

UDC 658.5

JEL Classification: M14, O35, L22

Kravchenko M. O., Ivanova T. V.

TRANSFORMATION OF RESPONSIBLE INNOVATION PRINCIPLES UNDER POST-CONFLICT ENTERPRISE RECOVERY

National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

The article develops a system of transformed responsible innovation principles for post-conflict enterprise recovery conditions. The relevance of the study is determined by the conceptual gap between classical responsible innovation principles, developed for stable economies, and the real conditions of recovery, where resource scarcity, time pressure and investment irreversibility render the mechanical application of existing approaches counterproductive. The purpose of the article is to substantiate a system of transformed RRI principles adapted to the specifics of post-conflict enterprise recovery and amenable to practical operationalisation in crisis conditions. The research methodology is based on a critical reconstruction of the classical RRI framework through a comparative analysis of stable and crisis context requirements, applying a systemic approach and the method of synthesis. For each principle, the limitations of the classical version are identified, a new definition is proposed, and operationalisation tools are provided. The research results are presented as a complete eight-element system of principles: four transformed classical principles (Adaptive Foresight, Pragmatic Reflexivity, Strategic Engagement, Adaptive Governance) and four principles specific to the recovery context (Justifiability, Iterativity, Resource-Consciousness, Temporal Financial Matching). It is established that the transformed principles differ from the classical ones in three key respects: a shift of emphasis to adaptive management of current crises, pragmatic acknowledgement of inclusivity limitations, and operationalisation of adaptability through structural flexibility. The scientific novelty lies in the development of a system of principles that does not replace classical RRI approaches but extends them for the crisis context. The practical value of the study lies in providing enterprise managers with appropriate tools for implementing responsible innovations under conditions of resource scarcity and recovery pressure.

Keywords: responsible innovation, post-conflict enterprise recovery, innovation principles, adaptive governance, crisis management.

DOI: 10.32434/2415-3974-2026-23-1-123-129

Introduction and formulation of the problem

The transformational nature of the contemporary challenges facing enterprises in post-conflict and post-crisis conditions requires a reconsideration of traditional approaches to innovation. Classical models of innovative development, oriented towards maximising economic efficiency in stable institutional environments, prove incapable of simultaneously addressing economic recovery, environmental

responsibility and social inclusiveness.

The concept of Responsible Research and Innovation (hereinafter RRI) acquires particular significance as a potential mechanism for integrating the multiple objectives of recovery into a single strategic framework. However, its application to the analysis of enterprise recovery processes encounters a fundamental methodological problem: the existing theoretical base of RRI was developed in the context of stable, resource-

© Kravchenko M. O., Ivanova T. V., 2026



This article is licensed under Creative Commons Attribution 4.0 International License (CC-BY)

Transformation of responsible innovation principles under post-conflict enterprise recovery

sufficient developed economies, where innovation is directed at anticipating potential negative consequences of future technologies.

Post-conflict recovery, by contrast, is characterised by acute resource scarcity, destruction of the innovation infrastructure, migration of skilled labour and the need for immediate results. Recovery without integrating the principles of responsibility risks reproducing the inefficient and environmentally destructive models of the pre-war period; conversely, mechanical application of RRI principles developed for other contexts may delay the critically important rapid restoration of productive capacity and employment. Resolving this dilemma requires a conceptual reconstruction of RRI principles that accounts for the specificities of the crisis context.

Analysis and research of publications

The classical RRI framework comprises four core principles – anticipation, reflexivity, inclusion and responsiveness – which have been institutionalised within the EU framework programmes Horizon 2020 and Horizon Europe. In their comprehensive analysis, Wiarda et al. (2021) document the academic evolution of these principles and identify a growing tension between their normative content and their practical applicability outside the stable research environment [1].

Lukovics et al. (2023) demonstrate that businesses face structural barriers to RRI adoption rooted in information asymmetry, arguing that the inclusion and responsiveness principles, as classically formulated, lack the operational mechanisms necessary for implementation in competitive environments [2]. Ivanova et al. (2023) identify persistent conflicts between profitability objectives and the normative demands of the anticipation and reflexivity principles in corporate contexts, concluding that the classical framework requires adaptation to function outside research policy settings [3].

The limitations of individual principles become particularly acute under crisis conditions. Tian and Tian (2021) demonstrate that conventional inclusion mechanisms are structurally disrupted when stakeholder composition and resources undergo rapid change, rendering the anticipation principle analytically unfounded under conditions of radical uncertainty [4]. Stahl (2024) argues that the reflexivity principle requires reconceptualisation when applied outside stable environments, as the epistemological conditions for deep reflexive practice are unavailable to decision-makers operating under existential pressure [5].

Gonzalez-Gemio et al. (2020), in a systematic literature review on RRI in small and medium-sized enterprises, found that existing frameworks were developed primarily for large organisations with stable

resources, significantly limiting the applicability of the inclusion and anticipation principles to enterprises facing resource deficits [6]. Memon and Ooi (2025) reinforce this empirically, demonstrating that the responsible innovation pathway is contingent on minimum resource thresholds that are structurally absent in post-crisis environments [7]. Paredes-Frigolett et al. (2024) establish that the operationalisation of the responsiveness principle as a governance mechanism under conditions of competing stakeholder interests and resource scarcity remains an unresolved problem in existing RRI theory [8].

Thus, the review of the literature shows that despite the wide recognition of the RRI concept, the question of its transformation for post-conflict enterprise recovery conditions remains outside researchers' attention. Existing works are either focused on the normative dimension of the principles or examine their adaptation for specific sectors or types of organisations under stable conditions. This confirms the existence of a conceptual gap that the present study aims to address.

Purpose of the article

The purpose of the article is to substantiate a system of transformed responsible innovation principles adapted to the specifics of post-conflict enterprise recovery.

To achieve this purpose, the following objectives are to be addressed:

- to identify the conceptual limitations of classical RRI principles for the crisis context;
- to propose a transformation of each of the four basic RRI principles;
- to substantiate additional principles specific to the recovery context;
- to form a complete system of principles for responsible recovery.

Presentation of the main material

The RRI framework was developed for frontier research (nanotechnology, synthetic biology, artificial intelligence), where the time horizon of consequences is measured in decades, the primary uncertainty is technological in character, and the objective is to anticipate potential risks. In post-conflict recovery, by contrast, the time horizon is reduced to months, the primary uncertainty takes on an existential character, and the objective shifts to overcoming the current crisis.

The key idea of the transformation is that the proposed principles do not replace classical RRI principles but extend them for the crisis context, since the choice between versions is determined by contextual parameters: the depth of the crisis, resource scarcity, time constraints and institutional capacity.

The critical reconstruction of each of the four transformed principles for the recovery context basic principles enables the following system of (Table 1).

Table 1

Transformation of RRI principles for the post-conflict recovery context

Classical principle (Stilgoe et al., 2013)	Limitations for the recovery context	Transformed principle	Operationalisation
Anticipation	Fundamental parameters of the future are unknown; scenario planning is impossible; anticipation becomes speculation	Adaptive Foresight	Identification of critical uncertainty parameters; monitoring of weak signals; contingency planning; mechanisms for rapid strategy switching
Reflexivity	Deep epistemological reflection is a luxury in crisis conditions; time deficit; existential pressure	Pragmatic Reflexivity	Explicit articulation of key strategic assumptions; stress-testing of assumptions; identification of lock-in effects; short reflection cycles
Inclusion	Engaging everyone is physically impossible; conflict of interests is irreconcilable; time deficit for consultations	Strategic Engagement	Stakeholder mapping by power and legitimacy axes; differentiated engagement mechanisms; time-bounded engagement; explicit acknowledgement of limitations
Responsiveness	Irreversible investments make trajectory changes catastrophic; sunk cost effects	Adaptive Governance	Modular investment design; option contracts; phased implementation; learning cycles

Source: developed by authors

Principle 1: from Anticipation to Adaptive Foresight. The classical interpretation of the anticipation principle rests on the implicit assumption of the relative stability of the basic parameters of the environment, which makes scenario building possible. Under conditions of post-conflict uncertainty, when the key determinants of strategic planning – the duration of the conflict, the restoration of market linkages, the dynamics of energy costs – are fundamentally unpredictable, traditional anticipation loses its analytical foundation. The transformed principle of Adaptive Foresight is defined as the institutionalised capacity of an enterprise to operatively revise its strategic orientations when critical environmental parameters change, without catastrophic organisational and financial losses.

Principle 2: from Reflexivity to Pragmatic Reflexivity. Implementing the classical reflexivity principle requires deep epistemological reflection on basic assumptions, value orientations and problem framing, demanding significant time and intellectual resources as well as the absence of existential pressure on the organisation. These conditions are structurally unavailable in the post-conflict recovery context. The

transformed principle of Pragmatic Reflexivity is defined as a systematic critical analysis of the key assumptions underlying strategic decisions, with an emphasis on identifying potential vulnerabilities and decisions that constrain the enterprise’s strategic flexibility in the future.

Principle 3: from Inclusion to Strategic Engagement. The classical inclusion principle is oriented towards the broadest possible engagement of stakeholders in the innovation process. Under post-conflict recovery conditions, implementing this principle in its original form is organisationally infeasible: the dispersion of stakeholders (including workers in forced migration or military service), the irreconcilable nature of inter-group conflicts of interest, and the critical time deficit for consultations all make the traditional inclusive approach unworkable. The transformed principle of Strategic Engagement is defined as the targeted, differentiated engagement of priority stakeholder groups at key decision-making stages with the explicit acknowledgement of existing inclusivity limitations.

Principle 4: from Responsiveness to Adaptive Governance. The classical responsiveness principle

presupposes the enterprise's ability to adjust its innovation trajectory in response to new knowledge and environmental changes. Its implementation implies the reversibility of decisions and investments made. Under post-conflict recovery conditions, a significant portion of strategic decisions involves irreversible capital expenditures, the adjustment of which entails critical financial losses and a threat of insolvency. The transformed principle of Adaptive Governance is defined as the purposeful formation of organisational and financial structures that systematically minimise the share of irreversible investments and ensure strategic optionality – preserving the ability to change trajectory without critical losses.

The specificity of post-conflict recovery has revealed conceptual gaps in classical frameworks that require the introduction of four additional principles absent from existing RRI theory. In view of the identified gaps, the following additional principles are proposed:

Principle 5: Justifiability. Classical RRI frameworks implicitly presuppose that, provided the principles of inclusion and reflexivity are observed, a decision acquires legitimacy a priori through the agreement procedure. However, under post-conflict recovery conditions, when full agreement is impossible and dilemmas of choice between competing values are inevitable, procedural legitimacy is insufficient. The principle of Justifiability addresses this gap by requiring substantive justification of every decision that compromises any dimension of responsibility. This is not only an ethical requirement but also a practical tool for managing stakeholder trust in conditions where consensus is unattainable: the public articulation of trade-offs and considered alternatives ensures accountability without paralysing consultative procedures.

Principle 6: Iterativity. Existing RRI theory treats the innovation process as unfolding under conditions of sufficient information to make well-grounded decisions at each stage. Under post-conflict recovery conditions, an enterprise operates under radical uncertainty, where the correctness of a strategic decision can only be assessed post factum. The principle of Iterativity institutionalises this reality by establishing the structure of successive cycles – decision – implementation – assessment – adjustment – as a normative requirement rather than a deviation from ideal planning. This fundamentally changes the management logic: mistakes cease to be failures and become sources of information for the next iteration.

Principle 7: Resource-Consciousness. Classical RRI principles were developed under conditions of

relative resource sufficiency, where the primary constraint was not the availability of resources but their rational allocation. Post-conflict recovery is characterised by simultaneous deficits of financial, human, natural and social capital, where resource constraints are not a temporary phenomenon but a systemic feature of the context. The principle of Resource-Consciousness requires that every decision account not only for financial costs but for the full structure of resource expenditures and the interdependencies among different forms of capital. In particular, a decision that optimises financial costs at the expense of depleting social capital (for example, mass redundancies) may prove strategically ruinous in the long-term perspective of recovery.

Principle 8: Temporal Financial Matching. This principle reflects a specific vulnerability of enterprises in the post-conflict period that is not represented in classical RRI theory. Mismatches between the time horizon of investments and the terms of financing are among the most common causes of insolvency among enterprises that have begun recovery: short-term loans drawn in to finance long-term assets generate critical debt burdens well before the investments begin to yield returns. The principle of Temporal Financial Matching formalises the requirement of alignment between the nature of the financed asset and the financing instrument as an integral component of responsible innovative activity in crisis conditions.

The combination of four transformed classical and four new principles forms the complete system of responsible recovery principles (Table 2).

The proposed system of principles differs from classical RRI frameworks in three key respects. First, the emphasis shifts from anticipating long-term risks to adaptive management of current crises. Second, the resource constraints for inclusive processes are acknowledged: strategic engagement with explicit recognition of limitations replaces the idealistic objective of reaching all stakeholders. Third, adaptability is operationalised through structural flexibility (Adaptive Governance) rather than merely a willingness to listen (responsiveness).

Meaningful connections exist among the principles. Adaptive Foresight and Resource-Consciousness together form the informational basis of strategic decisions: the former is responsible for monitoring external uncertainty parameters, the latter for accounting for internal resource constraints. Pragmatic Reflexivity and Iterativity form a cycle of organisational learning: reflection on assumptions acquires practical meaning only when a mechanism for adjustment in light of its results exists. Strategic Engagement and Justifiability are mutually

complementary in managing stakeholder relations: the former defines the architecture of engagement, the latter ensures accountability where full engagement is impossible. Adaptive Governance and Temporal Financial Matching are both directed at managing irreversibility: the former at the level of organisational

structures and investment decisions, the latter at the level of their financing.

It should be noted that the degree of relevance of individual principles may vary depending on industry specifics, enterprise scale and the depth of the crisis.

Table 2

Complete system of responsible innovation principles for post-conflict recovery

No.	Principle	Essence	Key operationalisation tools
1	Adaptive Foresight	Readiness for a plurality of possible futures rather than linear prediction	Mapping of critical uncertainty parameters, weak signal monitoring, contingency planning, rapid switching mechanisms
2	Pragmatic Reflexivity	Critical analysis of key assumptions underpinning strategic decisions, focused on identifying vulnerabilities and constraints on strategic flexibility	Explicit articulation and stress-testing of assumptions, identification of lock-in effects, quarterly reflexive reviews
3	Strategic Engagement	Targeted engagement of priority stakeholder groups at critical decision-making stages with explicit acknowledgement of inclusivity limitations	Stakeholder mapping (power x legitimacy), differentiated mechanisms, time-bounded engagement
4	Adaptive Governance	Building structures that minimise irreversible investments and create optionality — the ability to change trajectory without critical losses	Modular design, option contracts, leasing over purchasing, phased implementation with transition criteria
5	Justifiability	Every decision that compromises any dimension of responsibility must be publicly and explicitly justified	Justification statements, public communication of trade-offs, appeal mechanisms
6	Iterativity	Recovery is a trajectory of iterations: decision – implementation – assessment – adjustment	Phased strategy (6–12 months), success criteria, decision checkpoints, rapid learning
7	Resource-Consciousness	Every decision must account for multiple deficits and their interdependencies	Multi-capital accounting (financial, natural, human, social), opportunity cost analysis, bottleneck identification
8	Temporal Financial Matching	Financing sources must correspond to the time horizons of investments	Prohibition on financing long-term projects with short-term credit; diversification of sources; matching matrix

Source: developed by authors

Conclusions

The study has confirmed that classical responsible innovation principles require conceptual reconstruction for the conditions of post-conflict enterprise recovery. It has been established that applying the classical approach under conditions of resource scarcity, time pressure and investment irreversibility is not merely

insufficient but potentially counterproductive.

The scientific novelty of the study consists in the following:

- a critical reconstruction of four basic RRI principles for the crisis context has been carried out: anticipation has been transformed into Adaptive

Foresight, reflexivity into Pragmatic Reflexivity, inclusion into Strategic Engagement, and responsiveness into Adaptive Governance;

– four principles specific to the recovery context and absent from existing RRI theory have been substantiated: Justifiability, Iterativity, Resource-Consciousness and Temporal Financial Matching;

– a complete system of responsible recovery principles has been formed, where each principle is provided with a definition and operationalisation tools;

– it has been established that the transformed principles do not replace classical RRI approaches but form a continuum with them, where the choice between versions is determined by contextual parameters: the depth of the crisis, resource scarcity, time constraints and institutional capacity.

The practical significance of the study’s results lies in the possibility of using the developed system of principles for:

– forming the strategy of innovative enterprise recovery with account for the specifics of the crisis context;

– making substantiated management decisions under conditions of resource scarcity and time pressure;

– diagnosing the conformity of an enterprise’s innovative activities with the principles of responsible recovery;

– developing state programmes of support for innovative recovery that account for the real constraints faced by enterprises.

The prospects for further research lie in verifying the proposed system of principles on the basis of empirical data on the recovery practices of Ukrainian enterprises, developing quantitative indicators for assessing the degree to which they are observed, and adapting the system for the specificities of individual economic sectors.

REFERENCES

1. Wiarda, M., van de Kaa, G., Yaghmaei, E., & Doorn, N. (2021). A comprehensive appraisal of responsible research and innovation: From roots to leaves. *Technological Forecasting and Social Change*, 172, 121053. DOI: <https://doi.org/10.1016/j.techfore.2021.121053> [in English].
2. Lukovics, M., Nagy, B., Kwee, Z., & Yaghmaei, E. (2023). Facilitating adoption of responsible innovation in business through certification. *Journal of Responsible Innovation*, 10(1), 2211810. DOI: <https://doi.org/10.1080/23299460.2023.2211810> [in English].
3. Ivanova, S., Reichetzer, C., Martinuzzi, A., Findler, F., & Miko-Schefzig, K. (2023). Frames, interests, and incentives: A typology of institutionalizing RRI in the business

sector. *Journal of Responsible Innovation*, 10(1), 2267736. DOI: <https://doi.org/10.1080/23299460.2023.2267736> [in English].

4. Tian, H., & Tian, J. (2021). The mediating role of responsible innovation in the relationship between stakeholder pressure and corporate sustainability performance in times of crisis. *International Journal of Environmental Research and Public Health*, 18(14), 7277. DOI: <https://doi.org/10.3390/ijerph18147277> [in English].

5. Stahl, B. C. (2024). Critical responsible innovation: The role(s) of the researcher. *Journal of Responsible Innovation*, 11(1), 2300162. DOI: <https://doi.org/10.1080/23299460.2023.2300162> [in English].

6. Gonzalez-Gemio, C., Cruz-Cazares, C., & Parmentier, M. (2020). Responsible Innovation in SMEs: A Systematic Literature Review for a Conceptual Model. *Sustainability*, 12, 10232. DOI: <https://doi.org/10.3390/su122410232> [in English].

7. Memon, K. R., & Ooi, S. K. (2025). Addressing resource scarcity: The role of responsible innovation and resilience in SMEs’ competitive advantage and sustainability performance. *Corporate Social Responsibility and Environmental Management*, 32(5), 5734–5746. DOI: <https://doi.org/10.1002/csr.70005> [in English].

8. Paredes-Frigolett, H., Pyka, A., Leoneti, A. B., & Nachar-Calderon, P. (2024). Governance of responsible research and innovation: A social welfare, psychologically grounded multicriteria decision analysis approach. *Heliyon*. DOI: <https://doi.org/10.1016/j.heliyon.2024.e40863> [in English].

Received 20.03.2026.

Revised 25.04.2026.

Accepted 20.05.2026.

Published 30.05.2026.

ТРАНСФОРМАЦІЯ ПРИНЦИПІВ ВІДПОВІДАЛЬНИХ ІННОВАЦІЙ В УМОВАХ ПОСТКОНФЛІКТНОГО ВІДНОВЛЕННЯ ПІДПРИЄМСТВ

Кравченко М. О., Іванова Т. В.

У статті розроблено систему трансформованих принципів відповідальних інновацій для умов постконфліктного відновлення підприємств. Актуальність дослідження зумовлена концептуальною прогалиною між класичними принципами відповідальних інновацій, розробленими для стабільних економік, та реальними умовами відновлення, де обмеженість ресурсів, часовий тиск та безповоротність інвестицій роблять механічне застосування існуючих підходів контрпродуктивним. Мета статті – обґрунтування системи трансформованих принципів RRI, адаптованих до специфіки постконфліктного відновлення підприємств та придатних до операціоналізації в кризових умовах. Методологія базується на критичній реконструкції класичної структури RRI через порівняльний аналіз вимог стабільного та кризового контекстів із застосуванням системного підходу та методу синтезу; для кожного принципу визначено обмеження класичної версії, запропоновано нове визначення та інструменти операціоналізації. Результати дослідження представлені у вигляді повної восьмиелементної системи принципів: чотири трансформовані класичні принципи (*Adaptive Foresight*,

Pragmatic Reflexivity, Strategic Engagement, Adaptive Governance) та чотири принципи, специфічні для контексту відновлення (Justifiability, Iterativity, Resource-Consciousness, Temporal Financial Matching). Встановлено, що трансформовані принципи відрізняються від класичних у трьох аспектах: зміщення акценту на адаптивне управління поточними кризами, прагматичне визнання обмежень інклюзивності та операціоналізація адаптивності через структурну гнучкість. Наукова новизна – система принципів, що не замінює класичні RRI-підходи, а розширює їх для кризового контексту. Практична цінність – забезпечення менеджерів підприємств інструментами для впровадження відповідальних інновацій в умовах обмеженості ресурсів та тиску відновлення.

Ключові слова: відповідальні інновації, постконфліктне відновлення підприємств, принципи інновацій, адаптивне врядування, кризовий менеджмент.

TRANSFORMATION OF RESPONSIBLE INNOVATION PRINCIPLES UNDER POST-CONFLICT ENTERPRISE RECOVERY

*Kravchenko M. O., Ivanova T. V.**

National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

*e-mail: tetyana.v.ivanova@gmail.com

Kravchenko M. O. ORCID: <https://orcid.org/0000-0001-5405-0159>

Ivanova T. V. ORCID: <https://orcid.org/0000-0001-9659-8681>

The article develops a system of transformed responsible innovation principles for post-conflict enterprise recovery conditions. The relevance of the study is determined by the conceptual gap between classical responsible innovation principles, developed for stable economies, and the real conditions of recovery, where resource scarcity, time pressure and investment irreversibility render the mechanical application of existing approaches counterproductive. The purpose of the article is to substantiate a system of transformed RRI principles adapted to the specifics of post-conflict enterprise recovery and amenable to practical operationalisation in crisis conditions. The research methodology is based on a critical reconstruction of the classical RRI framework through a comparative analysis of stable and crisis context requirements, applying a systemic approach and the method of synthesis. For each principle, the limitations of the classical version are identified, a new definition is proposed, and operationalisation tools are provided. The research results are presented as a complete eight-element system of principles: four transformed classical principles (Adaptive Foresight, Pragmatic Reflexivity, Strategic Engagement, Adaptive Governance) and four principles specific to the recovery context (Justifiability, Iterativity, Resource-Consciousness, Temporal Financial Matching). It is established that the transformed principles differ from the classical ones in three key respects: a shift of emphasis to adaptive management of current crises, pragmatic acknowledgement of inclusivity limitations, and operationalisation of adaptability through structural flexibility. The scientific novelty lies in the development of a system of principles that does not replace classical RRI approaches but extends them for the crisis context. The practical value of the study lies in providing enterprise managers with appropriate tools for implementing responsible innovations under conditions of resource scarcity and recovery pressure.

Keywords: responsible innovation, post-conflict enterprise recovery, innovation principles, adaptive governance, crisis management.

REFERENCES

1. Wiarda, M., van de Kaa, G., Yaghmaei, E., & Doorn, N. (2021). A comprehensive appraisal of responsible research and innovation: From roots to leaves. *Technological Forecasting and Social Change*, 172, 121053. DOI: <https://doi.org/10.1016/j.techfore.2021.121053> [in English].
2. Lukovics, M., Nagy, B., Kwee, Z., & Yaghmaei, E. (2023). Facilitating adoption of responsible innovation in business through certification. *Journal of Responsible Innovation*, 10(1), 2211810. DOI: <https://doi.org/10.1080/23299460.2023.2211810> [in English].
3. Ivanova, S., Reichetzer, C., Martinuzzi, A., Findler, F., & Miko-Schefzig, K. (2023). Frames, interests, and incentives: A typology of institutionalizing RRI in the business sector. *Journal of Responsible Innovation*, 10(1), 2267736. DOI: <https://doi.org/10.1080/23299460.2023.2267736> [in English].
4. Tian, H., & Tian, J. (2021). The mediating role of responsible innovation in the relationship between stakeholder pressure and corporate sustainability performance in times of crisis. *International Journal of Environmental Research and Public Health*, 18(14), 7277. DOI: <https://doi.org/10.3390/ijerph18147277> [in English].
5. Stahl, B. C. (2024). Critical responsible innovation: The role(s) of the researcher. *Journal of Responsible Innovation*, 11(1), 2300162. DOI: <https://doi.org/10.1080/23299460.2023.2300162> [in English].
6. Gonzalez-Gemio, C., Cruz-Cazares, C., & Parmentier, M. (2020). Responsible Innovation in SMEs: A Systematic Literature Review for a Conceptual Model. *Sustainability*, 12, 10232. DOI: <https://doi.org/10.3390/su122410232> [in English].
7. Memon, K. R., & Ooi, S. K. (2025). Addressing resource scarcity: The role of responsible innovation and resilience in SMEs' competitive advantage and sustainability performance. *Corporate Social Responsibility and Environmental Management*, 32(5), 5734–5746. DOI: <https://doi.org/10.1002/csr.70005> [in English].
8. Paredes-Frigolett, H., Pyka, A., Leoneti, A. B., & Nachar-Calderon, P. (2024). Governance of responsible research and innovation: A social welfare, psychologically grounded multicriteria decision analysis approach. *Heliyon*. DOI: <https://doi.org/10.1016/j.heliyon.2024.e40863> [in English].