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T. Kulinich,
PhD in Economics, Associate Professor, Associate Professorof the Department of Management of Organizations, Lviv Polytechnic National University
ORCID ID: https://orcid.org/0000-0003-0110-7080

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METHODICAL APPROACH TO REGULATING ENTERPRISE SUSTAINABLE DEVELOPMENT TRIGGERS

Т. В. Кулініч,
к. е. н., доцент кафедри менеджменту організацій, Національний університет "Львівська політехніка"

МЕТОДИЧНИЙ ПІДХІД ДО РЕГУЛЮВАННЯ ТРИГЕРІВ СТАЛОГО РОЗВИТКУ ПІДПРИЄМСТВА

The modern economy is characterized by high dynamism, uncertainty, and intense competition among various market participants, which necessitates the adoption of adaptive management strategies. Simultaneously, one of the key factors of strategic competitiveness is sustainable development, which ensures a balance among the economic, social, and environmental aspects of any business entity's operations. However, despite numerous studies in the field of corporate sustainable development, methodological issues concerning the effective identification and regulation of the triggers for its implementation remain unresolved. Accordingly, the aim of this study is to develop a methodological approach for regulating an enterprise's sustainable development triggers, ensuring the systematic, adaptive, and integrated nature of managerial decisions. The study emphasizes that the dynamic nature of sustainable development factors-which encompasses ongoing changes in market, technological, environmental, and social conditions-requires the continuous management of sustainable development triggers for each individual organizational and economic unit involved in the production of goods or provision of services to satisfy consumer needs and generate profit. It is observed that a static approach is increasingly ineffective, as it fails to capture the actual pace and directions of changes in the external environment. Considering this specificity, the author has developed a methodological approach that ensures the implementation of managerial, analytical, and strategic actions through: continuous identification of triggers and key areas of their impact, as well as assessment of their significance for the enterprise; ongoing monitoring and flexible forecasting (specifically, systematic tracking of changes in triggers within both external and internal environments and modeling the consequences of their effects); and flexible adjustment and adaptation of managerial decisions, strategic orientations, and business processes (in accordance with changes in the significance of triggers). It has been demonstrated that the proposed methodological approach to regulating enterprise sustainable development triggers is based on continuous analysis of factors, identification of changes in their intensity and significance, and adaptive updating of managerial decisions in line with current trends in the external and internal environment. In this context, attention should be paid to significant changes in net income and the triple effect, which create a negative discrepancy between them.

Сучасна економіка характеризується високою динамічністю, невизначеністю та активним процесом суперництва між різними учасниками ринку, що обумовлює необхідність застосування ними адаптивних стратегій управління. При цьому одним із ключових чинників стратегічної конкурентоспроможності є сталий розвиток, який забезпечує баланс економічних, соціальних та екологічних аспектів у діяльності будь-якого суб'єкта господарювання. Однак, незважаючи на значну кількість досліджень у сфері сталого розвитку підприємства, методичні питання ефективного визначення та регулювання тригерів його реалізації залишаються відкритими. Відтак, метою цього дослідження є розробка методичного підходу до регулювання тригерів сталого розвитку підприємства, що забезпечує системність, адаптивність та інтегрованість управлінських рішень. У межах дослідження звернуто увагу на те, що динамічний характер факторів сталого розвитку, який охоплює постійні зміни ринкових, технологічних, екологічних та соціальних умов, визначає необхідність безперервного регулювання тригерів сталого розвитку кожної окремої організаційно-економічної одиниці, що здійснює виробництво товарів або надає послуги з метою задоволення потреб споживачів та отримання прибутку. Констатовано, що статичний підхід втрачає ефективність, оскільки не відбиває реальної швидкості та напрямів змін зовнішнього середовища. Враховуючи окреслену специфіку автором розроблено методичний підхід, що забезпечує реалізацію управлінських, аналітичних та стратегічних дій через: безперервне виявлення тригерів та ключових зон їх впливу та оцінки їх значущості для підприємства; постійний моніторинг і гнучке прогнозування (а саме систематичне відстеження змін тригерів у зовнішньому та внутрішньому середовищі та моделювання наслідків їх дії); гнучку корекцію та адаптацію управлінських рішень, стратегічних орієнтирів і бізнес-процесів (відповідно до змін значущості тригерів). Доведено, що запропонований методичний підхід до регулювання тригерів сталого розвитку підприємства грунтується на безперервному аналізі факторів, виявленні змін їх інтенсивності та значущості, а також на адаптивному оновленні управлінських рішень відповідно до актуальних тенденцій зовнішнього та внутрішнього середовища. У цьому контексті слід зважати на те, що важлива така зміна значень чистих доходів та триєдиного ефекту, що формує негативну різницю між ними.

Key words: adaptive strategies; enterprise management; sustainable development; triggers; integration of managerial decisions; net profits.

Ключові слова: адаптивні стратегії; управління підприємствами; сталий розвиток; тригери; інтегрованість управлінських рішень; чисті доходи.

PROBLEM STATEMENT

The modern economy is characterized by high dynamism, uncertainty, and intense competition among various market participants, which necessitates the adoption of adaptive management strategies. Simultaneously, one of the key factors of strategic competitiveness is sustainable development, which ensures a balance among the economic, social, and environmental aspects of any business entity's operations. However, despite numerous studies in the field of corporate sustainable development, methodological issues concerning the effective identification and regulation of the triggers for its implementation remain unresolved.

In this regard, many enterprises that publicly declare a transition to sustainable development continue, in practice, to follow a degradative development model. This model prioritizes financial performance while systematically diminishing social and environmental value. It is reflected in situations where the difference between net income and the triple-bottom-line effect is positive, indicating the predominance of short-term economic gains over long-term sustainability objectives. The key characteristics of such a model include [7; 4]:

— increasing net profit due to unaccounted externalities;

— depletion of natural capital and deterioration of social well-being;

— a widening gap between economic performance and holistic value creation;

— heightened risks of reputational, regulatory, and environmental sanctions.

In particular, previous studies have shown that large domestic packaging manufacturers, aiming to increase profits, often reduce spending on waste recycling and rely on cheaper raw materials, while disregarding environmental standards. As a result, although net profit increases, the effect of sustainable development remains absent, since externalities-such as environmental pollution and waste management costs-are not taken into account. Consequently, natural capital is depleted, leading to pollution of rivers, soils, and the atmosphere. This, in turn, reduces social welfare, as working conditions deteriorate

Table 1. Key triggers of an enterprise's sustainable development and their characteristics

Trigger group	Specification of triggers within groups	Analytical characteristics and impact on an enterprise's sustainable development
Economic trigger group	Market fluctuations, changes in demand, access to investments and credit	Determine financial stability and strategic development opportunities. Positive impulses support business expansion and modernization, while negative ones threaten solvency and undermine stability.
Innovation and technological trigger group	Technological innovations, digitalization, production automation.	Enhance productivity, resource efficiency, and competitiveness. Contribute to long-term advantages and support the transition to environmentally oriented technologies.
Environmental trigger group	Environmental risks, climate change, regulations on emissions and waste reduction.	Stimulate environmental investments and encourage minimizing negative ecological impacts. However, they may increase operational costs and require adaptation of production processes.
Regulatory and legal trigger group	Legislative changes, government standards, environmental and legal requirements	Shape the external framework of business activities. Often determine the need for sustainable practices, while potentially imposing additional regulatory burdens.
Social trigger group	Consumer expectations, social responsibility standards, level of corporate culture	Influence reputational capital and stakeholder loyalty. A socially oriented strategy strengthens resilience and minimizes social risks.
Managerial trigger group	Quality of corporate governance, effectiveness of strategic planning, control systems	Ensure the ability to respond promptly to changes and maintain alignment among economic, environmental, and social objectives.
Resource trigger group	Availability of material, energy, labor, and natural resources	Define production potential and the capacity to implement energy-efficient technologies. Resource scarcity acts as a destabilizing trigger requiring strategic management responses.
Market and competitive trigger group	Competition dynamics, emergence of alternative products and business models	Require adaptation of positioning strategies, enhancement of innovation capability, and optimization of business processes.

Source: created by the authors based on [1; 3—5].

and the health of the population in industrial regions declines.

ANALYSIS OF RESEARCH AND PUBLICATIONS

In the scientific works of Tkachenko V., Makhovsky S. [7]" Kuzmak O.I. [3], Grosul V.A., and Mamaeva H.S. [1], the triggers of sustainable development are defined as internal and external factors that stimulate innovation, optimize resource use, and enhance corporate social responsibility. Manuylov O.V. [2] stresses that an effective methodological approach to the regulation of such triggers enables the systematization of managerial decisions, reduces risks, and increases the overall effectiveness of sustainable development strategies.

At the same time, considering the fragmented nature of existing research, there is a clear need to develop comprehensive methodologies that integrate the financial, environmental, and social aspects of corporate activity. Taking into account industry specifics and market conditions, such methodologies should enable timely and effective adjustment of the trajectory and parameters of sustainable development.

This is particularly important because a modern enterprise operates under conditions of interdependence among financial, social, and environmental factors. Without a comprehensive approach, decisions may remain fragmented, leading to inconsistencies in strategies and inefficient use of resources. Conversely, a systematic approach to sustainable development triggers allows for the timely identification of risks and negative trends arising from the external environment or internal processes, ensuring greater stability and predictability in the enterprise's operations.

FORMULATION OF THE ARTICLE'S OBJECTIVES

The aim of this study is to develop a methodological approach to regulating the triggers of an enterprise's sustainable development, ensuring that managerial decisions are systematic, adaptive, and integrated.

THE PAPER MAIN BODY

Within the scope of this study, it is emphasized that the triggers of an enterprise's sustainable development are highly diverse, as they represent a combination of factors, events, and internal or external impulses capable of initiating, accelerating, or substantially transforming the trajectory of sustainable development. In this regard, they include both positive stimuli (e.g., innovations, increasing demand for eco-friendly products, improvements in management efficiency) and risks or destabilizing influences (e.g., environmental threats, regulatory changes, market fluctuations), which require timely and adequate responses. A more detailed classification-based on contemporary concepts of sustainable development (ESG approaches, stakeholder theory, and the resource-based paradigm [1; 3]) and the characteristics of the key triggers of an enterprise's sustainable development-is presented in Table 1.

It should be noted that the use of sustainable development triggers is important for an enterprise for several reasons. First, identifying these factors allows the enterprise to pinpoint critical areas where changes can have the greatest impact on its economic, environmental, and social subsystems. For example, implementing energy-efficient technologies can simultaneously reduce production costs (economic effect), decrease emissions (environmental effect), and improve employee safety (social effect) [1; 5].

Thus, the identification, timely detection, and assessment of triggers enable managerial decisions that maximize the benefits of sustainable development and ensure the harmonization of all its components.

Table 2. Features of the impact of an enterprise's sustainable development triggers on its performance outcomes

Zone of influence	Direction of trigger impact on enterprise performance		
	By timing	By management level	By direction of impact
Directions of impact	Preventive (proactive) 1 Corrective (reactive) 2 Predictive 3	Strategic 4 Tactical 5 Operational 6	Economic 7 Environmental 8 Social 9
General aspects of influence	Dynamics of influence (Triggers are not static; their effect changes over time)	Triggers can have a positive or negative effect on outcomes	Quantitative and qualitative impact The results of a company's activities are shaped not only by numbers but also by intangible factors.

Notes:
1. Aimed at minimizing negative effects before a trigger manifests.
2. Carried out in response to detected changes or risks that have already affected the enterprise's activities.
3. Involves modeling potential triggers and planning strategic actions in advance.
4. Changes in long-term plans, investment priorities, and corporate policies.
5. Adaptation of medium-term plans, resource allocation, and managerial procedures.
6. Changes in daily processes, logistics, production operations, and personnel management.
7. Adjustment of financial flows, investment strategies, and market policies.
8. Optimization of resource consumption, minimization of emissions and waste, and implementation of green technologies.
9. Improvement of working conditions, corporate culture, and stakeholder engagement.

Source: created by the authors based on [4; 6].

Second, identifying triggers lays the foundation for more accurate forecasting and decision-making models, enhancing the enterprise's adaptability and resilience to external environmental turbulence [4; 6]. For instance, systematically monitoring regulatory and legal changes allows the enterprise to anticipate the effects of new environmental standards on cost structures, operational activities, or technological processes, enabling proactive planning of equipment upgrades, supply chain optimization, or product range adjustments. This approach reduces the likelihood of regulatory risks and ensures a more predictable development trajectory [5].

Third, it helps determine priority areas for investment, managerial focus, and strategic transformation. For example, if trigger analysis indicates a growing influence of innovation and technological factors, the enterprise can direct investments toward digitalizing production processes or modernizing equipment, thereby enhancing productivity and reducing resource intensity. Consequently, managerial decisions become more evidence-based, and strategic transformations align with the long-term goals of sustainable development [3].

Considering the outlined specifics, it should be noted that the need to regulate sustainable development triggers is driven by the dynamic nature of these factors. In particular, market, technological, environmental, and social conditions are constantly changing, which leads to transformations in the influence and significance of individual triggers. Under such conditions, a static approach to their assessment loses effectiveness, as it does not reflect the actual speed and direction of changes in the external environment. Therefore, a qualitatively new methodological approach is required, capable of supporting managerial, analytical, and strategic actions aimed at: continuous identification and evaluation of triggers; ongoing monitoring and flexible forecasting; and adaptive adjustment of managerial decisions, strategic priorities, and business processes in accordance with changes in trigger significance.

Effectively, such a methodological approach to regulating an enterprise's sustainable development triggers should create dynamic procedures capable of detecting, evaluating, monitoring, and adjusting both the quantitative and qualitative values of triggers, depending on how their timing, intensity, and direction impact the enterprise's performance outcomes (see Table 2).

This approach is grounded in the continuous analysis of sustainable development factors, the identification of changes in their intensity and significance across the previously outlined trigger groups, and the adaptive adjustment of managerial decisions in line with current trends. In this context, changes in the values of net profit (NP) and the triple effect (TEH) play a critical role. It is therefore necessary to consider the ratio between net profit (NP) and the triple effect (TEH) through the difference indicator D, where:

— $D > 0$ — profit is generated at the expense of social and environmental losses; low level of sustainability harmony;

— $D = 0$ — profit is fully "clean" from the standpoint of sustainable development;

— $D < 0$ — social and environmental effects exceed economic profit, enhancing the integrated sustainable outcome.

At the same time, the condition $D < 0$ when $NP < 0$ indicates artificial harmony, where a negative economic result conceals the social and environmental effect. Such a state may appear desirable, although only when the negative value does not arise from a net loss ($NP < 0$). In other words, this "harmony" is fictitious, as it is driven by excessive operational costs rather than by a real increase in economic performance or socio-environmental value.

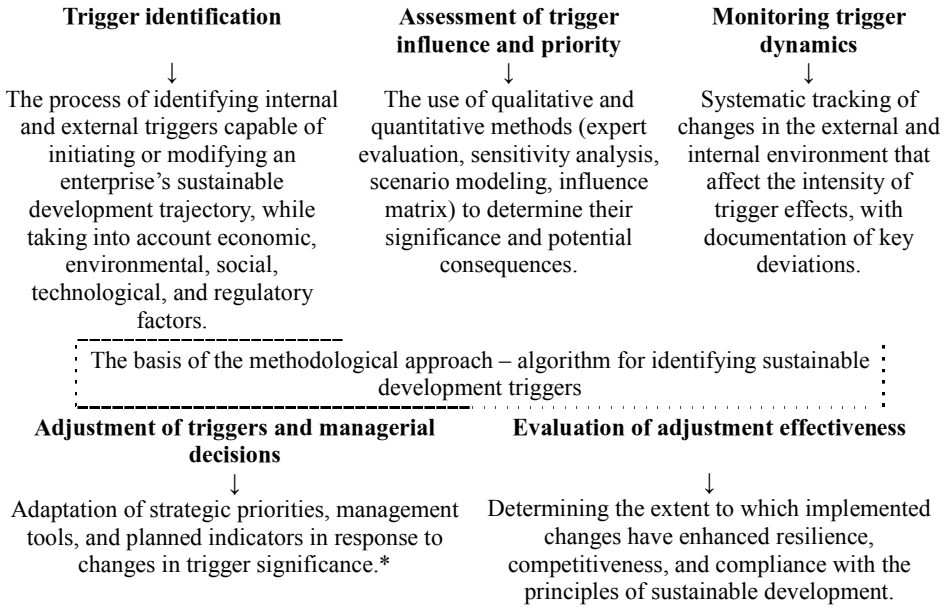

Figure 1. Methodological approach to regulating an enterprise's sustainable development triggers

Note:
* This stage ensures: the relevance of strategic priorities in accordance with market requirements and emerging trends; flexibility and timely adaptation of the management system to new challenges; and minimization of risks associated with the use of outdated tools and development models.
Source: created by the authors based on [2—3; 7].

To ensure flexibility and effectiveness, the proposed methodological approach should incorporate the following key stages (see Figure 1):

— identification of triggers using appropriate identification algorithms;

— assessment and prioritization of the identified triggers;

— monitoring of trigger dynamics;

— adjustment of triggers and managerial decisions;

— evaluation of the effectiveness of these adjustments.

It should be noted that a fundamental component of the above-described methodological approach is the algorithm for identifying sustainable development triggers, as it involves the sequential execution of the following procedures: formation of a target list of impact areas; collection of primary

Table 3. Characteristics of the algorithm for ientifying sustainable development triggers as the basis of the methodological approach to their regulation in an enterprise

Components of the algorithm	Features determining the effectiveness of the algorithm for identifying sustainable development triggers	Role of the component in regulating an enterprise's Sustainable development triggers
Formation of a target list of impact areas	Identification of the key subsystems of an enterprise's sustainable development (economic, environmental, social, technological, and managerial), within which potential triggers are most likely to manifest intensely.	Ensures the focus of analytical efforts on critically important areas, enhancing the accuracy and relevance of the identified triggers and their subsequent regulation.
Collection of primary information on external and internal environmental factors	Processing of statistical data, industry reports, regulatory documents, internal audit results, operational performance indicators, and innovation potential.	Contributes to the formation of a reliable and comprehensive database for trigger analysis, reducing the risk of overlooking important influencing factors.
Identification of potential triggers	Initial outlining of factors, events, or impulses that may initiate changes in the enterprise's development trajectory; application of SWOT and PESTEL analyses, and expert evaluation.	Allows for the systematization of potential sources of influence and the identification of key opportunities and risks for sustainable development.
Classification of triggers by groups and nature of influence	Classification of triggers by nature (economic, environmental, social, technological, managerial) and determination of their positive or destabilizing effects.	Ensures a differentiated approach to trigger management, prioritization of actions, and adaptation of impact strategies.
Verification of relevance and elimination of redundant factors	Elimination of factors with low impact or duplicated triggers, refining the final list of relevant triggers.	Increases the efficiency of the algorithm, eliminates unnecessary resources spent on redundant analyses, and optimizes managerial decisions.
Creation of a matrix of identified triggers	Summarization of results in a structured matrix indicating the area of influence, nature of the trigger, potential effect, and expected outcomes.	Provides a basis for assessing the influence of triggers, their prioritization, and the subsequent adjustment of managerial decisions.

Source: created by the authors based on [2;4; 7].

data on external and internal environmental factors; identification of potential triggers; classification of triggers by group and type of influence; verification of relevance and elimination of redundant factors; and construction of a matrix of identified triggers [2—3].

Based on these characteristics, the features of forming the basis of the methodological approach to regulating an enterprise's sustainable development triggers are presented in Table 3.

Effectively, in this context, the methodological approach to regulating an enterprise's sustainable development triggers ensures the regular adjustment of triggers, thereby guaranteeing: the relevance of the enterprise's strategic priorities (allowing alignment of strategic goals with emerging trends and requirements to minimize the gap between NP and TEH); adaptation of the management system to new challenges (enhancing the enterprise's flexibility and responsiveness to unforeseen changes); and minimization of risks associated with the use of outdated managerial approaches (through timely updating of managerial decisions, tools, and planning methods in accordance with current business conditions).

CONCLUSIONS

The study emphasizes that the dynamic nature of sustainable development factors-which encompasses ongoing changes in market, technological, environmental, and social conditions-requires the continuous management of sustainable development triggers for each individual organizational and economic unit involved in the production of goods or provision of services to satisfy consumer needs and generate profit. It is observed that a static approach is increasingly ineffective, as it fails to capture the actual pace and directions of changes in the external environment. Considering this, a methodological approach was developed to ensure the implementation of managerial, analytical, and strategic actions through:

— Continuous identification and evaluation of triggers by determining key influencing factors and assessing their significance for the enterprise;

— Ongoing monitoring and flexible forecasting-systematic tracking of changes in the external and internal environment and modeling the consequences of trigger effects;

— Adaptive adjustment of managerial decisions, strategic priorities, and business processes in accordance with changes in trigger significance.

It has been demonstrated that the proposed methodological approach to regulating an enterprise's sustainable development triggers is based on the continuous analysis of factors, detection of changes in their intensity and significance, and adaptive updating of managerial decisions according to current trends in the external and internal environment. In this context, particular attention should be given to changes in net profits (NP) and the triple effect (TEH), which may result in a negative difference between them (D).

The prospects for future research lie in improving methodologies for regulating an enterprise's sustainable development triggers, taking into account the dynamics of changes in market, technological, environmental, and social factors, as well as integrating quantitative indicators, such as net profits (NP) and the triple effect (TEH), for more precise assessment of development harmony.

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