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Review of the doctoral dissertation
prepared by Mariya Sira, MA
entitled: **“Implementation of cognitive technologies in management in the modern
business services sector”**
prepared under the supervision of:
Prof. Aleksandra Kuzior, PhD, and Prof. Volodymyr Tkachenko, PhD

The formal basis for the review constitutes Resolution No. 64/2025 of the Discipline Council for Management and Quality Science at the Silesian University of Technology dated 26 November 2025, and the substantive basis is the Act of 20 July 2018 Law on Higher Education and Science (Article 187, points 1 and 2).

The subject matter of the reviewed doctoral dissertation by Mariya Sira, concerning the implementation of cognitive technologies in management in the contemporary business services sector, has been appropriately selected and falls within the discipline of management and quality sciences. The dissertation is an original work, and the issues it addresses are important and relevant in the Polish context, while its conclusions can be applied in a broader international perspective. The review includes a formal and substantive assessment of the work, as well as a final evaluation and conclusion.

I. Formal assessment of the dissertation

The doctoral dissertation submitted for assessment contains 428 pages, consisting of:

- Introduction (pp. 6-8)
- Theoretical Framework and Research Design (pp. 8-28)
- Essence and features of cognitive technology solutions in management (pp. 28-79)
- Analysis of the modern business services sector and impact of cognitive technology solutions on business performance (pp. 79-130)
- Empirical findings from survey investigation (pp. 130-202)
- Qualitative validation of empirical findings through in-depth interviews (pp. 202–223)
- Discussion of cognitive technologies implementation results in business services (pp. 223–260)
- Conclusions (pp. 260–264)
- References 413 items (pp. 264–282)
- Abbreviations – p. 283
- List of figures and tables (p. 284-288)
- Appendices (p. 288-428)

The structure of the work is correct. The table of contents is very detailed, with clear titles. The dissertation includes a large number of appendices. However, due to the complexity of the topic presented, it would be worth considering the standard structure of a doctoral thesis: theoretical part, methodological chapter, research part – this would make the presented considerations even more transparent.

The topic of the thesis, “Implementation of cognitive technologies in management in the modern business services sector,” is correctly defined and fills a gap in both the literature and knowledge in the fields of management and quality sciences.

In her thesis, the doctoral student indicated:

The primary aim is to develop and empirically validate an integrated framework for effective cognitive technology implementation in modern business services organisations.

The theoretical-cognitive objectives encompass systematisation of knowledge in the field of cognitive technology solutions and their applications in management, establishment of the role of various organisational units and competencies in implementation, determination of factors influencing effective adoption, and identification of critical success factors for implementation in organisational management contexts.

The utilitarian objectives include analysis of implementation processes in modern business services organisations, analysis and evaluation of key factors for successful adoption including technological innovation prioritisation and ethical considerations, assessment of managerial competencies and their impact on implementation effectiveness, evaluation of employee perceptions and experiences regarding cognitive technology impact, and development of practical recommendations for decision-makers.

The methodological objectives focus on developing the research approach and analytical frameworks necessary to investigate these complex phenomena systematically.

In addition, specific objectives, research questions and research hypotheses have been developed. They have been correctly defined and correspond to the main objective. In this way, the topic of the dissertation has been comprehensively presented for empirical research. The work plan constructed in this way indicates the doctoral student's scientific maturity.

In summary, the work has been prepared with great care. The language of the dissertation is communicative, with rich and scientifically mature vocabulary. The graphs and tables are legible, which makes them easy for the reader to understand. These activities indicate the doctoral student's ability to convey information, which is important in scientific work.

II. Substantive assessment of the dissertation

The formulation of the topic is an innovative approach to the subject of cognitive technologies in management in the business services sector. It is a topical subject due to the growing number of employees in this sector in the largest cities in Poland, which are an important point on the map of the business services sector worldwide. In her work, the doctoral student used a number of quantitative and qualitative research methods and techniques to test the models developed by the author, as shown in Figures 1, 2 and 3 on pp. 17-19. They concerned the theoretical framework for the implementation of cognitive technologies in contemporary business services, the dual perspective framework of cognitive technologies, and theoretical indications of relationships involved in the implementation of cognitive technologies in business service management. These models were developed in a very thoughtful manner and correspond to the main objective of the dissertation. This is an original approach to the topic, as well as the subsequent conduct, analysis and presentation of the research results. This approach demonstrates the high level of maturity of the doctoral student's research planning.

The research part of the thesis contains a large number of graphs and a rich description of the results (chapter 5). Therefore, in order to better capture the results of the research, it would be worth considering compiling these results into a table – for each subchapter – and presenting them in one place; this would allow for a more transparent overview of the research results and their comparison (this is a suggestion if the doctoral student decides to publish this dissertation).

Noteworthy is the development of an integrated matrix of results with strategic implications (Table 20, pp. 225-230), which presents specific recommendations for implementation in business service organisations when implementing cognitive technologies; this is an original solution to a scientific problem.

III. Final assessment

The reviewed doctoral dissertation is an original work in terms of the choice of topic, “The implementation of cognitive technologies in management in the modern business services sector”. The literature review systematises concepts related to cognitive technologies by classifying solutions based on these technologies and presents their application in management. The current state and development of the business services sector in Poland have been prepared. The bibliography is very extensive (413 items) and mainly contains foreign literature. The research approach based on a combination of quantitative and qualitative methods with the validation of empirical results is interesting. The matrices indicating the application possibilities of cognitive technologies in business services, created after the analysis of the research results (chapter 7), deserve special recognition. Additionally, it is worth emphasising that the dissertation has been prepared with great care.

Questions for the doctoral student:

- 1) What characteristics of the business services sector determine the possibilities and limitations of implementing cognitive systems in management?
- 2) Can the proposed solutions for the implementation of cognitive technologies be applied in other companies? If so, to what extent and what elements are worth paying attention to?

IV. Conclusion

The reviewed dissertation by Mariya Sira, MA is a valuable and reliable work. The doctoral student's scientific maturity is demonstrated by her detailed analysis of the literature and her ability to plan research with a multidimensional approach to the topic of implementing cognitive technologies in management in the modern business services sector. The comments contained in the review do not change my unequivocally positive assessment of the work.

In accordance with Article 187 (points 1 and 2) of the Act of 20 July 2018 on Higher Education and Science, I hereby declare that:

- 1) The doctoral dissertation submitted for review by Mariya Sira, MA presents the doctoral student's general theoretical knowledge in the discipline of management and quality science and confirms her ability to conduct independent scientific work.
- 2) The subject of the reviewed doctoral dissertation is an original solution to a scientific problem concerning the implementation of cognitive technologies in management in the modern business services sector and an original solution in the field of applying the results of her own scientific research in the economic sphere.

In view of the above, I request that the reviewed dissertation by Mariya Sira be admitted for public defence and, at the same time, I request that this doctoral dissertation be awarded a distinction.