of the alpha value, which would avoid type I errors. When calculating the Bonferroni correction, we start from the initial level of significance (that is, 0.05) and divide by 4, since we compare the indicators of solvency and financing of fixed assets in 2016 against 2015, in 2017 against 2016, in 2018 against 2017, and in 2019 against 2018. This gives a new significance level of 0.0125 (Pallant, 2007).

3. Results and Discussion

Table 1 and Figure 3 shows the movement of solvency ratios of the observed agri-cultural enterprises in the period from 2015 to 2019.

Table 1. Trend of solvency of agricultural enterprises in the Republic of Serbia in the period 2015–2019.

Elements	2015	2016	2017	2018	2019
Total equity at sample level (in millions of RSD)	13.633	14.800	16.771	16.767	16.888
Total borrowed capital at the sample level (in millions of RSD)	11.656	9.528	9.374	9.836	10.304
Solvency ratio at the sample level	1.17	1.55	1.79	1.7	1.64
Average value of solvency ratio at sample level	3.43	3.58	3.65	4.78	4.39
Maximum value of solvency ratio	14.76	18.11	15.7	29.03	19.88
Minimum value of the solvency ratio	0.01	0.42	0.44	0.45	0.47

Number of enterprises with the ratio above 1	12	10	11	11	10
Number of enterprises with the ratio between 0.5 and 1	2	5	4	4	5
Number of enterprises with the ratio below 0.5	3	2	2	2	2

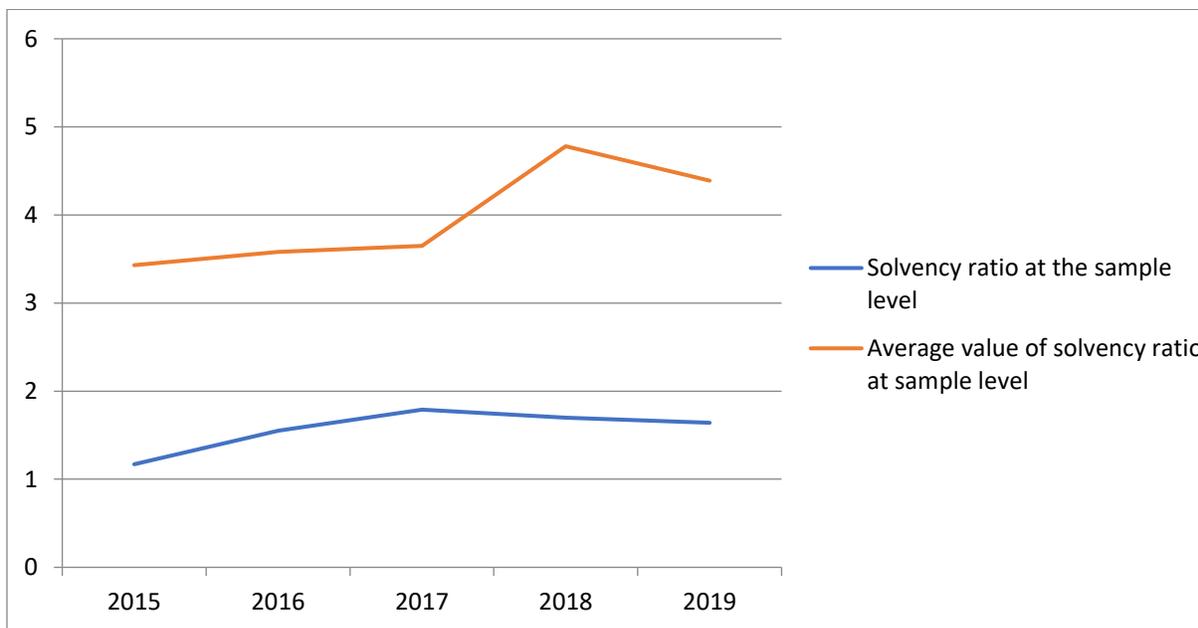


Figure 3. Trend of solvency ratios at the sample level and an average value of solvency ratios at the sample level of agricultural enterprises in the Republic of Serbia in the period 2015–2019.

As can be seen from Table 1, the value of equity at the sample level records a growth trend in the observed five-year period. Thus, in 2019, the value of equity at the sample level is 23.85% higher than in 2015. When it comes to the value of total borrowed capital at the sample level, there is a downward trend in value in the first two observed years, followed by a rise in value. In the first three observed years, there is a trend of the increasing value of solvency ratios at the sample level, followed by a decrease in value in the last two observed years. Despite the observed fluctuations, the value of solvency ratios at the sample level is at a high level during all five observed years (value above 1). In addition, the average value of solvency ratios at the sample level is at a high level during all five years (due to high values of solvency ratios of individual enterprises). In seven enterprises, the value of solvency ratios increased in 2016 in 2015, while in ten enterprises, the value of this indicator decreased. In 2017, the value of solvency ratios increased in nine enterprises compared to 2016, while the value of this indicator decreased in eight enterprises. In eight enterprises, the value of solvency ratios increased in 2018 compared to 2017, while the same number of companies recorded a decrease in the value of solvency ratios. The same value of solvency ratios was recorded in one enterprise in 2017 and 2018. At the end of 2019, the value of solvency ratios increased in eight enterprises compared to 2018, while the value decreased in nine enterprises. The results of the Friedman test ($\chi^2(4, n = 17) = 0.518; p = 0.972$) show that the changes in solvency ratios during the observed five-year period are not statistically significant.

Table 2 and Figure 4 shows the movement of debt ratios of agricultural enterprises in the period from 2015 to 2019.

Table 2. Trend of debt ratios of agricultural enterprises in the Republic of Serbia in the period 2015–2019.

Elements	2015	2016	2017	2018	2019
Total liabilities for the sample level (millions of RSD)	11.656	9.528	9.374	9.836	10.304
Total assets at the sample level (millions of RSD)	25.289	24.328	26.145	26.603	27.192
Debt ratio at the level of the sample	0.46	0.39	0.36	0.37	0.38
Average value of debt ratios at the sample level	0.41	0.39	0.39	0.39	0.39
The maximum value of the debt ratio	0.99	0.70	0.70	0.69	0.68
The minimum value of the debt ratio	0.06	0.05	0.06	0.03	0.05

Number of enterprises with the ratio above 0.5	5	7	5	5	7
Number of enterprises with the ratio below 0.5	12	10	12	12	10

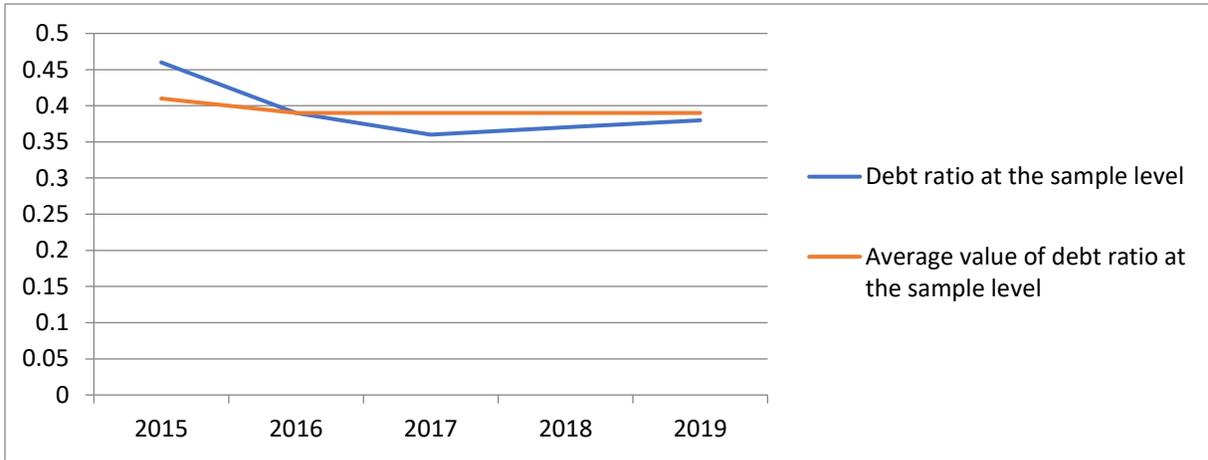


Figure 4. Trend of debt ratios at the sample level and average value of debt ratios at the sample level of agricultural enterprises in the Republic of Serbia in the period 2015–2019.

As can be seen from Table 2, there is a decline in the value of total liabilities at the sample level in 2016 and 2017, and in the last two years, there has been an increase in value. When it comes to the value of total assets of the enterprise at the level of the sample, after a decline in value in 2016 compared to 2015, there is a trend of increasing value in the last three years. Thus, at the end of 2019, the value of total assets was 7.5% higher than at the end of 2015. Observed at the sample level, over a five-year period, more than 50% of total assets were financed from their own sources. In 2016, compared to 2015, and in 2017, compared to 2016, the debt ratios increased in eight enterprises, while the value of this indicator decreased in seven enterprises. Two enterprises maintained the same level of share of borrowed funding sources in the structure of total funding sources. In eight enterprises, there was an increase in the indebtedness ratio in 2018 in relation to 2017, and in 2019 in relation to 2018. Six enterprises recorded a decrease in the value of debt ratios in 2018 compared to 2017, and in 2019 compared to 2018. The same level of participation of borrowed sources of financing in the structure of total sources of funds in 2018 was maintained in three enterprises in relation to 2017, and in 2019 in relation to 2018. However, the results of the conducted Friedman test ($\chi^2(4, n = 17) = 0.518; p = 0.982$) reveal that the changes in the debt ratios of the observed agricultural enterprises in the period from 2015 to 2019 are not statistically significant.

The movement of ratios on financing fixed assets with equity of observed agricultural enterprises from the Republic of Serbia in the period from 2015 to 2019 is shown in Table 3 and Figure 5.

Table 3. The trend of ratios on financing fixed assets with own capital of agricultural enterprises in the period 2015–2019.

Elements	2015	2016	2017	2018	2019
Total equity at sample level (in millions of RSD)	13.633	14.800	16.771	16.767	16.888
Total fixed assets at the sample level (in millions of RSD)	13.853	14.978	17.291	17.127	17.292
The ratio of financing fixed assets with equity at the sample level	0.98	0.99	0.97	0.98	0.98
Average value of equity financing ratios with equity at the sample level	1.26	1.2	1.18	1.21	1.18
The maximum value of the ratio of financing fixed assets with own capital	2.72	2.64	2.53	2.62	2.6
Minimum value of equity financing ratios with own capital	0.03	0.42	0.40	0.38	0.43
Number of enterprises with the ratio above 1	11	10	10	9	10

Elements	2015	2016	2017	2018	2019
Number of enterprises with the ratio below 1	6	7	7	8	7

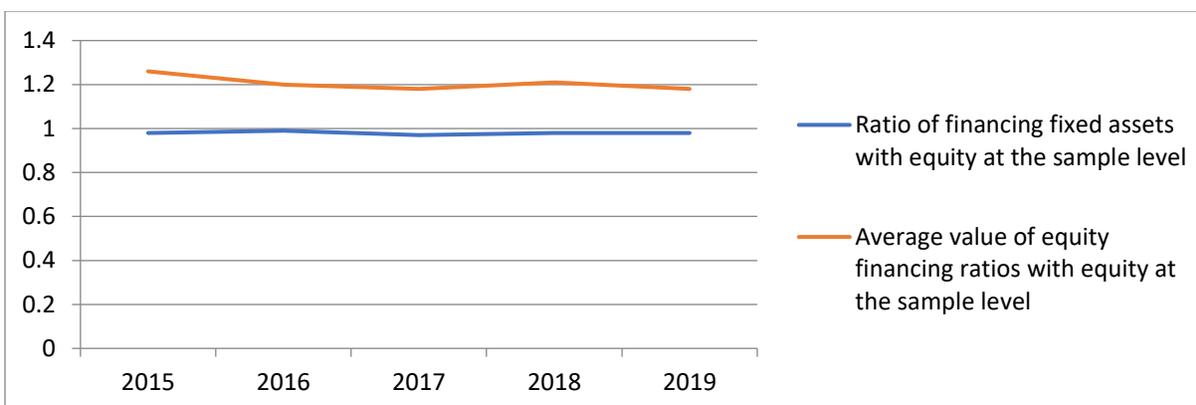


Figure 5. Trend of equity financing ratios with own capital at the sample level and average value of equity financing ratios of fixed assets at the sample level of agricultural enterprises in the Republic of Serbia in the period 2015-2019.

As shown in Table 3, during the observed period, there was a growing trend in the total value of fixed assets of the observed agricultural enterprises, except for a slight decline in 2018, while equity recorded a growth trend. Almost 100% of fixed assets at the sample level were financed with their own capital during the five-year period. The maximum values of fixed assets financing ratios with own capital during the observed period were achieved by one enterprise, as well as the minimum values. During all observed years, more than 50% of the observed agricultural enterprises financed fixed assets and part of current assets from their own capital (since the value of ratios is above 1). In nine enterprises, there was an increase in the ratios of financing fixed assets with own capital in 2016 compared to 2015, while in eight enterprises, there was a decrease in value. In 2017, eight enterprises increased the percentage of financing fixed assets from their own capital compared to 2016, while nine enterprises saw a decrease in that percentage. The ratio of financing fixed assets with the own capital of ten enterprises increased in 2018 compared to 2017, while there was a decrease in value in seven enterprises. In the last observed year, the ratio of financing of fixed assets with own capital increased in nine enterprises in relation to 2018, while the value decreased in eight enterprises. However, the mentioned changes in the level of financing of fixed assets with own capital during the observed period are not statistically significant (as indicated by the results of the conducted Friedman test) ($\chi^2(4, n = 17) = 1.271; p = 0.866$).

Table 4 and Figure 6 shows the movement of financing fixed assets with long-term capital of agricultural enterprises in the period from 2015 to 2019.

Table 4. The trend of financing fixed assets with long-term capital in the observed agricultural enterprises in the period 2015–2019.

Elements	2015	2016	2017	2018	2019
Total long-term capital at the sample level (000 RSD)	16.092	19.453	21.427	21.097	20.978
Total fixed assets at the sample level (in millions of RSD)	13.853	14.978	17.291	17.127	17.292
The ratio of financing fixed assets with long-term capital at the sample level	1.16	1.3	1.24	1.23	1.21
Average value of fixed assets financing ratios with long-term capital at the sample level	1.55	1.46	1.41	1.43	1.38
The maximum value of fixed assets financing ratios with long-term capital	2.86	2.83	2.72	2.66	2.63
The minimum value of fixed assets financing ratios with long-term capital	0.49	0.57	0.57	0.53	0.54

Elements	2015	2016	2017	2018	2019
Number of enterprises with the ratio above 1	14	13	13	13	13
Number of enterprises with the ratio below 1	3	4	4	4	4

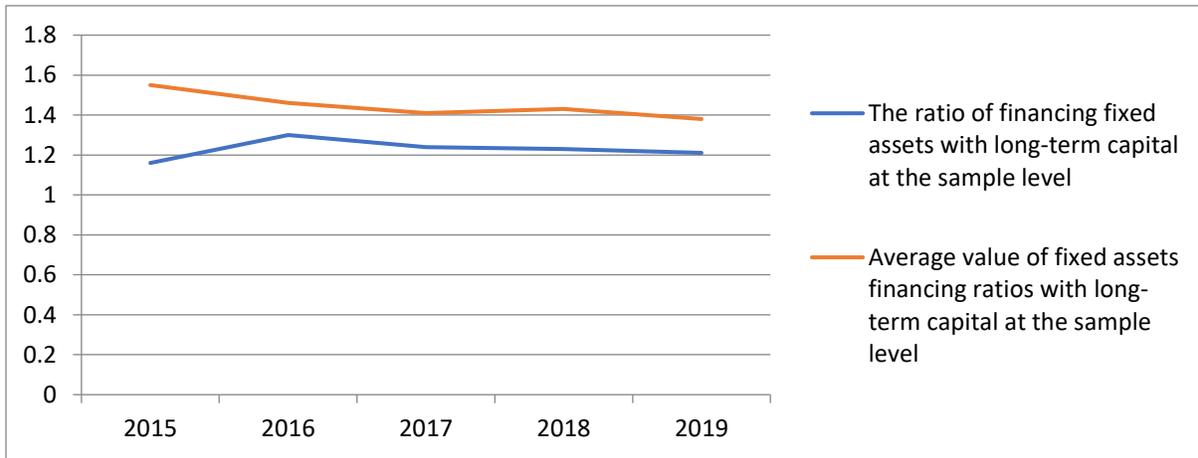


Figure 6. Trend of fixed assets financing ratios with long-term capital at the sample level and average value of fixed assets financing ratios with long-term capital at the sample level of agricultural enterprises in the Republic of Serbia in the period 2015–2019.

As can be seen from Table 4, in the first three observed years, there is a downward trend in the total value of long-term capital at the sample level, and in the last two observed years, there has been a decline in value. During the five-year period, at the sample level, fixed assets and part of current assets were financed from long-term capital (the value of long-term capital financing ratios with long-term capital at the sample level is above 1). In more than 75% of enterprises, during the five-year period, fixed assets were financed from long-term assets, as well as a part of current assets. In 2017, nine enterprises improved the ratio of long-term capital and fixed assets compared to 2016, while in eight enterprises, there was a deterioration. In 2017 compared to 2016, and in 2018 compared to 2017, the ratio of long-term capital and fixed assets improved in six enterprises, while that ratio deteriorated in eleven enterprises. In seven enterprises, the ratio of long-term capital and fixed assets improved in 2019 compared to 2018, while in the case of ten enterprises, there was a deterioration. The results of the Friedman test ($\chi^2(4, n = 17) = 9.224; p = 0.056$) indicate that changes in the ratios of financing fixed assets with long-term capital of agricultural enterprises during the observed five-year period are not statistically significant.

4. Conclusions

The research conducted on a sample of 17 agricultural enterprises from the Belgrade Stock Exchange found that there are significant differences in the level of solvency and financing of fixed assets between enterprises. Most enterprises, during the observed time period, have favourable values of the analysed solvency indicators (solvency ratio and debt ratio), which may indicate that these are sufficiently secure enterprises for creditors. The conducted statistical analysis established that during the observed five-year period, the financial security of agricultural enterprises did not change statistically significantly. Further, it was determined that the largest number of agricultural enterprises during the observed period of time finance the entire fixed assets from their own capital, i.e., long-term capital. As in the case of the solvency indicator, the statistical analysis found that there were no statistically significant changes in the fixed asset financing indicator over time.

The conducted research is characterized by several limitations from which the directions of future research arise. The main limitation of this research is the sample size. Therefore, future research should include a larger number of agricultural enterprises, including enterprises that are not organized as joint-stock companies. In addition, in future research, other solvency indicators should be included, but also ratios of liquidity, activity, and profitability in order to get a complete picture of the enterprise's business (Mitrović *et al.*, 2021). As many users of financial statements consider the information from the cash flow statement to be crucial for performance appraisal and business decision making, in future research, it is necessary to include indicators based on the data from this report.

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Fraudulent Financial Reporting from the Managers' Perspective

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Abstract

Fraudulent financial reporting is a matter of serious social and economic concern. The subject of this paper is to present research flows that include fraudulent financial reporting from a manager's perspective. The purpose of this paper is to present, critique and integrate events and research flows that include effective prevention and identification of accounting fraud as a complex task for the accounting profession and business management. The discussion-based model was used based on existing academic and professional references and past experiences. The paper could be useful to regulators and policymakers to better understand the importance and relevance of academic research on the issue.

Keywords: financial reporting, fraud, management

1. Introduction

Fraud, in its various forms, has existed since time immemorial. However, in recent years, the development of information and communication technologies, which have made our daily life, communication and business easier, has led to new ways in which fraud can be committed. Traditional forms of fraudulent behaviour have become much easier to commit, and new types of fraud have emerged, such as telecommunications fraud and illegal access to computers. In a general sense, fraud can be defined as the act of intentionally manipulating the truth for financial or personal gain. (Milojević *et al.*, 2020), The company's financial statements summarize the economic consequences of its business activities, as well as the performance of the manager (Knežević *et al.*, 2019a). Currently, there is a noticeable increase in fraud in the area of financial reporting in the business environment. As a result, the detection of fraud in financial reporting is an increasing challenge for decision-makers, companies, industry, but also as a topic of increasing academic research. The accounting information system is of primary importance for directing capital in profit-oriented organizations that will use it most efficiently in the realization of business goals (Simonović *et al.*, 2019)

The Association of Certified Fraud Examiners (ACFE), as the world's largest anti-fraud organization, founded in 1989 and with over 80.000 members (Knežević, 2019), classifies professional fraud into three basic categories - embezzlement, corruption and fraud related to financial statements (James & Ratley, 2016). In this paper, the emphasis is on the third group - fraud with financial statements, which are listed as the most expensive type of fraud, and an interesting fact is that "the frequency of fraud occurring with financial statements is the lowest compared to other categories"(Omidi *et al.*, 2019).

Effective detection of accounting fraud remains a complex task for accounting professionals and company management. Auditors' reports and audit opinion are of great importance for transparency and investors in the business decision-making process (Brown *et al.*, 2020). The fraud is by its very nature intentionally hidden, making it more difficult for auditors to spot other irregularities affecting the financial statements (ICAEW, 2020). Traditional auditors fail to deal with new accounting fraud for a number of reasons, including lack of necessary knowledge of new fraud detection technologies, lack of experience and expertise due to the rarity of financial fraud and fraud perpetrators' efforts in finance departments, to conceal data and their actions (Ngai *et al.*, 2019). This highlights the role of managers in establishing adequate systems for the prevention of fraud within the organization, as well as the need for constant improvement of these systems with advances in technology, methods and techniques.

This paper aims to approximate the concept of fraud in financial reporting, along with ways to prevent and detect them, but from a special perspective - the perspective of a manager. The first part of this paper points to fraudulent financial reporting as an activity and the types of fraud it involves. The second part of the paper is dedicated to the role of management in the prevention of fraudulent actions. Observing managers as perpetrators of fraudulent actions is the subject of consideration in the third part of the paper. This is followed by concluding remarks, and finally, the printed and electronic sources used.

2. FRAUDULENT FINANCIAL REPORTING AND PERPETRATORS OF FRAUDULENT ACTIONS

As pointed out by Dimitrijević *et al.*, manipulation of financial statements can shake even the most developed capital markets, disrupt their functioning and lead to a more or less serious financial crisis, and it can be concluded that reduced investment attractiveness resulting from uncertainty, higher risk and inefficient capital markets can slow economic activities. In this context, it is emphasized that fraudulent financial reporting can significantly negatively affect the stability of the economic and financial environment.

Fraudulent financial reporting is treated by Rezaee (2002) as a deliberate misstatement or concealment of amounts in the financial statements, with the intent to mislead users of financial statements, especially investors and creditors. The same author emphasizes which frauds can involve financial reporting:

- “Falsifying, altering or manipulating financial records or business transactions.
- Intentional misreporting of events, transactions, accounts, or other significant information making up the financial statements.
- Knowingly abusing the accounting principles, policies and procedures used to measure, report, and disclose economic events and business transactions.
- Intentionally avoiding the disclosure or presentation of inadequate information regarding accounting principles and policies related to the observed financial amounts”.

The quality of financial statements is affected by many different factors, the most important of which are: the role of management in the fair presentation of financial statements, the role of actuaries in the calculation of financial categories, developed system of internal controls and risk management and the role of the auditor in terms of responsibility for the quality of information disclosed in the financial statements (Mandić *et al.*, 2017).

Fraudulent financial reporting usually begins with a minor change in the presentation of gains in the quarterly financial statements, which is considered not to have a significant impact. Over time, this change grows into a complete fraud and leads to erroneous annual financial statements. Such reporting is harmful for several reasons (Fisher *et al.*, 2009):

- “Undermines the quality and integrity of the financial reporting process.
- Endangers the integrity and objectivity of the audit profession, especially auditors and audit firms.
- Decreases the reliability of the capital market, as well as participants in that market, in terms of reliability of financial information.
- Reduces capital market efficiency.
- Negatively affects national economic development and prosperity.
- May result in high litigation costs.
- Leads to the destruction of the careers of individuals involved in fraudulent financial reporting.
- Causes bankruptcy or significant economic loss to the company in which the fraud begins.
- Encourages excessive regulatory intervention.
- It leads to the destruction of the normal functioning and activities of the company in which the fraud was committed”.

There is no clearly defined profile of the fraud perpetrator. These can be employees, managers, suppliers, but also customers and competitors can commit fraud if the company has a weak supervisory system. In its research, ACFE states that employees commit the most fraud in the company, followed by managers, and the least fraud was committed by the owner or director of the company.

3. The role of management in the prevention of fraudulent actions

Given that the company's management is responsible for the efficient operation of the company, internal control and preparation of financial statements, it has a dominant position in the company's structure and has a unique ability to commit or approve fraud, because it is often in a position to directly or indirectly manipulate accounting records and present false information, the auditor must be very interested in management behaviour and performance in the business (Knežević *et al.*, 2019b).

The extremely important role of the organization's management is reflected in the establishment of a responsible and effective management system that contributes to the creation of value for all stakeholders. "Managers, with their authority, delegated to them by the board of directors, enable the establishment and execution of organizational strategies, manage the effective and efficient allocation of resources, coordinate business activities and ensure the protection of assets" (Chuck, 2010).

In order to meet the set strategies, management should design and implement robust accounting systems. These systems will result in reliable, high-quality financial statements. In addition, it is necessary to establish an effective system of internal control that will

ensure compliance with applicable laws and regulations. A particularly important subsystem of the internal control system is the control over financial reporting, which aims to ensure the accuracy and completeness of financial statements.

Management's responsibility in financial reporting is related to the establishment of such a financial reporting process, which is characterized in the first place by quality, integrity and reliability, as well as fair presentation of reports, and compliance with generally accepted accounting principles. From the point of view of the users of financial statements, especially investors and creditors, it is necessary to ensure that the financial statements do not contain any errors, irregularities or fraud. To effectively exercise its responsibility for financial reporting, management should do the following (Rezae, 2002):

- Identify and assess the circumstances, conditions and factors that may lead to fraud in the financial statements.
- Assess and manage the risk of fraud with financial statements related to given circumstances and conditions.
- Design and implement an adequate and effective internal control process to prevent and detect fraud with financial statements.

The greatest responsibility for preventing fraud with financial statements is in the hands of the company's management. Establish and maintain a sound accounting system, and design and implement an adequate and effective system of internal control over financial reporting, are the main responsibilities of the company's management when it comes to the prevention of fraudulent financial reporting. In addition, it is necessary to ensure that the company complies with applicable laws and regulations, as well as those transactions are recorded properly, in accordance with accounting policies and practices.

"Some of the risk factors that increase the chance of fraud are ineffective management oversight, weak internal control, complicated organizational structure, complex transaction procedures, and other (Wells, 2002). It is concluded that an effective component of control, which includes environmental control, risk assessment, information and communication, and control activities, is a very important step in eradicating or minimizing the chances of fraud. In addition, management should be more accountable when it comes to the process of preparing financial statements in order to reduce the occurrence of fraud related to it.

It is important to assess the current anti-fraud processes and controls that exist in the company, by identifying and measuring fraud risks, by taking steps to reduce the identified risks, and by applying and monitoring appropriate preventive controls. Companies should develop an appropriate fraud risk control procedure with financial statements, which can be applied both inside and outside the company, under the overall supervision of the audit committee or management board. However, although the entire management team shares the responsibility for implementing and overseeing these activities, under the supervision of the board of directors, the company's CEO should lead and actively support such measures. Undoubtedly, without the strong support of the CEO, these activities are less likely to succeed.

Along with management, auditors play an important role in fraud prevention. It is therefore necessary to make all financial records and information available to auditors and to cooperate fully with them in gathering sufficient as well as competent audit evidence. Further, the actions of managers must be in the service of satisfying the interests of investors and creditors by creating and increasing the value of their investments. As Omotoso & Obalola (2014) emphasize, the best way to manage corporate fraud is through people-centered preventive controls.

Employee compensation has a dual role in preventing fraud. Research shows that compensation for both management and other employees plays an important role in increasing customer satisfaction and company value (Basuroy *et al.*, 2014). In the short run, salary or bonus does not have a large impact, but long-term incentive benefits show a positive correlation with customer satisfaction. The second role refers to the connection between the amount of compensation and the motivation to commit fraudulent acts. If employees feel they are paid in line with their contributions to the company's progress, they will be more satisfied and less motivated to do harm for personal gain. These conclusions can serve as guidelines for managers to pay special attention to the fairness of the distribution of salaries and bonuses, as well as the interdependence of different parameters that need to be monitored.

4. Managers as perpetrators of fraudulent actions

In modern business conditions, rapid and continuous changes affect the efficiency of the organization, the management and its strategic options and strategic choices. In the conditions of changes, the role of management is significantly modified and adjusted to the needs of the company, and its goals and efforts to maintain and improve business. More than before, the management is burdened with the need to react quickly and anticipate changes in the environment and to respond to the pressures of various stakeholders (Novaković & Gostimirović, 2011).

Such pressures and great responsibility of managers can lead to fraudulent actions. Managers, unable to meet the set goals, make changes in the financial statements to reduce deviations achieved from the required results. Further, managers of organizations engage in fraud related to financial statements in order to achieve personal benefits such as (Rezae, 2002):

1. Increased compensation based on shown higher earnings.
2. Increased value of personal share in company shares, such as share-based compensation.
3. Conversion of company property into funds for personal use.
4. Promotion or retention of the current position within the company.

Corporate strategies for achieving or exceeding projected earnings put great pressure on managers who have a responsibility to achieve set goals. Managers are motivated, or in most cases rewarded, when their bonuses are tied to their earnings. This may lead managers to choose those accounting principles that result in misstatements of earnings in the financial statements. However, the motive or opportunity may not play an important role in fraudulent financial reporting if the fraud plan is not perceived as an acceptable alternative.

According to the authors Zulfiqar *et al.* (2011), the interests of management can be reduced to the following items:

- Meet internal goals - Management seeks to meet goals set by the Supervisory Board or the owner. If goals such as sales, profitability, etc. deviate from the set, in a negative sense, there is a need to use creative accounting in order to reduce these deviations.
- Meet external expectations - The stable state of the company's financial statements indicates the possibility of progress and its expansion. Since business partners also expect the longest possible cooperation with the company, the financial statements may be adjusted in order to raise the company's reputation.
- Styling income - Management, knowing the investors, can "style" the income that the company has and thus the image of the financial position and performance of the company.
- Taxation - Creative accounting is very often used for the purpose of obtaining tax relief, where financial items in the reports are designed to reduce the taxable part of profits.
- "Showcase ranking" to obtain a loan - Accelerating revenues and inflows, and slowing down expenditures and outflows, to make financial indicators as attractive as possible. As a result, the loan is given to a company that does not deserve it, and thus not only increases the risk of losses, but also the lender has potential problems to which he is not aware.

There are interesting studies that have examined the likelihood that companies, with women in senior management positions, will find themselves in litigation related to financial reporting fraud. Research has shown that there is a negative relationship between the percentage of women as top executives and the number of lawsuits. Studies have also found that women managers are more positive about the code of ethics, and that there is only minimal participation of women in corporate criminal networks Lenard *et al.*, (2017). A company is less likely to commit financial reporting fraud when there is at least one woman as CEO or one woman on the board. Given the special responsibility, the tendency to be more committed to ethical policies can lead to women reducing the likelihood of taking risks and thus reducing the likelihood that the company will be involved in financial reporting fraud. Further, the results showed that the company is less likely to commit fraud when there is at least one woman on the audit committee. Finally, when examining male or female-dominated industries, the presence of at least one woman in a high position has a mitigating effect on fraud in male-dominated industries.

4. Conclusions

Ensuring that fraud is kept to a minimum is crucial for a sustainable economy and the confidence of investors and creditors in business. It is logical to state that fraud will never be eliminated, but what can be done is to continuously invest maximum efforts in the activities of deterrence and identification of fraud, in order to minimize the risk of fraud. There are various types of fraud and they are becoming more complex in today's environment.

The information disclosed in the financial statements reflects the company's performance in a particular accounting period and discloses its value. It is for this reason that companies will make every effort to increase their performance. However, sometimes it does not have the true connotation of "realized effect", but it is a matter of fraudulent actions. These actions in financial reporting pose a threat to investors' confidence in the financial information on the basis of which they make financial decisions. The side effects of financial fraud significantly affect confidence in published financial statements.

The primary responsibility for preventing and detecting fraud in profit-oriented organizations rests with management (the management tone at the top says a lot about the organization), but auditors can also play an important role in promoting prevention activities. In addition, it is important to emphasize the importance of an adequate organizational culture, which is characterized by the fact that it proactively recognizes and corrects mistakes, and contributes, among other things, to raising the quality of financial information.

The auditing profession has a lot of room for improvement. There is a particularly large space in the segment of using audit skills to increase the likelihood of identifying fraudulent financial reporting. Greater understanding of issues related to the issue of fraudulent financial reporting can enable better business decisions for various stakeholders, but primarily investors and creditors. What seems clear is that accounting financial scandals caused by false financial statements negatively affect financial markets. In this context, it is important to emphasize, among other things, that the quality of financial reporting needs to be improved in order to build and maintain confidence in financial markets.

It is a known fact that by its nature, fraudulent (false) financial reporting is difficult to detect. If we take into account the very complex and increasingly complex computerized accounting systems that are mainly used by large companies, with complex schemes for committing fraud, it all makes it even more difficult to detect and apply the preventive action in that segment.

The crucial question, which is very complex, is what the ways are to strengthen the preventive role of company management in the occurrence of fraud in the financial statements. The general question is: how can the problem of fraud in the financial statements be controlled? The answers to this question are as complex as the problem itself. There are no definitive answers here because

reporting serves the needs of society and those needs are constantly changing, on the one hand, and we should keep in mind the emergence of new modalities of financial fraud, so it is probably not possible to completely eliminate all fraudulent financial reporting.

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Ethics of business and social leadership in the corona crisis

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Abstract

The subject of the paper is to point out the significance of ethical business and social leadership in the conditions of the covid 19 pandemic. The aim of the research is to improve the paradigm of ethical leadership under the conditions of crisis. The paper discusses the importance of ethics in modern business and social leadership for survival and further development. The corona crisis as a change requires more creative and ethical models. In the paper the relationship between spiritual and material needs has been clarified and new divisions of roles have been offered. We have emphasized the ethics of political responsibility in a crisis and reminded that the crisis is changing the hierarchy of authority and power, and that it is necessary to fight for universal spiritual values in business and politics as a public good. Further, spiritual and ethical leadership as a behavioural science in times of crisis and spiritual capital in running a business has been highlighted. We used induction-deduction and analysis-synthesis methods to observe the object of research. By abstracting, we have connected the categorical apparatus of leadership with ethics and spirituality. For the realization of the research task, the method of observation and analysis of the content is used, using the relevant literature. A part of the primary statistical research through an online survey is also attached.

Keywords: ethics, leadership, business, society, the corona crisis.

1. Introduction

There are many theories and styles of leadership [Pavlović et al., 2017: 30-39]. In the literature, a distinction is made between classical and special styles [Yukl, 1998]. It is evident that the existing theories and practices of leadership do not have an answer to the corona crisis, which is deep, systemic, economic, safeguarding, social, but also moral or ethical [Živković, 2006]. The paper was created in the broader context of Orthodox leadership, namely: the Lord Jesus Christ, Saints, Gospel and Orthodox tradition led the process of making positive changes, meeting needs, setting examples, performing roles, taking responsibility, gaining authority, gaining power, behaviour, struggle and influencing groups of followers, in all areas of life and work [Resimić, 2021].

Ethics in business conduct is a combination of policies and practices that can satisfy the interests of different stakeholders [Galijašević et al., 2018: 8-19]. In this paper, we will affirm business and political leadership in the conditions of the corona crisis [Videnović, 2020: 53-57] in the broader context of responsibility and morality in the world economy and politics [Kuckertz et al., 2021]. In unforeseen situations, such as the Covid 19 pandemic on a global level, the readiness of companies to respond immediately to the challenges and manage the changes that threaten to overtake them comes to the fore [Zelenović et al., 2020]. Financial and political institutions bear a great burden of responsibility for stability but also bear moral responsibility for professional conduct.

2. Basic Research

Our hypothesis is that the systemic crisis would be lower if the Christian ethics of business and political leadership were improved. The emphasis is on the external ethics that business and political systems adopt in order to develop and implies an obligation to do the job appropriately. We will analyse the ethical responsibility of leadership in the Covid crisis through the main categories [Bešić, 2019] of leadership according to most of the above theories.

2.1. The Change: The crisis seeks new authentic creative forms of leadership [Melany Smit et al., 2019: 234-294]. There is no ethical business without changing the broader socio-political system. Ethical business leadership is demonstrated by change [Burnes et al., 2013: 239-252] and the corona crisis as a phase [Đurković, 2021: 31-52] towards the establishment of the New World Order [Pejnović, Belgrade]. Orthodox leadership demands vigilance: "Watch therefore, for you know neither the day nor the hour in which the Son of man will come" [Scripture-New Testament, Mt. 25, 13]. Adaptive leadership is essential [Yukl et al., 2010: 81-93] which means that companies and governments start to change ethically as they go. Our goal is to develop awareness of greater moral and ethical social responsibility of companies and governments [Brdar, 2006: 137-164] towards citizens in the future [Carletti et al., 2020].

2.2. *The Need:* In order to raise the ethics, business leadership should focus more on the real needs of clients. Benjamin Franklin said, "Those who can give up a little of their own freedoms to achieve a little of their own temporary security deserve neither freedom nor security. And poverty itself must ultimately be understood as an absolute concept. "If there is hunger and starvation, no matter how relative the image looks, it is poverty" [Sen, 1983: 153-169]. It is interesting that there are still no queues in front of "spiritual corporations" such as the Serbian Orthodox Church. If the corona crisis ended tomorrow, the economy is in such a decline [Odžaklijeska et al., 2020] that the big question is when the people will be up to have fun and songs. Food is a hierarchically lower need. Hunger can also be a stricter fasting. There you have is the layperson apostolate and contribution to the ascetic economy. We emphasize that freedom is ahead of the need for food or housing. Without it, the employee or manager in the company becomes like a mouse that eats grain in an experiment and goes lower and lower in the jar and eventually it cannot get out.

2.3. *The Example:* The example of business leadership that we emphasize is Islamic because, in addition to the financial and economic aspect, it equally affirms the ethical, moral, social and religious dimension of transactions as a way of achieving benefits for the wider community [Antić, 2008].

2.4. *The Role:* Before all business titles and roles one should be a man. In this context, the role of the leader of the organization in promoting socially responsible behaviour must be considered, so the principles of ethical leadership can be deemed an important segment of improving social responsibility, primarily its internal dimensions, which is the main subject of research of this paper. JD Power conducted the research after another full month of social distancing, voluntary isolation, and schooling and work from home. The research found that 55% of respondents are slightly stressed due to their overall financial situation, while 27% say they are under a lot of stress. In terms of engagement, the respondents said the following:

1. 25% work fewer hours.
2. 21% temporarily lost their jobs.
3. 14% have lower commission or bonus income
4. 5% of respondents reduced their income from tips.
5. 6% lost their jobs permanently.
6. 13% registered for unemployment [Vitomir, 2020].

The role of an ethical business leader is especially evident in a crisis. The pandemic brought unemployment and job inequality as a stake in the economy and society. Entire industries like travel, catering, sports and entertainment have closed and millions of people in the United States alone have reported unemployment. Christianity teaches that whoever wants to be the first must serve, so we believe that the crisis should make humble servants from proud directors in expensive suits [Katavić et al., 2010: 99-102], the theodules of his tormented people. The crisis of economy and morality is re-examining the workplace and the role of man in the company and society. Are those who are just doing their job in their job role responsible? What about the role of man as a moral being. And those who crucified Jesus were just doing their job!?

2.5. *The Responsibility:* Organizations are an inseparable part of the wider society, so the responsible behaviour is both towards the external environment and the social community [Trevino et al., 2011] but also according to its internal members, one of the imperatives for the success of most modern companies. The external dimension of corporate social responsibility refers to the care of external stakeholders, starting from clients, through business partners, the local community to the state level, and often the wider regional and even global environment [Stojanović-Aleksić, 2016: 139-151].

We believe that all together we should share responsibility with the people instead of acute measures of repression, ever stronger government controls and ever more authoritarian leadership, with limited innovation and increasing pressure on citizens leading to a global uprising. The only thing that is certain is that the modest mystic Tesla and those who are rich in the misuse of his patents will not be in the same "neighbourhood" of eternity! Ethics is a bridge, everyone chooses the side.

2.6. *The Authority:* Mihajlo Pupin showed by his example that the commitment to the scientific-methodological way of thinking does not exclude the nurturing of the religious spirit [Cucić, 2020]. On the contrary, he held that his only knowledge that made any sense was knowledge of God. What is the use of expert authorities if we are left without a religious and national identity [Despotović, 2013]? The crisis calls for a review of the responsibilities of all the professional authorities [Crichton, 2020] who fled before it [Cort et al., 2021]. Ethical and moral authority comes before the professional, which is deserved by the liberating truth. (John, 8.32). The practice that everyone would go to heaven and no one will die should be stopped by uniting morals, competencies and experiences [Resimić, 2020]. Acts, not words, the apostle Paul teaches us, that prominent Christian leader of the highest moral and active authority, influence and following.

2.7. *The Power:* The pandemic increased the effects of financialization [Bukvić et al., 2010: 277-293] through the corporatization of capital. From the position of Orthodox business management, we distinguish between spiritual and financial strength. Spiritual leadership influences the empowerment of employees and clients. Woe to him who offends one of these little ones... [the Bible, Matthew 18]. Recent research has been done between 3-5. April, a company asked how the COVID-19 crisis affected the respondents' personal financial situation. The results show that the pandemic had a very severe impact on 28% of the respondents,

if we add to that the 43% whose financial situation is somewhat damaged, we come to the figure of 72%, without reaching the peak of the epidemic. This situation speaks in favour of the great economic crisis that certainly follows after the Covid 19, while the scale of the crisis is still being estimated [Vitimir, 2020]. The global economic crisis, especially the Covid, had negative effects on economic entities and the entire Serbian economy, which resulted in a negative impact on economic activity, employment, living standards of citizens and the creditworthiness of individuals. Although often presented as an acceptable framework for ethical decision-making, mainly due to the influence of classical utilitarian theory, cost-benefit calculation is at best a limited area of ethical research and often results in recommendations that remain ethically problematic [Lamb, 2020].

2.8. The Behaviour: Communication is a prerequisite for leadership [Nikezić et al., 2012: 261-276]. Improving customer relationship management requires improving communication procedures, communication channels, and customer communication technologies. Simplicity of procedures, accessible and understandable terminology and accessible sales practices are the essence of the development of the principle of ethics in establishing and maintaining a business relationship between a company and clients. Measuring and perceiving emotional intelligence is one of the most significant shifts in perceiving human behaviour in organizations. The main emotional reaction of people to the pandemic [Stojkov, 2020] is fear for their own lives, the lives of close family members and friends, the job and monthly income [Stanković, 2020: 101-120]. Leaders should be guided first by God's law and only one is His moral law. We will be better off when he stops lying and stealing to begin with!

2.9. The Influencing: Leadership implies the ability to influence followers, in order to engage in the achievement of organizational goals, using appropriate motivational techniques of influence, based on power and formal or informal authority [Yukl, 1998]. Social responsibility means that companies direct their business strategies, decisions and activities towards the improvement of the economic, social and natural environment in which they operate. Through training, it is possible to improve the performance of business activities in a way that does not harm existing stakeholders [Palomino et al., 2011]. The Corona had a catastrophic impact on the world and domestic economy [Cvetković et al., 2020: 29-51]. At the moment, the entertainment and catering industries are hit the hardest, but our titanic is sinking, so we want to influence other areas of the economy to fight for the right to work. The crisis is not only health but also systemic, so its impact will spread to other areas of the domestic and international economy [Vesić et al., 2020: 31-38] and policies [Stošić, 2020]. We warn of the incalculable influences of the unethical and hypocritical [Kim et al., 2021] behaviour of banks and the Government towards "big players" while laws are enforced on small ones. Scenes in which protesters burn banks and stone governments are proof that such behaviour does not last long. Even before the corona, there were thousands of flawless papers on the SCI lists, but they did not prevent a cataclysm of biblical proportions. There is enough knowledge and skills, but there is a lack of virtues! It is obvious that future papers must also respect spiritual intelligence in order to achieve influence in the direction of truly positive changes that will not be bypassed even by scientific monopolies. Nobody needs lapurlartism, knowledge for the sake of knowledge without ethical application! Everyone should be paid according to their deeds and results on the market. Jesus expelled the money changers and merchants from the temple, and Tesla warned that only with the merging of religion and science would society truly prosper. This is a small step out of the abyss of space technology and rainforest ethics. The results show that spiritual leadership has a significant impact on the ethical business climate. Altruistic love is the most important dimension of spiritual leadership for improving the ethical climate in an organization [Dincer et al., 2021].

2.10. The Following: As a nation, we wander torn [Stepić, 2018: 201-220] because we have deviated from the path of Saint Sava above the East and the West. In business, loyalty could be understood as a favourable attitude and orientation towards a certain service provider which implies the probability of redemption and price tolerance towards the supplier's price [Oliver, 1999: 33-44] or as a psychological temperament of the customer towards a certain service because emotions lead from intention to loyalty [Razzaq et al., 2019: 980-1002].

Based on the research, just before the corona crisis, on the topic of turning to the values of Orthodox leadership on a sample of respondents from the worlds of business, politics, culture, science and the media which was conducted during January and February 2020, involving 51 people. The respondents filled out an online questionnaire. The sample consisted of 75% of male respondents and 25% of female respondents. Over 90% of the respondents agree with the view that preference should be given to leaders who operate in accordance with moral norms, as well as that the worker and peasant have become slaves, and that most prominent tycoons do not show elementary responsibility before God, law and people. About 80% of respondents believe that the economic crisis is just an image of a spiritual crisis, and that a new Orthodox leadership is needed. Further, the majority of respondents (over 80%) claim that the norms of behaviour and business in the market in most domestic companies are in accordance with the moral code and Orthodoxy. About 75% of them believe that companies, banks and state services should cooperate more with spiritual organizations under the auspices of the Serbian Orthodox Church in order to overcome the crisis, while about 15% of the respondents do not agree with this view.

Over 90% of the respondents agree with the statement that most prominent businessmen and politicians do not show elementary responsibility before God, the law and the people. It is certain that the corona crisis would additionally affect the respondents' dissatisfaction with the quality of leadership ethics in the business and public sector due to the growth of unemployment and due obligations.

3. Concluding Remarks

The paper is of an exploratory nature with the aim of pointing out the growing need for business and social ethics in crisis. We sought to maintain a balance between methodological norms, Christian altruism, and the creativity of authentic leadership. In doing so, we were guided by the principle that spiritual and material are not substitutes. Jesus did not take scientists as apostles, but simple fishermen with pure hearts, and they achieved great influence, brought about positive changes, and gained followers. If science is powerless before the crisis, we believe that it is obliged to listen to religion through ethics, so we affirm Orthodox business and political leadership. The Holy Scriptures warn not to bind the mouths of the oxen who threshes the corn (Cor. 9: 2-12), so we believe that the scientific public, with all its shortcomings, will have an ear for the birth of a new theory of Orthodox ethical leadership and its application to business and society.

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The Role of Accounting Information Systems and Financial Analysis in Enhancing the Human Resources Management Cycle

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Abstract

The subject of this paper is to present research flows that include human resource management, achieving the target financial performance of the company, and common issues related to the links between these two areas. This research was done in order to give a detailed view of the role and importance of human resource management in achieving the target financial performance of the company. The discussion-based model was used based on existing academic and professional references and past experiences.

One of the most important tasks is to identify and implement a strategy that will enable efficient management of human and financial resources. Human capital is recognized for the fact that it can contribute to the improvement of business processes, and it can also be a factor of primary importance for increasing the value of a company and significant improvement of financial performance. The financial performance, for which shareholders are particularly interested in, shows whether the company's strategy contributes to basic improvements, which is essential for sustainable business in the long run.

Research in this paper focuses on the financial aspects of human resource management. Successful HR professionals in today's competitive global marketplace need to be financially educated. They face such tasks that require knowledge of the language used by the company's management, which is the language of accounting. The aim of the research is focused on the issue of identifying the accounting and financial role of human resources in strategic and other activities, which are tangential to the key goals of effective human resource management.

Keywords: HR management cycle, accounting information system, financial analysis, enhancing.

1. Introduction

The accounting information system is considered to be the main artery that provides information to management and stakeholders (outside the company) for the purpose of rationalizing decisions (Al-Hattami *et al.*, 2019, p. 85). In other words, it facilitates business-financial decision-making by providing relevant and valid information on the whole operation and by segments (Obradović *et al.*, 2021). Observing the performance of a company, the first thing to start with is to think about which factors contribute to its success or failure (Mitrović *et al.*, 2021). If we start from the assumption that differences in people (human resources) are those that contribute to differences in the value of companies, then it can be said that the function of human resources is crucial for the success of a company.

At the beginning of the paper, the importance of the human resources management cycle in the company was pointed out. Further, attention is paid to understanding the role of the accounting information system and analysis of financial statements in support of the human resource management cycle in the company. After that, a case study was presented on the example of a company operating in Serbia, where a combination of financial and operational data analysed financial performance and productivity.

1. The cycle of human resource management in the company

The strategic level, which deals with policy formulation and overall goal setting, focuses on the long-term positioning of the organization in its environment (Devanna *et al.*, 1981). Managerial and strategic tasks can be carried out only when people understand each other and are committed to the goals that are defined for the realization of the appropriate business strategy. Companies thrive in a turbulent and highly competitive environment because they have a workforce that skillfully implements a value-generating business strategy.

Strategic and managerial planning requires processes to define and achieve the overall set of goals (Devanna *et al.*, 1981, p. 62). In this context, the importance of planning various types of resources is emphasized, and one of them is human resources. Planning this type of resource is a very complex process. The human resource management cycle involves the organization determining its employment needs in accordance with a particular business strategy (Alrabei *et al.*, 2015, p. 437). The entire human resources with an accurate and reliable accounting system of information and reporting greatly affect the performance of internal processes, which means the process of innovation, operational process and process after the sale of services (Tavitiiman *et al.*, 2012). In addition to the financial accounting system that is oriented towards meeting the needs of external users (primarily investors and creditors),

management accounting is focused on supporting management in order to make decisions and evaluate the performance of companies (Žarkić Joksimović *et al.*, 2020, p. 34). Management accounting uses, adapts and interprets financial accounting data that can help management to improve the efficiency of future business (Knežević & Mitrović, 2019, p. 30).

The financial expression of the costs of engaging human resources is visible in the report entitled income statement which shows the success of the company (Mitrović & Milašinović, 2019). In addition, liabilities to employees can be seen in the balance sheet within short-term liabilities. The human resources department has many functions, including recruitment, compensation, and benefits, and among these the latter two functions require complex skills. Therefore, closer alignment of the finance (accounting) function with human resources activities is particularly important. Planning human resource costs by cycle stages requires collaboration between financial managers and managers from the human resources department.

2. Accounting information system and analysis of financial statements in support of the human resources management cycle in the company

The accounting information system is responsible for collecting, storing and processing financial and accounting data used to make internal management decisions, including non-financial transactions that directly affect the processing of financial transactions (Belfo & Trigo, 2013). The role of accountants in the modern environment has changed. Today, the tasks of an accountant are no longer only in the domain of traditional accounting activities that they have been performing for decades, but they are also largely related to supporting the identification of strategic management guidelines in profit-oriented organizations.

Financial analysis is an integral part of business analysis. In addition to financial analysis, business analysis includes analysis of the business environment and strategy (Knežević *et al.*, 2017, p. 17), including human resource management strategy. Financial managers are responsible for managing company costs and generating profits for owners (Knežević, 2019, p. 91). They should work closely with human resource managers in budgeting related to the financial aspects related to human resources in the enterprise. The CIMA report for 2009 points out that "the closer the cooperation between the finance departments and the human resources department in areas such as bonus schemes, the better the organizational performance will be."

One of the questions that needs to be considered in detail is, under what circumstances is it necessary for financial analysis to precede decisions on human resources? The logical answer to this question is that it is not necessary for all situations, but when financial decisions involve many factors or a significant amount of money (Director, 2012). Theeke & Mitchell (2008, p. 128) emphasize that a human resources accountability approach would improve a financial analyst's ability to understand and value firms.

3. Case study

To measure the performance of the company "MINEL CONCERN SC" from Belgrade a case study was done, and a ratio analysis was applied, which is a type of financial analysis. With the data from the financial reports taken from the website of the Business Registers Agency (www.apr.gov.rs), the operational data on the number of employees are also combined. Liquidity, solvency, activities, profitability and productivity were tested (based on financial information). The financial performance of the observed company was the result of the work of both the managers to whom the resources were entrusted and all employees in the company. Among other things, intellectual capital is considered a strategic performance of companies.

The results of the analysis are presented in Tables 1-5, as well as in Figure 1.

Table 1 shows the calculation of the aforementioned four liquidity indicators.

A Table 1: Liquidity analysis of the observed company in the period from 2015 to 2019

Liquidity ratio	2015	2016	2017	2018	2019
Overall liquidity ratio	6,29	4,60	4,87	7,58	5,31
Rigid liquidity ratio	6,15	4,45	4,12	7,48	5,26
Cash liquidity ratio	3,37	1,52	2,39	6,67	4,30
Net current assets (000 RSD)	185.034	108.594	58.265	48.010	52.969

Source: Authors based on company financial statements

As can be seen from Table 1, during the observed five-year period, the values of the three liquidity ratios (overall, rigid and cash liquidity) were significantly above the reference values, with value oscillations. When it comes to the overall liquidity indicator, the highest value was recorded in 2018, while the lowest was in 2016. In 2015, each dinar of short-term liabilities was covered with 6.29 dinars of current assets, in 2016 with 4.60 dinars, in 2017 with 4.87 dinars, in 2018 with 7.58 dinars, and in 2019 with 5.31 dinars. As in the case of overall liquidity ratios, the highest value of reduced liquidity ratios was recorded in 2018, while the lowest value was recorded in 2017. Each dinar of short-term liabilities in 2015 was covered with 6.15 dinars of monetary assets, with 4.45 dinars in 2016, with 4.12 dinars in 2017, 7.48 dinars in 2018 and 5.26 dinars in 2019. As can be seen from Table 1, during the observed years there was a small difference in the value of the overall and reduced liquidity ratios. This indicates that in the observed company, inventories make up a small part of current assets. In 2018, the highest value of cash liquidity ratios was recorded, while the lowest value was recorded in 2016. At the end of 2015, each dinar of short-term liabilities was covered with 3.37 dinars in cash, at the end

of 2016 with 1.52 dinars, at the end of 2017 with 2.39 dinars, at the end of 2018 with 6.67 dinars, and at the end of 2019 with 4.30 dinars. During all five years, the value of net current assets is positive, which indicates that the company is able to pay the costs of its operations.

The values of the selected solvency indicators are shown in Table 2.

Table 2: Solvency analysis of the observed company in the period from 2015 to 2019

Solvency ratio	2015	2016	2017	2018	2019
Interest coverage ratio	-14,48	/	/	/	-25,908
Indebtedness ratio	0,10	0,15	0,13	0,11	0,11
The ratio of total liabilities to equity (%)	10,92	17,25	14,35	12,90	12,79

Source: The authors based on the company's financial statements

As it can be seen from Table 2, the value of interest coverage ratios in 2015 and 2019 was negative (due to the negative result). In 2016, 2017, and 2018, the company did not have interest expenses (which is why it was not possible to determine the value of interest coverage ratios). The indebtedness ratio records oscillations during the observed period. Thus, there is an increase in value in 2016 compared to 2015, followed by a decrease in value in 2017 and 2018 (whereby the same level was maintained in 2019). In addition, there are oscillations when it comes to the ratio of total liabilities and equity.

The average time of collection of receivables, turnover of inventories and payment of liabilities to recipients (as activity ratio) is shown in Table 3.

Table 3: Indicators of activity of the observed company in the period from 2015 to 2019

Activity ratio	2015	2016	2017	2018	2019
Average time of collection of receivables (in days)	187,95	165,95	355,72	68,53	12,85
Average inventory turnover time (in days)	10,93	9,78	73,01	61,66	0,80
Average payment time to suppliers (in days)	60,81	67,97	308,28	222,41	340,34

Source: The authors based on the company's financial statements

The average time of collection of receivables shows a decrease in 2016 compared to the first observed year, and after the growth in 2017, there was a decrease in value in 2018 and 2019. This indicates that in the last two observed years, the company turned its receivables into cash faster. The average time of inventory turnover shows a decrease in 2016 compared to 2015, and after the recorded growth in 2017, there was a decrease in value in the last two observed years. This decrease indicates that the company retains inventories for a shorter period, that is, the company needs fewer days to acquire inventories and convert them into sales revenue. The average time for settling liabilities to suppliers shows variations during the observed period. Thus, from the average settlement of obligations in 2015 every 2 months and in 2019 it was 340 days.

Profitability ratios of the observed company in the five - year period are shown in Table 4.

Table 4: Analysis of the profitability of the observed company in the period from 2015 to 2019

Name	2015	2016	2017	2018	2019
Return on assets rate (ROA) (%)	0,04	0,10	0,20	0,31	3,87
Return on equity rate (ROE) (%)	0,04	0,12	0,23	0,35	4,37

Source: The authors based on the company's financial statements

As can be seen from Table 4, the values of the rate of return on assets and the rate of return on equity during the observed period recorded a growth trend, with a positive value recorded in each of the observed years. The company achieved the highest return on assets in 2019, when it earned 3.87 dinars for every 100 dinars of invested business property, while the lowest return, of 0.04 dinars, was achieved in 2015. In 2019, the company earned 4.37 dinars for every 100 dinars of invested capital, which is the highest value of the rate of return on capital, while the lowest value was recorded in 2015 (0.04 dinars for every 100 dinars of invested capital).

The following table shows the productivity of employees in the period from 2015 to 2019.

Table 5: Productivity of employees in the period from 2015 to 2019

Productivity ratios	2015	2016	2017	2018	2019
Sales revenue per employee	15.561	12.306	2.138	843	19
EBITDA per employee	-783	-842	-2.186	-1.861	-2.260

Operating profit per employee	-883	-903	-2.250	-1.956	-2.355
Net profit per employee	14	44	104	159	2.091

Source: The authors based on the company’s financial statements

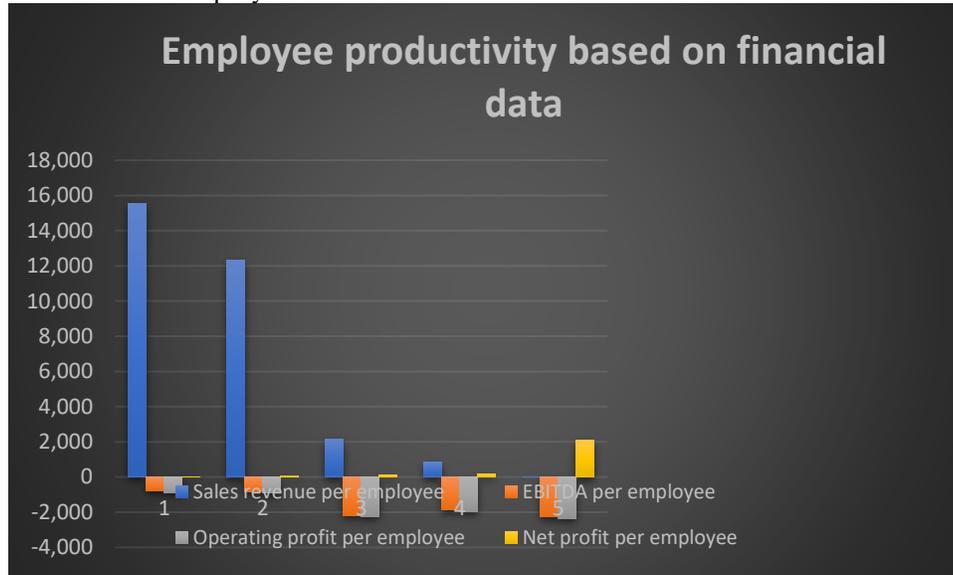


Figure 1. Employee productivity based on financial information (2015-2019)

As can be seen based on the dynamics of the observed financial performance (Table 5, Figure 1), during the observed period there are variations in the productivity of employees. Thus, productivity measured by sales revenue per employee records a declining trend in the period from 2015 to 2019. The other two productivity indicators (EBITDA per employee and operating result per employee) record negative values (due to negative values of EBITDA and operating result). During the observed period, there is a positive trend of productivity growth measured by net profit per employee.

A limitation in the application of this case study is that data on the number of employees by narrower organizational units were not available, in order to provide a broader picture of employee productivity. This would provide an adequate information base for planning future performances.

4. CONCLUSION

It is indisputable to point out that the human resources profession today has a lot of room for improvement. There is a particularly large space in the segment of financial understanding required to align the human resource management strategy with the business strategy, in order for the company to have a sustainable operation. A deeper consideration and understanding of these issues can enable better decisions to be made about the allocation of resources within the human resources function in companies, regardless of their size or legal form of organization.

What is likely is that conventional short-term approaches are unlikely to result in success in turbulent times. Therefore, it is necessary to adopt a strategic approach while respecting financial sustainability in human resource management. In order to generate added value, it is necessary to assign a strategic role to managers within human resources, and at the same, time it is necessary for them to master key financial knowledge, i.e. to increase their financial literacy to the extent necessary for efficient implementation of their tasks.

Measuring employee productivity based on financial information is important for monitoring the overall performance of companies. This is in line with one of the tasks of management accounting, which refers to accounting budgeting and control of the realization of planned values.

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Evaluation of the Financial Performance of Serbian Dairy Companies Using the Integrated AHP and VIKOR Methodology for Sustainable Competition

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Abstract

In today's dynamic and competitive environment, the issue of evaluating the performance of a company is important for investors, creditors, and managers in the decision-making process, especially for considering the possibilities of sustainable business. The aim of this research is to present a model based on the fuzzy analytical hierarchy process (FAHP) and the Vise Kriterijumska Optimizacija I Kompromisno Resenje (VIKOR) method, which is represented by financial ratios. The proposed method is used to assess the financial performance of 19 selected dairy companies operating in Serbia using data that are publicly available in the form of financial statements (balance sheets and income statements). By applying the FAHP, key financial ratios important for measuring a certain financial performance are determined, while the VIKOR method is used for ranking; i.e., the best alternative is chosen on the basis of given criteria, which, in this case, refers to the best dairy company.

Keywords: fuzzy analysis hierarchy process (FAHP), fuzzy sets, VIKOR model, performance evaluation, dairy companies, financial ratios.

1. Introduction

Milk production is strategically important. This is why the Republic of Serbia allocates certain funds from the budget to stimulate its production (Dražković *et al.*, 2010). In the past few years, a more active policy has been followed in order to make the dairy sector competitive in both global and European markets, with prices that are acceptable to domestic consumers, and that generate sufficient income for producers and processors to produce safe food (Open Society Fund & Center for Applied European Studies, 2009).

Statistics of milk and dairy products in Serbia includes the following elements: skimmed milk by type of milk, use of milk on farms, production of dairy products, milk input for obtaining dairy products, protein and fat content in milk and dairy products, structure of dairies and purchase stations according to purchased quantity of milk, and structure of dairies according to a certain type of dairy products (NARS, 2021). In the two previous decades, the Serbian dairy-processing sector underwent significant structural changes. The main characteristics of the mentioned structural changes were concentration, vertical coordination, and integration (Popović & Panić, 2018). The total value of sales and purchase of agricultural, forestry, and fishery products in the Republic of Serbia in the first quarter of 2021, compared to the same period in 2020, was higher by 5.7% in current prices; in constant prices, it is lower by 1.9%. In the structure of the value of sales and purchase, in the first quarter of 2021, the largest share was achieved by the following product groups: cereals (36.8%), livestock (18.3%), milk (17.9%), and industrial plants (11.7%) (Republic Statistical Office). The structure of the milk supply market depends on processing capacities in Serbia, which are more orientated to-wards the production of the dairy products of pasteurized and sterilized milk, and fermented dairy products (yoghurt, cream, sour milk, etc.), while the production of solid dairy products (cheeses, cream, spreads, butter, powdered milk, etc.) is significantly lower (Veljković *et al.*, 2018).

Toljaga-Nikolić *et al.* (2020) state that organizations have shown a great interest in incorporating sustainability into managerial concepts, both at the strategic and operational. Financial-performance assessment is a very important process for industries in the current highly competitive environment, which is a vital issue for investors, creditors, and companies to achieve their investment goals (Rezaie *et al.*, 2014); so, financial sustainability design is an adequate system for performance evaluation (Shaverdi *et al.*, 2016). As Fu *et al.* (2011) indicated, performance measurement and benchmarking are, in principle, multicriteria decision-making problems.

Performance measurement is a system by which profit-orientated organizations monitor day-to-day operations and evaluate the degree of achievement of defined goals (Ardekani *et al.*, 2013). Assessing the performance of companies belonging to a certain sector is an important issue, and especially important in conditions of fierce competition in the business environment for investors, creditors, and companies in the same sector to determine the company's position in the sector. In this context, comparing a company with other companies helps to identify the competitive strengths and weaknesses of the observed company (Eyuboglu, 2016). In today's highly competitive and dynamic environment, profit-orientated organizations make enormous efforts to gain and maintain a competitive advantage both in the market and in the field of sustainable development (Medne & Lapina, 2019). It is necessary to keep in mind the importance of environmental sustainability for the efficient management of individual industries. It is imperative to determine if economic growth, urbanization, and tourism play a role in domestic material consumption, since the extraction and depletion rate of renewable and nonrenewable resource stocks is currently high and associated with environmental burden (Lasisi *et al.*, 2021). Uzun *et al.* (2020) emphasize the need to encourage the use of renewable energy or introduce energy-saving electronics in the implementation of consumption and production activities in various industries, which is important in the dairy industry and a branch of agriculture where government agencies play the largest role.

Multicriteria decision-making methods (MCDA) are widely used in various fields and disciplines (Sařabun *et al.*, 2020) such as engineering, logistics, health management (Shekhovtsov & Sařabun, 2020), and the field of performance evaluation.

Multicriteria decision making (MCDM) has been increasingly used in recent years (Lukić, 2020) to identify the optimal solution or decision from many alternatives using a number of criteria, and is considered to be a complex decision-making tool, involving both quantitative and qualitative factors (Mardani *et al.*, 2015). With regard to evaluators, multicriteria decision-making methods are very useful in terms of evaluating various alternatives in different units and from the perspectives of different criteria (Akkoç & Vatansver, 2013).

Gul *et al.* (2016) stated that multicriteria decision making is a research area of operations research and management science to which researchers and practitioners have paid great attention. As one way of making decisions, multicriteria decision making (MCDM) determines the best alternative on the basis of choosing certain criteria from a number of alternatives. The standards, measures, or rules used in decision making usually become the criteria (Ishak *et al.*, 2020). Gupta states that many other MCDM techniques are used to calculate the weights of criteria (attributes) such as AHP, ANP, and TOPSIS (Gupta, 2018). The fuzzy AHP method is then used to find the weight of each criterion (both objective and subjective) (Parameshwaran *et al.*, 2015).

Due to the potential decimating impact on both a corporation itself and on society as a whole during financial turmoil, measuring financial performance is an essential topic because a corporation with good financial performance normally poses superior operating efficiency (Anagnostopoulou *et al.*, 2020). In today's competitive global economy, assessing the financial performance of companies is of great importance not only for managers, creditors, and current/potential investors, but also for companies located in the same sector. Company performance evaluation is generally conducted in the context of financial analysis (Yalcin *et al.*, 2012). Ratio analysis is one of the most commonly used tools for measuring financial performance (Vasilev *et al.*, 2019).

The performance of firms in today's business environment is affected by corporate governance and financial transparency (Oncioiu *et al.*, 2020). Financial ratios are usually classified on the stock exchange by certain categories because accounting experts believe that financial ratios belonging to a category are partially similar (Wang, 2008). Marinho *et al.* (2017) indicated that these indicators can be used for the purpose of trend analysis and for comparing the finances of companies with the finances of other (peer) companies. Ratio analysis can show various aspects of the financial performance of the company: profitability, business activity, liquidity, and solvency. Analysis in this paper is widely used by a large number of managers, creditors, investors, and legislative bodies. Ratio analysis represents the systematic use of these ratios to analyse the financial performance of an enterprise. Liquidity ratios indicate the ability of a company to settle past due liabilities, while maintaining a satisfactory scope and structure of working capital, and creditworthiness. Solvency ratios refer to the structure of a company's capital, that is, how a company finances its activities (Higgins, 2009). Business-activity ratios express relative income–expense ratios and investments in operating assets (Knežević & Fabris, 2010). A company's ability to generate profits is measured by profitability ratios. Ratio numbers that are calculated in a particular indicator cannot be viewed separately since the purpose of ratio analysis is to present an overall picture of the financial position of a company (Mitrović *et al.*, 2015).

In practical applications, to obtain a unique measure of performance from different ratios, it is necessary to use weighted averages of individual ratios (Vuković & Bulajić, 2014). However, assigning appropriate weights in this approach is a controversial issue for many researchers. Modern business requires continuous adaptation to changes in the environment, first for companies to survive and then for finding chances for future development. The development of operational research science, which is an integral part of management science, provides an adequate method for determining the weighting coefficients between ratio numbers (Chang, 1996). AHP is a method developed by Thomas Saaty in the early 1970s; it is a decision-analysis tool designed to help decision makers in solving complex problems (Saaty, 2000). The AHP approach should also be viewed as a numerical approach to multicriteria decision making (Kumar & Garg, 2017). AHP is a very flexible and powerful MCDM tool, and computations by AHP are always guided by the decision maker's experience (Shaikh *et al.*, 2021). The analytic hierarchy process (AHP) is a useful method in decision making when one is faced with various selection criteria and alternatives (Tang & Ngerng, 2015). AHP is structured method that can elicit biased opinions of decision makers in weighting and prioritization (Cheng & Li, 2001).

The three research questions considered in this study are:

- RQ1. How are certain priorities identified among ratios in order to assess the financial position of the company as closely as possible?
- RQ2. How is the choice of selected companies, given the different combinations related to ranked financial performance for competitiveness evaluation, used in the financial decision-making process?
- RQ3. How significant are the presented results for the strategy of sustainable development of the dairy industry in Serbia?

To answer these research questions, an integrated AHP and VIKOR methodology was applied. Although the AHP method enables the more accurate determination of the observed ratio numbers, it is also necessary to determine comparative criteria relating to financial ratios (Frei & Harker, 1999). In this paper, they are determined according to the problems of the focus industry of this research. In the market of the Republic of Serbia, the vast majority of problems relate to the illiquidity of companies, which causes most companies to disappear from the map, so it is necessary to favour liquidity ratios over other indicators. It is also necessary to use methods that enable the ranking of companies according to the criteria that were previously compared with each other. The VIKOR and TOPSIS methods are the most commonly used ones in the literature. Therefore, in this study, the authors used the multicriteria compromise-solution method, which makes it possible to favour the overall benefit within group decision making using certain factors.

The remainder of the paper is organised as follows: Section 2 presents a literature review and discusses the need for this research. Section 3 presents the research methodology, outlining the ratio-based model created using the AHP and VIKOR methods. Section 4 demonstrates the application of this integrated approach. Section 5 discusses research findings, and theoretical and practical implications, makes recommendations for future research directions, and presents certain conclusions.

2. Literature Review

Crucial data for executive financial decisions that are important for all firms are provided by financial accounting (Diakomihalis, 2012), and the key product is the financial statements of companies used by various stakeholders (investors, shareholders, managers, government agencies and others). Accounting information is prepared and provided to stakeholders with the aim of influencing their behaviour and decisions (Abubakir bayz *et al.*, 2021), and it is useful for decision making at the micro and macro levels (e.g., defining branch-development strategies). Under the accounting principles of general acceptance, a set of financial statements in economic units are prepared, and these lists were designed to present the financial position of the enterprise on the specific date, and the results of operations and cash flows for the period ending on that date, including information related to the entity’s important liquidity sources (Jones, 1973). One of the most commonly used primary models of assessing business performance is financial-statement analysis using ratios. Such a financial statement is also used for comparing it to the rest of the stakeholders in the industry (Mbona & Yusheng, 2019).

Shaverdi *et al.* (2016) indicate that, in order to evaluate financial performance, it is necessary to take into account some financial indicators that reflect a company’s competitiveness, and it is necessary to keep in mind that there are many financial indicators and criteria that are important and can be regarded as fuzzy multiple-criteria decision-making (MCDM) problems. Financial ratios can be used for various purposes, such as (Ross *et al.*, 2010):

- providing relevant information for interest groups such as creditors and suppliers;
- evaluating the competitive positions of rivals; and
- projecting future performance on the basis of available historical information and enabling potential investors to make use of it.

The selected financial indicators used in ratio analysis to test liquidity, profitability, solvency, and activity are described below (Table 1).

Table 1. Financial ratios by key categories (liquidity, solvency, efficiency, and profitability).

Indicator		Explanation
Liquidity Ratios	Cash-Coverage Ratio	Cash-coverage ratio is the most rigorous indicator of liquidity. It is often referred to as an indicator of liquidity and degree. It shows how much cash and cash equivalents the company has available to cover short-term liabilities. If the calculated coefficient is 1 or greater than 1, the company can settle the short-term liabilities to the creditors with the available funds. In case the coefficient is less than 1, the company is not able to fully pay short-term liabilities from the available funds.

	Quick Ratio	Quick ratio is a ratio indicator that excludes inventories from the category of working capital for the purpose of determining liquidity, as the most illiquid form of working capital (Walsh, 2006). The reason for their exclusion is the fact that there may be difficulties in selling them in the short term. It indicates the ability of the company to settle short-term liabilities from liquid assets. The minimum recommended value of this liquidity ratio is 1, i.e., that liquid assets are equal to short-term liabilities. If the value of the ratio is above 1, it speaks in favour of a strong financial structure of the company, i.e., that companies from long-term sources finance in addition to the entire inventory and a part of the receivables (Knežević <i>et al.</i> , 2019). Low value means that the company is highly “leveraged”, bills are paid too quickly, it struggles to maintain sales, or receivables are collected too slowly (Knežević <i>et al.</i> , 2019).
	Current Ratio	The general liquidity ratio indicates the company’s ability to respond to short-term liabilities using working capital. It is most often stated that a company is financially strong if the value of this indicator is 2 or more. However, the company may find itself in a situation where, despite the high value of this indicator, it cannot pay due short-term liabilities. The explanation for that occurs in the fact that this indicator puts total working capital and short-term liabilities into the ratio, i.e., neglects the structure of working capital. For this reason, it represents the crudest indicator of liquidity.
	Net Current Assets	Net current assets are often used as an indicator of liquidity. They represent the difference between working capital and short-term liabilities, indicating the value of working capital financed from long-term sources. A company that has a higher amount of net working capital automatically provides a higher degree of liquidity, not specifying the needed optimal amount of net working capital, which is individually conditioned. A negative value of net current assets means that the company is not in a position to pay its operating expenses.
Solvency Ratios	Debt/Equity Ratio	This shows the relative share of borrowed resources in own sources. It is one of the most fundamental indicators used in corporate finance. Higher debt relative to equity may indicate that the company is pursuing an aggressive policy of financing growth with borrowed capital (Žarkić-Joksimović <i>et al.</i> , 2016).
	Debt Ratio	This shows what percentage of funds comes from borrowed sources, i.e., this shows how great the share of borrowed capital in the total available sources of the company is. A high value of this indicator indicates that most of the funds come from borrowed sources. Creditors prefer the value of this indicator to be lower or within normal limits, which gives them greater protection in case the company has financial trouble (Baker & Powell, 2005).
	Times Interest Earned	This shows how many times EBIT covers interest expenses on the basis of short- and long-term liabilities (Alexander & Nobes, 2004). A high value of this indicator suggests that the company is too secure and ignores the opportunity to increase earnings through financial leverage, while a value below 1 indicates that the company is unable to meet interest obligations (Knežević <i>et al.</i> , 2019).
Activity Ratios	Collection Period (Days)	This represents the average period of collection of trade receivables, i.e., the required time for the company to collect trade receivables. This indicator is an important measure of whether the company has sufficiently available cash to pay its financial obligations. Days sales in cash shows the number of times a company went through its cash balance during an accounting period and the efficiency of the cash in revenue generation. A higher value of this ratio is desirable, and it is necessary to compare it with those of key competitors and reference values in the industry in which the company operates.
	Days Sales in Cash (Days)	Cash-turnover ratio (CTR) shows how many times cash was reverted in turnover in the observed accounting period and the efficiency of the company’s cash in generating revenues. A higher CTR ratio is desirable because it then means that the company is turning its cash more frequently. It is important to compare this ratio with the key competitors of the observed entities in the branch in which they operate and the industrial benchmarks.
	Payables Period (Days)	This shows how many days on average it takes for a company to pay a supplier for purchased raw materials, materials, or services. By comparing the value of the obtained indicator with the approved credit period from the supplier, this helps evaluate whether the company fulfils its obligations on time or whether there is a delay. If the value of this indicator is higher than the agreed payment deadline with suppliers, the company has a problem with a lack of cash—i.e., it has a problem with liquidity (Weetman, 2011).
	Asset Turnover	This shows how many times during the year the value of the total engaged business assets of the company was generated in sales. The turnover ratio of total business assets is a synthetic expression of the turnover ratio of certain types of business assets, so its amount can be influenced by increasing the turnover ratio of individual assets. A high value of this indicator shows that the company efficiently uses its total assets to generate sales revenue.

Profitability Ratios	Return on Assets (ROA)	Return on assets—ROA shows how many monetary units of operating profit are generated for each monetary unit that the company has invested in operating assets. It is not precisely defined how much the value of this indicator should be in order for the company to be said to effectively use the invested funds; therefore, the company should strive for this indicator to be as high as possible. This indicates that the company makes better use of its assets and has a higher return on assets (Pavlović <i>et al.</i> , 2020).
	Return on Equity (ROE)	Return on equity (ROE) shows how many monetary units of net profit are generated for each monetary unit of equity. Therefore, this indicator is especially interesting to the owners, i.e., shareholders of the company [54]. As for the previous indicator, it is not precisely defined to how much it should amount, so the company should strive for this indicator to have the highest possible value. However, if the increase in the value of ROE occurs due to a decrease in share capital, this results in the use of other people’s funds and an increase in risk exposure (Pavlović <i>et al.</i> , 2020).
	Profit Margin	The profit margin, as the ratio of net results and sales revenue, indicates how well the company converts sales revenue into profit, that is, how much sales revenue is left for business owners after paying all expenses. Thus, this indicates the efficiency of the company in managing expenses, i.e., it derives from the principle of covering costs (Karapavlović, 2018).
	Operation Margin	Operating margin shows how much business profit a company generates per unit of sales revenue. It determines the ability of a company to make a profit regardless of how it finances business activities, but it also measures the flexibility and ability of managers, especially in difficult economic times (Knežević <i>et al.</i> , 2019). Companies should strive to make the value of this indicator as high as possible.

The unstructured problems of political, economic, social, and management sciences can be modelled using the analytic hierarchy process (AHP), which is a widely used decision-making analysis tool (Yu, 2002). For most organizations, sustainability is an important objective since it is a competitive necessity (Alameeri *et al.*, 2018). Different decision makers can analyse the company’s competitiveness on the basis of obtained results, according to the selected segments: liquidity, activity, solvency, and profitability. Sustainability is more in the focus of managers to achieve more nonfinancial goals, which is important to keep in mind, as it leads to a better company rating, and the companies become more economically, environmentally, and socially sustainable (Cubas-Díaz *et al.*, 2018). Dai *et al.* (2018) stressed that, as an important method of nonfinancial-information disclosure, the fulfilment and disclosure of CSR information is of great significance to the development of listed companies and capital markets, and nonfinancial information is a relevant part of the evidence needed for investors to make decisions. Supporting the aforementioned, Goicoechea *et al.* (2019) indicated that a key instrument for informing stakeholders about the sustainability issues of a certain company is integrated reporting. The integration of financial and nonfinancial information provides the best picture of the company’s performance for many interest groups in which they are decision makers. Goicoechea *et al.* (2019) further stressed that nonfinancial information in the form of sustainability, corporate-social-responsibility (CSR), and other kinds of reports is used with classical financial (accounting) information for communicating a company’s relevant environmental and social performance indicators. It is necessary for companies to improve their commitment to incorporating sustainability into every organisational decision to enhance the trust of stakeholders, improve social responsibility, and encourage sustainable management and practice (Štrukelj *et al.*, 2020). For reporting on the results of sustainability performance, academic and professional support is important that is yet to reach the structured status of financial (accounting) reports (Bradford *et al.*, 2017; Jovanović *et al.*, 2020).

Rapidly developing multiple-criteria decision-making (MCDM) research is a main area for dealing with complex decision problems (Sun, 2010). One of MADM approaches, the analytical hierarchical process (AHP), is applied to decision making according to the criteria set by the decision maker and to help make a choice from among several options (Safardokht & Barandagh, 2015). Using a 9-point scale, matrices of comparison are formed between certain ratio numbers in the indicators. With the 9-point scale, it is not possible to accurately determine the priority of a particular ratio over another within the same indicator, so it is necessary to apply an extended AHP method approach using fuzzy-set theory. AHP is suitable for ranking alternatives when a number of criteria are present in the decision-making process (Shin *et al.*, 2013). Laosirihongthong *et al.* (2019) reported that the weakness of the AHP method is that it is based on the application of a comparison scale of 1 to 9, which cannot handle the uncertainty and fuzziness associated with human thinking. The fuzzy AHP represents a systematic approach for selecting alternatives and solving problems using the concept of fuzzy-set theory (Zadeh, 1968), along with the AHP method, which is applied through the use of fuzzy number triangles (Chang, 1996). Fuzzy AHP is an extension of the traditional AHP method (Shweta & Kumar, 2021), allowing for the more accurate and objective evaluation of ratio numbers. This approach is used in various types of decision-making problems by researchers (Yadav & Sharma, 2015). Fuzzy-set theory is an important approach for providing uncertainty measurements that are related to people’s subjective judgments (Yadav & Sharma, 2015). An extended form of the AHP method related to fuzzy sets is, therefore, applied in this paper. A large number of decision makers were involved in determining the priority between ratio numbers, and this may result in discrepancy in ranking, so it is necessary to eliminate the subjectivity of decision makers and use fuzzy sets that had been scientifically and empirically validated in order to reduce the lack of communication between decision makers.

3. Research Methodology

This research used data from publicly available financial reports for a selected sample of 19 companies belonging to the dairy industry of the Republic of Serbia (according to the opening balance in 2019 (Business Registers Agency) from a group of financially viable companies. The sequence of steps in the research is presented in Figure 1. The intention was to answer the defined research questions by applying the Integrated AHP and VIKOR Methodology for Sustainable Competition.

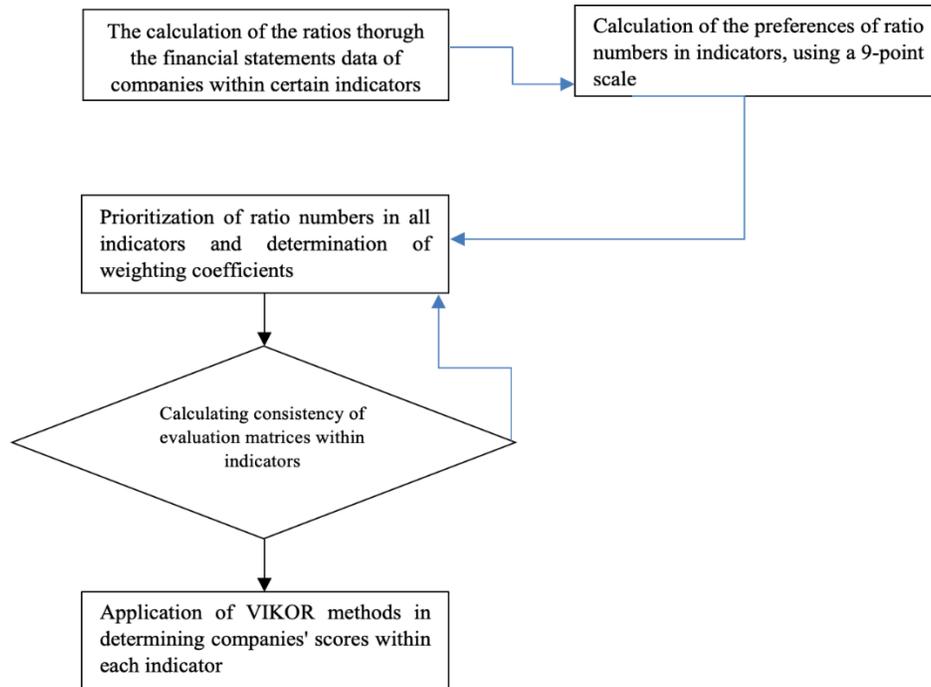


Figure 1. Shema of research methodology

The methodology in this research is based on the application of two methods, namely, ratio analysis and analytical hierarchical process (AHP). Ratio analysis is used to determine financial performance. As ratio analysis cannot determine the significance of certain ratio numbers in the indicator, this method is adjusted using the AHP method. The very idea of the research relates to the application of the method of AHP for determining the relative weights of calculated ratios. When calculating the ratio numbers in the four indicators of liquidity, solvency, profitability, and activity, the next phase of the research relates to the ranking of certain ratio numbers in the indicators using the method of AHP, that is, the 9-point scale. When the appropriate weighting coefficients are assigned, the next stage is to determine the company score in a particular indicator, i.e., to compare it with the competition (Figure 1).

The design of the research is structured as follows: (1) using the FAHP method to determine the weights of financial ratios, and (2) determining the rank of companies using the VIKOR method.

The AHP is defined as an MCDM method that reflects information about the relative importance of particular alternatives for evaluating efficiency. The AHP is a numerical approach of MCDM (Amrita *et al.*, 2018) that uses three stages of generating weights; these stages are hierarchy, judgement of comparisons, and synthesis of priorities (Saaty, 1980). According to Saaty (1980), hierarchy refers to dividing problems into criteria and then alternatives. In this study, this consists of devolving the overall financial-performance score into financial-performance indicators. Within all indicators, it is necessary to select certain ratio numbers that best represent the indicators. Due to the negative consequences of bankruptcy, monitoring the financial health of companies is the subject of interest for both owners, managers, and creditors, and the wider community (Milašinović *et al.*, 2019). These indicators were selected on the basis of another article (Knežević, 2011). Benchmarking was performed using the 9-point scale. Priority synthesis is the last stage in this method and refers to the calculation of the weight coefficients of the ratio numbers within each indicator.

The modelling process requires four stages (Čupić & Suknović, 2010):

- problem structuring;
- data collection;
- assessing relative weights;
- determining the problem solution.

In this paper, the structuring phase refers to the selection of the most significant ratios of indicators for evaluating financial performance. These are then divided into another set of elements corresponding to the next level. The second level refers to the selection of the most significant ratio numbers within all indicators.

The second phase of the AHP method begins with data collection and measurement (Dyer *et al.*, 1992). Data collection was performed on the basis of officially published financial statements of companies presented by the official Business Register of the Republic of Serbia. The evaluator adds relative ratings in pairs of attributes of one hierarchical level and given attributes of a higher hierarchical level (Čupić & Suknović, 2010). Following this ranking method, the estimator individually assigns weights to each pair as a measure of how much more significant one pair of attributes is than another.

The third phase of AHP represents the most significant and determining phase in which the relative weight coefficients are estimated. Pairwise matrices are “translated” into problems of determining their own values to obtain normalized and own weight vectors for all attributes at each level of the hierarchy (Cvijanović *et al.*, 2019). In this step, the decision maker constructs a comparison matrix between the ratio numbers according to the different criteria involved.

Suppose a given hierarchy level has n attributes A_1, A_2, \dots, A_n with the vector of weights $t=(t_1, t_2, \dots, t_n)$. It is necessary to find t in order to determine the relative importance of A_1, A_2, \dots, A_n . If the one who weighs compares each pair A_i and A_j of the attributes as the degree to which A_i dominates over A_j (i.e., t_i/t_j), then a comparison matrix can be formed.

$$A = (a_{ij}) = \begin{bmatrix} t_1/t_1 & t_1/t_2 & \dots & t_1/t_n \\ t_2/t_1 & t_2/t_2 & \dots & t_2/t_n \\ \dots & \dots & \dots & \dots \\ t_n/t_1 & t_n/t_2 & \dots & t_n/t_n \end{bmatrix}$$

The last part of the AHP method involves finding the composite normalized vector. The composite vector is used to prioritize all the entities at the lowest hierarchical level. In that case, the composite vector enables the achievement of the set goals of the overall problem. Then, the normalized vector of weights $t=(t_1, t_2, \dots, t_n)$ can be found by solving the corresponding problem of the greatest eigenvalue (Tummala & Ling, 1996).

In this step, the AHP method with some weights is used to calculate the company’s score, that is, to determine the company’s position relative to its competitors in each year of observation. The criteria used to select a company in each year are related to the highest net profit achieved in a given year.

The VIKOR method is a multicriteria decision-making method based on the ideal-point technique, and it is used in circumstances where decision makers focus on profit as opposed to the risk of the decision being less important (Babashamsi *et al.*, 2016). Fu *et al.* (2011) stated that VIKOR was primarily created as a method for solving discrete decision problems that have noncommensurable and conflicting criteria.

4. Results and Discussion

4.1. Ratio-Based Model Using AHP

The consideration of financial-performance evaluation is one of the key aspects of performance evaluation (Shaverdi *et al.*, 2014). According to Farre-Danesh *et al.* (2016) “Financial perspective is still the core of performance evaluation”. Financial indicators provide useful quantitative financial information to various stakeholders, primarily investors and analysts, for the purpose of assessing the company’s operations as well as analysing its position in the sector to which it belongs over time (Dragić *et al.*, 2019; Mitrović *et al.*, 2021).

In order to determine financial performance on the basis of the significance of certain ratio numbers, hierarchical-process analysis is also used along with ratio analysis. The ratio models used in financial analysis assume uniformity in the significance of all ratios of indicators, and they need to be compared with each other to provide a more accurate picture of companies (Shaverdi *et al.*, 2014). However, research requires certain priorities to be identified among ratio numbers in order to assess the position of the company as closely as possible. As all indicators are equally important for the overall assessment of the position of the company, the analytical hierarchical process is applied to determine the weights in the ratio numbers. For analytical purposes, financial indicators are classified into four groups, as shown in Figure 2. In terms of liquidity ratios, the most significant ratios are cash-coverage ratio, current ratio, quick ratio, and net current assets. The included solvency indicators are debt ratio, debt/equity ratio, and times interest earned. The profitability indicators included for the purposes of this paper are return on equity, return on assets, profit margin, and operation margin. Analysis of the operational margin as a measure of long-term performance has recently been given theoretical and practical significance (Lukić, 2018). The included activity indicators are collection period (days), day sales in cash (days), payable period (days), and asset turnover (Knežević *et al.*, 2011). The application of selected financial ratios for the observed dairy companies (profitability ratio, activity (efficiency) ratio, solvency ratio and liquidity ratio) is schematically presented below. The presented financial ratios were calculated for each of these companies (Figure 2).

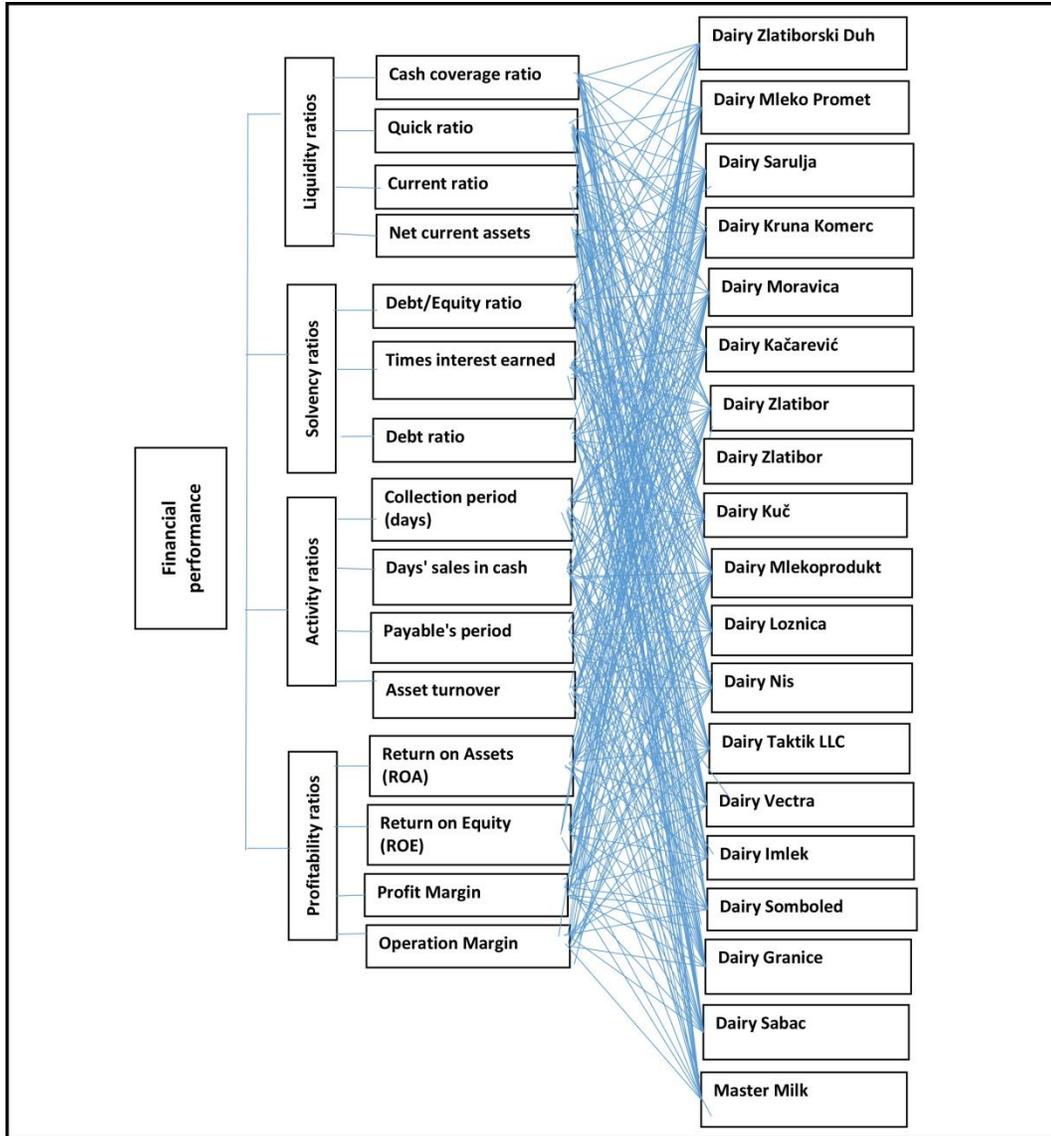


Figure 2. Financial ratios for performance evaluation. Source: authors' work based on Rezaie *et al.* (2014) and Knežević *et al.* (2019)

Financial performance is assessed through indicators of liquidity, solvency, activity, and profitability (the first level of the hierarchy). Each indicator contains a certain number of ratio numbers that are shown in the Figure 2. For each company, the values of the ratio numbers for each indicator are calculated.

The fuzzy analytic hierarchy process (FAHP) method uses priority vectors for decision-making criteria (Knežević *et al.*, 2017; Mandić *et al.*, 2014). The goal of analysis via fuzzy AHP numbers is to obtain more accurate information about the indicator. That is, through the fuzzy AHP method, the significance of ratio numbers within the indicator is determined. Certain ratio indicators are more important than others within the indicators, e.g., within liquidity ratios, the cash-coverage ratio is more significant than the net working capital ratio is. In this way, a more accurate presentation of liquidity, profitability, solvency, and activity indicators is obtained, which includes certain ratio numbers that have greater impact on the overall state of the indicator, and thus eliminates potentially false representations of liquidity, profitability, solvency, and activity.

4.2. Fuzzy AHP

The theory of fuzzy sets is a suitable mathematical apparatus for modelling various processes dominated by uncertainty, ambiguity, subjectivity, indeterminacy, etc. The theory of fuzzy sets allows for treating insufficiently precise phenomena that cannot be modelled solely using probability theory or interval mathematics (Čupić & Suknović, 2010). The theory of fuzzy sets was first developed by Zadeh as an effective method for the mathematical interpretation of uncertainty and imprecise evaluation methods

(Čupić & Suknović, 2010). Human judgment is characterized as imprecise language, such as the terms “equality”, “weakness”, “very strong”, and “absolute” (Mandić *et al.*, 2014). When prioritizing ratio numbers within a metric, the expanded version using fuzzy sets is used instead of Saaty’s 9-point scale (see Table 2). The comparison matrix is presented in Appendix A (see Tables A1 and A2).

Table 2. Saaty’s expanded 9-point scale using fuzzy sets.

Definition	Importance Intensity	Reciprocals
Equal importance	(1, 1, 1)	(1, 1, 1)
Moderate importance	(2, 3, 4)	(1/4, 1/3, 1/2)
Strong importance	(4, 5, 6)	(1/6, 1/5, 1/4)
Very strong importance	(6, 7, 8)	(1/8, 1/7, 1/6)
Extreme importance	(9, 9, 9)	(1/9, 1/9, 1/9)
Intermediate values	(1, 2, 3), (3, 4, 5), (5, 6, 7) and (7, 8, 9)	(1/3, 1/2, 1), (1/5, 1/4, 1/3), (1/7, 1/6, 1/5) and (1/9, 1/8, 1/7)

Source: Saaty (1980) & Saaty (2000)

To maintain objectivity, when ranking ratio numbers, the AHP method is used, which allows for the use of group decision making.

Let

$X = (x_1, \dots, x_n)$ be an object set, and

$G = (g_1, \dots, g_n)$ be the goal set.

According to the methodology described in Chang (1996), each goal is set for each object. The steps of Chang’s extent analysis are given as follows.

Each object’s value of the extended analysis is as follows:

$$M_{gi}^1, M_{gi}^2, \dots, M_{gi}^n, i = 1, 2, \dots, n \tag{2}$$

Where $M_{gi}^j, j = 1, n$, is a triple fuzzy number. The weight coefficients of the AHP method are initially used by the size inversion of S_k .

For the purpose of obtaining value $\sum_{j=1}^n m_{gi}^j$, fuzzy-set adaptation m is shifted to a special matrix:

$$\sum_{j=1}^m m_{gi}^j = \left[\sum_{j=1}^m l_j, \sum_{j=1}^m m_j, \sum_{j=1}^m u_j \right] \tag{3}$$

For the purpose of obtaining value $[\sum_{j=1}^m l_j, \sum_{j=1}^m m_j, \sum_{j=1}^m u_j]$, it is necessary to determine all three sizes of fuzzy set $M_{gi}^j (j = 1, 2, m)$:

$$\sum_{j=1}^n \sum_{j=1}^m M_{gi}^j = \left[\sum_{j=1}^m l_i, \sum_{j=1}^m m_j, \sum_{j=1}^m u_j \right] \tag{4}$$

When the vector inversion is complete, the next step is the expression obtained below:

$$\left[\sum_{j=1}^n \sum_{j=1}^m M_{gi}^j \right]^{-1} = \left(\frac{1}{\sum_{j=1}^m u_j}, \frac{1}{\sum_{j=1}^m m_j}, \frac{1}{\sum_{j=1}^m l_j} \right) \tag{5}$$

Starting from this, $M_1 = (l_1, m_1, u_1)$ and $M_2 = (l_2, m_2, u_2)$ represent two triangular fuzzy numbers. Degree of possibility $M_2 = (l_2, m_2, u_2) \geq M_1 = (l_1, m_1, u_1)$ is defined as

$$V(M_2 \geq M_1) = \sup \left[\min (\mu_{m_1}(x), \mu_{m_2}(y)) \right] \tag{6}$$

This is further expressed as follows (Ahmed & Kılıç, 2019):

$$V(M_1 \geq M_2) = hgt(M_1 \cap M_2) = \mu_{M_1}(d)$$

$$V(M_2 \geq M_1) = hgt(M_1 \cap M_2) = \mu_{M_2}(d)$$

$$= \left\{ \begin{array}{ll} 1 & m_2 \geq m_1 \\ 0 & l_1 \geq \mu_2 \\ \frac{l_1 - u_2}{(m_2 - m_1) - (m_1 - l_1)} & otherwise \end{array} \right\} \tag{7}$$

Both sizes are required to compare the values of M_1 and M_2 $V(M_2 \geq M_1) \text{ I } V(M_1 \geq M_2)$. Considering a convex fuzzy number with a realization rate greater than k and a convex fuzzy M_i ($i = 1, k$), numbers can be defined as

$$V(M \geq M_1, M_2, \dots, M_k) \tag{8}$$

$$V = V((M \geq M_1) \text{ I } (M \geq M_2), \dots, (M \geq M_k))$$

$$V = \min V(M \geq M_i), i = 1, 2, 3 \dots k.$$

If we assume that $d(A_i) = \min V(S_i \geq S_k)$, for $k = 1, 2, n, k \neq i$
 Furthermore, the weight factor can be given as

$$W' = (d'(A_1), d'(A_2), \dots, d'(A_n))^T \tag{9}$$

In the equation shown below, $A_i = (i = 1, 2, \dots, n)$ presents n elements. Further, via normalization, the normalized weight vectors are:

$$W = (d(A_1), d(A_2), \dots, d(A_n))^T \tag{10}$$

where W is a nonfuzzy number (Shaverdi *et al.*, 2014).

When assessing the significance between pairs, the next step is to determine the weight coefficients of certain indicators. This means that the values of the weight coefficients are determined using these formulas, that is, after ranking all the ratio numbers within the indicator, the weight coefficients are thus determined. Using this formula, the following table is obtained in which the results of all ratio numbers within the indicators are obtained (Table 3). The numbers from the mentioned tables represent the subcriteria used when determining the coefficients of weight in the method of analytical hierarchical processes (Mitrović *et al.*, 2015).

Table 3. Weight ratios of ratio numbers in indicators.

<i>Liquidity</i>	0.335	Rank
Cash-coverage ratio	0.532	1
Quick ratio	0.234	2
Current ratio	0.145	3
Net current assets	0.089	4
<i>Profitability</i>	0.116	Rank
Return on assets (ROA)	0.442	1
Return on equity (ROE)	0.298	2
Profit margin	0.181	3
Operation margin	0.079	4
<i>Solvency</i>	0.178	Rank
Debt/equity ratio	0.629	1
Debt ratio	0.263	2
Times interest earned	0.107	3
<i>Activity</i>	0.371	Rank
Collection period (days)	0.328	2
Days' sales in cash (days)	0.389	1
Payable period (days)	0.192	3
Asset turnover	0.091	4

Source: authors' work based on Wang (2008).

In Table 3, using Saaty's 9-point scale (extended for fuzzy numbers), the significance of ratio numbers within the criteria was determined. The overview of significance is shown in Appendix A.

In terms of liquidity ratios, the most significant is the cash-coverage ratio. Cash is the most liquid asset, and accordingly, liquidity ratios that include cash and cash equivalents are more significant than other working capital. Net working capital, compared to other ratios such as the fast- and general-liquidity ratios, is the least significant.

In the case of profitability indicators, the most important ratio is the rate of return on operating assets. Profit and operating margins are less important because ROA is the most important for the wellbeing of the entire company and its stakeholders, followed by ROE. The profit margin can create a false image because only the positions from the income statement are viewed, and the positions from the balance sheet are simultaneously ignored. This can lead to a situation where the company has a large profit margin, but simultaneously has a high amount of funds in the active balance sheet position.

In the case of solvency ratios, the most important is the ratio of debt to capital, i.e., how much debts are affecting the total sources of financing. This ratio directly shows the way of financing the company, i.e., if it is high, then the company is financed by borrowing; in the opposite case, the situation is more favorable. This ratio is the most important in liquidity indicators.

Table 3 shows that daily sales in cash is the most important activity ratio. It is more significant than the average pay-out period of suppliers since it is more important for companies to collect sales than to pay off debt to suppliers. The average period of collection of receivables is the second most important ratio because it implies the entire cash cycle that the company needs from the sale to the collection of receivables and the payment of debt to suppliers. The turnover ratio of total assets is the least significant ratio.

After obtaining all weight coefficients for all ratio numbers within the indicator, it is necessary to add them; if their value is equal to 1, they can be considered as acceptable. However, despite ranking individual ratios, it is also necessary to determine the weight coefficients for the indicators. Weight-coefficient ratios for financial ratios should be determined in such a way that they best reflect the industry in which the company operates. Considering that companies operating in the dairy industry in Serbia are observed, it is necessary to adjust the weight coefficients according to cash cycles, i.e., liquidity and activity ratios, then profitability, and lastly solvency (Mitrović *et al.*, 2015)

When determining the weight coefficients, it is essential to observe consistency conditions, that is, the consistency of the matrix must be higher than 90%. In the method of the analytical hierarchy process, it is very important to calculate the consistency of scores (Čupić & Suknović, 2010). If the estimation matrix is inconsistent, this refers to a malfunctioning of the estimation matrix, which can be reflected in incorrect decision making (Pakkar, 2014). Matrix consistency tables are found in the appendix. Matrix consistency in this paper is calculated for the matrices of liquidity, solvency, profitability, and activity assessment.

Consistency index CI represents a measure of deviation n of λ_{max} and can be represented by the following formula:

$$CI = \frac{\lambda_{max} - n}{n}$$

where quantity n represents the number of ratios in a certain indicator, while λ_{max} refers to the highest value of all ratios. The calculated consistency index is used to calculate the inconsistency ratios, (Hanine *et al.*, 2016), i.e., to determine the consistency estimates of the indicator matrix. The inconsistency ratios are calculated by dividing the consistency index by the RI values from the table below (Table 4).

Table 4. Consistency ratios.

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

Source: Hanine *et al.* (2016)

The first row contains the numbers of ratios, while the second column contains the consistency ratio for a certain number of ratios. If there are four ratios in the indicator; then, a consistency ratio of 0.9 is used. Table 5 shows the consistency ratio for the indicator matrices.

Table 5. Consistency presentation.

Ratios	CI	CR	Percentage of Inconsistencies	Consistency
Liquidity ratios	0.1	0.9	10%	90%
Solvency ratios	0.08	0.92	8%	92%
Profitability ratios	0.04	0.05	5%	95%
Activity ratios	0.07	0.08	8%	92%

Source: authors' work based on Hanine *et al.* (2016)

Bearing in mind that the consistency ratio for all indicator matrices is higher than 90% (Table 5), this means that the consistency condition is met, because if this condition was not met, the matrices would not be significant.

To summarize (Table 3), these indicators contain certain ratio numbers whose estimates depend on the subjectivity of the decision maker's judgment. For the liquidity indicator, as explained above, there are ratio numbers, i.e., general-liquidity, quick-liquidity, and cash-coverage ratios, and net working capital. The decision maker sets priorities between ratios according to the criterion of the speed of cash conversion, that is, to the ratios that are heavily dependent on cash, which in today's environment is necessary for the survival, growth, and development of businesses. For solvency ratios, the most important criterion is the ratio of debt and equity, which is the basic means of financing an enterprise. This ratio must not be separately viewed from ratios within the

profitability ratios, as a higher value of this ratio can create a “false image” of a high ROE, which conceals the problem and relates to short-term liabilities (Ta & Har, 2000). In activity criteria, the most important factor is the average period of collection of receivables, which in itself is connected with the cash ratio.

4.3. Multicriteria Compromise Ranking

The use of multicriteria decision-making (MCDM) methods constitutes an efficient tool for reducing subjectivity and systematizing the decision-making process (Cheney, 2009). The VIKOR method is a very commonly used multicriteria ranking method that is suitable for solving various decision problems (Rajković *et al.*, 2020). Multiple criteria ranking by the VIKOR method is performed on the basis of metrics Q_i expressed by the following relation:

$$Q = \frac{s_j - s^*}{s^- - s^*}, R = \frac{R_j - R^*}{R^- - R^*}, Q_i = v \frac{s_j - s^*}{s^- - s^*} + (1 - v) \frac{R_j - R^*}{R^- - R^*}, i = 1, 2, m.$$

This method is distance-measure-based, which means that the closest solution to ideal is called a compromise solution. The aim of this method is to find the closest alternative to ideal, which means that the distance from the ideal point is minimal. The following formula:

$$L_p(F^*, F) = \left\{ \sum_{j=1}^n [f_j^* - f_j(x)]^p \right\}^{\frac{1}{p}}, 1 \leq p \leq \alpha \tag{11}$$

represents the distance between ideal point F^* the point $F(x)$, in the criterion function space (Opricović, 1986).

For each action, there is a value of Q_i ; then, an action is selected at which this value is the smallest (the least distance from the “ideal” point). The measure for the multicriteria ranking of the i th action (Q_i) is calculated by the expression:

$$Q = p^* QS_i + (1 - p)^* QR_i \tag{12}$$

where

$$Q = \frac{s_j - s^*}{s^- - s^*}, R = \frac{R_j - R^*}{R^- - R^*} \tag{13}$$

Minimizing this metric determines the compromise solution. The FAHP method enables determining the weighting coefficients (Mandić *et al.*, 2014) of all ratios within financial performance, followed by the application of the VIKOR method, which allows for companies to be rated on the basis of four rating criteria, and to determine which has the best financial performance. Muñoz-Medina *et al.* indicated that the VIKOR method is suitable for solving decision-making problems with conflicted and incommensurable criteria (with different units), or in the case of quantitative or qualitative criteria (Muñoz-Medina *et al.*, 2021). Accordingly, authors are able to deliver the databases upon request. On the basis of the VIKOR method (Farrokh *et al.*, 2016), Table 6 with the ranking of companies was obtained.

Table 6. Ranking table of companies using the VIKOR method.

Rank	Liquidity	Solvency	Activity	Profitability
1	Dairy Taktik	Dairy Sarulja	Dairy Sabac	Dairy Meggle Srbija
2	Dairy Somboled	Dairy Kruna Komerc	Sarulja	PK Zlatibor
3	Sarulja	Dairy Moravica	Master Milk	Dairy Taktik
4	Dairy Kacarevic	Dairy Kacarevic	PK Zlatibor	Dairy Kacarevic
5	Moravica	Dairy Zlatibor	Zlatiborski duh	Dairy Mlekoprodukt Zrenjanin
6	Master Milk	Dairy Kuc	Mleko Promet	Dairy Mleko Promet
7	Zlatiborski duh	Dairy Mlekoprodukt Zrenjanin	Kruna Komerc	Dairy Kuč
8	Dairy Sabac	Dairy Loznica	Dairy Loznica	Dairy Granice
9	PK Zlatibor	Dairy Nis	Dairy Nis	Dairy Vectra
10	Dairy Nis	Dairy Taktik	Moravica	Dairy Sabac
11	Mleko Promet	Mlekara Mleko Promet	Imlek	Dairy Loznica
12	Mlekoprodukt Zrenjanin	Dairy Vectra	Dairy Taktik	Dairy Moravica
13	Imlek	Meggle Serbia	Dairy Somboled	Dairy Master Milk
14	Vectra	Dairy Imlek	Meggle Srbija	Dairy Kruna Komerc
15	Dairy Loznica	Dairy Somboled	Granice	Dairy Nis
16	Kuč	Dairy Zlatiborski duh	Vectra	Dairy Zlatiborski duh

17	Meggle Srbija	Dairy Granice	Mlekoprodukt Zrenjanin	Dairy Sarulja
18	Kruna Komerc	Master Milk	Kuč	Dairy Somboled
19	Granice	Dairy Sabac	Dairy Kacarevic	Dairy Imlek

Source: authors' work based on Rezaie *et al.* (2014)

According to the criterion of liquidity, the best company is Taktik LLC, while according to the criterion of activity, the best company is Dairy Šabac (Table 6). Dairy Sarulja is the best company according to the solvency criterion (Table 6), while Dairy Meggle Srbija is the best company according to the profitability criterion (Table 6, Figure 3). In addition, these criteria should not be separately viewed, but used to determine which company has the best performance.

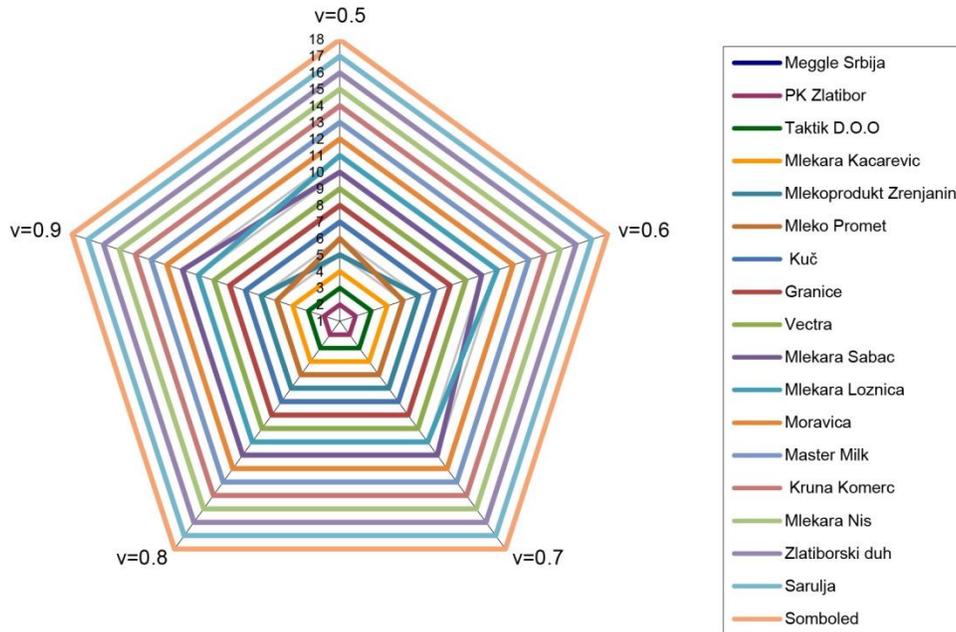


Figure 3. Ranking the position of profitability depending on size v . Source: authors' work based on the table in Lukić & Vojteski-Kljcnak (2020).

Depending on size v in the following formula, which determines the preference, i.e., favoring the alternative, the ranking of companies' changes. If the value is $v = 0.5$, then the situation is such that we equally favour the sum of all ratios within the indicator, and the largest value within the indicator. As we increase the size of v , then this criterion moves to the highest value within the indicator, and a different ranking of companies is obtained. This can be seen in this case in the positions of the company Dairy Mlekoprodukt Zrenjanin. As v increases, so does its position. The opposite is the case of the company Dairy Mleko Promet, whose rank is decreasing by increasing the size of v .

Srebro *et al.* stressed that ratios only have value if they are precisely and correctly interpreted (Srebro *et al.*, 2021). Insufficient coverage indicates that the business might face difficulties in facing its debts (Giraldez-Puig & Berenguer, 2018) and financial sustainability. On the other hand, funds should be available for investment for operations or investment purposes with higher returns (Giraldez-Puig & Berenguer, 2018). "Sustainable finance aspires to strengthen financial stability and asset pricing by improving the assessment and management of long-term material risks and intangible drivers of value creation—including those related to environmental, social and governance (ESG) factors" (Thimman, 2017).

5. Conclusions

The application of multicriteria decision-making methods has led to a more detailed and precise analysis of the financial operations of the companies. Using the fuzzy AHP (FAHP) method, key indicators relevant to financial performance were identified. Using the VIKOR method, the best alternative, in this case, the best company, was selected on the basis of given criteria. In some methods, it is possible to cover inadequate positions in financial statements by applying certain financial ratios, while in this approach, attention is focused on the key ratios that are crucial for the evaluation of financial performance.

The VIKOR and FUZZY AHP methods are widely used in today's environment, which is very dynamic, so it is essential to constantly adapt financial models to modern methods and decision-making techniques. Decision makers, especially financial

managers, have a shortened period for making decisions on a daily basis, so it is necessary to implement decision-making methods into a single decision-making mechanism that allows for them to respond in a timely manner. The consequences of making the wrong financial decisions may be immeasurable for the entire company. It is necessary for each company to have data from the previous period, and to constantly monitor its own growth and development. The above model, which includes two multicriteria decision-making methods, aims at comparing companies against financial-statement data. These data can be a great trigger for determining the position of the company in relation to the competition and provide guidance for the further development of the company; on the other hand, they can be very useful for external investors when evaluating the position of the company. The AHP and VIKOR methods, as some of the most commonly used methods in decision making, have the power of integration to adapt to the needs of decision makers or model makers. These methods have a very wide application and should not be closely viewed through their basic previously defined assumptions but should be constantly adapted to new methods and techniques in order to adapt as quickly as possible to the environment. In addition to these multicriteria methods, it is possible to use other methods that are closely related to this field and can use fuzzy sets. The financial model, or a model that enables decision makers to provide more accurate and specific information, must reflect the dynamism and complexity of the environment in which the business operates.

Our results are useful to various stakeholders, particularly creditors and investors, as such analysis allows for them to gain a more accurate position of the company compared to the one that they could obtain by isolated observation using only financial analysis. Creditors or investors could use these methods to more accurately determine the state of the company and to identify which company has the best prospects for further growth, the state of solvency, and the like. The results of this research can also be used by independent financial institutions when evaluating financial performance or determining the real value of a company. This area needs more attention from researchers and scientists.

Summarizing the results of the research, they can be useful in choosing the most appropriate strategy for the development of dairy in Serbia, having in mind the evaluation of financial performance (position and success) of the observed companies. The analytical results of the applied fuzzy AHP–VIKOR approach are important in considering the sustainability of dairy companies, especially in relation to foreign competition, which is of general interest. The inadequate evaluation of the performance of dairy companies can result in inefficient resource allocation, and thus lead to negative implications for their sustainability.

The results of the study provide useful information to dairy companies to revise their goals and strategies, improve their performance, plan future activities to seize market opportunities, achieve competitive advantage, and thereby long-term financial sustainability. When it comes to recommendations for future research, the usefulness of applying the integrated AHP and VIKOR methodology in other segments is emphasized.

Appendix

Appendix A

Table A1. Nine-point scale.

Scale	Ranking Explanation
1	Equally significant or desirable
2	Equal to weaker
3	Weaker to more significant or desirable
4	Weaker to stronger
5	Stronger towards more significant or desirable
6	Strong to very strong
7	Very strong towards very significant or desirable
8	Very strong to the absolutely most important
9	Absolutely most significant or desirable

Table A2. FAHP use on the selected financial ratios.

Liquidity Ratios	Cash Coverage Ratio	Quick Ratio	Current Ratio	Net Current Assets
Cash coverage ratio	(1, 1, 1)	(2, 3, 4)	(3, 4, 5)	(4, 5, 6)
Quick ratio	(1/4, 1/3, 1/2)	(1, 1, 1)	(1, 2, 3)	(2, 3, 4)
Current ratio	(1/5, 1/4, 1/3)	(1/3, 1/2, 1/1)	(1, 1, 1)	(1, 2, 3)
Net current assets	(1/6, 1/5, 1/4)	(1/4, 1/3, 1/2)	(1/3, 1/2, 1/1)	(1, 1, 1)
Solvency ratios	Debt/Equity ratio	Times interest earned		Debt ratio
Debt/Equity ratio	(1, 1, 1)	(2, 3, 4)		(4, 5, 6)
Times interest earned	(1/4, 1/3, 1/2)	(1, 1, 1)		(2, 3, 4)
Debt ratio	(1/6, 1/5, 1/4)	(1/5, 1/4, 1/3)		(1, 1, 1)
Activity ratios	Collection period (days)	Days' sales in cash (days)	Payable's period	Asset turnover
Collection period (days)	(1, 1, 1)	(1, 1, 1)	(1, 2, 3)	(2, 3, 4)
Days' sales in cash (days)	(1/1, 1/1, 1/1)	(1, 1, 1)	(2, 3, 4)	(3, 4, 5)

Payable's period	(1/3, 1/2, 1/1)	(1/4, 1/3, 1/2)	(1, 1, 1)	(2, 3, 4)
Asset turnover	(1/4, 1/3, 1/2)	(1/5, 1/4, 1/3)	(1/4, 1/3, 1/2)	(1, 1, 1)
<i>Profitability ratios</i>	<i>ROA</i>	<i>ROE</i>	<i>Profit margin</i>	<i>Operation margin</i>
ROA	(1, 1, 1)	(1, 2, 3)	(2, 3, 4)	(3, 4, 5)
ROE	(1/3, 1/2, 1)	(1, 1, 1)	(1, 2, 3)	(3, 4, 5)
Profit margin	(1/4, 1/3, 1/2)	(1/5, 1/4, 1/3)	(1, 1, 1)	(2, 3, 4)
Operation margin	(1/5, 1/4, 1/3)	(1/5, 1/4, 1/3)	(1/4, 1/3, 1)	(1, 1, 1)

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