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TECHNICAL AND ORGANIZATIONAL ADAPTATION OF CONSUMER REQUIREMENTS IN THE TEXTILE INDUSTRY TAKING INTO ACCOUNT INTERNATIONAL STANDARDS

Madikhanova Nigora Sahibd j anovna
Republic of Uzbekistan, Andijan 170100.Andijan State Technical Institute
Assistant at the Department of Metrology and Light Industry
ORCID: 0000-0002-7057-8145.
E-mail: nigosha1978@gmail.com

Abstract: This article examines the mechanism for translating consumer expectations into technical regulations for children's clothing production. The author conducts a comparative analysis of TQM tools and the QFD method, classifying adaptation measures into technical and organizational ones. Using the example of children's T-shirt production, it demonstrates how the integration of ISO 9001 and OEKO-TEX Standard 100 standards ensures product competitiveness through systematic quality management.

Keywords: QFD, TQM, ISO 9001, OEKO-TEX, textile industry, children's clothing, technical adaptation, organizational adaptation.

Introduction. In modern textile production, product quality is determined not only by the absence of defects but also by the level of customer satisfaction. For the children's clothing segment, safety and comfort requirements are regulated by strict international standards. The challenge lies in the difficulty of translating subjective demands ("softness," "safety") into objective production parameters. The objective of this study is to develop a model for the technical and organizational adaptation of customer requirements based on a synthesis of the QFD method and ISO standards.

Methods. The study is based on the Quality Function Deployment (QFD) methodology . Function Deployment) and a process approach. A method of decomposing the requirements of OEKO-TEX Standard 100 and ISO 9001:2015 was used to identify areas of responsibility within the production cycle of a textile enterprise. "In this study, the technical adaptation mechanism was implemented through the construction of a correlation matrix, where consumer requirements (What?) are converted into product specifications (How?), taking into account the restrictive framework of the OEKO-TEX Standard 100.

The integration algorithm includes the following stages:

Table 1

Transformation of environmental requirements	Identifying technical correlations	Organizational Linkage (Responsibility Matrix	Weighting factors
Consumer requirements for "skin safety" and "non-toxicity" are broken down into maximum	A relationship is established between the chemical composition of dyes (a technical	Each technical characteristic affecting OEKO-TEX compliance is correlated with a	Using an expert assessment method, the significance weights for each parameter are

permissible concentrations (MPCs) of harmful substances established by OEKO-TEX (e.g., the content of free formaldehyde, heavy metals, and the pH value of the aqueous extract).	parameter) and the environmental friendliness of the finished fabric (a standard requirement). For example, replacing azo dyes with environmentally friendly alternatives is specified in the QFD matrix as a priority technical solution.	specific stage of the production cycle (preparation, dyeing, finishing). This allows for the adaptation of the quality management system (ISO 9001:2015) by implementing control charts at critical stages of chemical processing.	determined. This allows the company, during organizational adaptation, to prioritize investments in equipment components that directly impact certification (for example, automatic chemical dosing systems or water treatment plants).

Results. A two-level adaptation model was developed during the study. A children's knitted T-shirt was chosen as the object of analysis.

Table 2

Consumer Requirements (WHAT?)	eight (1-10)	Fiber composition 100% Cotton	Surface density (g/m²)	Colour fastness (points)	OEKO-TEX certified	Pattern conformity (ISO)
Hypoallergenic	0	◎		○	●	
Durability (does not fade)				◎	○	
Seam safety			○			●
Technical adaptation:		Purchase of combed yarn	Machine setup	Selection of reactive dyes	Chemistry audit	ISO pattern development
Organizational adaptation:		Selecting a supplier	Quality control	Lab testing	Certification	Staff training
Legend: ● — strong connection; ◎ — medium connection; ○ — weak connection.						

Discussion. Analysis shows that technical adaptation (equipment modernization) without organizational adaptation (changes in management structure) does not produce long-term results. For example, purchasing an expensive needle detector is pointless without organizational procedures for its calibration and data recording in a traceability system (in accordance with ISO

9001). QFD integration allows for the "digitalization" of the parent's voice, and international standards create a safety framework within which this adaptation occurs without risk to the child's health.

Conclusion. Effective adaptation of requirements in the textile industry is a synergy of technology and management. Technical adaptation ensures the achievement of the product's physical parameters, while organizational adaptation ensures consistency in their reproduction from batch to batch. The model tested on the children's T-shirt can be scaled up to other types of knitwear.

Literature

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