

*To the Specialized Academic Council DF 58.082.058_ID 6305
at the West Ukrainian National University
of the Ministry of Education and Science of Ukraine*

REVIEW

of the opponent **Yuriy DANKO**,
Doctor of Economic Sciences, Professor, Vice-Rector for Research and International
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on the qualification thesis of **Igor RIVILIS** on the topic:
“Global Waste Management and Corporate Social Responsibility”,
submitted for the degree of Doctor of Philosophy in specialty 073 “Management”

Relevance of the topic of the qualification thesis. Inefficient waste management, particularly inadequate disposal, leads to pollution of air, water, and soil. Open and unsanitary landfills contaminate drinking water, cause infections, and spread diseases. This problem is especially acute in developing countries and low-income nations. Waste accumulation pollutes ecosystems, and toxic substances from electronic waste and industrial waste harm urban residents' health and the environment. Moreover, in developing countries, economic entities pay insufficient attention to the proper handling of specialized waste (plastic, agricultural biomass, electronic equipment). Therefore, the process of optimizing household waste management is systemic in nature, requiring the development of local pilot projects and the involvement of stakeholders at all levels.

Corporate social responsibility involves conducting business that offers initiatives and solutions aimed at improving the environment, people's lives, and society as a whole. Companies operating on these principles have a high level of responsibility to their stakeholders (employees, customers, investors) and do everything possible to meet their needs. Corporate social responsibility also includes a positive attitude and interest in socially important issues such as the environment, well-being, and urban infrastructure. Developing businesses based on corporate social responsibility' principles enables companies to implement solutions aimed at improving the state of the environment and ecology. These features highlight the importance of waste management and the formation of corporate social responsibility at both global and local levels, necessitating the development of a comprehensive model for implementing business's environmental strategic priorities.

In light of this, Ihor RIVILIS's dissertation, which aims to justify the theoretical concepts of waste management and the formation of social corporate responsibility in the context of the development the applied model for the implementation the environmental strategic priorities of business, is relevant.

The submitted qualification thesis contains scientific provisions reflected in the materials of applied research at the West Ukrainian National University, including:

fundamental state budget funding researches “National concept of eco-security of society and inclusion of the circular economy in the conditions of the pandemic” (state registration number 0121U109485); “Concept of recovery and green reconstruction of Ukraine” (state registration number 0124U000003); implementation of the international project (Erasmus+ Module Jean Monnet) “European inclusive circular economy: post-war and post-pandemic module for Ukraine (EICEPPMU)” 2022-2024, registration number 101085640); business funding research on the topic “Transformation of business in conditions of sustainable development of the global economy” (Contract No. MEV-33-2023 dated 05/10/2023); business funding research on the topic “Scientific and professional consulting of the enterprise on issues of social responsibility and organization of recycling” (Contract No. MEV-81-2021 dated 01/10/2021); business funding research on the topic “Formation of the company’s ecological brand in foreign markets” (Contract No. MEV-37-2024 dated 25/04/2024), within which the author improved theoretical and methodological provisions on waste management and corporate social responsibility.

Degree of justification of the scientific provisions, conclusions, and recommendations formulated in the qualification thesis. The qualification thesis clearly defines its goals and objectives, substantiates the methodological approaches to their achievement, and presents a logically structured framework, theoretical generalizations, and proposals for improving the theoretical, methodological, and organizational foundations of waste management and corporate social responsibility. The research and conclusions in Igor RIVILIS’s qualification thesis are presented consistently, ensuring that the logic of the research is clearly traceable through the sections of the dissertation. The conclusions and recommendations of the work are well-founded and confirmed by the results of the approbation of the main provisions of the dissertation. The reliability of the scientific provisions, conclusions, and recommendations is supported by the use of a broad information base on the topic of the qualification thesis.

Various scientific research methods and special cognitive methods were used in the work, including analysis and synthesis, induction and deduction, methods of comparative analysis, systematization, abstract-logical, historical-chronological, and statistical analysis. The use of modern scientific research methods ensured the achievement of the research objectives and the resolution of the research tasks, resulting in significant theoretical and practical outcomes. The conclusions drawn in the work are logically justified, supported by real analysis of both theoretical sources and the current state of waste management and corporate social responsibility.

The main theoretical and methodological provisions of Igor RIVILIS’s qualification thesis have received positive evaluation from the scientific community during the approbation process.

The above allows for a positive conclusion regarding the scientific level, reliability of the material presented in the qualification thesis, theoretical justifications and arguments, practical significance of the conclusions and recommendations derived from Igor RIVILIS's dissertation.

Structure and volume of the qualification thesis. The qualification thesis is written in English and includes annotations in both Ukrainian and English, an introduction, three chapters, conclusions, a list of references, and annexes.

In the first chapter of the qualification thesis, "Theoretical and methodological basis of the research waste management and corporate social responsibility", the genesis of theoretical approaches to research waste management concept is explored, the theoretical identification of the corporate social responsibility theories is conducted, and the concept of environmental management in the system of waste management is examined. It is noted that waste can manifest in various forms, and its classification can have different dimensions (physical state, properties, potential for reuse, biodegradability, origin, and environmental impact) (p. 12). It is established that sustainable waste management largely depends on the definition and classification of "waste", which is closely related to human activities and lifestyle (p. 22). It is noted that representative strategies encompass environmentally conscious production methods, such as using less hazardous materials, implementing modern systems for monitoring the storage of hazardous materials, and adopting innovative methods for chemical neutralization and water conservation (p. 23).

Carroll's pyramid of corporate social responsibility is adapted to the modern infrastructure conditions of corporate social responsibility in terms of its global interactions (pp. 29-34). The main properties and characteristics of corporate social responsibility' theories are described, highlighting that a firm has a moral obligation to achieve social and environmental goals in addition to financial benefits (p. 35). It is explored that creating a comprehensive environmental safety management system allows enterprises to leverage the synergistic advantages of all its components, thus optimizing the use of vital materials and organizational resources (pp. 36-37). It is established that the field of environmental management encompasses socio-economic, political, and scientific aspects, focusing on developing solutions to real-world problems related to resource extraction, waste generation, and human interaction with nature (p. 39). It is confirmed that the key role of environmental management is to improve the physical, social, and economic aspects of an enterprise or project (pp. 42-43). As a result, it is established that environmental management focuses on addressing the fundamental issue of technological progress and minimizing its impact on the natural environment (pp. 48-49).

The second chapter of the qualification thesis "Research of global waste management and corporate social responsibility". The second chapter is dedicated to analysis of waste management in the system of circular transformation, evaluation of

the features of corporate social responsibility under instability, and analysis of the level of emissions under global transnationalization. This allowed for outlining the levels of circularity, developing options for municipal cooperation in waste collection, and formulating the concept of transitioning from linear waste management to circular resource management (pp. 61-66). The main directions should include ensuring both international and local funding for zero-waste production systems, developing comprehensive roadmaps and regulatory frameworks to facilitate their implementation, and integrating zero-waste goals into local and national climate strategies, such as initiatives to reduce methane emissions (pp. 67-68). Analyzing business operations, it is noted that socially responsible companies prioritize the development of their employees, directing about 10% of their resources towards this goal (pp. 72-75). As a result, achieving sustainable development goals can provide significant economic benefits for companies that invest in the development of innovative solutions and transformational changes.

It is substantiated that regulatory barriers and the lack of standardized waste management methods often hinder the fulfillment of corporate responsibility in the field of waste management (pp. 78-81). It is emphasized that technological progress has played a crucial role in strengthening sustainable waste management practices. As a result, companies can utilize technologies such as “smart” bins for efficient waste collection and advanced recycling methods to improve waste management processes and reduce environmental impact (pp. 94-95). It is proven that consumers are increasingly aware of the environmental consequences of their purchasing decisions and actively seek out companies that prioritize environmentally friendly waste disposal methods. This growing trend motivates companies to be transparent about their waste management initiatives and actively engage in environmentally responsible practices.

The third chapter of the qualification thesis “Prospects of development the waste management system and improvement of the corporate social responsibility”. The third chapter focuses on the key areas of waste management system improvement, ways of implementation of corporate social responsibility management strategy, and the model of waste management in the system of corporate social responsibility. It is established that in the modern business landscape, a reliable waste management system is becoming increasingly important, as the growing global population and rising demand for products and services result in the generation of more hazardous and non-hazardous waste (pp. 105-106). It is found that blockchain has the potential to revolutionize waste management by implementing digital asset markers, such as security tokens, linked to waste in smart cities for tracking purposes (pp. 106-108). It is substantiated that the implementation of a corporate social responsibility’ strategy in an organization can be more effective with the use of artificial intelligence (AI). AI can help companies monitor and report on corporate social responsibility performance and identify and address any gaps and risks (pp. 119-122). It is argued that the successful

implementation of environmentally responsible practices by transnational companies leads to increased business resilience by improving stakeholder relations, reducing environmental risks, and enhancing product competitiveness (p. 132). To enhance the effectiveness of eco-conscious practices within corporate social responsibility, it is necessary to integrate environmental principles into the strategic management system, create a dedicated team of managers to implement environmental initiatives, and conduct regular environmental audits with a priority on business interests in these projects (pp. 133-135).

The structural design of the qualification thesis by Igor RIVILIS meets the qualification characteristics, and the style of presentation and material delivery is logical, consistent, and unified in its goal orientation. The qualification thesis contains a sufficient number of tables, diagrams, illustrations, and charts, which are presented directly in the main part of the dissertation and in the appendices. The language of the qualification thesis is concise, correct, and clear. In terms of structure and formatting, the work complies with the current requirements for design of dissertation, approved by the Ministry of Education and Science of Ukraine's Order dated January 12, 2017, No. 40 "On approval of Requirements to design of dissertation".

The collection of scientific provisions, conclusions, and recommendations presented in the qualification thesis, along with their practical significance, allow for the conclusion about the completeness, coherence, and structured nature of Igor RIVILIS's qualification thesis.

Assessment of the scientific novelty of the provisions and results obtained in the qualification thesis. The results that have been substantiated in the qualification thesis, which have theoretical and practical significance, and define the scientific novelty of the dissertation, are as follows:

— The model of waste management in the system of corporate social responsibility has been developed, based on methods of implementing environmental management and directions of corporate social responsibility. Tools for improving the waste management system have been provided, approaches to the development of corporate social responsibility as a management strategy have been outlined, and the components of the strategy for implementing corporate social responsibility and its interdirections under crisis conditions have been defined (pp. 130-135);

— The concept of environmental management within the waste management system has been improved through the analysis of the environmental management system. The advantages of applying environmental management have been justified, and tools for implementing environmental management have been developed (pp. 42-48);

— Terminology has been improved, particularly by detailing the essential characteristics of waste management and justifying the concept of waste. The term

“waste hierarchy” has been justified with options ranked in order of preference for waste minimization (pp. 19-23);

– The evaluation of the features of corporate social responsibility under instability has been improved by highlighting the stages and approaches of business social responsibility. Problems and threats to corporate social responsibility have been outlined (pp. 71-79);

– The properties and characteristics of corporate social responsibility theories have been further developed through the identification of key components such as the viability of corporate social responsibility theory, the advantages of applying corporate social responsibility theory, and the problems in applying corporate social responsibility theory (pp. 34-37);

– The characteristics of types of corporate social responsibility have been further developed by distinguishing between external and internal CSR. Theoretical identification of corporate social responsibility theories has been conducted by classifying the evolution of corporate social responsibility theories into three main phases (pp. 28-32);

– The analysis of waste management in the system of circular transformation and the analysis of the level of emissions under global transnationalization have been further developed. This has allowed for the definition of levels of circularity, the development of cooperation options for waste collection for municipalities, and the development of a concept for transitioning from a linear waste management concept to a circular resource management concept (pp. 59-66).

Significance of the research results for science and practice. The theoretical significance of the work lies in solving the scientific problem and developing proposals for waste management and the formation of corporate social responsibility in the context of creating an applied model for implementing environmental and strategic business priorities.

The practical significance of the results obtained in the dissertation is that the main theoretical provisions of the study on key directions for improving the waste management system and methods for implementing corporate social responsibility strategies can be used in the practical activities of business entities, in further scientific developments, and in the educational process for preparing higher education students. The presented research results, developed into practical findings and recommendations, are confirmed by the certificate of implementation and participation in scientific research work of West Ukrainian National University (certificate No. 21/69.2024 dated June 28, 2024).

Completeness of the presentation of scientific provisions, conclusions, and recommendations formulated in the dissertation in published papers relevant to the dissertation topic. The main provisions of the qualification thesis, which have scientific novelty, are substantively and convincingly revealed in the published papers.

Based on the main results of the dissertation, 11 scientific papers have been published, including 3 articles in journals indexed in international scientometric databases Scopus and Web of Science, 3 articles – in scientific professional editions of Ukraine, 1 article – in a foreign periodical edition and 4 publications have approbation nature.

The published scientific papers of Igor RIVILIS that are relevant to the dissertation topic meet the requirements of the current procedure for awarding the Doctor of Philosophy degree. The quantity and volume of the edited papers grant the author the right to publicly defend the dissertation.

Absence (presence) of violations of academic integrity. The scientific results of the dissertation were obtained personally by the author. In the co-authored scientific papers, only those ideas and provisions that were personally acquired by the author were used in the dissertation.

No violations of academic integrity have been detected in Igor RIVILIS's dissertation. The dissertation includes references to relevant sources of information, provides accurate information about the methods used and the results of the research conducted, and complies with copyright and related rights legislation. This allows for the conclusion that the author of the dissertation has adhered to the requirements and rules of academic integrity.

Discussion points and remarks on the dissertation. Evaluating Igor RIVILIS's qualification thesis, which is carried out at a sufficiently high scientific level, some remarks can be made that may serve as a basis for discussion during the defense:

1) on page 64, the author notes that improper waste management creates serious risks for the environment and human health, hinders human and urban development, economic growth, and the achievement of the UN Sustainable Development Goals, particularly SDG 12 – reducing the resource intensity of the economy and ensuring environmental safety. However, it would be beneficial to provide a more detailed description of sustainable consumption and production models when discussing the transition from linear waste management to circular resource management.

2) on page 71, the author presents the stages and approaches to business social responsibility from the perspectives of corporate egoism, corporate altruism, social requirements, stakeholder' engagement, and ethical obligation. It would be useful to more thoroughly show the relationship between the use of specific approaches at each stage and the achievement of economic results and sustainable business development.

3) on pages 90-93, the author analyzes the level of emissions in the context of global transnationalization by examining EU countries. However, this analysis is insufficiently focused on emission problems in Ukraine.

4) in Figure 3.1 “The waste management system improvement” on page 103, the author lists the areas that a waste management plan should cover. It would be useful to provide a more detailed characterization of these areas, specifically the waste management strategies and waste minimization strategies.

5) on page 125, the author presents Figure 3.5 “Interdirections of corporate social responsibility under crisis.” This figure covers steps for enhancing corporate social responsibility aimed at meeting the needs of various stakeholders. It would be beneficial to describe in more detail the changes in the needs of different stakeholders during a crisis.

The mentioned remarks and discussion points indicate some controversial aspects of the research. However, they generally reflect the relevance, complexity, and multifaceted nature of the chosen topic, its practical significance, and do not significantly affect the qualitative characteristics of the qualification thesis.

General conclusion and evaluation of the qualification thesis

Igor RIVILIS’s qualification thesis on the topic “Global waste management and corporate social responsibility” is a completed scientific study, the result of which is a scientific justification of the theoretical foundations of waste management and the formation of social corporate responsibility in the context of the development of the applied model for the implementation of the environmental strategic priorities of business.

In terms of content and professional orientation, the qualification thesis corresponds to the specialty 073 “Management” in the field of knowledge 07 “Management and administration,” and in terms of quality and level of theoretical and practical developments, it meets the requirements for a PhD thesis. It presents a unique authorial approach to solving the scientific problem.

In general, the qualification thesis “Global waste management and corporate social responsibility” meets the requirements of the Resolution of the Cabinet of Ministers of Ukraine dated January 12, 2022, No. 44 “On the Approval of the Procedure for Awarding the Degree of Doctor of Philosophy and the Cancellation of the Decision of a One-time Specialized Academic Council of a Higher Education Institution, Research Institution on Awarding the Degree of Doctor of Philosophy” in terms of content, substantiation of scientific provisions and recommendations, and level of scientific novelty. The author, Igor RIVILIS, deserves to be awarded the degree of Doctor of Philosophy in the specialty 073 “Management”.

Official Opponent:
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