Prof. Czesław Zając, PhD
Wrocław University of Economics

REVIEW OF THE DOCTORAL DISSERTATION by John Muzam, MA, entitled:

"The Competency Framework of Knowledge Workers in the Age of Digital Transformation",

written under the scientific supervision of Jacek Bendkowski, PhD, Prof. of AWSB

The formal basis for this review is the letter of 24 September 2025 addressed to me by Lilla Knop, PhD, Prof. of the SUT, the Chair of the Discipline Council for Management and Quality Studies at the Silesian University of Technology in Gliwice, in which I was informed of my appointment by the Council as a reviewer of the above-mentioned doctoral dissertation (Resolution No. 46/2025 of Discipline Council for Management and Quality Studies at the Silesian University of Technology) on 17 September 2025. The legal basis for this is the Act of 20 July 2018 on Higher Education and Science (Journal of Laws of 2024, item 1571).

I. General characteristics of the dissertation

The doctoral dissertation I reviewed is the result of scientific research conducted by its author, John Muzam, MA. The subject of this research was the issue of improving the competences of knowledge workers, and its aim was to develop a comprehensive competence model tailored to the specific nature of the digital economy. The author of the dissertation analysed and evaluated this issue on a theoretical basis - through a systematic review of the literature on the subject - and on an empirical basis, using panel interviews with specialists in economic practice (qualitative research) and a survey conducted among knowledge workers (quantitative research). This mixed (combined) approach used in empirical research allowed the doctoral student, as he himself stated in the fourth chapter of the dissertation, devoted to the methodology of his own research, "to thoroughly recognise the essence of the skills and competences necessary to achieve success in today's rapidly changing work environment. It allowed to recognise both the depth (quantitative dimension) and breadth (qualitative dimension) of these key skills and competences. Such a triangulation approach increases the credibility and reliability of the results obtained by examining competences from multiple perspectives" (p. 93).

The above-mentioned issue is a complex and multidimensional research problem, difficult to explore scientifically. At the same time, it is a cognitively interesting issue, important for management theory and practice.

The doctoral candidate states in the introduction to his dissertation that "(...) although much effort in the literature has been devoted to how digital transformation affects organisations, a fundamental gap exists in understanding the specific competencies that knowledge workers must develop in order to thrive in a changing organisational environment. Digital transformation has changed the work environment, creating new professional roles and causing existing ones to disappear. The impact of this transformation on the competencies of knowledge workers is not yet fully recognised. While organisations are adapting to the changing environment, there remains a significant gap in identifying and developing the specific competencies desired for knowledge workers. This dissertation aims to bridge this gap by proposing a comprehensive competency model built for the needs of knowledge workers in the digital age. As organisations evolve into dynamic, interconnected entities, the desired competencies of knowledge workers should constantly change. However, traditional competency models are no longer sufficient to meet the needs of the digital economy. The lack of such a comprehensive model that combines the competencies of knowledge workers with a highly technologically advanced organisational environment is disadvantageous" (p. IX).

Therefore, I consider the choice of research topic and subject matter of the dissertation made by John Muzam, MA, to be entirely appropriate.

The work consists of 255 pages of text, including: a table of contents, a summary in English and Polish, an introduction, six chapters, a summary (general conclusions), a bibliography, lists of tables and figures, a list of abbreviations, a list of key terms, and four appendices. It is enriched with 37 tables and 16 figures.

The bibliography used in the thesis includes as many as 654 items - articles from scientific journals and monographs, in English, downloaded from online sources, mostly by foreign and domestic authors. The structure and relevance of the publications cited by the author of the reviewed doctoral thesis are beyond doubt, and their number significantly exceeds the unwritten standards applicable in this area. They could easily be "distributed" among four doctoral theses.

II. Assessment of the substantive and methodological aspects of the dissertation

In the introduction, the doctoral student summarised the reasons for undertaking research on the subject of his dissertation, defined the research problem, the main objective and seven specific objectives of the work, six research questions and three hypotheses. He also presented a summary of the methodology and a description of the literature and empirical research he conducted for the purposes of preparing the reviewed work. The above-mentioned elements were presented in detail in the fourth chapter of the dissertation, devoted to the methodology of his own research. In the introduction, the author of the dissertation also included a description of the content of each chapter of the work.

From a methodological ("technical") point of view, the research problem was not clearly formulated by the doctoral student, e.g. in the form of an open question, which he could answer using the results of a systematic review of the literature conducted by himself and the results of his own empirical research. The author of the dissertation also made a fairly successful attempt to explain the essence of the research gap.

The main objective of the study is to "develop a comprehensive model of knowledge workers' competences in the era of digital transformation". Such a model, as he himself explained, "is focused on equipping knowledge workers with the skills necessary to adapt and operate in a dynamic, technologically integrated work environment undergoing permanent digitisation processes." This objective is supplemented and complemented by the following specific objectives:

- "identifying the impact of digital transformation on structures and processes";
- "recognising the different nature of knowledge-based work in the digital age";
- "assessing and developing the theoretical foundations of knowledge worker competencies";
- "developing a comprehensive competency model (tailored) to the digital economy";
- "analysing and assessing future directions for competence development;
- "identifying key emerging competencies and possible ways for organisations to prepare themselves to meet the requirements of future desired competencies";
- "verification and validation of formulated research hypotheses".

John Muzam, MA, formulated the following research questions:

- "How does digital transformation redefine the nature of knowledge-based work and the associated competency requirements?";
- "What factors define knowledge work in the digital age, how does it differ from traditional work, and how do these factors most strongly shape professional competencies?";
- "Are the current theoretical foundations of competencies adequate for the nature of knowledge work in the digital age, and what are the most important limitations of such theories?";
- "What specific competences, such as technical, cognitive, social, self-management and learning skills, are key for knowledge workers to operate in the digital economy, and how is their importance changing?";
- "Which emerging competences will become dominant and how can organisations anticipate and prepare for future competence requirements?";
- "What are the key components and structural elements of a comprehensive model tailored to knowledge workers in the digital age?".

The author also developed the following research hypotheses:

HI. "The identified competency groups, including digital, cognitive, learning, social, self-management and emotional competencies, and leadership, are key to effective work in the era of digital transformation."

H2. "Specific competences including a set of cognitive competences (such as critical thinking and creativity) and a set of social competences (such as communication skills) have the strongest positive impact on the performance of knowledge-based work in the digital economy era."

H3. "A comprehensive competency model for knowledge workers shows dynamic and structured relationships that can be effectively represented by three clearly defined foundations: fundamental competencies, operational competencies, and strategic competencies, which form a system of competencies built on top of each other."

The conceptual and methodological layer of the dissertation presented by the author does not raise any doubts. The only issue is the incorrectly formulated fifth (detailed) sub-goal "analysis and assessment of future directions of competence development". Analysis is one of the key methods of conducting scientific research, and its use allows the objectives of the research to be achieved.

All the research questions formulated by the author of the dissertation are also focused on identification and recognition (they begin with a question word; "What?"), but there are no explanatory questions (beginning with question words ("Why?" or "How?").

Furthermore, the research question: "Are the current theoretical foundations of competence adequate for the nature of knowledge-based work in the digital age, and what are the most important limitations of such theories?" is closed-ended, and the possible answer to such a question is yes or no. Closed questions without a complement severely limit the amount of information that can be obtained by the researcher.

I also have doubts about the wording of the first and third research hypotheses, which are more like theses or statements than hypotheses, and are difficult to confirm or refute unequivocally.

The nature of the issue under consideration and the qualitative (qualitative analysis) and quantitative (quantitative analysis) approaches used by the doctoral candidate in the empirical exploration of this issue argue in favour of formulating both research questions and hypotheses.

The reviewed work is theoretical and empirical in nature. In his empirical research, John Muzam, MA, used a qualitative and quantitative research approach. The former refers to the interpretative-symbolic paradigm and the neo-positivist paradigm, which are part of the metaphorical and critical trends in management studies. The latter, on the other hand, is related to the systemic trend in these sciences.

In my opinion, the research approach used by the doctoral student is correct and adequate to the essence, nature, scope and subject of the research.

In my perception, the conceptual and methodological layer of the dissertation, designed by its author, fully enabled him to achieve his goals and answer all the research questions formulated. It also created a sufficient methodological basis for testing the research hypotheses he had defined.

I consider the results of the literature review, and in particular the results of the empirical research conducted by the author, to be valuable elements of the reviewed work. These include:

- the systematisation and original conceptualisation of notions and issues related to the concept of digital transformation considered through the viewpoint of work processes, knowledge and knowledge workers and their competences;
- a thorough, critical, but at the same time constructive analysis of the rich literature on the subject, which provides a solid foundation for general considerations on the issues of work

and the subject of research and provides a basis for the proper design of empirical research; a high level of scientific discourse;

- a reliable presentation of the results of the author's own qualitative empirical research;
- a valuable analysis of the quantitative data obtained on the subject of the research, and an evaluation of the results of this analysis, carried out with the professional use of a rich statistical apparatus, which made it possible to verify the formulated research hypotheses;
- a reliable qualitative analysis of the subject of the research, the results of which made it possible to answer all the research questions formulated;
- high utilitarian value of the conclusions contained in the discussion of the results of own research and identification of limitations and further directions for research;
- an original model of knowledge workers' competences in the era of the digital economy, which is cognitively interesting and useful for human resource management practice.

III. Specific comments on the linguistic and editorial aspects of the work

The dissertation is written in a communicative manner. It is carefully edited. The text is accompanied by numerous tables and figures, which makes it reader-friendly and easy to understand.

IV. Conclusion

The few critical and controversial comments do not detract from the overall positive assessment of the work. John Muzam, MA, formulated and independently solved an important scientific problem, demonstrated general theoretical knowledge in the subject area of the dissertation, and demonstrated the ability to conduct independent scientific work. His dissertation can be considered a research contribution to management theory and practice.

In conclusion, I find that the reviewed doctoral dissertation entitled "The Competency Framework of Knowledge Workers in the Age of Digital Transformation" meets the requirements for doctoral theses specified in the Act of 20 July 2018 on Higher Education and Science (Journal of Laws of 2024, item 1571). In view of the above, I request that it be accepted and that Mr John Muzam be admitted to the next stages of the doctoral procedure.

At the same time, considering the merits of the dissertation, which I have listed in my review, I request that the work be awarded a distinction.

Czesław Zając