

Article

Theoretical and Methodological Foundations of Anti-Crisis Management and Pre-Crisis Assessment Mechanisms in Industrial Enterprises

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Abstract: Industrial enterprises operate in an environment characterized by increasing market uncertainty, financial instability, technological change, and intensified competition, which raises the likelihood of crises and requires the development of effective anti-crisis management mechanisms. The purpose of this study is to improve the theoretical and methodological foundations of anti-crisis management by systematizing the factors that contribute to crisis development and proposing a mechanism for assessing the pre-crisis condition of industrial enterprises. The research applies theoretical generalization, comparative analysis, classification, system analysis, and structural-functional methods. Based on the analysis, crisis-generating factors are grouped into external and internal categories, while early warning indicators are structured into financial, production-operational, market, organizational, and managerial dimensions. A conceptual mechanism is proposed that integrates continuous monitoring, identification of early warning signals, assessment of crisis probability, determination of the crisis level, and selection of appropriate managerial responses. The proposed approach supports timely managerial decision-making and enables enterprises to shift from reactive crisis response to preventive anti-crisis management.

Keywords: anti-crisis management; industrial enterprises; crisis diagnostics; pre-crisis condition; management mechanism; early warning; managerial decision-making.

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1. Introduction

Industrial enterprises today operate in an environment where changes that once developed gradually can affect business performance within a relatively short period. Shifts in demand, interruptions in supply chains, rising production costs, technological change, stronger competition, financial constraints, and uncertainty in external markets increasingly interact with weaknesses that already exist inside an enterprise. Under such conditions, a crisis is rarely the result of a single unfavourable event. More often, it develops through the accumulation of several problems that initially appear in separate areas of activity and later begin to reinforce one another. For management, this changes the nature of the task: it is no longer sufficient to respond when financial difficulties become evident; potentially destabilising changes must be identified while corrective decisions can still be made at an acceptable cost [1–5].

Recent studies carried out in Uzbekistan provide a useful basis for understanding this problem at the enterprise level. E.V. Zarova and B.O. Tursunov [1] showed that the

financial security of textile enterprises is closely connected with differences in industrial production dynamics, which means that the assessment of enterprise stability should take sectoral and regional conditions into account. In their subsequent work, the authors developed an approach to financial security assessment for the post-pandemic digital economy and emphasised the importance of evaluating enterprise conditions through a system of interrelated indicators rather than through isolated financial ratios [2]. Research on small textile enterprises in Namangan Province also demonstrated that enterprise development is shaped by a combination of internal resources and changes in the surrounding economic environment [3]. Similar conclusions were obtained in studies of the economic stability and economic security of other industrial enterprises in Uzbekistan [4, 5]. These findings are particularly relevant to anti-crisis management because deterioration in financial or economic security often emerges before a crisis becomes visible in the form of insolvency, production decline, or loss of market position.

At the same time, the experience of recent years has shown that financial indicators alone do not fully explain the origin and development of an enterprise crisis. A company may retain acceptable liquidity and profitability in the short run while facing declining orders, increasing dependence on a limited number of suppliers, falling labour productivity, growing staff turnover, technological obsolescence, or delayed managerial responses. Conversely, a temporary deterioration in individual financial ratios does not necessarily indicate an irreversible crisis if the enterprise possesses sufficient adaptive capacity and management is able to react promptly. For this reason, contemporary anti-crisis management is increasingly considered as a continuous management process rather than a set of measures applied only after serious financial distress has occurred.

This interpretation is also evident in recent Russian research. M.S. Oborin [6] regards anti-crisis management of industrial enterprises as a systemic activity involving the diagnosis of imbalances between the internal and external environment, preventive measures, restoration of stability, and adaptation to macroeconomic instability. S.O. Egorov and M.V. Rybkina [7] place particular emphasis on risk identification and classification within anti-crisis management, since unmanaged risks may gradually transform into factors of a crisis. S.A. Dyakov et al. [8] link anti-crisis management with the economic security of an enterprise and identify declining solvency, personnel problems, insufficient technological capacity, and weaknesses in the application of management tools among the signals requiring managerial attention. These studies suggest that the crisis management system should cover not only financial recovery but also the broader managerial causes that determine the enterprise's ability to maintain stable operations.

The distinction between reactive and preventive anti-crisis management is particularly important in this respect. R.K. Ovcharenko and E.V. Khalambashyan [9] distinguish preventive, current, and reactive measures and argue that an anti-crisis model should reflect the specific operating conditions of an individual enterprise. Their approach includes monitoring, sensitivity analysis, scenario development, stress testing, and early-warning instruments at the preventive stage. E.B. Khomenko [10] likewise notes that the need for anti-crisis action should be determined through diagnostics not only of financial stability but also of other functional areas of an organisation. O.B. Skripnik [11] demonstrates the close relationship among entrepreneurial risk, anti-crisis management, and economic security, indicating that systematic risk assessment can improve the quality of managerial decisions under unstable economic conditions. Taken together, these approaches shift the focus from eliminating the consequences of an already developed crisis to recognising its symptoms and causes at an earlier stage.

A similar change can be observed in the international management literature, where crisis management is increasingly discussed together with the concept of organizational resilience. C. Hu et al. [12] found that firms' resilience capabilities are important for maintaining sustainable performance during periods of adversity. Rather than treating

resilience as an outcome that appears after a crisis, their study considers it as a combination of organisational capabilities that can be developed before and during disruptive events. G.S.C. Lopes et al. [13] approached crisis management from a strategic perspective and proposed a structured model linking preparation, managerial response, and organisational characteristics. T. Ingram, M. Wiczorek-Kosmala and K. Hlaváček [14], analysing organizational resilience in the context of the energy crisis, similarly underline that the capacity to anticipate, adapt, and reorganise activities has become an important condition for enterprise continuity.

This perspective is significant because the contemporary enterprise is exposed not only to measurable risks but also to events whose probability and consequences are difficult to determine in advance. R. Mayberry et al. [15] describe this situation through the concept of Knightian uncertainty and argue that traditional responses based primarily on previously observed patterns may be insufficient when firms face disruptive and unfamiliar changes. This reinforces the need for management systems capable of recognising weak signals, processing information from different functional areas, and adjusting decisions as the situation evolves. In practical terms, an anti-crisis mechanism should therefore be flexible enough to distinguish between a temporary deviation, an emerging pre-crisis condition, and a crisis that requires immediate intervention.

The growing literature on early-warning systems provides further support for this approach. R.J. Powell et al. [16] showed that accounting-based variables can provide useful warning information before corporate financial distress becomes fully apparent. More recent research by K. Tanaka et al. [17] demonstrates how a multi-stage early-warning system can improve the identification of insolvency risk by separating different stages of financial deterioration. These contributions have strengthened the methodological basis of financial crisis diagnostics; however, their main focus remains on accounting or insolvency-related information. For industrial enterprise management, this is only part of the problem. Production disruptions, changes in capacity utilisation, declining sales, delayed fulfilment of orders, employee turnover, loss of key customers, or slow managerial responses may precede a visible deterioration in financial statements.

Digital transformation is making such integrated diagnostics increasingly feasible. A. Cardoso et al. [18] indicate that digital capabilities, innovation, organisational learning, and resilience are interconnected with organisational performance in the post-pandemic business environment. Digital management systems allow information on finance, production, inventories, sales, human resources, and customer behaviour to be collected with greater frequency. Nevertheless, the availability of data does not itself constitute an anti-crisis mechanism. The managerial problem lies in deciding which changes should be treated as early warning signals, how these signals should be combined, and what managerial response should follow from a particular level of deterioration.

The reviewed literature therefore reveals two closely related research issues. First, anti-crisis management is increasingly recognised as a preventive and continuous management function, but many practical assessment methods still give priority to financial distress and bankruptcy indicators. Second, studies dealing with organizational resilience, risk management, economic security, and crisis diagnostics offer valuable individual instruments, yet these instruments are not always integrated into a single managerial sequence linking early signal identification, diagnosis of the pre-crisis condition, determination of crisis severity, and selection of a managerial response. This gap is especially relevant to industrial enterprises, where operational, market, organisational, and managerial disturbances can interact long before the consequences are fully reflected in financial reporting [8–18].

Accordingly, the purpose of this study is to develop the theoretical and methodological foundations of anti-crisis management by systematising the factors that contribute to crisis development and by proposing a mechanism for assessing the pre-crisis

condition of industrial enterprises. Unlike approaches that restrict crisis diagnostics primarily to financial distress, the study considers the enterprise as an interconnected managerial system and combines financial, production-operational, market, organisational, and managerial indicators within a common diagnostic framework. The study addresses three questions:

1. Which internal and external factors are most relevant to the formation of crisis conditions in industrial enterprises;
2. How can indicators of a pre-crisis condition be structured for managerial diagnostics;
3. How can the results of such diagnostics be translated into timely anti-crisis management decisions?

Addressing these questions is expected to provide a basis for moving from predominantly reactive crisis response towards a preventive management mechanism in which emerging threats are identified before they develop into a persistent deterioration of enterprise performance.

2. Materials And Methods

This study employed a conceptual and analytical research design aimed at systematizing the theoretical foundations of anti-crisis management and developing a framework for assessing the pre-crisis condition of industrial enterprises. The methodological basis combined theoretical generalization, comparative analysis, classification, system analysis, and structural-functional analysis.

The research procedure was carried out in three stages. First, recent scientific approaches to anti-crisis management, crisis diagnostics, organizational resilience, and early-warning systems were reviewed and compared. Second, the main causes and manifestations of crisis situations were classified into external and internal factors, while diagnostic indicators were grouped into five functional blocks: financial, production-operational, market, organizational, and managerial indicators. Third, the identified factors and indicators were integrated into a conceptual management mechanism that links early-warning signals with the assessment of crisis severity and the selection of appropriate managerial responses.

The proposed framework is based on the principle that crisis diagnostics should not be limited to financial distress indicators. Instead, it should reflect changes occurring simultaneously in different functional areas of an enterprise. This approach allows the pre-crisis condition to be assessed as a multidimensional management problem and provides a methodological basis for preventive anti-crisis decision-making.

3. Results and Discussion

The **3.1. Crisis formation in industrial enterprises and its managerial interpretation.** The results of the analysis show that a crisis in an industrial enterprise should not be interpreted only as a deterioration in financial performance. In practice, financial difficulties are often the visible consequence of problems that have already developed in production, sales, personnel management, supply relations, or managerial coordination. Therefore, from the perspective of anti-crisis management, the most important task is not simply to identify an existing crisis, but to recognize the combination of signals that precedes it.

The reviewed approaches [6–18] indicate that crisis development usually has a cumulative character. A decline in demand may initially reduce capacity utilization; lower

utilization increases unit costs; higher costs weaken profitability and cash flow; this, in turn, limits investment and reduces the ability of management to respond to technological or market changes. Thus, separate deviations may gradually form a chain of mutually reinforcing problems. This finding supports the need to consider the enterprise as an interconnected management system rather than to diagnose crisis conditions through a single group of financial ratios.

For practical purposes, the factors that influence crisis formation can be divided into two broad groups: external and internal. External factors are largely beyond the direct control of the enterprise, whereas internal factors can be influenced by managerial decisions. The distinction is important because anti-crisis measures should differ depending on the origin and strength of the emerging threat.

Table 1. Main crisis factors, early warning signals and managerial responses*

Factor group	Typical factors	Early warning signals	Possible managerial response
Market	declining demand, stronger competition, changes in customer preferences	falling sales, loss of customers, decreasing order portfolio	market diversification, revision of sales strategy
Financial	rising debt burden, liquidity shortage, increasing costs	negative cash flow, delayed payments, declining profitability	cash-flow control, cost restructuring, debt management
Production	equipment downtime, inefficient capacity use, technological lag	higher unit costs, increasing defects, lower output	process optimization, maintenance and technological renewal
Supply	dependence on limited suppliers, price volatility, logistical disruptions	delivery delays, inventory shortages, rising input costs	supplier diversification, safety stocks, contract revision
Organizational	staff turnover, weak coordination, unclear responsibility	missed deadlines, falling productivity, internal conflicts	redistribution of responsibilities, process redesign
Managerial	delayed decisions, inadequate monitoring, weak risk assessment	repeated deviations from plans, slow response to changes	early-warning monitoring, scenario analysis, preventive decisions

**Source: developed by the authors based on the synthesis of [6–18].*

The classification demonstrates that the same crisis may originate from different functional areas. Consequently, a decline in profitability should not automatically be treated as the primary cause of a crisis. It may instead reflect earlier operational or market problems. From a managerial perspective, this distinction determines whether the enterprise requires financial restructuring, operational intervention, market repositioning, or a combination of measures.

3.2. From stable operation to crisis: stages and early warning signals. The analysis made it possible to distinguish several stages in the development of a crisis. Their main difference lies not only in the severity of deterioration but also in the amount of managerial freedom available to the enterprise. At an early stage, management usually has several

relatively low-cost alternatives. As the crisis deepens, the range of possible decisions becomes narrower and the cost of corrective action rises.



Figure 1. Development of a crisis and corresponding managerial response

Source: developed by the authors.

This sequence illustrates why the pre-crisis stage is particularly important. If management reacts only after liquidity, solvency or production indicators have reached critical values, anti-crisis management becomes predominantly reactive. By contrast, identifying a combination of weak but persistent signals allows corrective measures to be implemented before the enterprise loses financial and operational flexibility.

The findings therefore suggest that crisis diagnostics should be based on at least five groups of indicators: financial, production-operational, market, organizational, and managerial. Financial indicators remain necessary, but they should be interpreted together with changes in orders, capacity utilization, production costs, personnel stability, decision-making speed, and the fulfilment of operating plans.

3.3. Statistical context: the case of Uzbekistan's textile industry. The relevance of a multidimensional approach to crisis diagnostics can be illustrated by recent developments in Uzbekistan's textile industry. The sector continues to play an important role in national industrial production and foreign trade; however, recent indicators do not move uniformly. Growth in production has occurred alongside weaker export performance, while the composition of exports has shifted toward finished products. Such a combination makes the sector particularly suitable for demonstrating why enterprise stability cannot be assessed on the basis of a single indicator.

According to the National Statistics Committee, textile production in January–August 2025 reached UZS 58.5 trillion, representing an increase of 6.3% compared with the corresponding period of 2024. Textile products accounted for 8.9% of total industrial production during this period [19]. The corresponding January–August 2024 production volume is estimated at approximately UZS 55.0 trillion, based on the reported year-on-year growth rate. At the same time, annual textile exports decreased from approximately USD 2.87 billion in 2024 to USD 2.63 billion in 2025, or by 8.2% [20].

Table 2. Selected indicators of Uzbekistan's textile industry

Indicator	2024	2025	Change / interpretation
Textile exports, USD billion	2.87	2.63	-8.2%
Share of textile products in total exports, %	10.5	7.8	decline in relative export contribution
Share of finished textile products in textile exports, %	39.2	54.3	+15.1 percentage points; shift toward higher value-added products
Share of yarn in textile exports, %	43.2	27.0	-16.2 percentage points; declining dominance of yarn exports
Textile production, UZS trillion, January–August	≈55.0*	58.5	+6.3% year-on-year

Sources: National Statistics Committee of the Republic of Uzbekistan [19, 20]; 2024 export structure based on official statistical data reported by TextileExpo Uzbekistan [21].

**Calculated from the officially reported 6.3% year-on-year increase in January–August 2025.*

The figures reveal an important feature of the sector's recent development. The decline in the total value of textile exports should not, by itself, be interpreted as evidence of a sector-wide crisis. In 2025, finished textile products accounted for 54.3% of textile exports, compared with 39.2% in 2024, while the share of yarn fell from 43.2% to 27.0% [20, 21]. Thus, the decline in aggregate export value occurred simultaneously with a substantial change in the export structure. From a managerial perspective, this distinction is important: deterioration in one aggregate indicator may coexist with structural changes that strengthen the position of higher value-added production.

At the same time, the sector continues to face risks that are directly relevant to anti-crisis management. At the official review of the textile industry's 2025 performance, several constraints on sustainable development were identified, including partial dependence on imported cotton fiber, high financing costs, rising logistics expenses in foreign markets, and shortages of qualified specialists in certain areas [22]. These problems correspond closely to the supply, financial, market, and organizational risk categories identified in the proposed diagnostic framework. The measures announced for 2026 also demonstrate the practical relevance of differentiated anti-crisis intervention: USD 200 million in concessional financing is planned to replenish enterprises' working capital, 138 enterprises are to undergo financial rehabilitation, and 100 new enterprises are expected to be involved in export activities [22].

The scale of the sector further strengthens the need for systematic monitoring. As of 1 June 2026, Uzbekistan had 62.0 thousand active industrial enterprises, including 3.8 thousand textile manufacturing enterprises and 6.2 thousand apparel manufacturing enterprises, representing 6.1% and 10.1% of all industrial enterprises, respectively [23]. In January–May 2026, textiles, apparel, leather and leather goods accounted for 14.2% of manufacturing output [23]. These data indicate that the sector is not only export-oriented but also structurally significant within Uzbekistan's manufacturing base.

The official assessment of the sector also shows that anti-crisis management should not be reduced to financial recovery alone. Alongside financial rehabilitation, measures planned for 2026 include wider implementation of international certification, the introduction of international financial reporting standards, expansion of ERP systems and artificial intelligence technologies, and stronger interaction with international sourcing companies and major brands. These measures address different dimensions of enterprise resilience, including financial stability, operational efficiency, managerial transparency, market access, and adaptability.

Overall, the statistical evidence supports the central methodological argument of this study. An increase or decrease in a single indicator cannot be equated automatically with stability or crisis. Uzbekistan's textile industry simultaneously demonstrates production growth, declining aggregate export value, a shift toward finished products, continued exposure to financing and logistics constraints, and targeted measures for financial rehabilitation and modernization. A more reliable pre-crisis assessment should therefore evaluate the direction, persistence, and interaction of financial, production-operational, market, organizational, and managerial indicators, rather than relying on isolated changes in output or exports.

3.4. Proposed mechanism for assessing the pre-crisis condition. Based on the theoretical synthesis and the identified relationships, a conceptual mechanism for pre-crisis assessment was developed. Its central principle is that monitoring should be directly linked to managerial action. Diagnostics has limited practical value if the results do not lead to a differentiated management response.

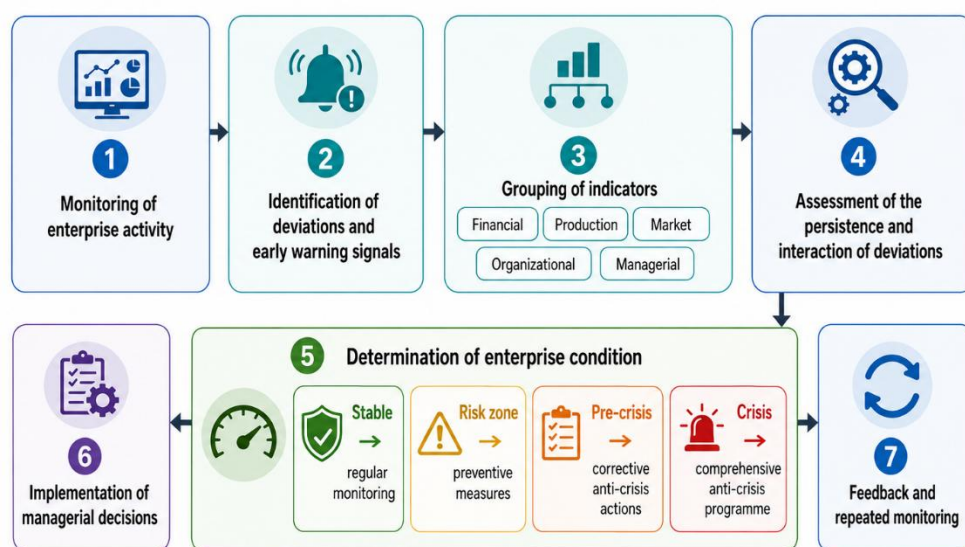


Figure 2. Proposed mechanism for pre-crisis assessment and anti-crisis decision-making

Source: developed by the authors.

The proposed mechanism differs from purely financial diagnostics in two respects. First, it treats the appearance of a crisis as a multidimensional process. Second, it connects the diagnostic result with the type of managerial response. An isolated short-term deviation does not necessarily require an anti-crisis programme; however, simultaneous

and persistent deterioration across several blocks should increase the level of managerial intervention.

The practical value of this approach lies in the possibility of moving from a binary assessment — “crisis/no crisis” — to a staged assessment of the enterprise condition. Management can therefore distinguish between normal fluctuations, an emerging risk zone, a pre-crisis condition and an already developed crisis. Such differentiation is particularly relevant for industrial enterprises because production cycles, inventories, contractual obligations and technological processes may cause managerial problems to appear considerably earlier than their consequences become visible in annual financial statements.

At this stage, the proposed classification is conceptual; quantitative threshold values for individual crisis levels require subsequent empirical calibration using enterprise-level data.

Overall, the results confirm that an effective anti-crisis management system should combine early detection, multidimensional diagnostics and differentiated managerial response. The statistical example of Uzbekistan’s textile sector also demonstrates that apparently contradictory trends — such as growing production alongside declining export value — require interpretation rather than mechanical classification. Therefore, the quality of anti-crisis management depends not only on the availability of indicators but also on management’s ability to understand their interaction and respond before separate deviations develop into a systemic crisis.

5. Conclusions

The study confirms that anti-crisis management in industrial enterprises should be viewed as a continuous and preventive management process rather than as a set of measures applied only after serious financial difficulties have emerged. Crisis development is usually multidimensional and results from the interaction of market, financial, production, organizational, supply-related, and managerial factors. For this reason, the assessment of an enterprise’s condition cannot be limited to individual financial ratios.

The analysis made it possible to systematize early warning indicators into five interrelated groups: financial, production-operational, market, organizational, and managerial indicators. On this basis, a conceptual mechanism for assessing the pre-crisis condition of industrial enterprises was proposed. The mechanism combines continuous monitoring, identification of deviations, classification of warning signals, assessment of their persistence and interaction, determination of the enterprise’s condition, and selection of an appropriate managerial response.

The statistical evidence from Uzbekistan’s textile industry also shows that changes in individual indicators may have different economic meanings. Growth in production may occur simultaneously with a decline in export value or changes in export structure. Therefore, managerial conclusions should be based on a comprehensive interpretation of several indicators rather than on isolated trends.

The practical significance of the proposed approach lies in enabling managers to distinguish between normal fluctuations, an emerging risk zone, a pre-crisis condition, and a developed crisis. This creates a basis for timely preventive measures and allows anti-crisis decisions to be differentiated according to the severity and source of emerging

problems. The proposed framework can subsequently be adapted and empirically tested using enterprise-level data from Uzbekistan's textile industry.

REFERENCES

- [1] E. V. Zarova and B. O. Tursunov, "Regional features of industrial production dynamics in the research of textile enterprises' financial security in Uzbekistan," *Vlákna a Textil*, vol. 28, no. 1, pp. 108–115, 2021. [Online]. Available: http://vat.ft.tul.cz/2021/1/VaT_2021_1_14.pdf
- [2] E. Zarova and B. Tursunov, "Methodology for assessing the financial security of enterprises in the post-pandemic period of digital economy," in *Proc. 6th Int. Conf. Future Netw. Distrib. Syst.*, 2022, pp. 110–115. doi: 10.1145/3584202.3584219.
- [3] B. O. Tursunov et al., "Econometric assessment of factors affecting the development of small textile enterprises in Namangan Province under the conditions of development of the digital economy," in *Proc. ICFNDS 2023*, 2023, pp. 252–259. doi: 10.1145/3644713.3644746.
- [4] A. U. Burkhanov, B. O. Tursunov, K. F. Uktamov, and B. Usmonov, "Econometric analysis of factors affecting economic stability of chemical industry enterprises in digital era: In case of Uzbekistan," in *ACM Int. Conf. Proc. Ser.*, 2022, pp. 484–490. doi: 10.1145/3584202.3584274.
- [5] K. F. Uktamov, "Improving the method of assessing the level of economic security of industrial enterprises under the transformation of the digital economy," in *Proc. 6th Int. Conf. Future Netw. Distrib. Syst.*, 2022. doi: 10.1145/3584202.3584253.
- [6] M. S. Oborin, "Anti-crisis measures to support Russian industry" (in Russian), *Uchenye Zapiski Krymskogo Federalnogo Universiteta imeni V. I. Vernadskogo. Ekonomika i Upravlenie*, vol. 8, no. 74, pp. 56–64, 2022.
- [7] S. O. Egorov and M. V. Rybkina, "Risks as an object of enterprise anti-crisis management" (in Russian), *Simvol Nauki*, no. 6-1, pp. 35–38, 2022.
- [8] S. A. Dyakov, E. A. Gorbenko, Yu. A. Zhivitsyna, and I. A. Plyasovitsa, "Anti-crisis management as a mechanism for ensuring enterprise economic security" (in Russian), *Vestnik Akademii Znaniy*, no. 2 (55), pp. 426–431, 2023.
- [9] R. K. Ovcharenko and E. V. Khalambashyan, "Anti-crisis management of domestic enterprises under uncertainty" (in Russian), *Gosudarstvennoe i Munitsipalnoe Upravlenie. Uchenye Zapiski*, no. 1, pp. 67–75, 2024. doi: 10.22394/2079-1690-2024-1-1-67-75.
- [10] E. B. Khomenko, "Anti-crisis management of an organization: From theoretical provisions to practical actions" (in Russian), *Vestnik Udmurtskogo Universiteta. Seriya Ekonomika i Pravo*, vol. 34, no. 6, pp. 1062–1068, 2024.
- [11] O. B. Skripnik, "Methodology for assessing the impact of entrepreneurial risks on economic security in enterprise anti-crisis management" (in Russian), *Kreativnaya Ekonomika*, vol. 17, no. 5, 2023.
- [12] C. Hu, K. H. Yun, Z. Su, and C. Xi, "Effective crisis management during adversity: Organizing resilience capabilities of firms and sustainable performance during COVID-19," *Sustainability*, vol. 14, no. 20, art. 13664, 2022. doi: 10.3390/su142013664.
- [13] G. S. C. Lopes, C. R. Rossetto, M. R. Oliveira, J. O. Sausen, and R. A. Rocha, "The structure of a strategic crisis management model: The context and characteristics of a Brazilian community college," *Int. J. Disaster Risk Reduct.*, vol. 87, art. 103555, 2023. doi: 10.1016/j.ijdrr.2023.103555.
- [14] T. Ingram, M. Wiczorek-Kosmala, and K. Hlaváček, "Organizational resilience as a response to the energy crisis: Systematic literature review," *Energies*, vol. 16, no. 2, art. 702, 2023. doi: 10.3390/en16020702.
- [15] R. Mayberry, J. S. Boles, N. Donthu, and J. T. Lucke, "Crisis response in an era of Knightian uncertainty," *J. Bus. Res.*, vol. 170, art. 114288, 2024. doi: 10.1016/j.jbusres.2023.114288.
- [16] R. J. Powell, D. V. Dinh, N. T. Vu, and D. H. Vo, "Accounting-based variables as an early warning indicator of financial distress in crisis and non-crisis periods," *Int. J. Finance Econ.*, vol. 29, no. 4, pp. 4105–4124, 2024. doi: 10.1002/ijfe.2864.
- [17] K. Tanaka, T. Higashide, T. Kinkyō, and S. Hamori, "A multi-stage financial distress early warning system: Analyzing corporate insolvency with random forest," *J. Risk Financ. Manag.*, vol. 18, no. 4, art. 195, 2025. doi: 10.3390/jrfm18040195.

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- [18] A. Cardoso, J. Figueiredo, I. Oliveira, and M. Pocinho, "From crisis to opportunity: Digital transformation, digital business models, and organizational resilience in the post-pandemic era," *Adm. Sci.*, vol. 15, no. 6, art. 193, 2025. doi: 10.3390/admsci15060193.
 - [19] National Statistics Committee of the Republic of Uzbekistan, *Textile Products Worth 58.5 Trillion Soums Were Produced in 8 Months*. Tashkent, Uzbekistan: National Statistics Committee, 2025.
 - [20] National Statistics Committee of the Republic of Uzbekistan, *Foreign Trade Turnover of the Republic of Uzbekistan: January–December 2025*. Tashkent, Uzbekistan: National Statistics Committee, 2026.
 - [21] TextileExpo Uzbekistan, "In 2024, textile production in Uzbekistan increased, but exports decreased by 6.7%," based on data of the Statistics Agency of the Republic of Uzbekistan, 2025.
 - [22] President of the Republic of Uzbekistan, "This year's results in textile industry reviewed and priority tasks for the future set," Dec. 23, 2025. [Online]. Available: <https://president.uz/en/lists/view/8828>
 - [23] National Statistics Committee of the Republic of Uzbekistan, *Industrial Production in the Republic of Uzbekistan: January–May 2026*. Tashkent, Uzbekistan: Press Release, Jun. 30, 2026.