



## TRANSFORMING RISKS INTO OPPORTUNITIES THROUGH THE STRATEGIC MANAGEMENT OF A SCIENTIFIC INSTITUTE

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### Abstract

*This research, aimed to determine whether the COSO (Committee of Sponsoring Organizations) ERM (Enterprise Risk Management) model, implemented in a scientific Institute of special importance to the Republic of Serbia, can identify the multiple business opportunities and prevent instabilities caused by various external factors through its strategic decisions. The goal is to identify the risk factors that can be turned into opportunities and possibilities. The SWOT analysis survey was conducted from June 26, 2024, to July 1, 2024, on a sample of 214 respondents, with a response rate of 55.6% (119 respondents). The results indicate a sustainable business strategy for the Institute.*

**Keywords:** *Nationally significant Institute, COSO (Committee of Sponsoring Organizations), ERM (Enterprise Risk Management), Sustainable Business Strategy, SWOT Analysis*

### 1. INTRODUCTION

Risks are an integral part of the operations of any organization. The objectives of risk management within a company are: 1) the company can survive losses and sustain further growth thereafter, 2) efficient functioning in a risky environment, and 3) permanent compliance with regulations. Accordingly, the risk management is a dynamic, continuous, and ever-evolving process that extends through the implemented organizational strategy [1]. Risk is a condition in which there is a possibility of a negative deviation from the desired outcome that is expected or hoped for [2]. This research was conducted at an Institute of national importance for the Republic of Serbia, which is funded by the budget of the Republic of Serbia and possesses the intangible resources — the human factor as the greatest potential, whose research results are significant for society as a whole. The aim of this research is to determine the extent to which the COSO ERM risk management model [3], implemented in the aforementioned scientific research Institute is suitable for making timely and correct decisions that represent a sustainable business strategy. The SWOT analysis was conducted to assess the current state of the Institute and identify the potential areas for improvement (both risks and opportunities). The SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. The SWOT analysis is a valuable tool in strategic planning as it helps organizations structure their strategies in accordance with the business



requirements [4]. It also has its limitations, considering that the anonymous questionnaires with the closed-ended responses were used, which reduces the flexibility of answers. The contribution of this work lies in the fact that the SWOT analysis identified deficiencies that, with the correct management strategy, can be turned into business opportunities.

*Note: Having in mind data protection of the Institute, the authors will not mention the name of the Institute in the research (for the future text it will be used Institute).*

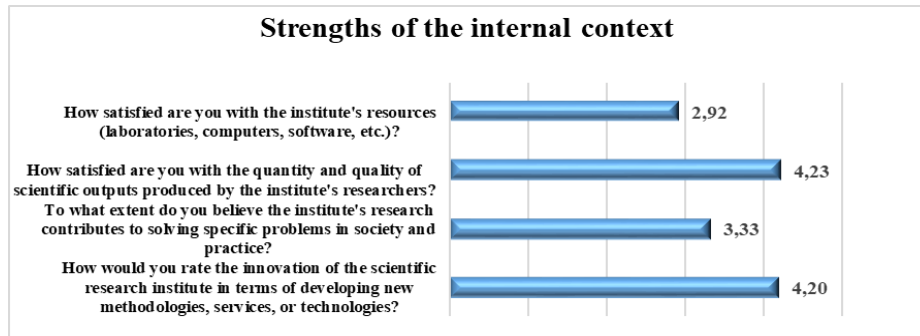
## 2. EXPERIMENTAL

The SWOT analysis and primary survey are applied in the experimental part. In accordance with it, this research presents the SWOT Analysis of transforming risks into opportunities through the strategic management of the Institute. This research presents the SWOT analysis aimed at identifying potential areas for improvement, both in terms of risks and opportunities, in the Institute operations. To conduct the SWOT analysis, various methods were used to collect data during the preparation of an anonymous survey: (reviewing literature on strategic management in the scientific research organizations [5], interviews with employees in the Institute strategic transformation team...). The following scientific research methods were also employed: the quantitative methods for the SWOT analysis, illustrative methods for presenting the research results, and deductive method for drawing conclusions. The survey was anonymous with the closed-ended questions. The anonymous survey was conducted from June 26, 2024 to July 1, 2024, on a sample of 214 respondents. This survey on the topic of the Institute Sustainable Business Strategy consists of 4 parts. The first part of the survey, on the topic of potential strengths of the Institute internal context, contains 4 questions. The second part of the survey, related to the potential weaknesses of the Institute internal context, consists of 4 questions. The third part of the survey contains 4 questions about potential opportunities in the Institute external context. The fourth part of the survey, concerning threats in the Institute external context, has 3 questions. Before being sent to the respondents, the survey was reviewed by the Institute strategic transformation team to ensure that the questions aligned with the research purpose on the topic of the Institute Sustainable Business Strategy. A total of 119 employees responded to the survey, resulting in a response rate of 55.6%. Respondents answered the questions by selecting one of five possible ratings. The responses were analyzed using a Likert scale from 1 to 5 (where a rating of 1 means strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree). The risks/opportunities of the scientific research institute identified through this survey-SWOT analysis will be presented with illustrations in Chapter 3.

## 3. RESULTS AND DISCUSSION

The results, obtained from the SWOT analysis, conducted on the basis on the survey for potential strengths and weaknesses of the internal context, as well as opportunities and threats of the external context of the Institute, are presented in the following illustrations in Figures 1, 2, 3, and 4, created on the basis of the conducted survey.

Figure 1 illustrates the Potential Strengths of the Institute internal business context.

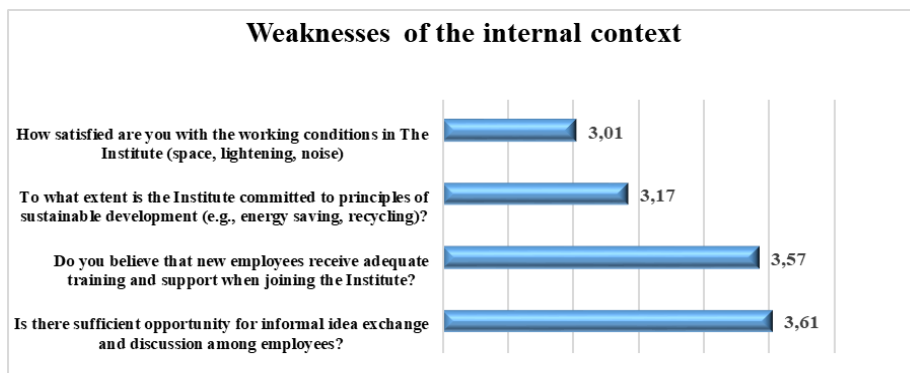


Legend: Possible strengths: >4.20; Sustainable context: >2.60<4.20; Possible weaknesses: <2.60

Figure 1. Potential Strengths of the Institute Internal Context (Source: authors)

Based on the survey data, the lowest average score of 2.92 was given to the question about satisfaction with the Institute equipment (laboratories, computers, software, etc.), indicating a need for modernization. The highest average score of 4.23 was for satisfaction with the number and quality of scientific papers, published by the Institute researchers, proving that the employees are the Institute most valuable resource. The average score of 3.67 indicates a sustainable business context.

Figure 2 shows the Potential Weaknesses of the Institute internal business context.



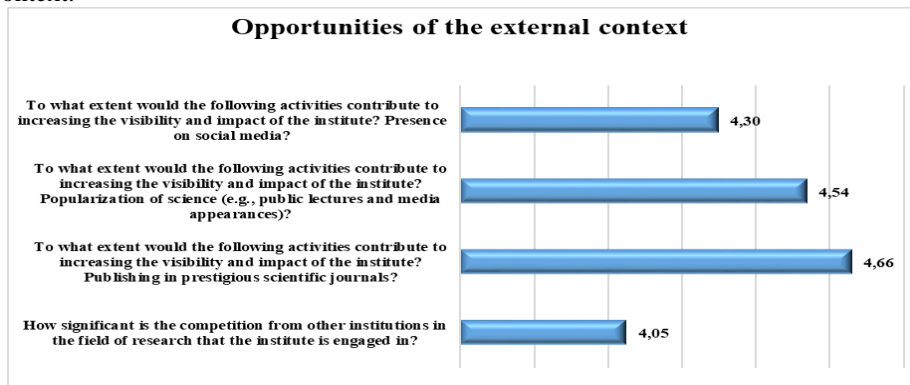
Legend: Possible strengths: >4.20; Sustainable context: >2.60<4.20; Possible weaknesses: <2.60

Figure 2. Potential Weakness of the Institute internal context (Source: authors)

Analyzing the responses to questions about the potential weaknesses in the internal context, the lowest average score of 3.01 was obtained for the question regarding satisfaction with working conditions (space, lighting, noise). This indicates a sustainable context but shows a room for improvement. The Institute should focus more on improving the working environment and conditions. The highest average score of 3.61 was obtained

for opportunities for informal exchange the ideas among employees, indicating a sustainable business cooperation. The average survey score of 3.34 proves a sustainable business context. Despite this, it is suggested to improve the working conditions, hold workshops on sustainable development, and provide better support and training for the new employees.

Figure 3 presents the Potential Opportunities of the Institute’s external business context.

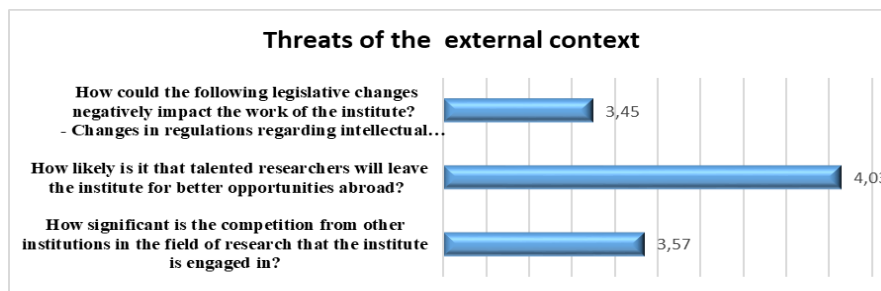


Legend: Possible strengths: >4.20; Sustainable context: >2.60<4.20; Possible weaknesses: <2.60

**Figure 3.** Potential Opportunities of the Institute external context (Source: authors)

The analysis of responses to the questions about potential opportunities in the external context revealed that the lowest average score of 4.05 was given to the question about the importance of collaboration with the companies and industry, indicating the excellent opportunities that the Institute should take advantage of. The highest average score of 4.66 was given to the question about the significance of publishing scientific papers in prestigious scientific journals, showing the outstanding external opportunities that researchers can utilize to improve the Institute operations. The average survey score of 4.39 indicates the exceptional potential external opportunities. Conclusion: The Institute should be focused on recognizing these opportunities.

Figure 4 depicts the Potential Threats of the Institute external business context.



Legend: Possible Threats: >4.20; Sustainable context: >2.60<4.20; Possible opportunities: <2.60

**Figure 4.** Potential Threats of the Institute external context (Source: authors)



The lowest average score of 3.45 (indicating a sustainable context) was obtained for the question regarding the impact of changes in the intellectual property legislation on the Institute operations. The highest average score of 4.03 was obtained for the question about the likelihood of talented researchers leaving the Institute for better conditions abroad, suggesting that the Institute must find ways to retain young researchers. The average survey score of 3.68 indicates that the Institute is successfully resisting the potential threats. It can be concluded that the Institute should focus on retaining talent and adapting to legislative changes.

#### **4. CONCLUSION**

The contribution of this paper lies in identifying areas for improvement the operations of the Institute. The SWOT analysis detected the need to enhance the working conditions through better laboratory and workspace equipment. Additionally, the workshops on sustainable development principles and better support for the new employees should be provided. This analysis identified the potential external opportunities that should not be missed, such as publishing the scientific papers in prestigious journals and presence of the researchers on social networks. Regarding the external threats, the Institute shows a sustainable business context but needs to find the ways to retain the talented researchers and increase competitiveness. This SWOT analysis confirmed that the COSO ERM risk management model, implemented in the Institute, is suitable for making the timely decisions that represent a sustainable business strategy. The future research directions could analyze the management competencies, opportunities for professional development of researchers, and implementation of their scientific work in the industry.

#### **ACKNOWLEDGEMENTS**

*This work was financially supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia, Contract on realization and financing of the scientific research work of the Mining and Metallurgy Institute Bor in 2024, Contract No.: 451-03-66/2024-03/200052.*

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**The 55<sup>th</sup> International October Conference on Mining and Metallurgy**

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