

DEVELOPMENT OF INTERNATIONAL CERTIFICATION AND STANDARDIZATION SYSTEMS IN UZBEKISTAN

<https://doi.org/10.5281/zenodo.18159195>

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Abstract

This article comprehensively examines the role and significance of international certification and standardization systems in the context of the modern global economy, as well as their impact on enterprise competitiveness and innovative development. International standards—particularly ISO 9001, ISO 14001, ISO 45001, and ISO/IEC 27001—are regarded as important institutional mechanisms for enhancing organizational performance, improving quality management systems, ensuring environmental sustainability, and strengthening information security. The article presents a statistical analysis of the number of certificates across different countries, discusses the practical application of ISO standards, explores scholarly approaches within the framework of institutional voids theory, and analyzes the advantages and challenges of implementing international standards in enterprises in the Republic of Uzbekistan.

Keywords

International standardization; certification; ISO 9001; ISO 14001; ISO/IEC 27001; quality management system; information security; competitiveness; global trade; innovative development; exports.

Introduction

In today's globalization process, the successful implementation of economic, technological, and social cooperation at the international level is inconceivable without certification and standardization systems. Standards play a crucial role in almost all spheres of human activity—from manufacturing and service provision to transportation, communications, and healthcare.¹

Standardization has become an integral part of societal development, serving to evaluate the quality of products and services based on unified criteria, protect consumer rights, facilitate international trade, and accelerate technological

¹ <https://www.iso.org/ru/home.html>

innovation. In particular, under conditions of rapid changes in information and communication technologies (ICT), the expansion of international trade, and intensifying competition, the importance of standardization continues to increase.

International norms developed within the standardization process—such as ISO 9001 (quality management systems), ISO 14001 (environmental management systems), and ISO 45001 (occupational health and safety management systems)—enable enterprises to organize their operations efficiently, use resources rationally, and remain competitive in international markets. Certification formally confirms compliance with these standards, thereby enhancing an enterprise's credibility and reputation.

Literature Review

American scholars Andrew A. King (Dartmouth College, USA) and Michael J. Lenox (University of Virginia, USA), in their studies published in 2001 and 2005, empirically analyzed the impact of international management and environmental standards—particularly ISO 14001 certification—on firm performance. Using panel regression models, these studies examine the effects of international certification on firms' environmental performance as well as their economic outcomes.²

Peter Terlaak (USA, a researcher in strategic management and industrial organization) and Andrew A. King (Dartmouth College, USA), in their 2006 publication, empirically investigated the role of ISO 9000 certification—one of the international quality standards—in shaping trust and cooperative relationships among firms. Employing a difference-in-differences (DiD) methodology, the authors compared the dynamics of market performance indicators between firms that had implemented ISO 9000 certification and those without certification.³

Matthew Potoski (USA, University of California system, a scholar in public policy and political economy) and Aseem Prakash (University of Washington, USA, a leading researcher in global governance and environmental policy), in their works published in 2005 and 2009, analyzed the cross-national diffusion of voluntary international environmental standards such as ISO 14001 and their economic implications. Using cross-national empirical data and multivariate regression models, these studies examined the determinants of voluntary standard adoption across countries and their effects on export performance, integration into international trade, and competitiveness.⁴

² <https://onlinelibrary.wiley.com/>

³ "The effect of certification with the ISO 9000 Quality Management Standard: A signaling approach" Ann Terlaak , Andrew A. King, Journal of Economic Behavior & Organization, 2006, vol. 60, issue 4, 579-602b

⁴ "Covenants with weak swords: ISO 14001 and facilities' environmental performance," 2005, Journal of Policy Analysis and Management, John Wiley & Sons, Ltd., vol. 24(4), 745-769b.

Joseph A. Clougherty (USA, University of Illinois at Urbana-Champaign, a researcher in industrial economics and competition policy) and Michal Grajek (European Union, European School of Management and Technology (ESMT Berlin), a scholar in industrial organization and empirical economics), in their studies published in 2014 and 2018, explored the causal relationship between the adoption of international standards – particularly ISO standards – and export growth. Based on industry-level panel data, the authors employed instrumental variable (IV) techniques and panel regression models to address endogeneity concerns.⁵

Methodology

In the course of the research, a systematic approach, abstract and logical reasoning, grouping and comparative analysis, as well as factor analysis methods were employed.

Analysis and Results

Large enterprises as well as small and medium-sized enterprises (SMEs) encounter various problems and challenges in the course of their operations; therefore, they are compelled to modify their strategies and introduce and develop new approaches.⁶ For this purpose, many companies implement Quality Management Systems (QMS) as a tool to enhance organizational performance. The results of numerous studies indicate that there is a positive relationship between ISO 9001 certification and various measures of organizational performance, such as operational and market outcomes.⁷

The ISO 9001 standard, first introduced in 1987, provides a system of documented processes aimed at standardizing organizational activities. The standard is generally revised every five years; for example, the ISO 9001:2015 version is currently being updated under ISO/DIS 9001 (ISO, 2025). As a normative standard, ISO 9001 can be adapted by different types of organizations and serves as an effective model for the implementation of quality management systems.

At present, the International Organization for Standardization (ISO) comprises 173 national member bodies, each representing ISO in its respective country. ISO has developed 25,989 international standards covering management, technology, and production sectors. The development and maintenance of these standards are carried out by 828 technical committees and subcommittees (ISO, 2025).

⁵ "International standards and international trade: Empirical evidence from ISO 9000 diffusion" Joseph A. Clougherty & Michał Grajek,(2014) International Journal of Industrial Organization, Volume 36, pages 70–82b

⁶ "Sustaining a quality management system: Process, issues and challenges" Sanuri Mohd Mokhtar Sany, Adiana Hiau Abdullah, Nur Kardi Nordin, Idzwan Yacob Mohd, Vol. 14, Issue 4, 2013, 123–130b

⁷ "ISO 9001 based quality management systems and organisational performance: a systematic literature review" Leonardo Stertz Sfreddo, Guilherme B. B. Vieira, Gabriel Vidor & Carlos H. Schuch Santos, 2018, Total Quality Management & Business Excellence, 32(1) 1–21b

According to the ISO certification survey conducted in 2023, data were provided on the number of valid certificates and certified sites (permanent locations where companies operate or provide services) that confirm companies' compliance with standards. These data make it possible to gain an understanding of the global adoption and application of QMS. Detailed indicators are presented in Table 1.

ISO Standards	Total Number of Certificates Issued	Total Number of Sites
ISO 9001:2015	837,978	1,250,243
ISO 14001:2015	300,410	526,046
ISO 45001:2018	185,166	309,056
ISO/IEC 27001:2013	47,291	79,213
ISO 22000:2018	30,011	36,630
ISO 13485:2016	32,963	52,950
ISO 50001:2018	24,924	61,370
ISO 20000-1:2018	3,670	6,652
ISO 37001:2016	7,895	15,953
ISO 22301:2019	3,524	11,232
ISO 39001:2012	1,670	2,982
ISO 55001:2014	668	2,134
ISO 20121:2012	293	433
ISO 29001:2020	206	244
ISO 44001:2017	132	163

Table 1." Number of Valid Certificates and Sites by ISO Standards"⁸

The certification system in Uzbekistan is supported by national policy. In particular, the "Program for the Implementation of International Standardization Systems" for 2023-2025 has been approved. According to this program, over 700 ISO standards are planned to be nationalized, and approximately 1,000 products and services are expected to receive international certification. This initiative is being implemented to develop the QMS (Quality Management System) and enhance the country's export potential.

⁸ "Implementation of Quality Management Systems and ISO Certification as Important Steps for Achieving Total Quality Management in Albanian Companies" Arjan Qefalia, Nora Refatllari, The Albanian Journal of Economy & Business (ALJEB) — No. 43, Avgust 2025, 23–35b

Sector/Industry	Key Standards	ISO	Notes/Comments
Food Industry	ISO 22000:2018, HACCP, ISO 9001		Ensures product safety and is necessary for access to export markets.
Light Industry (Textiles)	ISO 9001, ISO 14001		Quality and environmental management systems.
Pharmaceuticals and Healthcare	ISO 13485		Certification requirement for the production of medical products.
Automotive and Machinery	ISO 9001, ISO 45001		Enhances quality and safety in production processes.

Table 2. Widely Applied ISO Standards in Industrial Sectors in Uzbekistan

The table below shows that between 2019 and 2023, the number of national standards increased by 4,500, while the level of international compliance rose from 28% to 40%. This reflects Uzbekistan's systematic efforts to integrate its standardization system with global requirements and to develop quality management systems.

Year	Total Standards (units)	National	Harmonization (%) compliance with international standards)
2019	18,500		28%
2020	19,500		31%
2021	20,500		34%
2022	21,500		37%
2023	23,000		40%

Table 3. "National Standards Database in Uzbekistan over the Last Five Years"⁹

Among certified enterprises in Uzbekistan, ISO 9001 is the leading standard, accounting for approximately 94% of all certified companies. This indicates that organizations are widely implementing quality management systems and regard quality as a means to enhance competitiveness and export potential.

⁹ "Boboyev Gaybulla Gafurovich, Koziyev Botir Namozovich, Hasanov Muhriddin Hakimjon oglu "Scientific and methodological foundations of harmonization of national standards with international standards" 2025, Scientific Journal of Mechanics and Technology, 540-545p

Food Industry: Companies certified under ISO 22000 represent only 2.2% of total certifications. This suggests that certification in the field of food safety is still limited and that the adoption of this standard is closely linked to export requirements.

Light Industry (Textiles) and Environmental Management: Enterprises with ISO 14001 certification constitute about 2.1% of the total. This indicates interest in environmental management systems, but limited practical implementation.

Pharmaceuticals and Healthcare: The ISO 13485 standard covers only 0.15% of enterprises, indicating that certification in this sector is very rare. This situation is related to the specialized nature of the standard and the high requirements for medical applications (Figure 1).

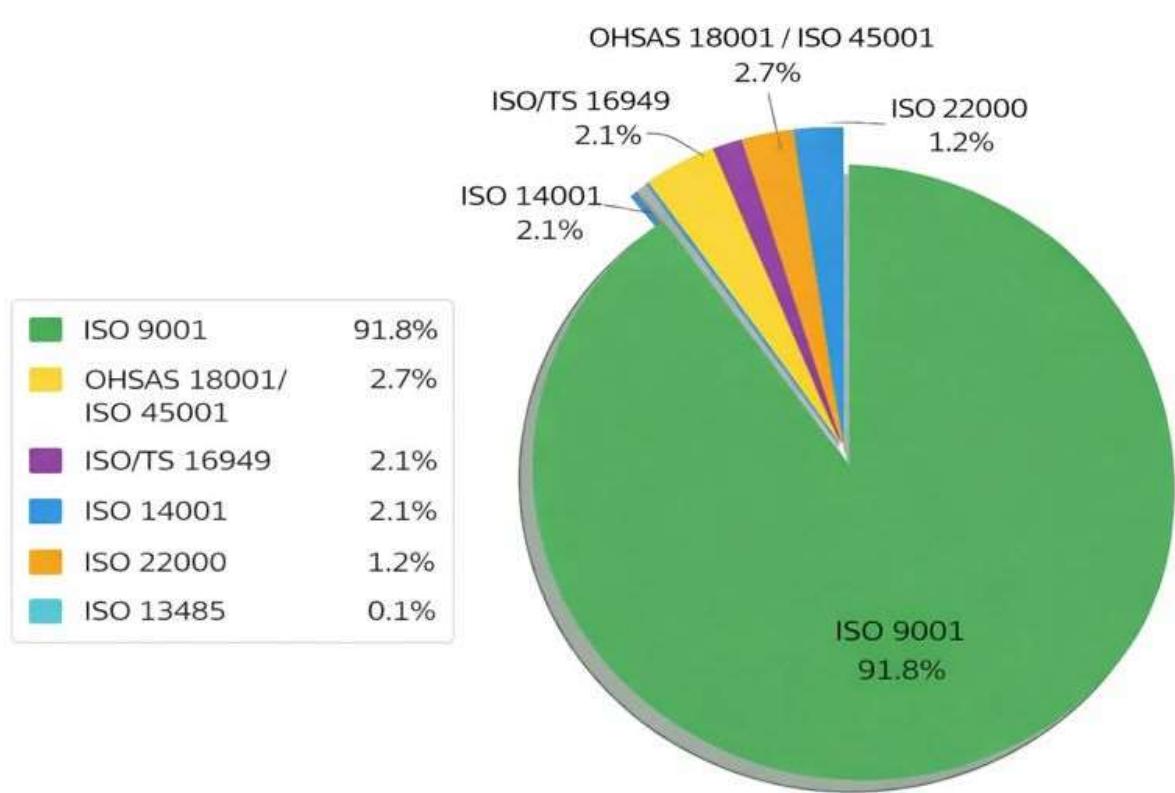


Figure 1. "Statistics of ISO Certifications in Uzbekistan"

Other standards (OHSAS/ISO 45001, TS 16949) account for approximately 1.2%, indicating a relatively small share in certification for occupational safety and the automotive sector.

The diagram clearly demonstrates that companies place significant emphasis on quality management systems in their certification processes.

Certification under specialized and sector-specific standards (ISO 22000, ISO 13485, ISO 14001) remains limited, which is associated with the characteristics of these sectors, as well as cost and complexity.

The high share of certification serves to enhance export potential, ensure quality control, and improve internal systems.

Conclusion and Recommendations

Uzbekistan's standardization system constitutes an essential component of national policy. One of the main objectives of this system is to align the economy with international market requirements by developing standards in accordance with global norms and regulations. To this end, the policy of the Republic of Uzbekistan in the field of standardization is based on the following principles:

- Improving existing national standards in accordance with international requirements;
- Adopting international standards either directly or in an adapted form as national standards;
- Developing cooperation with foreign countries in the field of technical regulation.
- These indicators are linked to the complexity, costs, and sector-specific characteristics of specialized standards.

Overall, certification demonstrates that companies pay considerable attention to quality management systems, contributing to enhanced export performance and internal control. In the future, expanding certification in the fields of food, pharmaceutical, and environmental standards could serve to strengthen Uzbekistan's global competitiveness.

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