The COVID-19 pandemic and its effect on human capital and financial performance: evidence from Serbian banks

Ефекти пандемије COVID-19 на људски капитал и финансијске перформансе: случај банкарског сектора Србије

Goran Pavlović
University Metropolitan, Faculty of Management, Belgrade, Republic of Serbia,
goran.pavlovic@metropolitan.ac.rs, https://orcid.org/0000-0002-5557-9262

Abstract: Human capital holds significant importance for banks, as it includes specific knowledge and skills. It serves as a crucial determinant of financial performance. However, human capital is susceptible to various factors that can exert negative effects. The COVID-19 stands as one such factor, necessitating bank restructuring and potentially resulting in a depreciation of human capital value and subsequent performance decline. The objective of the research is to investigate the influence of the COVID-19 pandemic on the human capital of banks in the Republic of Serbia and evaluate its implications on financial performance. The research spanned across all banks operating in the Republic of Serbia throughout the period of 2019 to 2021. The Wilcoxon Signed Rank test was employed to assess the difference in human capital value over the observed period. Furthermore, the regression analysis was implemented to investigate the impact of human capital on ROA, ROE, and NPM. Results showed that COVID-19 pandemic has led to a decrease in the value of human capital in banks in the Republic of Serbia. The financial performance of banks is positively influenced by human capital in the short term. However, over the long term, the value of human capital depreciates, resulting in a diminishing impact on financial performance.
Keywords: human capital, banking, financial performance, COVID-19, profitability
JEL classification: J24, G21, D22, M21

Сажетак: Људски капитал има веома велики значај у банкарству, будући да укључује специфична знања и вештине запослених, које могу деловати на остваривање финансијских перформанси. Међутим, људски капитал је подложан различитим факторима који могу имати негативне ефекте. COVID-19 је један од таквих фактора, који захтева реструктурирање банака и потенцијално резултира смањењем вредности људског капитала и последично опадањем перформанси. Циљ истраживања је испитивање ефекта COVID-19 на људски капитал банака у Републици Србији и процена импликација таквог утицаја на финансијске перформансе. Истраживањем су обухваћене све банке које су пословале у Републици Србији од 2019. до 2021. године. За процену разлике у вредности људског капитала у посматраном периоду коришћен је Wilcoxon Signed Rank тест. Такође, у студији је примењена регресиона анализа како би се испитао утицај људског капитала на ROA, ROE и стопу нето добитка. Резултати су показали да је пандемија COVID-19 довела до смањења вредности људског капитала у банкама у Републици Србији. Људски капитал остварује статистички сигнификантан утицај на финансијске перформансе

банака у кратком року, док се дугорочна вредност смањује услед погоршања вредности људског капитала.
Кључне речи: људски капитал, банкарство, финансијске перформансе, COVID-19, профитабилност
ЈЕЛ класификација: J24, G21, D22, M21

Introduction

Banking is a knowledge-based industry sector where the emphasis is on the continuous process of innovation and maximizing the quality of services provided (Milošević, Dobrota, Dmitorović, & Barjaktarović-Rakočević, 2021). It is evident that human capital, which encompasses specific competencies and skills, holds special importance in the banking sector. The resource-based view of the firm postulates that creating business success and gaining a competitive advantage requires resources that are rare, valuable, and cannot be imitated, as is the case with human capital (Soevarno & Tjahjadi, 2020). Bontis (2001) states that human capital includes special knowledge, skills, competencies, as well as employees' ability to innovate and solve complex problems. In the modern business landscape and era of globalization, the development of knowledge is crucial alongside the advancement of information technology. Knowledge development has emerged as a socially responsible practice towards employees, capable of fostering the growth of human capital and exerting a positive influence on financial outcomes (Aleksić, Pjanić, Berber & Slavić, 2022). Considering the unique value and intangible nature of human capital, which makes it challenging to build or replicate, it can be assumed that human capital significantly influences the financial performance. Since human capital represents one of the most vital components of a bank's intellectual capital, we should consider the contribution that employees' competencies can make to the financial results achieved by banks (Milošević et al., 2021; Ousama, Hammami & Abdulkarim, 2019).

Given that human capital represents an asset of banks, it is evident that it is influenced by numerous internal and external factors. One such factor is the COVID-19 pandemic, which rapidly transitioned from the health to the economic sector and caused global economic and financial problems. COVID-19 represents a specific form of systemic risk that banks have faced, resulting in significant financial consequences (Xiazi & Shabir, 2022; Bentley, Kehoe, & Chung, 2021). Considering that the financial market in Serbia is primarily bank-centric (banks account for more than 90% of the total financial assets) (Cvetković, Cogoljević & Ranđelović, 2021; Živković & Vojinović, 2018; Ercegovac, Vlaović Begović & Jovin, 2019) and coupled with the debt moratorium and the redirection of consumer needs towards essential products during COVID-19, there has been a substantial decline in the total income of banks. Consequently, banks are facing a shortage of financial resources to invest in human capital. Restructuring banks in order to cope with the expected financial consequences during the COVID-19 has become a necessity (Vasić, 2020). Unfortunately, such restructuring inevitably affects human capital, often with negative implications. In an attempt to improve the financial situation, banks aim to minimize costs, and employee downsizing has become a prevalent strategy during the COVID-19. However, it is often overlooked that such a strategy may have long-term adverse consequences on the value created by banks (Bentley et al., 2021), especially if

downsizing is not planned and executed precisely to preserve valuable human capital. Consequently, banks may find themselves in a situation where, even after implementing restructuring measures, they achieve worse financial performance than before the changes were made. Considering these points, the objective of the research is to investigate the influence of the COVID-19 pandemic on the human capital of banks in Serbia and evaluate its implications on financial performance.

This paper is structured into several key sections. Following the introductory discussion, a literature review is conducted to explore the existing body of knowledge related to the examined problem. Based on these findings, hypotheses are formulated to align with previous research outcomes. The second part of the paper presents the research methodology, while the third part focuses on the results and discussion. The final section encompasses the conclusion, implications, limitations, and suggestions for further research.

1. Literature review and hypotheses

The transition from an economy dominated by physical assets to a knowledge-based economy, where the knowledge, skills, and abilities of employees are the most critical factors, emphasizes the significance of human capital as a fundamental driver of innovation and competitive advantage (Soevarno & Tjahjadi, 2020). As a central component of intellectual capital, human capital encompasses the aforementioned knowledge, skills, abilities, as well as employees' experience, willingness to learn, and develop (Peković, Pavlović & Zdravković, 2020). A focus on continuous learning is essential for improving human capital and ensuring a competitive advantage. Human capital includes employees' tacit knowledge, which is difficult to imitate, as well as their values, attitudes, overall education, motivation, willingness to cooperate, and knowledge sharing (Buallay, Hamdan, Reyad, Badawi & Madbouly, 2019; Simić & Slavković, 2019; Kovjanić & Vukadinović, 2021). As one of the most important assets, human capital often demonstrates a positive impact on Return on Assets (ROA) and other financial performance indicators (Soevarno & Tjahjadi, 2020).

Since employees' knowledge is one of the key factors influencing the performance of banks, employees in the banking sector are required to possess specific competencies and continuously improve and learn (Isa & Muafi, 2022). In fact, human capital stands out as the most crucial determinant of the performance and value added by financial organizations (Mirza, Hasnaoui, Naqvi & Rizvi, 2020). Among the three components of intellectual capital (structural and relational capital being the other two), human capital has the greatest statistically significant and positive impact on the performance of banks (Githaiga, 2022). Liu, Liu & Zhang (2021) point out that human capital in banking can be measured by the total formal and informal education in the field of finance, as well as by experience represented by the number of years working in banking. Considering the above, increasing human capital in banks through education and experience can be beneficial for generating financial performance, which is supported by studies demonstrating the statistically significant and positive impact of banks' human capital on their financial

performance (Milošević et al., 2021; Soevarno & Tjahjadi, 2020; Buallay et al., 2019; Githaiga, 2022).

However, the value of human capital, and consequently the performance achieved by banks, is influenced by numerous factors, including the previously mentioned COVID-19. As a specific form of systemic risk, COVID-19 has increased market volatility and financial vulnerability of banks, resulting in a decline in overall performance (Mirza et al., 2020; Xiazi & Shabir, 2022; Bentley et al., 2021). To maintain operations and minimize losses, many banks have implemented downsizing strategies, leading to significant reductions in the number of employees, particularly in high-skilled positions where employees command higher salaries. This strategy has also resulted in a significant reduction in the recruitment of qualified candidates and mass layoffs (Hamouche, 2021). The COVID-19 has led to a substantial increase in layoffs, impacting human capital in the banking sector (Bentley et al., 2021). Such strategies diminish the overall value of human capital in banks. The negative impact on human capital is further exacerbated by the new organizational changes that require reduced physical and social contact, as well as limited personal communication, teamwork, and knowledge sharing (Dissanayake, 2020). It is possible that banks will reduce investments in human capital to temporarily minimize operating costs, but these decisions overlook the fact that it threatens the creation of long-term value, even after the factors that led to the need for reducing human capital are eliminated (Bentley et al., 2021). The reason for this is that the departure of human capital represents a permanent loss of valuable and unique knowledge. Additionally, existing employees will have to handle a larger workload after the reduction of human capital, potentially leading to overtime work (Slavković, Bugarčić, Ognjanović & Pavlović, 2020). These factors highlight the specific nature and importance of human capital in creating long-term value and competitive advantage. Therefore, investing in employees and human capital should not be treated as an expense to be minimized, but rather as an opportunity that can enhance performance.

Based on the above considerations, this research assumes that during the COVID-19 period there was a decrease in the value of human capital of banks. Moreover, it is posited that human capital exerted a statistically significant and positively influential role on the financial performance of banks in the Republic of Serbia during the initial period. However, due to the decrease in the total value of human capital, it is assumed that the effects of the aforementioned impact on financial performance are of a short-term nature. Consequently, the following research hypotheses have been formulated:

H1: The COVID-19 led to a decrease in the value of human capital in banks in the Republic of Serbia.

H2: The financial performance of banks is positively influenced by human capital in the short term. However, over the long term, the value of human capital depreciates, resulting in a diminishing impact on financial performance.

2. Research methodology

Research in the field of the impact of intellectual capital on the financial performance of banks in the Republic of Serbia, as well as works that highlight the general importance of intellectual capital in banking in the Republic of Serbia exist (Peković et al., 2020; Bontis, Janošević, & Dženopoljac, 2013; Kovjanić & Vukadinović, 2021). According to the author's knowledge, there is a dearth of research specifically addressing the impact of human capital on the financial performance. It can be safely said that there are no studies in the Republic of Serbia that examines the effect of COVID-19 on the change of the human capital of banks and the effects of such change on financial performance, which is the specific theoretical and practical value of this paper.

To achieve the research objectives and test the defined hypotheses, a study was conducted on the population of banks that are active in the Republic of Serbia. All banks that operated on the Serbian financial market in the period 2019-2021 were included in the research. The independent variable is represented by human capital coefficient (HCE), measured with the VAIC methodology developed by Professor Pulić (Pulić, 2000). VAIC is is comprised of three elements: human capital, structural and relational capital. According to the aforementioned methodology, the first step in calculating human capital implies the determination of the value added (VA) by substracting total costs (IN) from total income (OUT):

$$VA = OUT - IN \tag{1}$$

Since VAIC methodology is based on the information from the balance sheet (Bontis et al., 2013), payroll costs are taken as an equivalent for investment in employees (HC) (Pulić, 2000; Sowearno & Tjahjadi, 2020). However, investments in employees should be excluded from the total costs, as they are considered investments rather than expenses, providing long-term benefits, which leads to a new model:

$$VA = OUT - (IN-HC) \tag{2}$$

When the added value is determined using the model (2), the second approach is calculating the value of the human capital coefficient (HCE) as a ratio of value added (VA) and total investment in employees (HC) (Pulić, 2000):

$$HCE = VA / HC \tag{3}$$

In model (3) HC includes wages, salary allowances and other personal expenses (payroll costs) during one fiscal year and as such describes the contribution of human resources to the created value (VA) (Janošević, Dženopoljac & Bontis, 2013).

The dependent variable is derived from three indicators of financial performance: Return on equity (ROE), computed as the ratio of net profit to banks' equity; Return on assets (ROA), computed as the ratio of net profit to banks' total assets; and Net profit margin (NPM), computed as the ratio of net profit to income.

The analysis covers a three-year period: 2019, which represents the year before the onset of the COVID-19; 2020, when the pandemic began and significant decisions were made to restructure banks, including changes in human capital; and 2021, a year characterized by financial stabilization and recovery in the banking sector. Financial reports for all banks that are active in Serbia are available for the year 2021.

3. Results and discussion

The first stage of statistical analysis entails the utilization of descriptive statistical analysis. Results in Table 1 shows that HCE decreased from 0.5955 in 2019 to 0.2709 in 2020. As expected, the value of human capital of banks in Serbia has decreased during the COVID-19. In 2021, as banks recovered financially, the value of human capital increased to 0.6177. Nonetheless, an inquiry arises regarding the potential amplification of the impact of human capital on financial performance. On average, all banks achieve positive financial performance except for the NPM, which is negative in 2020. Similar findings have been reported in other studies, showing a decline in bank profitability during the COVID-19 (Mirza et al., 2020; Xiazi & Shabir, 2022; Bentley et al., 2021).

Table 1: Descriptive statistics

Year	Variable	Min	Max	Mean	Stand. deviation
2019	HCE	-1.72	5.07	0.5955	1.3924
	ROA	-3.95	3.68	0.5586	1.8224
	ROE	-6.96	34,23	10,1550	12.3341
	NPM	-140.79	78.63	8.8764	47.3233
2020	HCE	-1.71	6.91	0.2709	1.6613
	ROA	-3.99	4.17	0.0273	1.7436
	ROE	-9.46	36.04	6.3714	11.5921
	NPM	-171.51	67.86	-6.2764	54.8244
2021	HCE	-0.99	3.39	0.6177	1.1234
	ROA	-3.25	2.31	0.4173	1.2359
	ROE	-4.84	24.97	9.1132	9.7554
	NPM	-155.15	56,48	8.3759	41.9785

Source: the authors' research

Prior to conducting the correlation analysis, it is imperative to examine the data distribution. In order to achieve this objective, the Kolmogorov-Smirnov (KS) and Shapiro-Wilk (SW) tests were employed. The outcomes of the normality tests, as presented in Table 2, reveal that the ROE exhibits a normal distribution across all analysed years, along with HCE in 2021. However, the remaining indicators exhibit statistically significant results, indicating a departure from a normal distribution. Hence, non-parametric tests should be employed accordingly.

Table 2: Normality tests

Year	Variable	KS			SW		
		Statistics	df	Sig.	Statistics	df	Sig.
2019	HCE	0.190	22	0.037	0.889	22	0.018
	ROA	0.234	22	0.003	0.917	22	0.066
	ROE	0.131	22	0.200*	0.944	22	0.236*
	NPM	0.288	22	0.000	0.830	22	0.002
2020	HCE	0.316	22	0.000	0.653	22	0.000
	ROA	0.232	22	0.003	0.895	22	0.024
	ROE	0.126	22	0.200*	0.944	22	0.244*
	NPM	0.285	22	0.000	0.796	22	0.000
2021	HCE	0.166	22	0.119*	0.904	22	0.036
	ROA	0.241	22	0.002	0.861	22	0.005
	ROE	0.125	22	0.200*	0.931	22	0.131*
	NPM	0.299	22	0.000	0.661	22	0.000

Source: the authors' research

In order to test the first (H1) hypothesis, it is necessary to apply the Wilcoxon Signed Rank test. The corresponding outcomes are presented in Table 3.

Table 3: The difference in human capital of banks in the observed years

Test statistics	Degrees of freedom	Standard error	Sig.	HCE Mean Rank 2019	HCE Mean Rank 2020	HCE Mean Rank 2021
8,455	2	0.302	0.015	2.32	1.5	2.18

Source: the authors' research

The results in the Table 3 show that the human capital of banks differs by observed years. As anticipated, the value of human capital is highest at the outset of the period, specifically before the onset of the COVID-19. During pandemic in 2020, human capital reached its lowest value. In 2021 investment in human capital increased. However, it should be noted that the value in 2021 is lower compared to 2019, indicating that the financial recovery of banks in 2021 was not sufficient to facilitate additional investments in human capital. Accordingly, the research hypothesis (H1) can be accepted and it can be stated that the *COVID-19 had negative impact on the value of human capital in banks in the Republic of Serbia.*

Regarding the correlation analysis, the outcomes of Spearman's correlation coefficient are presented in Table 4. Correlation coefficient values in the interval up to +/- 0.29 can be considered low, values from +/-0.3 to +/-0.49 as moderate, and values above +/-0.5 as high (Cohen, 1988).

Table 4: Results of the correlation analysis

Year	Variable	HCE	ROA	ROE	NPM
2019	HCE	1	0.750**	0.727**	0.671**
	ROA	0.750**	1	0.932**	0.936
	ROE	0.727**	0.932	1	0.929**
	NPM	0.617**	0.936**	0.929**	1
2020	HCE	1	0.730**	0.596**	0.681**
	ROA	0.730**	1	0.958**	0.917**
	ROE	0.596**	0.958**	1	0.967**
	NPM	0.681**	0.917**	0.967**	1
2021	HCE	1	0.542**	0.477*	0.547**
	ROA	0.542**	1	0.924**	0.935**
	ROE	0.477*	0.924**	1	0.922**
	NPM	0.547**	0.935**	0.922**	1

** 0.01 Significance level (2-tailed); *- 0.05 Significance level

Source: the authors' research

Narrowing the focus to solely examine the correlation between human capital (HCE) and financial performance (ROA, ROE and NPM), it is observed that a high correlation was achieved during 2019 and 2020. The highest degree of correlation in 2019 was achieved between HCE and ROA (0.750). During 2020, the highest degree of correlation exists again between HCE and ROA (0.730). Although it is a high degree, a certain decrease in correlation between those two variables is noticeable. Namely in the 2019, the value of human capital in the banks of the Republic of Serbia was at a satisfactory level, as a result of which a positive correlation was achieved with financial performance. During the 2021, the highest level of correlation was achieved between HCE and NPM (0.547). It is noticeable that the correlation of HCE and NPM in 2021 is lowest comparing with the period of 2019 and 2020. Similar observations can be made regarding the correlation between HCE and ROA, as well as HCE and ROE.

As correlation only indicates the strength and direction of the relationship, it is important to conduct regression analysis to obtain a more accurate understanding concerning the influence exerted by human capital on the financial performance. The results are presented in Table 5.

Table 5: Regression analysis

Year	Regression model	R²	β	t	Sig.	Durbin Watson	VIF
2019	HCE → ROA	0.540	0.735	4.846	0.000*	1.755	1.000
	HCE → ROE	0.565	0.751	5.094	0.000*	1.951	1.000
	HCE → NPM	0.388	0.623	3.558	0.002**	0.796	1.000
2020	HCE → ROA	0.487	0.698	4.353	0.000*	1.707	1.000
	HCE → ROE	0.523	0.739	4.906	0.000*	1.891	1.000
	HCE → NPM	0.200	0.487	2.497	0.021**	0.797	1.000
2021	HCE → ROA	0.097	0.312	1.469	0.157	1.959	1.000
	HCE → ROE	0.132	0.363	1.745	0.096***	2.570	1.000
	HCE → NPM	0.099	0.37	1.821	0.084***	1.864	1,000

***- 0.1 Significance level; **-0.05 Significance level; *-0.001 Significance level

Source: the authors' research

The results show that the HCE has a statistically significant and positive impact on financial performance (observed by ROA, ROE and NPM). During 2019, human capital describes 54% of the variability of ROA, with statistically significant results at the 0.001 level. Additionally, HCE describes 56.5% of ROE and 38.8% of NPM variability (with statistically significant results at the 0.001 and 0.05 levels, respectively). Durbin Watson test results in this period show the absence of autocorrelation, as the value was close to 2 (Bontis et al., 2013), except in the case of the regression model between HCE and NPM (0.796), making this model less reliable. In 2020, there was a slight decline in the results, but they remained statistically significant. The coefficient of determination between HCE and ROA was 48.7%. HCE explained 52.3% of ROE and 20% of NPM variability, which is also a decrease from 2019. However, the impact of HCE on financial performance was still statistically significant in all cases (at the 0.001 level when it comes to ROA and ROE and 0.05 level when it comes to NPM). It is worth noting that the COVID-19 hit Serbia in March 2020, leading to changes in bank restructuring. Despite these changes, employees managed to generate high performance with their knowledge and skills. Only later in 2020 did changes in the domain of human capital occur, and thus the regression results for 2021 should be examined. Durbin Watson test results in this period show the absence of autocorrelation, as the value was close to 2 (Bontis et al., 2013), except in the case of the regression model between HCE and NPM (0.797), making this model slightly less reliable. However, in 2021 human capital had a significantly lower impact on financial performance. The coefficient of determination between HCE and ROA was only 9.7%; between HCE and ROE 13.2% and finally between HCE and NPM 9.9%. These values were notably lower compared to previous periods. Therefore, it can be concluded that even though banks attempted to improve the previously reduced value of human capital, it did not result in positive effects, leading to the absence of significant impact of human capital on financial performance in 2021. The results of the Durbin Watson test in this period indicated the absence of autocorrelation, as the value was close to 2 (Bontis et al., 2013), except in the case of the regression model between HCE and ROE (2.570), where a slight presence of autocorrelation was observed, making this model less reliable than others. No

multicollinearity was observed in all periods and models, as the VIF factor was less than 5 (Field, 2020).

The empirical findings derived from the regression analysis indicate a significant and positive relationship between human capital and the financial performance of banks. However, this impact was observed to be short-term. During the COVID-19 period, the reduced value of human capital led to a temporary improvement in effects due to lower operating costs. Nevertheless, in the long run, the decrease in the value of human capital, including employees' knowledge, skills, and competencies, resulted in a decline in value. Despite the banks' efforts to increase the value of human capital in 2021, it did not reach pre-COVID-19 levels, leading to the absence of a statistically significant impact. Therefore, the second hypothesis (H2) can be accepted and it can be stated that *the financial performance of banks is positively influenced by human capital in the short term. However, over the long term, the value of human capital depreciates, resulting in a diminishing impact on financial performance.*

Conclusion, implications, limitations, and further research

Human capital fulfils a pivotal role within the banking sector, encapsulating knowledge, skills, abilities, experiences, willingness to learn, share knowledge, work in teams, and loyalty to the organization, all of which significantly impact financial performance, as confirmed by this research. Conducted over a three-year period and including all banks that were active in the Republic of Serbia, the study yielded compelling evidence indicating a robust and statistically significant positive impact of human capital on financial performance, including ROA, ROE, and NPM. By developing and retaining human capital, banks are better equipped to leverage market potential, foster innovation, and gain a competitive advantage. However, the value of human capital is subject to various factors, often considered as a system risk. The COVID-19 serves as one such factor, leading to significant financial challenges in the global banking market. To minimize costs and mitigate losses, banks often resort to decisions that involve reducing investments in human capital. While such decisions may yield immediate benefits in terms of cost reduction and short-term profitability, long-term consequences must be taken into account. By diminishing the value of human capital, banks directly undermine the overall knowledge level within the organization, ultimately leading to decreased performance. Furthermore, the reduction in human capital places an increased workload and overtime on existing employees, negatively impacting their satisfaction and, subsequently, the achieved performance. Based on the research findings, it is evident that human capital had a significant influence on the financial performance of banks during the pre-pandemic period. This influence continued in the subsequent year, likely because strategic changes in human capital within banks did not occur immediately at the beginning of the year but rather later when the impact of COVID-19 became more pronounced. Although the value of human capital increased in the following year, this growth was insufficient to compensate for the earlier loss of knowledge, which is the reason for the absence of a significant influence of human capital on financial performance.

The findings of this research hold both theoretical and practical significance. From a theoretical perspective, they contribute to scientific knowledge in the field of human capital in banks and lay the groundwork for future research. Taking into account the scarcity of research conducted in the specific domain, particularly in the context of the COVID-19 and its effects on human capital and financial performance, these results provide valuable insights. Additionally, the practical significance of the research lies in disseminating the obtained information to top managers and human resource managers in banks. The research results provide valuable insights into the imperative nature of investing in human capital to achieve better financial performance and gain a competitive advantage. This reaffirms the notion that investing in employees is not an expense but an investment that yields long-term benefits.

The research findings are accompanied by certain limitations that can guide future research. Firstly, the study encompasses all banks that were active in Serbia. In order to acquire better understanding of the subject matter, future research could consider expanding the scope to include banks from other regions or countries. Additionally, the analysis covers a three-year period. To assess whether there has been an improvement in human capital following the COVID-19, it is advisable to extend the time coverage in future studies and examine data from subsequent years, beyond 2021. Furthermore, this paper operationalizes the dependent variable using three indicators: ROA, ROE, and NPM. To provide a more holistic perspective of the relationship between human capital and financial performance, it would be beneficial for future research to incorporate additional financial indicators. Including a broader range of financial metrics would contribute to a more comprehensive knowledge about the relationship between human capital of banks and their financial performance. By addressing these limitations and conducting further research, scholars can advance the existing knowledge in the field, delve into the effects of the pandemic on human capital, and explore the influence of human capital on a wider range of financial performance indicators, thus enriching the understanding of this important relationship in the banking industry.

References

Aleksić, M., Pjanić, M., Berber, N., & Slavić, A. (2022). The impact of corporate social responsibility on the financial performance in the Republic of Serbia. *Journal of Engineering Management and Competitiveness, 12*(2), 95-103. Doi: https://doi.org/10.5937/JEMC2202095A

Bentley, F.S., Kehoe, R.R., & Chung, H. (2021). Investing for keeps: firms' prepandemic investments in human capital decreased workforce reductions associated with COVID-19 financial pressures. *Journal of Applied Psychology*, *106*(12), 1785-1804. Doi: https://doi.org/10.1037/apl0001002

Bontis, N. (2001). Assessing knowledge assets: a review of the models used to measure intellectual capital. *International Journal of Management Reviews*, *3*(1), 41-60. Doi: https://doi.org/10.1111/1468-2370.00053

Bontis, N., Janošević, S., & Dženopoljac, V. (2013). Intellectual capital and corporate performance of Serbian banks. *Актуальні проблеми економіки*, 4, 287-299.

Buallay, A., Hamdan, A.M., Reyad, S., Badawi, S., & Madbouly, A. (2019). The efficiency of GCC banks: the role of intellectual capital. *European Business Review*, *32*(3), 383-404. Doi: https://doi.org/10.1108/EBR-04-2019-0053

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New York: Routledge. Doi: https://doi.org/10.4324/9780203771587

Cvetković, M., Cogoljević, M., & Ranđelović, M. (2021). The impact of economic development on the efficiency of the financial sector. *Ekonomika, 67*(3), 107-117. Doi: https://doi.org/10.5937/ekonomika2103107C

Dissanayake, K. (2020). Encountering COVID-19: Human resource management (HRM) practices in a pandemic crisis. *Colombo Journal of Multi-Disciplinary Research*, *5*(1-2), 1-22. Doi: https://doi.org/10.4038/cjmr.v5i1-2.52

Ercegovac, D., Vlaović Begović, S., & Jovin, S. (2019). Analiza ključnih pokazatelja bankarskog sektora Republike Srbije. *Anali Ekonomskog fakulteta u Subotici*, *55*(41), 81-94. Doi: http://doi:10.5937/AnEkSub1941081E

Field, A. (2000). *Discovering statistics using SPSS for Windows*. Thousand Oaks: Sage Publications.

Githaiga, P.N. (2022). Intellectual capital and bank performance: the moderating role of income diversification. *Asia-Pacific Journal of Business Administration*, 1-19. Doi: Doi: https://doi.org/10.1108/APJBA-06-2021-0259

Hamouche, S. (2021). Human resource management and the COVID-19 crisis: implications, challenges, opportunities, and future organizational directions. *Journal of Management & Organization*, 1-16. Doi: https://doi.org/10.1017/jmo.2021.15

Isa, E.S.A., & Muafi, M. (2022). Human capital, organizational learning and their effects on innovation behavior and performance of banking employees. *International Journal of Finance & Banking Studies*, *11*(1), 2-18. Doi: https://doi.org/10.20525/ijfbs.v11i1.1533

Janošević, S., Dženopoljac, V., & Bontis, N. (2013). Intellectual capital and financial performance in Serbia. *Knowledge and Process Management, 20*(1), 1-11. Doi: https://doi.org/10.1002/kpm.1404

Kovjanić, M., & Vukadinović, P. (2021). Intelektualni kapital kao strateška performansa banke sa osvrtom na banke. *Bankarstvo*, *50*(1), 90-107.

Liu, G., Liu, Y., & Zhang, C. (2021). Human capital in the financial sector and corporate debt maturity. *China Economic Review*, 69, 1-21. Doi: https://doi.org/10.1016/j.chieco.2021.101652

Milošević, N., Dobrota, M., Dmitorović, V., & Barjaktarović-Rakočević, S. (2021). Managerial perception of human capital, innovations, and performance: evidence from banking industry. Engineering Economics, *32*(5), 446-458. Doi: http://dx.doi.org/10.5755/j01.ee.32.5.26032

Mirza, N., Hasnaoui, J.A., Naqvi, B., & Rizvi, S.K.A. (2020). The impact of human capital efficiency on Latin American mutual funds during Covid- 19 outbreak. *Swiss Journal of Economics and Statistics, 156*(16), 1-7. Doi: https://doi.org/10.1186/s41937-020-00066-6

Ousama, A.A., Hammami, H., & Abdulkarim, M. (2019). The association between intellectual capital and financial performance in the Islamic banking industry. An analysis of the GCC banks. *International Journal of Islamic and Middle Eastern Finance and Management*, *13*(1), 75-93. Doi: https://doi.org/10.1108/IMEFM-05-2016-0073

Peković, J., Pavlović, G., & Zdravković, S. (2020). The influence of intellectual capital on financial performance of commercial banks in the Republic of Serbia. *Ekonomika*, *66*(2), 103-111. Doi: https://doi.org/10.5937/ekonomika2002103P

Pulić, A. (2000). VAIC - an accounting tool for IC management. *International Journal of Technology Management*, *20*(5), 702-714. Doi: https://doi.org/10.1504/IJTM.2000.002891

Simić, M., & Slavković, M. (2019). The role of human capital in entrepreneurial innovativeness: evidence from Serbia. FACTA UNIVERSITATIS Series: Economics and Organization, *16*(1), 49-58. Doi: https://doi.org/10.22190/FUEO1901049S

Slavković, M., Bugarčić, M., Ognjanović, J., & Pavlović, G. (2020). Knowledge management and downsizing: implications for organizational performance. *Acta Economica, 19*(35), 35-51. Doi: https://doi.org/10.7251/ACE2135035S

Soeawarno, N., & Tjahjadi, B. (2020). Measures that matter: an empirical investigation of intellectual capital and financial performance of banking firms in Indonesia. *Journal of Intellectual Capital*, *21*(6), 1085-1106. Doi: https://doi.org/10.1108/JIC-09-2019-0225

Vasić, V. (2020). Očekivanja i izazovi bankarskog sektora u 2021. godini. *Bankarstvo*, *49*(4), 4-8.

Xiazi, X., & Shabir, M. (2022). Coronavirus pandemic impact on bank performance. *Frontiers in Psychology*, 13:1014009, 1-14. Doi: https://doi.org/10.3389/fpsyg.2022.1014009

Živković, S., Vojinović, Ž. (2017). Bankoosiguranje u Srbiji – trendovi i perspektive. *Zbornik radova EkonBiz*, 166-175.