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EFFECTS OF THE IMPLEMENTATION OF THE BALANCED SCORECARD MODEL ON THE FINANCIAL PERFORMANCE OF COMPANIES IN THE REPUBLIC OF SERBIA

Abstract: The growing complexity and ambiguity of contemporary business environment imply the necessity for using holistic strategic performance measurement systems, such as the Balanced Scorecard Model (BSC Model). BSC has gained significant importance in recent years as a strategic management tool enabling organizations to align their business activities with the vision and strategy of the organization and improve their overall performance. For decades, measuring and evaluating organizational performance was limited to financial performance. In addition to lagging financial metrics, the BSC incorporated leading performance indicators from the perspective of customers, business processes, and learning and growth. A major assumption underpinning the use of BSC in companies is that it has a positive effect on overall performance. The paper aims to demonstrate the effects of the BSC model's implementation on financial performance, specifically on the profitability, i.e. ROA and ROE of companies. Although numerous studies have researched the impact of implementing the BSC on financial performance, these studies have predominantly focused on developed economies, while research in the Republic of Serbia is scarce. Therefore, the contribution of the paper is reflected in the fact that the designed model aims to fill the research gap by investigating the impact of BSC implementation on the financial performance of companies in the Republic of Serbia, i.e. on ROA and ROE, as the most significant measures of company's profitability. The research covered 11 companies in the territory of the Republic of Serbia. The internal consistency of the statements used to measure the variables of the developed model was calculated based on the Cronbach's α coefficient. The multiple regression analysis was used to test the main effects. The results of the empirical research show that there is a positive statistically significant impact of the implementation of the Balanced Scorecard on the ROA and ROE of companies. Our research offers meaningful implications for managers who wish to consider adopting and using BSC. We indicate that using the BSC represents an effective means of enhancing organizational performance and designs of managerial practices that might be suitable for pursuing specific strategic priorities. Managers should first align the objectives of the BSC model with the mission and long-term goals of the company. Bonuses, rewards, and promotions of employees should be linked to key performance indicators from the different perspectives of the BSC model that impact the company's profitability. From the customer perspective, the BSC model is used to enhance the value of the market offering. Also, through appropriately set goals from the internal process perspective, it is possible to increase profitability by reducing product and service realization times, improving inventory management, and automating production processes. Additionally, managers should continuously monitor the implementation of the BSC model to identify deficiencies, respond promptly, and adjust the goals of different perspectives to the current business situation. The research was conducted

on a limited sample and within the territory of the Republic of Serbia, which means the results cannot be generalized or applied to employees from other countries. Accordingly, future models may include additional variables.

Keywords: Balanced Scorecard model, financial performance, ROA, ROE

1. INTRODUCTION

The characteristics of the contemporary business environment require the introduction and application of new, integrated, and holistic strategic performance measurement systems and models for strategy implementation control (Domanović, 2019). In this context, profitability and operational efficiency emerge as key predictors of achieving competitive advantage (Punniyamoorthy & Murali, 2008). Simultaneously, to maintain market position in today's environment, companies must continuously innovate their strategic initiatives by leveraging knowledge-based competitive advantages (Dzenopoljac et al., 2018). In this regard, intellectual capital is crucial, particularly for companies seeking to enhance their performance, increase profitability, and sustain competitiveness in a dynamic and unpredictable environment (Abdullah & Sofian, 2012). In the modern business environment, the main source of competitive advantage lies in intangible assets and intellectual capital, which underscores the need for the implementation of integrated and holistic performance evaluation models from various perspectives, such as the Balanced Scorecard (BSC) model. Therefore, companies must simultaneously possess intangible assets, the capability to manage customer satisfaction and loyalty, and efficient operational processes to create conditions conducive to the development of sustainable and innovative products (Sands et al., 2016). The value generated through intellectual capital is contextual, as it depends on its alignment with the company's strategy (Janošević et al., 2013). In this regard, the Balanced Scorecard can be of significant benefit as a completely new management model, where strategy is at the core of the company's operations (Domanović, 2016). Additionally, Wu (2005) argues that the application of the BSC model contributes to the creation, organization, and measurement of intellectual capital, as well as more comprehensive reporting on intellectual capital. The financial perspective, customer perspective, internal processes perspective, and learning and growth perspective within the BSC model lead to better management of intellectual capital. Furthermore, Wu (2005) asserts that the learning and growth perspective in the BSC serves as a predictor of innovation and human capital within intellectual property, while the strategic objectives within the internal business processes perspective of the BSC represent factors of structural capital. The customer perspective in the BSC influences relational capital within intellectual capital, ultimately driving the maximization of company value and improving organizational performance. It is important to emphasize that the Balanced Scorecard model does not undermine the financial perspective; on the contrary, the financial dimension remains primary, but not the sole factor in evaluating the overall effectiveness and efficiency of business operations. It is crucial to assess and analyze performance from non-financial perspectives, such as the customer perspective, internal business processes, and employee learning and development, as these non-financial factors increasingly serve as predictors of future financial performance.

Furthermore, a large number of studies have examined the impact of the implementation of the BSC model on the financial performance of companies (Malagueno et al., 2018; Davis & Albright, 2004; Braam & Nijssen, 2004). However, these studies have predominantly focused on developed economies, while research in the Republic of Serbia remains very limited (Domanović, 2010). Therefore, this study aims to fill the research gap by demonstrating the effects of the BSC model's implementation on financial performance, specifically on the profitability, i.e. ROA and ROE of companies.

The expected theoretical contribution of the paper involves addressing the identified gap in the literature, which, according to the authors' knowledge, highlights the scarcity of research dealing with examining the impact of Balanced Scorecard application on ROA and ROE in companies. From a practical standpoint, the research can provide guidelines for companies to enhance profitability through the application of the BSC model.

The paper is structured into several interrelated sections. The literature review presents some of the key theoretical concepts of BSC model application. In the second part, the hypotheses and research model are outlined. The methodology used in the research is then discussed, explaining the process of collecting and analyzing primary and secondary data. The results of the empirical research and their discussion are covered in the fourth and fifth parts of the paper. Finally, certain conclusions are drawn, implications are identified, and the limitations of the research are outlined.

2. LITERATURE REVIEW

Traditional accounting-based efficiency measures are overly historical in nature, lack predictive power, reward incorrect behaviors, fail to prompt key business changes until it is too late, and provide inadequate consideration of resources such as intellectual capital (Domanović, 2010). Therefore, the Balanced Scorecard (BSC) model was developed, based on the assumption that companies can no longer achieve sustainable competitive advantage solely through managing

and reporting on tangible resources (Ling Sim & Chye Koh, 2001). In other words, the BSC emerges as a performance management system that can be used by companies of all sizes to align their vision and mission with internal business processes (Punniyamoorthy & Murali, 2008). The BSC model is considered a modern performance management model, a tool for strategic management and managerial accounting, a strategic performance measurement system, and a model for strategic control (Domanović, 2019). When properly applied, the BSC model allows companies to integrate the strategic planning and budgeting processes to the extent that it can entirely replace traditional control systems (Atkinson, 2006). Malagueño et al. (2018) state that the BSC is a multidimensional and multi-perspective framework that relies on a set of performance measures (financial and non-financial, long-term and short-term, internal and external). The term "balance" in the model's name refers to the equilibrium between financial and non-financial measures, internal and external performance perspectives, and historical and predictive indicators of company success (Al Mseden & Nassar, 2015). Concrete goals, tasks, initiatives, and measures are hierarchically defined from the established vision and strategy (Domanović, 2019). Thus, the BSC model can be seen as a strategic management system that links long-term and short-term organizational goals (Punniyamoorthy & Murali, 2008). Furthermore, Atkinson (2006) notes that the BSC model enables companies to effectively link operational with strategic goals, integrate financial and non-financial performance measures, and direct business activities towards fulfilling customer requirements. Kaplan & Norton (1996) identify four primary perspectives within the BSC model: financial perspective, customer perspective, internal processes perspective, and learning and growth perspective. The performance observed within these perspectives is closely related and interdependent (Punniyamoorthy & Murali, 2008). Within the customer perspective, target segments are identified, and the company's business success is viewed in relation to customer satisfaction and market share (Punniyamoorthy & Murali, 2008). For example, continuous performance evaluation in relation to the goals set for the customer perspective can help managers track competitors and understand what they offer, as well as why current customers buy or do not buy the company's products and how satisfied they are (Malagueño et al., 2018). The primary goal of the customer perspective is to create value through differentiation from competitors (Chen et al., 2006). On the other hand, underperformance in the customer perspective is considered a significant indicator that could potentially impact future financial performance (Cohen et al., 2008). Further, the internal processes perspective identifies key processes in which the organization must specialize to continue adding value for customers (Domanović, 2010). Atkinson (2006) emphasizes that the essence of the internal processes perspective is to enable the achievement of financial goals and customer satisfaction. This perspective is also considered crucial for the organization's success, as it ensures that the company's products and services meet customer needs (Cohen et al., 2008). The learning and growth perspective identifies the capabilities in which the organization must excel to achieve superior internal processes that create additional value for customers and shareholders (Punniyamoorthy & Murali, 2008). The primary goals of this perspective are to identify the jobs (human capital), systems (structural capital), and organizational environment (relational capital) necessary to support internal business processes, with a focus on people, their attitudes, knowledge, development, and learning and advancement capabilities (Cohen et al., 2008). Similarly, Chen et al. (2006) state that the primary goal of the learning and growth perspective is to create an organizational climate that supports change, innovation, and risk-taking. Measures in the financial perspective indicate whether the implementation of a strategy, detailed through the measures selected from other perspectives, leads to better overall results (Domanović, 2010). In other words, the financial perspective emphasizes shareholder satisfaction, with key goals and measures including: gross and/or net profitability, return on invested capital, economic value added, sales growth rate, market share, and cash flow (Hasan & Chyi, 2017).

3. HYPOTHESES AND RESEARCH MODEL

The Balanced Scorecard (BSC) is a significant management tool, as it enables alignment between short-term objectives and long-term strategy of a company (Chen et al., 2006). The application of the BSC model can influence a company's financial performance in various ways. For example, objectives within the learning and growth perspective, such as increasing employee competence through training and development, contribute to innovative improvements in internal processes, which further imply growth in financial performance (Sands et al., 2016). Similarly, Malagueño et al. (2018) identify a statistically significant impact of BSC implementation on innovation and financial performance, particularly ROA, in small and medium-sized enterprises. Abueid et al. (2023) state that all four perspectives of the BSC model have a significant impact on financial performance in the banking sector. The same study also highlights that the internal processes perspective has the strongest impact on bank performance, as it focuses on improving quality while reducing costs, increasing efficiency, innovation rates, and decreasing delivery times. Al Mseden & Nassar (2015) conclude that implementing the BSC leads to increased profitability, identifying a statistically significant impact on the financial performance of companies (ROA and ROE). Davis & Albright (2004) assert that the BSC can be used to improve the financial performance of companies, demonstrating that firms utilizing BSC outperform those that do not. Additionally, Sweiti & Lele (2016) identify positive effects of BSC implementation on performance in shareholder companies, observing financial indicators over a five-year period. The structure and comprehensiveness of information contained within the BSC model positively influence the cognitive processes of managers, thereby contributing to how

managers approach information when making strategic decisions (Malagueño et al., 2018). This characteristic of the BSC stands out particularly in that it emphasizes knowledge sharing and continuous learning within the organization (Grafton et al., 2010). The application of BSC allows companies to develop a comprehensive overview of their operations, better aligning all operational and investment activities with strategic and short-term objectives (Punniyamoorthy & Murali, 2008). Furthermore, continuous use of the BSC leads to greater alignment of various internal processes, competencies, and functional units within the organization, which consequently reflects on organizational performance (De Geuser et al., 2009). De Geuser et al. (2009) identify a significant impact of BSC application on organizational performance, with the key benefits of the model being its continuous impact on managerial practices and aligning the company's resources with its strategic objectives. Thus, Cohen et al. (2008) argue that the application of the BSC model, particularly the learning and growth perspective, leads to improved financial performance, including ROE. The application of BSC improves performance in the customer, internal process, and learning and growth perspectives, concurrently enhancing short-term financial performance, contributing to the accumulation of intellectual capital, and ultimately leading to long-term competitive advantage (Tseng, 2006). Furthermore, Hussien & Aledwan (2017) identify a statistically significant impact of the application of all four BSC perspectives on ROE, emphasizing that, through this approach, companies achieve strategic goals, improve overall business performance, and strengthen competitive advantage. Additionally, research conducted by Nisha (2017) shows that companies that increased investments in activities covered by the learning and growth, internal process, and customer perspectives have recorded improvements in financial indicators, including return on equity (ROE). In line with the analyzed impact of BSC application on company profitability, the following hypotheses have been formulated:

H1: The implementation of the Balanced Scorecard has a positive statistically significant impact on the company's ROA.

H2: The implementation of the Balanced Scorecard has a positive statistically significant impact on the company's ROE.

4. RESEARCH METHODOLOGY

The empirical research was conducted based on the analysis of primary and secondary data. First, the statements used to measure the degree of implementation of the BSC model were derived from an appropriate review of the literature. The variable "Implementation of Balanced Scorecard" was measured through twelve statements. All statements used to measure this variable were adapted according to Mehralian et al. (2018) and Giannopoulos et al. (2013). Respondents' answers were measured using a five-point Likert scale, where a response of 1 represented strong disagreement with the given statement, and a response of 5 represented complete agreement with the statement. On the other hand, the financial performance indicators of the companies (ROA and ROE) were calculated based on the regular financial reports from 2023 of companies operating within the territory of the Republic of Serbia.

To identify the statistically significant impact of the implementation of the BSC model on the financial performance of the company, an empirical study was conducted between September 1 and September 15, 2024, in the Republic of Serbia. For collecting primary data and examining employees' attitudes toward the implementation of the BSC model, a survey method was applied. Within this method, the technique of online interviews was used, with a questionnaire as the instrument. Eleven companies participated in the study, and surveys were distributed to their employees online. Respondents were informed in advance that the survey was part of a research study and that their responses would remain fully confidential. Additionally, secondary data for calculating the financial indicators ROA and ROE were collected from the regular annual financial reports, publicly available on the website of the Serbian Business Registers Agency (APR). Data analysis was performed using the Statistical Package for Social Sciences (SPSS 26.0). The internal consistency of the statements used to measure the variables in the developed model was calculated based on the Cronbach's α coefficient.

5. RESEARCH RESULTS

5.1. Sample Characteristics

The structure of the sample is presented in Table 1. The study included only large companies that meet the requirements stipulated by Article 6 of the Accounting Law. Furthermore, out of the total of 11 companies included in the empirical research, 9.09% (1 company) are public enterprises and limited partnerships, while 54.55% (6 companies) are limited liability companies, and 27.27% (3 companies) are public limited companies by legal form. Among the studied companies, the majority are privately owned (72.73%), followed by mixed ownership (18.18%), and finally, state-

owned (9.09%). Finally, 3 companies (27.27%) fall under the manufacturing sector, while 8 companies (72.73%) are in the services sector.

Table 1: Sample structure

		Number	Percentage
Company Size	Small companies	0	0%
	Medium companies	0	0%
	Large companies	11	100%
	Total	11	100%
Legal Form	Public enterprise	1	9.09%
	Limited partnership	1	9.09%
	LLC	6	54.55%
	Public limited company	3	27.27%
	Total	11	100%
Ownership Type	State-owned	1	9.09%
	Private domestic	2	18.18%
	Private foreign	6	54.55%
	Mixed domestic	0	0%
	Mixed foreign	2	18.18%
	Total	11	100%
Type of Activity	Manufacturing company	3	27.27%
	Service company	8	72.73%
	Total	11	100%

Source: Authors

5.2. Calculation of financial indicators

Table 2 presents the profitability indicators (ROA and ROE) of the companies in the sample. ROA is calculated as the ratio of net profit to average assets, while ROE is calculated as the ratio of net profit to the company's average equity. In order to protect the privacy of the companies examined, all presented data is anonymous.

Table 2: ROA and ROE of the observed companies

Company	Net profit (1)	Average assets (2)	Average equity (3)	ROA (1/2)	ROE (1/3)
Company 1	343.816	9.929.864	4.339.321	0,035	0,079
Company 2	472.091	15.742.778	4.750.000	0,030	0,099
Company 3	1.933.166	65.796.759	17.436.785	0,029	0,111
Company 4	157.115	6.578.898	952.176	0,024	0,165
Company 5	338.784	3.358.386	2.629.019	0,101	0,129
Company 6	41.914.628	521.431.280	369.068.491	0,080	0,114
Company 7	12.029.767	396.328.771	130.087.602	0,030	0,092
Company 8	7.737.554	97.399.323	47.205.863	0,079	0,164
Company 9	1.799.145	75.021.094	35.879.878	0,024	0,050
Company 10	3.893.053	67.251.740	50.077.043	0,058	0,078
Company 11	9.031.010	41.660.069	30.291.907	0,217	0,298

Source: Authors, based on data obtained from the website of the Agency for Business Registers, www.gov.rs

5.3. Reliability analysis

Table 2 shows the results of the reliability analysis. The reliability of the variables included in the research model, i.e., the internal consistency of the statements used, was measured through the value of Cronbach's α coefficient. The value is 0.924, which indicates a high level of reliability, considering that Cronbach's α exceeds the threshold of 0.70, which is recommended by Nunnally (1978).

Table 3: Reliability analysis results

Variable	Cronbach's α
Implementation Balanced Scorecard-a	0.924

Source: Authors

5.4. Testing of main effects

The testing of the effects of the implementation of the BSC on company profitability (ROA) was carried out using multiple regression analysis (Table 4). It can be concluded that the implementation of the Balanced Scorecard has a statistically significant impact on ROA, which supports hypothesis H1. Similarly, multiple regression analysis (Table 5) was applied to test the effects of the BSC model on ROE as a measure of company profitability. It can be concluded that the implementation of the Balanced Scorecard has a statistically significant impact on ROE, which supports hypothesis H2. Furthermore, it can be stated that there is no issue of multicollinearity, as the VIF value is below 5 (Shrestha, 2020).

Table 4: Results of the multiple regression analysis (dependent variable: ROA)

Independent variables	β	t	Sig.	VIF
Implementation of the Balanced Scorecard	0.846	8.493	<0.00	2.484

Source: Authors
*** $R^2=0.458$; $F=22.349$ ($p<0.00$)

Table 5: Results of the multiple regression analysis (dependent variable: ROE)

Independent variables	β	t	Sig.	VIF
Implementation of the Balanced Scorecard	0.603	7.036	<0.00	2.120

Source: Authors
*** $R^2=0.311$; $F=21.385$ ($p<0.00$)

6. DISCUSSION OF THE RESULTS

The conducted research examines the impact of the implementation of the Balanced Scorecard (BSC) model on the financial performance of companies. First, a statistically significant impact of the implementation of the BSC model on the company's ROA and ROE was identified, which is consistent with the research conducted by Al Msedden & Nassar (2015, who emphasize the need for companies to focus on implementing various perspectives within the BSC model in order to improve their profitability. Unlike the observed sample, Malagueño et al. (2018) examine small and medium-sized enterprises, but reach the same conclusion, identifying a statistically significant impact of the implementation of the Balanced Scorecard on the financial performance of companies. Furthermore, Nisha (2017) concludes that the learning and growth perspective, the internal process perspective, and the customer perspective significantly affect the ROA and ROE of companies in the banking sector, which aligns with the research findings. Davis & Albright (2004) argue that companies implementing the BSC model achieve superior financial performance, which is consistent with the conducted research. The same authors conclude that companies implementing the BSC model achieve higher levels of employee loyalty, satisfaction, and productivity. Similarly, Cohen et al. (2008) conclude that companies that invested more in improving the activities within the learning and growth perspective increased their profitability during the observed period. Additionally, the research conducted by Ling Sim & Chye Koh (2001) shows that manufacturing companies implementing the Balanced Scorecard achieved significantly higher business performance, which aligns with the confirmed hypotheses. However, in contrast to the obtained results, Braam & Nijssen (2004) argue that the implementation of the Balanced Scorecard will not automatically lead to increased company performance, but will depend on the context in which it is applied. The BSC model aligned with corporate strategy will lead to increased financial performance, while the BSC model that is not aligned with corporate strategy may even lead to a decline in performance.

7. CONCLUSION

Based on the established research objective, the results obtained point to the following relevant conclusions. The results of the conducted empirical research show that there is a positive statistically significant impact of the implementation of the Balanced Scorecard (BSC) model on the ROA and ROE of companies. This research contributes to the existing literature, considering that there is insufficient research on this topic in the Republic of Serbia, which adds to the originality of the study.

In accordance with the presented results, theoretical and practical implications can be drawn. The theoretical contribution of the paper lies in addressing the identified gap in the literature, which refers to the fact that, to the best knowledge of the authors, there are not many studies examining the impact of the implementation of the BSC model on the ROA and ROE of companies. In practical terms, the research can provide guidance for companies to increase profitability through the implementation of the BSC model. Specifically, managers should first align the BSC model's goals with the company's mission and long-term objectives, ensuring alignment with critical areas such as customer

satisfaction, internal processes, and employee development. Furthermore, the system of incentives and compensation should be based on key performance indicators of the Balanced Scorecard. This means that bonuses, rewards, and promotions for employees should be linked to key indicators from the various perspectives of the BSC model that impact the company's profitability. Additionally, company management should continuously monitor the implementation of the BSC model to identify deficiencies, respond promptly, and adjust the goals of different perspectives to the current business situation. Each critical indicator within the various areas should have a designated manager responsible for its monitoring. This ensures accountability for the Balanced Scorecard's objectives at all levels. Through the customer perspective, the BSC model can be used to enhance the value of the market offering. By considering customer feedback and monitoring market trends, companies can innovate products and services and ensure greater satisfaction and customer loyalty, leading to increased market share. Also, through appropriately set goals for the internal process perspective, it is possible to increase profitability by reducing product and service realization times, improving inventory management, and automating production processes. By building a culture of continuous innovation, a system can be created within which employees can provide feedback on internal processes, customer needs, and operational inefficiencies. This will foster a culture of continuous improvement that aligns with profitability goals. Furthermore, through programs aimed at retaining talented employees, such as reward systems and opportunities for advancement, managers can reduce employee turnover, thereby preserving knowledge and lowering the costs of training new employees. Companies should also invest further in technology development, which contributes to the collection, storage, and dissemination of knowledge. This can include databases, software, or specific communication tools that facilitate employee collaboration. It is essential to document best practices, employee experiences, and knowledge so that they can be easily adopted and shared. By emphasizing employee knowledge and enabling their training, professional development, and mentorship in relevant areas, managers contribute to the accumulation of intellectual capital. Additionally, the BSC model can be used to improve the company's relationship with relevant stakeholders, aiming to enhance the company's relational capital. For example, within the customer perspective of the BSC model, strategies can be developed that prioritize customer feedback, as well as the analysis of their satisfaction and loyalty.

The limitations of the conducted empirical research are related to the fact that the study was conducted on a limited sample, which makes it impossible to generalize the implications. Therefore, it is recommended that future research include a larger number of respondents. Second, the research was conducted in the Republic of Serbia. Thus, certain implications cannot be transferred to employees in other countries. However, future research directions involve a detailed analysis of the relationship between the implementation of the BSC model and the profitability of companies in other countries, ensuring international comparison, identifying potential irregularities or best practices in other economies, which will then be applied in companies in corresponding countries based on cultural compatibility. Third, the model could include mediating/moderating variables, such as creativity, employee satisfaction, and innovation, as well as different dimensions of organizational structure and culture.

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