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# PERFORMANCE INDICATORS OF TECHNICAL AND ORGANIZATIONAL FLEXIBILITY OF SEWING AND KNITWEAR ENTERPRISES IN THE CONTEXT OF DIGITAL TRANSFORMATION (USING THE EXAMPLE OF NIL-GRANIT LLC AND KUVA-TEKSTIL LLC)

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**Abstract:** This article examines the mechanisms for adapting production systems at textile enterprises in Uzbekistan to the requirements of the mandatory digital labeling system "Honest Sign." Using the examples of Nil-Granit and Kuva-Textile, the authors analyze technical flexibility (equipment integration) and organizational agility (business process changes). The author proposes criteria for the effective implementation of traceability systems within the framework of ISO 9001 standards.

**INTRODUCTION.** Digitalization of the textile industry through the "Honest Sign" traceability system ( DataMatrix coding) has become a mandatory requirement for access to EAEU markets. For major players such as Nil-Granit LLC and Kuva-Textile LLC , this required rapid technical and organizational adaptation.

**Problem:** Implementing markings can reduce production speed (flexibility) due to increased complexity of supply chains. **Objective:** To evaluate the effectiveness of production line flexibility when integrating digital codes into a quality management system (ISO 9001).

**METHODS.** The study focused on the production cycles of the garment and knitwear companies Nil-Granit LLC and Kuva-Textile LLC. The research was conducted in three stages using systems analysis and mathematical modeling.

Stage 1. Timing and technical audit. A comparative measurement of production cycle times was conducted before and after the integration of labeling stations. A point-in-time observation method was used to assess equipment utilization in packaging areas.

Stage 2. Calculation of the technical and organizational flexibility coefficient ( $K_{tog}$ ). A proprietary formula is proposed for quantitatively assessing enterprise adaptation . " Formula 1 is proposed for quantitatively assessing the adaptive capacity of enterprises. It is based on an assessment of the time spent on additional digital tracking operations..."

$$K_{tog} = \frac{Tbase}{Tbase+\Delta Tmark+\Delta Taggr} (1)$$

Bu erda,

-Basic Tbaseproduction-

-Technical operation-Tmark

-Organizational operation-Taggr

The closer $K_{tog}$ The higher the ratio to 1, the higher the effectiveness of the enterprise's technical adaptation. If the ratio is below 0.8, organizational flexibility is considered insufficient.

**RESULTS.**

-Technical adaptation: Automation and manual input . At both enterprises, the implementation of the "Honest Sign" system required re-equipment:

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Nil-Granit LLC: Integration of high-speed labeling stations during the packaging of finished products (T-shirts, suits). Technical flexibility is ensured through the use of mobile data collection terminals (MDC), allowing for quick changes to part numbers within the system.

Kuva-Textile LLC: Modernization of packaging lines. Installation of industrial printers for printing DataMatrix codes directly onto labels during the packaging of knitted fabrics and other products.

-Organizational adaptation and performance indicators. The main focus was on changing business processes (organizational flexibility): **Synchronization with ISO 9001:** The process of obtaining codes is integrated into the production planning stage.

**DISCUSSION .** The analysis showed that the "Honest Sign" system is a powerful catalyst for organizational discipline. For Nil-Granit **:** Digital flexibility eliminated the risk of mis-sorting when handling large volumes of diverse products. For Kuva-Textile **:** Labeling became a tool for confirming product legitimacy, simplifying export procedures. The main performance indicator was information flexibility – the ability of the enterprise's ERP system to instantly transfer data to the national system " ASL" Belgisi ».

**CONCLUSION .** The implementation of the "Honest Sign" system at Nil-Granit and Kuva-Textile confirmed that technical flexibility (new equipment) is secondary to organizational adaptation. The effectiveness of the quality management system (ISO 9001) in the digital environment now directly depends on the accuracy of IT integration. The proposed indicators can be used by other garment and knitwear companies to assess their readiness for digital traceability .

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