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ISSUES OF DEVELOPMENT OF THE TEXTILE AND SEWING-KNITTING INDUSTRY ENTERPRISES' QUALITY MANAGEMENT SYSTEMS AND IMPROVEMENT OF METHODS FOR ITS EVALUATION

Khalilov Nurullo Khamidillayevich
Andijan Machine-building Institute, Associate professor, PhD,
Department of Accounting and Management, Uzbekistan

Nafisa Safina
Andijan Machine-building Institute, Senior Lecturer,
Department of Accounting and Management, Uzbekistan

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Abstract:

The article substantiates the importance of developing a quality management system for textile and sewing-knitting industry enterprises in the digital economy, improves methods for its assessment, and, based on the analysis, develops a strategy and model for the development of a quality management system.

Keywords:

INTRODUCTION.

Improving product quality is an important area of activity common to all leading organizations in the world. Today, improving the quality of products is considered the main condition for their competitiveness in the domestic and foreign markets. The competitiveness of products often determines the prestige of a country and remains a decisive factor in increasing national wealth.

Currently, the Republic of Uzbekistan attaches special importance to the development of the digital economy, improving the standard of living of the population, and ensuring economic, social and environmental security. The level of technical and technological development of enterprises and the high quality of their products remain an important condition for their "survival" and victory in competition in the conditions of the digital economy, scientific and technological development and the need to save resources.

The issue of developing a quality management system for industrial enterprises in the digital economy is associated with the use of information and communication technologies, network interaction of partners to form the image of the enterprise in the market. The development of a quality management system in the digital economy is associated with the improvement of the principles and methods of managing an organization. As a result of these transformations, it is possible to produce and sell quality products, increase profits, win competition and acquire an image. The issue of developing a quality management system is relevant, but currently methods for assessing these processes have not yet been developed. In connection with the transition to the digital economy, the issue of developing a quality management system and improving methods for its assessment is currently poorly understood, so this topic is relevant and has both theoretical and practical significance

ANALYSIS OF LITERATURE ON THE TOPIC.

Joseph Juran, an American expert on quality management systems, viewed the concept of quality: to realize quality, the manufacturer must know the consumer requirements and produce the product in such a way that it can satisfy these requirements [1].

According to Japanese expert K. Ishikawa, it is unethical to talk about rising prices while improving product quality, since improving quality is associated with stabilizing production, reducing defects, reducing costs, etc. as a result, higher prices for products and lower prices. K. Ishikawa also noted that it will be possible to talk about increasing prices only when the consumer receives a product of a technically new level. But even in this case, it is necessary to immediately plan to reduce further costs by regulating, stabilizing and adjusting the production process and regulating the activities of the "supplier-manufacturer-consumer" chain, and developing a quality management system. This is the key to the company's economic success, industry development and country viability[2].

Is is known that digitalization and digital technologies are receiving a lot of attention these days. The use of digital technologies to improve the quality management

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system (QMS) not only improves the quality of products (services), but also increases the potential, profit and competitiveness of the company[3]. Among the international studies devoted to determining the impact of digitalization on quality management systems, one can highlight the works of P. Correa and A. Fernandez. P. Correa and A. Fernandez, as part of an international study of companies in Asia and Eastern Europe, found a strong connection between the use of information technology and innovation in their activities and the ISO 9000 standard as a quality management technology. They proved that the introduction of information and communication technologies into quality management activities is more related to consumer pressure than to competitive or supplier pressure [4].

The development of a quality management system can lead to increased quality and competitiveness of products, reduced costs, increased profits, and increased efficiency. It is necessary to evaluate the development of the quality management system on the basis of specific indicators.

In modern economic literature, there are different opinions regarding the determination of parameters for assessing the development of a quality management system. This is due, first of all, to the authors' different understanding of the role of the quality management system in the company's strategy [5]

According to researcher V.D. Dorofeev, the QMS is part of the overall QMS, and the quality of products and services directly depends on the efficiency of enterprise management, as well as personnel and their qualifications [6].

Russian scientists N. Yashin, L. Popova, S. Bocharova, in their scientific research, believed that the assessment of the QMS should be based on the following indicators:

- level of compliance with established standards;
- compliance of manufactured products with established requirements;
- level of gaining consumer trust;
- quality of food suppliers;
- process quality and others [7].

Researcher M. Yu. Starenkov believes that "the core competencies of a service organization can be transformed into competitive potential if they form the distinctive features of the organization based on an in-depth study of consumer requirements and the introduction of innovative technologies in the process of providing services"[8].

Based on the analysis of the research level of the problem we are studying, we can conclude that certain aspects of the topic of this ban have been studied, however, the issue of improving methods for developing and assessing the QMS of industrial enterprises in the digital economy has not yet been fully studied. The development of scientific and methodological aspects of this problem, the study of its factors, the development of a QMS for industrial enterprises in the digital economy and increasing economic efficiency based on improving assessment methods have been little studied.

RESEARCH METHODOLOGY.

Studying existing scientific research on the development and improvement of the QMS of textile and sewing-knitting industryenterprises in the digital economy, studying statistical data and conducting economic comparison and analysis, conducting correlation analysis, using methods such as logical thinking, scientific abstraction, data grouping, analysis and synthesis

ANALYSIS AND RESULTS.

QMS is a set of interrelated and interacting elements, organizational structures, processes and resources that provide leadership in an organization to implement policies and develop quality goals at the enterprise [3]. The goal of a QMS is not to control every unit of product or service, but to eliminate possible errors in work that can lead to defects. To do this, it is necessary to determine which actions are correct to create a quality product or service, develop instructions for performing actions, monitor, analyze and evaluate them [9]. In order for the QMS to work effectively, first of all, it is necessary to constantly analyze and monitor the development of the QMS by management.

The digital economy places special demands on the development of a company's QMS. First of all, this is the widespread use of information and communication technologies in the company's activities, constant analysis of the effectiveness and efficiency of the QMS, the formation of the quality of products and services, the introduction of innovations in production, the use of measures to improve the quality of products and services, the company's image, etc. To do this, it is necessary that the company's QMS be structured on the basis of several principles, that is, on the basis of innovation, the use of modern methods and technologies, the provision of resources, rapid adaptation to changes in external factors, etc. [10].

The results of the analysis of domestic and foreign literature showed that studies conducted by scientists to assess the QMS of textile and sewing-knitting industryenterprises do not take into account the features of digitalization of the economy [7].

In this study, the author considered it appropriate to use the following indicators to assess the development of the QMS of textile and sewing-knitting

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industryenterprises in the context of digitalization of the economy based on an analysis of the content and essence of the QMS, factors of its development:

1. Innovativeness of the enterprise QMS (I);
2. Level of coordination of actions at the enterprise (U);
3. Compatibility of the enterprise's QMS with the overall strategy (S);
4. Adaptability of the enterprise QMS to various conditions (M);
5. Manufacturability of the enterprise QMS (T).

The system of indicators was developed based on the study of a number of similar studies conducted by foreign authors [11].

A survey was conducted among managers, heads of departments, and heads of the quality management department of textile and sewing-knitting industryenterprises in the Andijan region selected for the study. To conduct correlation analysis at the next stages, the author considered it appropriate to transform qualitative indicators into quantitative ones using a Likert scale. The assessment used a 5-point Likert scale. In this case, the answer ratings will look like this: "absolutely agree" - 5 points, "agree" - 4 points, "not sure" - 3 points, "no" - 2 points, "absolutely no". - 1 point.

The study was conducted using the example of textile and sewing-knitting industryenterprises operating in the Andijan region. In 2022, it was established that in our region there are a total of 2884 textile and sewing-knitting industryenterprises engaged in the production of textiles and clothing [12].

The author set himself the task of studying textile and sewing-knitting industryenterprises located in the Andijan region and their QMSs (sampling type - simple random).

At the process of examining the QMS of enterprises, it is necessary to take into account that each of them has its own characteristics.

During analyzing the literature, it was concluded that foreign and domestic scientists in their studies classified enterprises mainly by size, age and what industry they belong to.

Taking into account the fact that textile and sewing-knitting industryenterprises produce various products, as well as the fact that the years of creation and the size of these enterprises were different, when developing a mechanism for assessing the value of these enterprises, it was considered appropriate to classify these enterprises as follows.

Table 1. Average assessments of the level of development of the QMS according to the classification of enterprises.

№	Direction of company classification	Type of enterprise according to classification	Indicators for assessing the development of the QMS of enterprises	Innovativeness of the enterprise QMS	Level of coordination of actions at the enterprise	Compatibility of the enterprise QMS with the overall strategy	Adaptability of the enterprise QMS to various conditions.	Manufacturability of the enterprise QMS
			Abbre via-tions	I	U	S	M	T
1	By field of activity	Textile production, sewing	TTk	3,50	3,05	3,35	3,15	2,51
		Spinning, textile and finished production	ITTk	4,05	3,45	4,15	4,15	4,11
		Cluster	Kl	4,20	3,75	4,45	4,35	4,53
2	By number of employees	(up to 100 employees)	Kk	3,50	3,05	3,35	3,15	2,51
		(from 101 to 250 employees)	Ok	4,05	3,45	4,15	4,15	4,11
		(number of employees more than 250)	Yk	4,20	3,75	4,45	4,35	4,53
3	According to the age of the company	5-10 years	O	4,13	4,13	4,30	4,25	4,32
		More than 10 years	T	3,50	3,05	3,35	3,15	2,51
4	QMS (according to ISO 9001:2015 certificate).	ISO 9001:2015.	Xsb	4,13	4,13	4,30	4,25	4,32
		Not ISO 9001:2015 certified.	Xsy	3,50	3,05	3,35	3,15	2,51

Source: Author's development based on a survey conducted at enterprises.

Expert assessment was carried out based on the average number of answers to each question in 5 blocks and for each group. Integrated ratings were then calculated using a Likert scale. The level of development of enterprise QMSs can be determined based on an assessment of such indicators as innovativeness (I), consistency of actions (U), compatibility with the overall strategy (S), flexibility (M), manufacturability (T). To analyze the responses of survey participants, the arithmetic mean of each indicator was calculated. Arithmetic average scores were calculated according to the parameters of the development of the QMS and groups identified according to the classification indicators of the enterprises under study. A summary of the resulting indicators is presented in Table 1.

If strategic management is carried out at enterprises, that is, if the future development of the enterprise is set as a goal, risks are analyzed, factors of the external and internal environment, the actions of stakeholders are taken into account, a long-term action plan is developed, the competitiveness of products at such enterprises can be improved. The enterprise's QMS must operate on the basis of the overall enterprise strategy.

The study examined enterprise QMSs, such as innovativeness (I), consistency of actions (U), compatibility with the overall strategy (S), flexibility (M), manufacturability (T) in the areas of enterprise

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specification. To determine whether there is a correlation between the size of the enterprise, field of activity and the presence of an international certificate, we calculated the Pearson coefficient and obtained the following results (Table 2).

Table 2. Correlation analysis (Pearson coefficient).

		Y (dependent variable)				
		I	U	S	M	T
X (independent variable)	I	1	0,88293	0,99884	0,999317	0,999972
	U	0,88293	1	0,883730	0,876175	0,879766
	S	0,99884	0,88373	1	0,996452	0,99862
	M	0,99931	0,87617	0,996452	1	0,999492
	T	0,99997	0,87976	0,99862	0,999492	1

Source: author's elaboration.

According to the data in Table 2, it was established that there is a linear relationship between the indicators of the levels of development of the QMS of enterprises, and statistical innovation was confirmed. The fact that the level of development remains high indicates that the development of the QMS is in harmony with the innovation and development strategy of the enterprise.

Based on the results of the analysis, it was found that as companies strive for digitalization, managers must know whether all of the organization's internal management systems meet the new requirements, and which of them will most contribute to increasing the effectiveness of the QMS. Based on determining the influence of these parameters on the growth of qualitative, financial, scientific and technical indicators of the effectiveness of the QMS, an assessment model is being developed to determine the feasibility of developing a QMS. This assessment model reveals the ability of the QMS development parameters to participate in the effectiveness of the QMS. Achieving this goal involves solving a number of problems:

1. Justify the feasibility of developing a QMS in the context of digitalization of companies.
2. Formation of a QMS model suitable for the digital economy.
3. Development of a strategy for the development of a QMS in the digital economy.
4. Development of measures to improve the QMS within the framework of the development strategy, assessment of the real and conditional effect of the implementation of measures, taking into account the feasibility of its development in the context of digitalization of the economy.

During the study, the author studied the works of a number of scientists and classified the performance indicators of the QMS as follows: financial indicators; indicators of scientific, technical and technological development; personnel indicators; social indicators; indicators of the quality of products and services. Increasing the efficiency and effectiveness of an enterprise's QMS leads to increased efficiency and competitiveness of this enterprise.

Table-3. Average efficiency indicators according to the classification of textile and sewing-knitting industryenterprises (2022).

№	Direction of company classification		Labor productivity (million sums/person)	Capital productivity, (sum/sum)	Profitability, (%)	Percentage of quality products, (%)
1	By field of activity	Textile production, sewing	22,89	1,44	10,28	80,5
2		Spinning, textile and finished production	195,71	3,12	12,09	82,8
3		Cluster	549,02	7,82	11,66	83,72
4	By number of employees	(up to 100 employees)	22,89	1,44	10,28	80,5
5		(from 101 to 250 employees)	195,71	3,12	12,09	82,8
6		(number of employees more than 250)	549,02	7,82	11,66	83,72
7	According to the age of the company	5-10 years	372,36	5,47	11,88	83,26
8		More than 10 years	22,89	1,44	10,28	80,5
9	QMS (according to ISO 9001:2015 certificate).	ISO 9001:2015.	372,36	5,47	11,88	83,26
10		Not ISO 9001:2015 certified.	22,89	1,44	10,28	80,5

Source: author's elaboration.

During the study, we set ourselves the task of conducting a statistical analysis of the influence of QMS assessment indicators on the effectiveness of the QMS of textile and sewing-knitting industryenterprises.

During the statistical analysis, we chose indicators of the development of the QMS as independent variables, and indicators of the effectiveness of the QMS as dependent variables. As a result of the analysis, it can be determined that development indicators can influence efficiency and that there is a correlation between them. The author conducted a study based on average economic efficiency indicators of textile and sewing-knitting industryenterprises located in the Andijan region. It shows performance indicators achieved by enterprises in 2022, such as labor productivity, capital productivity, profitability, and the share of quality products [12].

As can be seen from the data in Table 4, the statistical (correlation) analysis (Pearson coefficient) of the influence of indicators for assessing the development of the QMS of enterprises on performance indicators turned out to be above 0.5, which means the presence of a correlation between the indicators. Based on the analysis, it was determined that an increase in indicators

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for assessing the development of the QMS of enterprises has a positive effect on the efficiency of the enterprise.

Table 4. Statistical (correlation) analysis of the influence of indicators for assessing the development of the QMS on QMS effectiveness indicators (Pearson coefficient).

Indicators		Indicators of effectiveness of QMS development			
		Labor productivity	Capital productivity,	Profitability	Percentage of quality products
Indicators for assessing the development of the QMS	(I)	0,9113	0,8816	0,9472	0,9983
	(U)	0,8425	0,8220	0,8046	0,8856
	(S)	0,9297	0,9029	0,9309	0,9999
	(M)	0,8955	0,8636	0,9584	0,9955
	(T)	0,9082	0,8781	0,9495	0,9979

Source: author's elaboration.

As can be seen from the table data, efficiency indicators, that is, profitability, are higher for organizations with a high level of development of the QMS, that is, innovation and flexibility, compatibility with strategy and high technological development. The share of quality products at these enterprises is also high. The greatest impact on the efficiency of the enterprise was exerted by its innovation and technological development.

CONCLUSIONS AND OFFERS.

Innovation, coordination of actions, compatibility with strategy, adaptability to environmental factors, manufacturability of the QMS enterprise will lead to improved product quality and economic efficiency indicators in the future. The author's hypothesis has been proven, i.e. his opinion that with the development of quality management of the enterprise, its efficiency will increase.

Based on the information presented, the author believes that in the future it is necessary to take measures to increase the technological sustainability of textile and sewing-knitting industryenterprises and increase the level of use of digital technologies.

In order to increase the flexibility of the company's QMS, the company should create a website to study the tastes and requirements of consumers, establish the use of e-commerce platforms, study the experience of developed countries, use benchmarking, and explore ways to promote the brand [13].

As a result of assessing the development of the QMS of textile and sewing-knitting industryenterprises located in the Andijan region, we came to the following conclusion:

1) The QMS of enterprises does not fully comply with the requirements of international standards;

2) QMSs of textile and sewing-knitting industryenterprises significantly lag behind the pace of digitalization of the economy;

3) low level of coordination in mutual actions between divisions of the enterprise;

4) low qualifications of personnel, the need to improve their skills in the field of digital technologies.

As a result of the study, the author came to the conclusion that improving the development indicators of the QMS of textile and sewing-knitting industryenterprises will lead to increased efficiency and competitiveness. The author considers it advisable to develop a strategy for the development of the company's QMS.

DEVELOPMENT STRATEGY FOR THE ENTERPRISE QMS.

The goal is to increase the efficiency of the enterprise and the competitiveness of products based on the development of a quality management system.

Tasks: innovative development and improving the company's image; improve the quality and competitiveness of products; increase the efficiency of the enterprise.

Stages of strategy implementation:introduction of innovative methods and technologies into the company's activities; improving the qualifications of company employees in the field of digital technologies; search and selection of qualified personnel for management and quality control (including foreign specialists); studying the requirements of stakeholders of the quality management system and bringing them to mutual agreement; involvement of all enterprise specialists in quality management (implementation of quality circles); increase employee motivation to improve quality; continuous monitoring and evaluation of the quality management system.

Expected Result:

quick adaptation to consumer requirements; improving the image of the enterprise and increasing the number of customers; increasing the competitiveness of products; increase in sales; increasing labor productivity; reduction of transaction costs; increasing efficiency.

According to the author, it is advisable to implement the development of a QMS in the following areas:

1. Introduction of innovative equipment and technologies into the activities of the enterprise;
2. Improving the qualifications of company employees in the field of digital technologies;
3. Search and attraction of qualified personnel for management and quality control (including foreign specialists);

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4. Studying the wishes of the stakeholders of the QMS and bringing them to mutual agreement;
5. Increase employee motivation to improve quality;
6. Continuous monitoring and assesment of the QMS.

Based on the factors of the external and internal environment, the level of development of the enterprise's QMS is assessed, the level of its development is determined, and after identifying problems, directions for the strategic development of the system are implemented.

Companies should regularly evaluate consumer opinions on specialized websites and forums and respond to customer complaints, even if they are not published on the company website. At the end of the year, it is necessary to synchronize them with the company's performance results. Continuous evaluation of the QMS identifies opportunities for developing quality improvement initiatives and innovation. The enterprise needs to constantly improve the effectiveness of the QMS.

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