

SMART MANUFACTURING INTEGRATION IN GOVERNMENTAL PROCUREMENT SYSTEMS: EVIDENCE FROM UZBEKISTAN

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Abstract. *This paper aims to study how to incorporate smart manufacturing systems into the process of buying for Government use in Uzbekistan to increase the efficiency, transparency, and cost-effectiveness of Government spending in public procurement. Furthermore, by examining the obstacles that continue to delay the ability to achieve optimal results with public procurement despite the Law on Public Procurement O'RQ-684 and the establishment of an electronic public procurement platform.*

Methodology.

This study uses a mixed-methods research design, which combines both qualitative data collection and quantitative data analysis techniques. The study reviews the academic literature, relevant legal documents from Uzbekistan, and the relevant public procurement laws in Uzbekistan, with a specific focus on the Law of the Republic of Uzbekistan on Public Procurement (O'RQ-684). Also, industry 4.0 technologies and international procurement practices will be compared to identify best practices that can be used in Uzbekistan. The study also uses secondary procurement data, stakeholder observations, and conceptual modeling to examine current issues and design an artificial intelligence-based smart procurement framework. The proposed model will contain such characteristics as supplier ratings, smart filters, certificates, and predictive analytics so as to improve transparency, efficiency, and performance in government procurement systems.

Results and Discussions. Research work clarifies various systemic barriers that lower the quality of procurement performance. Because many business organizations with modest capital do not have technical knowledge, the involvement of business organizations with modest capital in electronic procurement systems is limited, which results in the reduction of market competition. Government administrative bodies are forced to buy regular commodities at elevated financial costs when the open market is compared. It has been observed that many commercial providers do not have enough experience or fail to obey guidelines. This lack of knowledge causes technical specifications and contract rules to be ignored. Procurement performance is damaged when delivery is delayed and service processes lose their speed. A significant distance is visible between legal structures of control and the way legal structures of control are used in practice.

For resolving these difficult obstacles, this paper suggests combining clever production and knowledgeable electronic tools within the governmental procurement ecosystem. Artificial intelligence systems for ranking providers are introduced by this research to look at dependability, past activity records, and if providers follow legal rules. Experts claim that a clever sorting tool helps connect providers with procurement chances because these providers have specific listed business tasks and abilities. This study says that mandatory certification programs must happen because the Ministry of Finance of Uzbekistan provides support. Providers must have the needed understanding and talents when they join procurement procedures. Procurement procedures require these skills for success.

Conclusion. The research supports continual monitoring and the use of predictive analysis and artificial intelligence to identify, prevent and make improved purchasing decisions. By combining predictive analytical tools and AI, increased competition, lower costs, and timely delivery of products and services should create increased efficiency and effectiveness of the entire purchasing system.

Overall, the findings suggest that there is a link between applying smart manufacturing principles through use of intelligence technologies in procurement processes and achieving superior system performance in procurement; thus, creating a more efficient, transparent, and sustainable approach to governmental procurement, as compared to procurement processes that do not use these principles or technologies.

Keywords: *smart manufacturing, governmental procurement, artificial intelligence, supplier evaluation, digital transformation, Uzbekistan, e-procurement, Industry 4.0, predictive analytics, SME inclusion.*

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