




OPERATIONAL RISK MANAGEMENT AS A DRIVER OF BUSINESS SUSTAINABILITY

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ABSTRACT

In the context of increased competition, digital transformation, and uncertainty, sustainable development is a strategic objective for businesses. Employee well-being, ethical management, and customer and stakeholder trust, as the social aspect, can be undermined by unaddressed operational risks. Inefficient use of resources, environmental incidents, and failure to comply with environmental standards, as environmental aspects, pose risks that impact long-term stability and market position. An effective operational risk management system increases management transparency, strengthens accountability and the distribution of responsibilities, and improves the internal control system, thereby enhancing the governance component. The purpose of this study is to determine how operational risk management can support sustainable business development and contribute to strengthening competitiveness. The research combines theoretical analysis with quantitative approaches, including the evaluation of operational risks through key risk indicators and their relationship with sustainability metrics. The results indicate that embedding operational risk management into core business processes increases organizational resilience and lowers exposure to disruptions. The article may be useful for managers, risk specialists, researchers, and policymakers.

1 INTRODUCTION

In the context of the modern economy, which is characterized by high instability, the introduction of digital technologies and increased global competition, completely new challenges for the functioning and development of enterprises are emerging. In the context of such challenges, traditional approaches to enterprise management are insufficient, since they do not cover all aspects

and require proactive actions. At the same time, sustainable development is acquiring the role of not only a modern trend, but a strategically necessary point for organizations that seek to maintain and develop their competitiveness and long-term viability. The practice of sustainable development, which integrates Environmental, Social, and Governance aspects of enterprise activity, has received wide recognition in recent decades both in the scientific community and in

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practice. Due to a holistic view of business development prospects, this topic remains relevant. The social component of sustainable development plays an important role in modern management. Creating conditions for employees' well-being, fostering a mature corporate culture that fully adheres to principles of ethics and fairness, and ensuring the trust of customers, partners, and investors are fundamental to sustaining organizational competitiveness. At the same time, the sustainability of this area directly depends on a correctly constructed system of operational risk management, since personnel errors, insufficient qualifications, ineffective management decisions, or defective communication lead to a decrease in the level of the company's adaptability to changes in the external environment. Thus, the aspect of the social factor of sustainable development is inextricably linked with risk management, which forms the basis for the stable, uninterrupted functioning of the enterprise. At the same time, the environmental aspect of sustainable development is no less significant, due to global climate change, the trend of responsible use of resources, and the tightening of environmental legislation. Risks arising from the irrational use of energy resources, environmental pollution, or non-compliance with environmental standards lead to significant financial losses, deterioration of reputation, and, ultimately, to a decrease in the competitiveness of the organization. Systematic operational risk management in this area is becoming an important tool that allows minimizing the likelihood and impact of environmental incidents and, as a result, strengthening the long-term viability of the enterprise.

In analyzing the UN Sustainable Development Goals (SDGs), it is important to highlight the link between enterprise-level operational risk management and the achievement of strategic global objectives. Systematic risk management supports the realization of goals such as responsible consumption and production (SDG 12), decent work and economic growth (SDG 8), and innovation and industrialization (SDG 9). In this context, enterprises are viewed not as isolated units but as integral parts of a global system. Operational risk management thus functions not only as a safeguard against losses but also as a strategic driver of business development, capable of creating new competitive advantages and fostering growth.

2 LITERATURE REVIEW

Classic risk management studies, presented by Michel Crouhy, Dan Galai, and Robert Mark in *The Essentials of Risk Management* (2014), and by Paul Hopkin in *Fundamentals of Risk Management* (2018), emphasize the need for a systematic approach to identifying, assessing, and mitigating risks as the foundation of organizational resilience. While these approaches were initially focused on loss prevention, they laid the foundation for the subsequent integration of risk management into strategic management.

The development of this concept is also linked to the work of Robert S. Kaplan and Anette Mikes (2012) in *Managing Risks: A New Framework*, which identifies various risk categories and emphasizes their impact on the quality of management decisions and the long-term sustainability of companies. Within the framework of the Enterprise Risk Management (ERM) concept, research by Mark L. Frigo and Richard J. Anderson (2014) in *Strategic Risk Management* examines risk management as an element of strategic and corporate governance, directly linked to the governance (G) component of ESG.

From a sustainable development perspective, operational risk management (ORM) plays a key role in ensuring business continuity, protecting stakeholder interests, and enhancing trust in the organization. Terje Aven (2015) notes in *Risk Analysis* that risk analysis is the foundation of decision-making under uncertainty, while Nicholas Taleb (2010) in *The Black Swan* emphasizes the importance of considering rare but highly disruptive events that can significantly impact business resilience.

Despite the significant contribution of existing research to understanding the role of operational risk management, a gap remains in the scientific literature between theoretical approaches and their practical implementation in the context of sustainable development. Most studies examine ORM either as a loss minimization tool or as an element of an overall ERM system, but insufficient attention has been paid to its role as an independent driver of business resilience.

3 DATA AND METHODOLOGY

This research takes a conceptual-analytical perspective and seeks to provide a theoretical

foundation for the relationship between operational risk management and sustainable organizational development. System and process approaches are used as a methodological basis, allowing us to consider operational risk not as an isolated phenomenon, but as an element of the entire corporate management system. A theoretical analysis and synthesis of scientific sources was carried out, and enterprises from various industries were considered to build a relationship between key risk indicators and key indicators of business sustainability. In addition, corporate social programs and environmental initiatives were analyzed, which made it possible to establish a relationship between operational risk management, the implementation of the ESG initiatives, and the achievement of strategic goals of sustainable development. Thus, this methodological approach made it possible to comprehensively consider the problem and determine practical mechanisms and tools for increasing the competitiveness of enterprises by integrating operational risk management into the development strategy.

4 RESULTS AND DISCUSSIONS

The sustainability of business processes, which determines the ability of enterprises to maintain business continuity in the face of external shocks and uncertainty, is constantly influenced by

operational risks. Their manifestations vary: from incorrect process design to their execution, various technological failures, violation of the regulatory framework, and crises caused by external factors. At the same time, process risks arise in the event of duplication of functions, inefficient allocation of resources, or lack of standardization of processes, which ultimately leads to increased costs. In the context of digitalization, technological and information risks arise from failures of IT systems, breakdowns of equipment used in activities, and, as a result, are the reason for the suspension of key operations. Cyberattacks and data distortions are also an important factor, which is especially critical in digitalization. Human risks expressed in personnel errors, insufficient qualifications, or deliberate actions (fraud) also affect the sustainability of business processes and directly depend on the corporate culture. It is worth noting that external events can also paralyze the activities of an enterprise, for example, in the context of a pandemic, natural disasters, or supply chain disruptions. At the same time, in the event of non-compliance with regulatory requirements, legal and compliance risks arise, expressed in fines and sanctions, which not only lead to direct losses but also undermine the company's image. Figure 1 schematically shows operational risk factors and their impact on the duration of business processes.

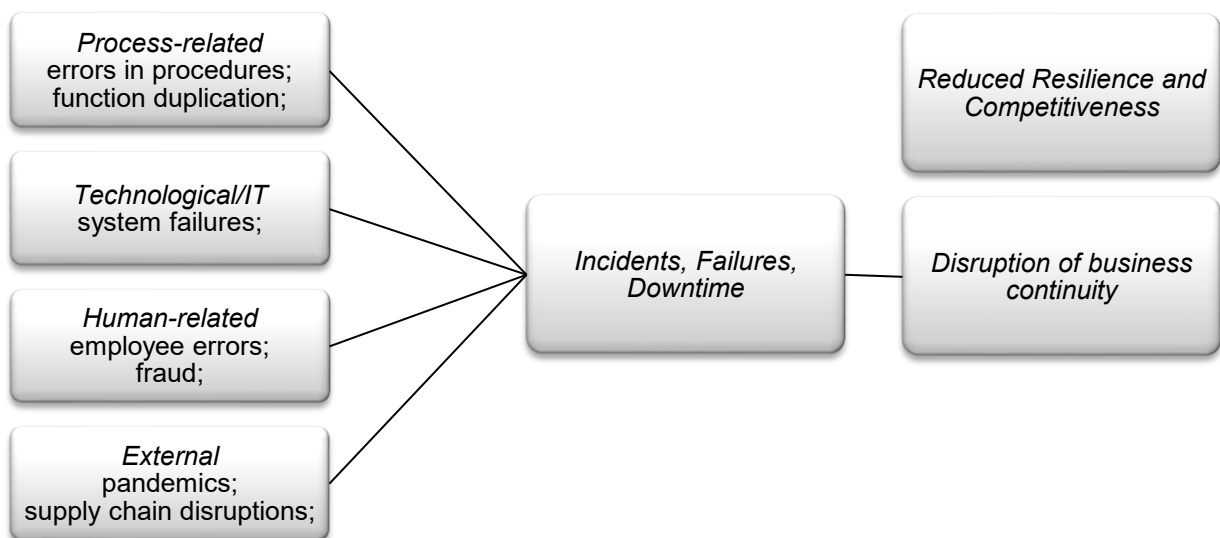


Figure1. Sources of operational risks and their impact on business process resilience

Source: developed by the author

It is important to note that the impact of operational risks on business processes is multiplicative. Thus, one incident can lead to a whole set of other failures in related systems, increasing the impact and scale of damage. For example, failure of an information system in a financial institution can not only stop transaction processing but also cause a massive outflow of customers and regulatory intervention. All this will ultimately lead to an increase in reputational risks. The COVID-19 pandemic has demonstrated that enterprises that did not have continuity plans faced greater losses: disruptions in logistics, a drop in production volumes, and labor shortages. Thus, an urgent restructuring of the business model was necessary. This provides grounds for threatening operational risk management not as an isolated process, but as a complex system of business sustainability. Accordingly, mature operational risk management systems that provide regular staff training, investments in cybersecurity, and the integration of continuity plans into the enterprise development strategy can significantly reduce the frequency and impact of incidents, as well as strengthen the trust of stakeholders.

4.1 Social aspects of sustainable development and operational risk management

Operational risk management is closely linked to the social aspect of sustainable development, as employees and stakeholders enable businesses to maintain business continuity and adapt to challenges. The findings of this study suggest that one of the most important tools for reducing the vulnerability of business processes is corporate social programs, as they affect the quality of human capital and the level of staff engagement, which plays a very important role in ensuring the effective operation of the organization.

One aspect of social initiatives is caring for the health of employees. According to a study by Deloitte (2024), the costs of UK employers associated with the consequences of poor mental health of staff amount to about £51 billion annually. At the same time, it is noted that every pound invested in supporting employee well-being can bring the employer up to £4.70 in return due to increased productivity and reduced turnover (Deloitte, 2024). Using this data, we can conclude

that investments in corporate social programs directly reduce operational risks associated with labor absence, errors, and reduced quality of work. At the same time, social initiatives also affect the trust of customers and investors. According to the results of the Edelman Trust Barometer (2023), business turned out to be a unit that most respondents assess as ethical: 62% of study participants trust companies more than governments, the media, or NGOs (Edelman, 2023). Based on this, it can be concluded that the socially responsible policy of organizations strengthens the image, reduces reputational risks, and forms long-term relationships with stakeholders. The report of the European Banking Authority (EBA, 2023) notes that operational resilience remains a priority: significant losses from the implementation of operational risk incidents force banks to build enhanced internal controls, train employees, and develop a risk-oriented culture of behavior. Thus, the banking sector is also susceptible to and confirms the relationship between social responsibility, operational risk management, and resilience. The evidence presented supports the view that human capital and social corporate programs for its development are part of a comprehensive risk management model, which ultimately leads to increased competitiveness of enterprises and increased sustainable development. Table 1 provides examples of the applied effect of social programs on reducing operational risks and increasing sustainability in various industries.

The study contends that operational risk management and sustainable development are in a two-way cause-and-effect relationship. On the one hand, social initiatives help reduce risks (according to the case studies presented in the table), and on the other hand, the operational risk management system itself requires the implementation of corporate social programs. This approach is reflected in international standards (ISO 31000, recommendations of the Basel Committee on Banking Supervision), which link the health and safety of personnel, human resource management, and operational risks. Thus, the integration of labor protection programs, employee training, and discrimination prevention into the control system or risk management system is a mandatory tool for reducing risks.

Table 1. Corporate and social programs' impact on operational risks and enhancing resilience

Sector/Source	Social Program or Initiative	Employee Effect	Impact on Risks and Resilience
Banking sector (EBA, 2023)	Regular staff training on operational risk, compliance, and cybersecurity	Improved competence; reduction of errors in operations	Internal incidents decreased by 25–30% in banks with systematic programs compared to those with ad-hoc training (EBA, 2023)
Manufacturing sector (Deloitte Insights, 2022)	Health & Safety programs, regular training, psychological well-being support	Employee turnover reduced by 18%, higher satisfaction	Workplace incidents reduced by nearly 40%, strengthening process continuity (Deloitte, 2022)
IT / Technology sector (Edelman Trust Barometer, 2023)	Diversity & inclusion programs, flexible work, work-life balance support	Increased employee engagement and loyalty	Reduction in HR-related incidents and reputational risks; 60% of consumers prefer companies with visible social responsibility

Source: developed by the author

The hypothesis of the relationship between operational risk management and sustainable development within the framework of the study is also confirmed by the fact that a mature operational risk management system assumes that companies have business continuity plans, and these plans cannot be implemented in the event of a crisis without social elements that

involve training personnel in actions, psychological stability of employees, and programs for retaining personnel. These results point to the conclusion that operational risk management tools or processes themselves are transformed into social programs necessary to ensure sustainability.

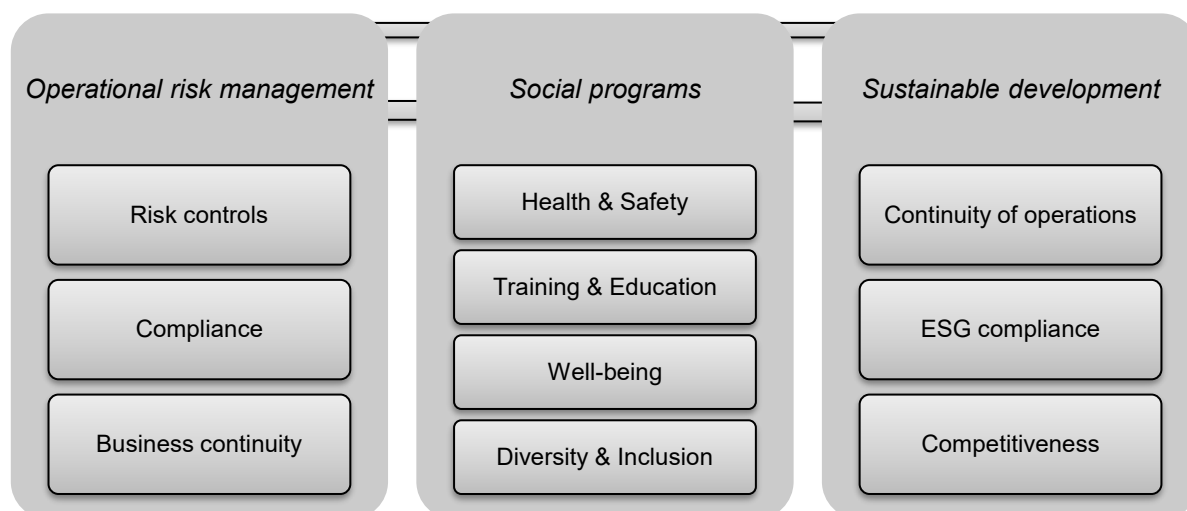


Figure 2. Bidirectional relationship between ORM, social programs, and sustainable development
Source: developed by the author

4.2 Operational risk management as a driver of environmental sustainability

Ensuring the environmental sustainability of enterprises is also carried out through the use of modern risk management methodologies. When considering the environmental aspect of sustainable development, the operational risk management system becomes a factor that forms the framework for the implementation of

environmentally responsible practices and ensures their integration into the company's strategy.

Methods of controlling the consumption of energy, water, and raw materials are assessed as a factor in reducing operational risks: supply disruptions, rising resource prices, and dependence on external suppliers can lead to interruption of activities. A risk management system that includes the identification of such threats encourages

organizations to switch to more energy-efficient technologies, optimize resource use, and implement the principles of "green" production. In these conditions, risk management contributes to the transition to a cyclical economy and increases the company's adaptability in the face of environmental and market changes. Taken together, these suggest that operational risks are directly related to the likelihood of accidents, leaks, pollution, or non-compliance with environmental legislation. At the same time, implementation of environmental audit procedures, regular equipment maintenance, and personnel training, including behavior in crisis situations, can help to reduce the inherent risks. Risk management in the context of international sustainable development standards provides a methodological basis for meeting requirements, from assessing the likelihood of environmental threats to developing measures to prevent them. The ISO 14 0001 standard is aimed at creating systems for managing a company's impact on the environment, which requires systematic risk analysis and continuous improvement.

The implementation of energy efficiency programs allows enterprises to reduce costs by 10-25%, according to the report of the International Energy Agency (IEA, 2022). At the same time, it helps reduce dependence on external suppliers of energy and raw materials. These results lead to the conclusion that this is directly related to

operational risk management, since the transition to renewable energy sources reduces the likelihood of interruptions in the organization's activities in the context of energy crises.

The results of major disasters demonstrate the importance and necessity of risk management systems in preventing environmental risks. For example, the BP Deepwater Horizon accident (2010) brought more than \$ 65 billion in direct and indirect costs, including fines and compensation. To prevent such incidents, companies use monitoring and preventive maintenance systems. This mechanism allows a reduction in environmental incidents. According to the European Commission, companies that have implemented ISO 14 001 and integrated the principles of the EU Green Deal are better positioned to attract investment. What emerges from analysis of these cases is that operational risk management becomes a driver of environmental sustainability through the efficient use of resources, incident prevention, and compliance with standards.

4.3 Methods of operational risk management as a factor in sustainable development

The process of operational risk management involves a cyclical approach, which includes key stages: risk identification, assessment, monitoring, response, and control.

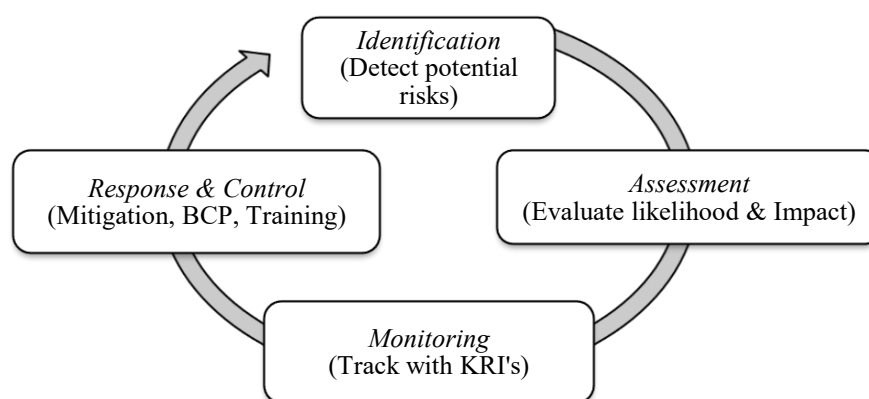


Figure 3. Risk management process cycle

Source: Developed by the author based on information from the source European Banking Authority. "Risk assessment of the European banking system"(2023).

As important tools, developing and continuously or periodically monitoring key risk indicators allow us to predict threats before they materialize. For example, an increase in staff turnover can be an

indicator of a decrease in employee satisfaction and, as a result, a potential increase in errors. At the same time, an increase in energy consumption signals the inefficiency of processes. Thus, key

risk indicators allow us to analyze the ESG components and ensure the preservation of operational security and the sustainability of the

organization. Table 2 shows examples of the correlation of KRI and some indicators of enterprise sustainability.

Table 2. *Correlation between KRIs and Sustainability indicators*

KRI	Sustainability KPI	Analytical Link/Correlation
Employee turnover (%)	Employee satisfaction index / ESG "S"	High turnover → lower engagement → reduced resilience;
Average energy consumption per unit of output	Energy efficiency / CO2 emissions	Rising energy consumption directly correlates with higher carbon footprint;
Number of downtimes (hours)	Business continuity index	More downtime → weaker resilience;
Number of cybersecurity incidents	Customer trust index / ESG "S"	Cyber incidents undermine trust;
Number of compliances / environmental violations	ISO 14001 / EU Green Deal compliance	Direct negative correlation: more violations → lower sustainability rating, higher regulatory risk, restricted access to ESG financing.

Source: developed by the author

Also, this research takes the view that in order to implement KRI for sustainable development, it is necessary to integrate environmental, social, and governance factors into it. Thus, simultaneously with measuring equipment downtime or the number of internal incidents, it is necessary to track the level of energy consumption per unit of production, the volume of CO2 emissions, or other resources used. This, in turn, will create a direct link between the risk management system and the organization's sustainable development strategy. It is worth noting that each indicator must be measurable, specific, and tied to threshold values. For example, the threshold value of the "red" zone for the employee turnover indicator can be set at 20% per year. Exceeding it will signal threats to sustainability as a result of increased social risks. It is important to note that it is necessary to monitor the indicator considering its cumulative nature throughout the year. The dynamics of energy consumption or an increase in the number of violations of environmental standards also become an indicator of future reputational or regulatory risks.

It is the position of this paper that for successful performance of key risk indicators, they must be integrated into corporate dashboards and

monitoring systems. This, in turn, will allow monitoring indicators in real time and will help make timely management decisions. This approach ensures transparency in decision-making and allows us to adjust the strategy depending on possible threats. At the same time, it is necessary to conduct regular reporting on the level of key risk indicators.

Another tool of operational risk management is crisis recovery plans that help minimize the impact of incidents and ensure the sustainability of the organization. A company's continuity plan is a set of measures that will ensure the continuity of critical functions during and after incidents. The process of forming a continuity plan consists of several stages: analyzing the impact on the business, identifying critical processes, establishing acceptable downtime, and determining the amount of data that can be lost without critical damage. Within the framework of sustainable development, BCP is important, as it ensures the continuity of the enterprise's social obligations - protecting the health of employees, preserving jobs, and maintaining the confidence of customers and investors in crisis situations.

A recovery plan, being part of a continuity plan, focuses on restoring resources after a crisis. This

may include data backup, the availability of alternative data centers, etc. What emerges from this analysis is that to maintain sustainable development, DRP is very important because, in the context of digitalization, information security and data integrity are not only an operational necessity, but also a social aspect, since customers associate trust in a company with their ability to protect information.

The present study maintains that the use of operational risk management methods not only helps reduce the likelihood of incidents but also ensures compliance with the sustainable development strategy, which is based on ESG principles. In order for the operational risk

management process to be effective and efficient, it is necessary to create a system of measures that will ensure a comprehensive approach to risk management. Particular attention should be paid to the development and monitoring of key risk indicators that are directly related to sustainability indicators, the integration of risk mapping into planning, stress testing, and scenario analysis. The development of continuity and recovery plans after crises, their regular testing, and the formation of a risk culture through employee training also play an important role. Table 3 presents practical recommendations and specific risk management tools, as well as their effect on sustainable development.

Table 3. Practical recommendations and their effect on sustainable development

Recommendation	ORM tool / Method	Effects on Sustainable Development
Integrate risk identification and mapping into strategic planning	Risk maps, root cause analysis	Focus on critical threats; better resource allocation; alignment with ESG priorities;
Implement Key Risk Indicators linked to ESG	Staff turnover %, energy consumption, CO2 emissions, compliance breaches;	Early warning signals; reduced social risks; lower carbon footprint;
Maintain and test BCP and DRP regularly	Business Continuity planning, simulation exercises;	Ensured business continuity; stakeholder trust during crises; reduced financial losses;
Build risk culture and employee training programs	Corporate training; ESG-awareness workshops; cross-functional risk teams;	Reduced error rates; improved social responsibility; stronger employee engagement.
Digitalize risk management	AI – driven monitoring, Big Data analytics	Real-time risk detection; predictive maintenance; reduced environmental impact.
Risk assessment and scenario analysis	Stress testing, climate risk scenarios, supply chain vulnerability analysis	Resilience to crises; ability to adapt to regulatory and climate challenges.
Introduce continuous improvement mechanisms	Regular risk reviews; post-incident analysis; benchmarking	Adaptive organization; ability to evolve with new regulations and market changes.
Establish transparent reporting and stakeholder communication	ESG reporting frameworks; integrated risk reports	Increased investor confidence; accountability

Source: developed by the author

Considered as a whole, the analysis and the recommendations point to determining that with the correct application of operational risk management tools, it becomes possible not only to provide early warning, which helps to minimize operational risks, but also to increase resource efficiency, strengthen stakeholder confidence, and create strategic advantages in the context of global competition.

5. CONCLUSIONS

Synthesizing the above, this paper concludes that with the increasing impact of non-financial risks on organizations, operational risk management is becoming a key factor in sustainable development. This study demonstrated the conceptual link between operational risk management and organizational sustainability and

confirms that developing a system for monitoring, managing, and controlling operational risk not only reduces the likelihood of events but also leads to their proactive management. Together, this creates a sustainable business model capable of adapting to changes in a dynamic external environment. Developing a risk management system and strategic governance allows organizations to strengthen corporate governance, increase stakeholder trust, and enhance operational transparency. The cumulative weight of the analysis supports the

conclusion that operational risk management should not be viewed as an isolated process, but as a basis for the sustainable development of enterprises. Combining control mechanisms with external sustainability requirements will form a comprehensive system that will ensure business continuity even in conditions of uncertainty. Companies that integrate the operational risk management system into their development strategy strengthen their market positions, create long-term value, and simultaneously respond to emerging threats.

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