



Improvement of labor protection financing mechanisms in the context of modernization of the Uzbek economy

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Abstract— The present study analyzes the links between the level of financing of labor protection and the effectiveness of the safety management system in enterprises in the context of economic modernization. Comparative analysis shows that companies that adopt integrated approaches to labor protection, including international standards such as ISO 45001. Companies that implement targeted safety programs and invest in staff training, technical safety and digital control show more sustainable development and positive production dynamics. However, the study also identified a number of systemic obstacles that prevent the widespread adoption of best practices. First of all, these are the fragmentation and instability of financial flows, the inadequacy of insurance mechanisms and the lack of effective institutional incentives for employers. These problems are particularly serious in small and medium-sized enterprises, where labor protection is often reduced to the formal implementation of minimum requirements without real investment in safety. This indicates the need to move from a reactive model of risk management to a proactive one – in which labor protection is considered not as a financial burden, but as an element of the strategic development of the enterprise.

Keywords: occupational health, safety, investment, financing, Uzbekistan, economic modernization, occupational risks, ISO 45001.

INTRODUCTION

The modernization of the Uzbek economy, driven by structural reforms and global integration, necessitates a fundamental transformation in the approach to occupational health and safety. As industrialization accelerates and production processes become increasingly complex, ensuring safe working conditions is not only a legal and moral

obligation but also an economic necessity. Labor protection plays a crucial role in safeguarding human capital, increasing productivity, and reducing financial losses caused by injuries, illnesses, and production downtime.

Despite the existence of legislative instruments such as the Law on Labor Protection [1] and the updated Labor Code [2], actual implementation remains inconsistent. Government budget allocations are limited, and employer contributions, especially from small and medium-sized enterprises (SMEs), are fragmented and reactive. As a result, occupational safety is often reduced to compliance with minimal legal requirements rather than viewed as a strategic investment.

At the international level, the paradigm of labor protection financing has shifted significantly—from reactive cost-based models to proactive investment-based frameworks. Developed economies have demonstrated that structured investments in workplace safety, such as through ISO 45001 certification and digital safety monitoring, result in up to a 60% reduction in occupational injuries [3], [4]. In addition to minimizing human suffering, these strategies enhance operational efficiency and corporate image.

For Uzbekistan, aligning with global safety standards requires not only legal harmonization but also the development of financial and institutional incentives. International organizations such as UNDP [4] and the World Bank [5] advocate for sustainable funding strategies that include public-private partnerships, social insurance, and tax incentives for companies that prioritize worker protection.

There is growing evidence from large Uzbek industrial enterprises that investing in labor protection yields tangible benefits. Companies such as UzAuto Motors and Uzmetkombinat have reported improvements in workplace safety and staff satisfaction following the adoption of international safety protocols. However, SMEs remain marginalized in this transformation due to lack of financing, awareness, and institutional support.

Hence, a shift from fragmented, compliance-driven mechanisms toward an integrated, cross-sectoral safety financing model is necessary. Such a model must combine public support with private responsibility, be adaptable to sectoral needs, and prioritize digital innovation in monitoring and risk prevention.

The aim of this study is to analyze the current state of labor protection financing in Uzbekistan, identify the barriers to its effectiveness, and propose practical, scalable solutions tailored to national economic realities.

Methodology.

This study adopts a mixed-method approach combining policy analysis, comparative case studies, and quantitative performance assessments. The research covers the period from 2020 to 2024, analyzing national regulations, corporate reports, and international guidance related to occupational health financing.

1. Data sources:

- Legislative documents: Labor Protection Law [1], Labor Code [2], modernization policies;
- Reports from ILO [3], UNDP [4], and the World Bank [5];
- Internal safety documentation from major enterprises such as UzAuto Motors, Uzbekneftegaz, and Uzmetkombinat [8]–[10];
- National safety performance statistics from the Ministry of Labor [7].

2. Company selection criteria:

- Staff size >1000 employees;
- Participation in modernization programs;

- Availability of public occupational safety data;
- Sector coverage: metallurgy, oil & gas, mechanical engineering, and transportation.

3. Key indicators analyzed:

- Annual investments in occupational health (in million UZS);
- Injury frequency per 1,000 workers;
- ISO 45001 implementation status;
- Level of digitalization in safety monitoring;
- Staff training and qualification levels.

4. Analytical tools used:

- Comparative matrix to evaluate performance differences;
- Trend analysis on investment vs. injury rates;
- Policy gap analysis against international benchmarks.

This triangulated method ensures reliability of findings and allows both macroeconomic and firm-level perspectives to be integrated, offering a holistic view of labor protection financing in Uzbekistan.

In addition to the core indicators, the research also considered the organizational culture surrounding occupational safety, including the existence of employee feedback mechanisms, frequency of safety drills, and integration of safety objectives into performance reviews. These qualitative metrics were assessed through semi-structured interviews with safety managers and a content analysis of internal documentation.

Small enterprises in Uzbekistan face persistent financial constraints that hinder the implementation of effective occupational safety systems [11].

According to the Asian Development Bank, SMEs in Uzbekistan remain under-integrated into the financial system, limiting their ability to invest in occupational health [12].

A recent UNDP report emphasizes that an effective social protection system requires integrated coordination among government institutions, private actors, and international partners [13].

The OSH Week 2025 event in Tashkent showcased growing interest in digital technologies for occupational safety management and the development of a strong safety culture [14].

The expansion of public-private partnerships in Uzbekistan is viewed as a key mechanism for attracting investment into labor protection and infrastructure modernization [15].

The World Bank's latest overview stresses the importance of adopting sustainable financing mechanisms for occupational safety within the broader framework of Uzbekistan's economic reforms.

To increase methodological rigor, a triangulated framework was applied. Quantitative data (e.g., investments, injury rates) were cross-validated with qualitative insights from employee surveys and expert consultations. The selection of case companies ensured sectoral diversity, allowing for comparative benchmarking between heavy industry and service-linked infrastructure organizations.

Data collection was facilitated by direct cooperation with participating enterprises and access to their internal safety audits. Where access was restricted, publicly available data and third-party inspection reports were used. This ensured a degree of consistency and comparability, even across heterogeneous sources.

A special emphasis was placed on evaluating the effectiveness of financing mechanisms, such as:

- The use of earmarked budget lines for occupational health;
- Allocation of donor grants or subsidies;
- Cost recovery mechanisms (e.g., reduction in absenteeism or insurance premiums);
- The role of external audits in shaping internal investment decisions.

The research also mapped policy recommendations from multilateral agencies against Uzbekistan's national context, focusing on transferability, regulatory feasibility, and institutional readiness. The resulting framework offers a nuanced understanding of how financial instruments can shape safety outcomes at enterprise and policy levels.

Results.

The results of the study highlight a clear link between the volume and consistency of labor protection financing and workplace safety outcomes. The analysis covered six large industrial and transport enterprises, comparing indicators such as investment levels, injury frequency, and implementation of occupational health standards.

Table 1 below presents key indicators for selected enterprises, including their annual investments in labor protection, injury rates, and ISO 45001 certification status. The description of this table underlines the contrast in performance between companies with structured safety systems and those with ad-hoc practices.

Company	Annual Investment (UZS million)	Injury Rate (per 1000 workers)	ISO 45001 Certified
Uzmetkombinat	3500	2.1	Yes
NGMC	4200	1.8	Yes
UzAuto Motors	2900	2.5	Yes
Uzbekneftegaz	3100	2.0	Yes
Uzbekistan Airports	1500	3.4	No

Table 1. Occupational safety indicators of selected enterprises (2020–2024).

Discussion.

The findings of the study confirm that there is a strong positive correlation between financial commitment to occupational safety and the overall performance of safety management systems. Companies with structured and proactive financing mechanisms, such as "Uzmetkombinat", "NGMC", and "UzAuto Motors", demonstrated notably lower injury rates and higher operational stability.

In contrast, enterprises with reactive or minimal investments in labor protection tend to exhibit fragmented practices, limited staff training, and higher frequencies of work-related injuries. This disparity highlights the crucial role of consistent funding, not just in accident prevention but also in maintaining a resilient organizational structure.

The adoption of international standards, particularly ISO 45001, has served as a key differentiator. Certified companies showed improvements not only in safety indicators but also in employee satisfaction and regulatory compliance. These benefits suggest that strategic investments in labor safety are instrumental in fostering corporate sustainability.

However, systemic barriers remain—especially for SMEs. The lack of targeted incentives, absence of national insurance schemes, and minimal access to digital monitoring tools hinder their progress. International programs such as those implemented by UNDP and the World Bank advocate for multi-stakeholder approaches, which have shown effectiveness when adapted to local contexts.

Therefore, Uzbekistan's labor protection framework would benefit from a transition to a proactive model that emphasizes investment, capacity building, and performance-based incentives. Measures such as the establishment of a national safety fund, implementation of tax incentives, and broader adoption of digital technologies are essential for scaling best practices nationwide.

Such a model should also ensure inclusivity by extending support to SMEs, developing sector-specific solutions, and enhancing public-private partnerships. Without this shift, occupational safety will continue to be perceived as a compliance issue rather than a developmental priority.

Conclusions.

The financing of labor protection in the context of Uzbekistan's economic modernization requires a holistic and cross-sectoral strategy. The analysis confirms that companies with sustained investments in occupational safety infrastructure, training, and monitoring systems demonstrate not only improved safety records but also enhanced productivity and organizational stability. These outcomes reaffirm the value of treating labor protection as a strategic business function [16].

The examples of leading enterprises such as “Uzmetkombinat”, “NGMC”, and “UzAuto Motors” illustrate the tangible social and economic returns of integrating labor safety into corporate governance. Conversely, the fragmented and underfunded approach typical among SMEs reflects systemic constraints including insufficient insurance systems, weak enforcement mechanisms, and limited access to financial incentives and digital tools.

To address these challenges, the study recommends the establishment of a state-managed safety fund, the introduction of tax incentives for employers investing in labor protection, and the development of public-private insurance schemes tailored to high-risk sectors. Furthermore, it is essential to improve institutional support by enhancing personnel training, digitizing safety management, and aligning regulations with ISO and ILO standards.

Labor protection should be reframed not as a regulatory obligation but as an investment in national human capital. The proposed model emphasizes transparency, sustainability, and inclusion – principles that are vital for achieving long-term progress in worker safety.

Future actions should focus on extending these strategies to SMEs, improving national data systems for safety tracking, and ensuring multi-level stakeholder engagement, including trade unions, international donors, and employers. With coordinated efforts, Uzbekistan can build a modern and resilient occupational safety system that supports economic growth and social welfare.

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