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ENHANCING THE ORGANIZATIONAL-ECONOMIC MECHANISM OF THE TEXTILE INDUSTRY IN UZBEKISTAN



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Abstract: this article examines the development of Uzbekistan's textile and apparel industry through the lens of its organizational-economic mechanism and identifies the main directions for its improvement under current conditions. The study analyzes sectoral dynamics for 2016-2025, focusing on production trends, structural change, and the industry's role in national industrial development. The results show that recent sectoral growth has been driven mainly by real output expansion rather than by price effects, while the ARIMA (0,2,1) model indicates continued growth through 2028. On this basis, the article substantiates practical directions for modernization, deeper processing, export competitiveness, and stronger coordination within the industry.

Keywords: *textile and apparel industry, organizational-economic mechanism, real output, ARIMA model, forecasting, value-added production, Uzbekistan, industrial efficiency.*

O'zbekistonda to'qimachilik sanoatining tashkiliy-iqtisodiy mexanizmini rivojlantirish

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Annotatsiya: ushbu maqolada O'zbekiston to'qimachilik sanoatining tashkiliy-iqtisodiy mexanizmi tahlil qilinib, uni zamonaviy iqtisodiy sharoitda takomillashtirishning asosiy yo'nalishlari asoslab berilgan. Ayniqsa, 2016-2025-yillarda sohada yuz bergan tarkibiy o'zgarishlar, ishlab chiqarish dinamikasi, investitsiyaviy faollik, shuningdek, boshqaruv va qo'llab-quvvatlash vositalarining samara-dorligiga alohida e'tibor qaratilgan. Shu bilan birga, to'qimachilik sanoatining 2028-yilgacha bo'lgan o'rta muddatli rivojlanish istiqbollarini prognozlash uchun ARIMA (0,2,1) modeli qo'llanilgan. Olingan natijalar to'qimachilik sanoatining tashkiliy-iqtisodiy mexanizmining

samaradorligini oshirish, raqobatbardoshligini kuchaytirish va barqaror rivojlanishini ta’minlashga qaratilgan amaliy chora-tadbirlarni ishlab chiqish imkonini beradi.

Kalit so‘zlar: *to‘qimachilik va tikuvchilik sanoati, tashkiliy-iqtisodiy mexanizm, real ishlab chiqarish hajmi, ARIMA modeli, prognozlash, qo‘shilgan qiymatli mahsulot, O‘zbekiston, sanoat samaradorligi.*

Развитие организационно-экономического механизма текстильной промышленности в Узбекистане

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Аннотация: в статье рассматривается развитие текстильной и швейной промышленности Узбекистана через призму её организационно-экономического механизма и определяются основные направления его совершенствования в современных условиях. Анализ охватывает динамику отрасли за 2016-2025 гг., с акцентом на производственные тенденции, структурные изменения и роль отрасли в промышленном развитии страны. Результаты показывают, что в последние годы рост отрасли обеспечивался преимущественно реальным расширением выпуска, а не ценовыми факторами, тогда как модель ARIMA (0,2,1) указывает на сохранение положительной динамики до 2028 года. На этой основе в статье обоснованы практические направления модернизации, углубления переработки, повышения экспортной конкурентоспособности и усиления координации внутри отрасли.

Ключевые слова: *текстильная и швейная промышленность, организационно-экономический механизм, реальный объем производства, модель ARIMA, прогнозирование, производство продукции с добавленной стоимостью, Узбекистан, эффективность промышленного производства.*

In 2025, the textile and apparel industry remains one of the largest and most strategically significant segments of the world economy. Its scale reflects not only the continued expansion of consumer demand, but also the growing importance of production restructuring, value-added upgrading, and competitive positioning in global markets [1], [2]. Under such conditions, the textile sector is increasingly assessed not merely as a traditional manufacturing branch, but as a complex industrial system linked with investment, innovation, trade, and institutional coordination. For Uzbekistan, this sector has acquired particular economic importance. According to the National Statistics Committee,

in January-November 2025 the country exported textile products worth about USD 2,3 billion, which accounted for 7,3% of total exports, with the largest shares generated by finished textile products and yarn [3]. At the same time, as shown by the statistical calculations used in this study, the value of textile and apparel production in 2025 reached 144,5 trillion soums, confirming the sector's stable role in industrial growth and foreign economic activity. These trends indicate that the textile industry is not only one of the country's major manufacturing segments, but also an important source of structural transformation, employment, and export earnings.

Despite this importance, the existing literature does not yet provide a sufficiently integrated explanation of how the industry's organizational-economic mechanism operates in practice. Previous studies have examined the sector from the perspectives of strategic priorities, innovation policy, value-chain development, export potential, and cluster transformation. However, these approaches remain fragmented and do not fully explain how institutional-regulatory, production-investment, technological, value-added, export-logistics, and human-capital factors interact within a single development mechanism. Thus, the scientific problem of the study lies in the insufficient conceptualization and practical interpretation of the organizational-economic mechanism of Uzbekistan's textile and apparel industry under current conditions.

The aim of this article is to analyze the recent dynamics of Uzbekistan's textile and apparel industry and to substantiate directions for improving its organizational-economic mechanism. To achieve this aim, the study examines the sector's production dynamics in nominal and real terms, assesses its industrial significance, develops a structural-functional interpretation of the organizational-economic mechanism, and evaluates the medium-term trajectory of the industry through ARIMA-based forecasting. The author's contribution lies in linking statistical and forecasting analysis with a conceptual model of the mechanism as an integrated system of institutional, economic, technological, and managerial components that jointly determine the sustainability and competitiveness of sectoral development.

Among the studies examining the role of the textile industry in Uzbekistan's economy, the work of Y. Kim and J. Park remains one of the most systematic strategic analyses. Using a SWOT-AHP framework and survey data from 75 textile companies, the authors move beyond a purely descriptive account and attempt to rank the sector's strengths, weaknesses, opportunities, and threats in a structured way. Their main contribution lies in showing that the industry's development cannot depend only on raw cotton advantages and low production costs, but must also address technological gaps, logistical weaknesses, and skill shortages while making better use of external opportunities and public support. However, compared with later studies that pay more attention to institutional or value-chain issues,

their research remains largely a strategic prioritization exercise. It identifies the main directions of improvement, but does not explain in sufficient detail how the organizational and economic relations among firms, state agencies, suppliers, and support institutions should be structured in practice. Thus, Kim and Park provide a useful strategic foundation, although the internal design of the organizational-economic mechanism is still only partially developed [4].

A more recent contribution is offered by R. Nurimbetov and K. Karimov, who link the development of Uzbekistan's textile industry more directly to innovation policy and strategic forecasting. In contrast to Kim and Park, whose emphasis is placed on strategic positioning, these authors focus more on technological modernization and innovation incentives as key drivers of sectoral upgrading. Their study is important because it shifts the discussion from static comparative advantages toward the policy instruments needed for higher-value production, product diversification, and stronger export performance. At the same time, this approach is still centered mainly on innovation as a source of growth, while the broader organizational-economic mechanism of the industry remains only indirectly addressed. In particular, questions of coordination between production stages, institutional accountability, and the distribution of functions between public and private actors are not fully integrated into a single analytical model [5].

Among domestic studies, M.Umarkhodjaeva makes an important contribution by examining the textile sector through the lens of the value-added chain. Her analysis stresses that clustering has helped create an integrated production chain from cotton cultivation to finished products and exports, while also underlining the need to strengthen marketing, branding, and value-added management. Compared with the previous two studies, this approach moves closer to the internal structure of the sector, since it pays greater attention to production linkages and structural transformation. Nevertheless, the cluster model is assessed rather positively, and less attention is given to its internal asymmetries, coordination problems, and governance tensions. Therefore, while the value-chain perspective is highly useful for understanding vertical integration, it still does not fully explain how the organizational-economic mechanism should regulate relations among production, distribution, and market actors [6].

The external market dimension is most clearly developed in the work of V.Movchan and W.Walter, who view Uzbekistan's textile and apparel industry primarily as an increasingly important export-oriented sector. Their study shows that the sector's role in national exports has expanded and that export composition has gradually shifted toward more processed and finished goods. In comparison with Umarkhodjaeva's value-chain approach, Movchan and Walter place much stronger emphasis on competitiveness in international markets, including logistics, trade costs, market access, and product positioning. This makes their work particularly useful for understanding the sector's external prospects. Yet precisely because of this focus, the internal organizational and managerial mechanisms that make export upgrading possible are discussed

less fully. As a result, their study explains the external logic of sectoral growth better than the internal institutional logic of its coordination [7].

A more explicitly organizational perspective is offered by K. Khurana and Z. Ataniyazova. Unlike the studies above, which focus primarily on strategy, innovation, value chains, or exports, this paper critically examines the barriers within the textile value chain itself and draws on evidence from 50 textile companies. The authors argue that the Uzbek textile value chain suffers from fragmentation, weak supply-chain capabilities, and limited local participation beyond raw material production. In this respect, their work comes closer to the organizational-economic dimension of the problem, since it points not only to external constraints but also to internal coordination failures. However, even this study is stronger in diagnosing the sector's disconnections than in proposing a full model of institutional governance, incentives, and performance measurement [8].

Overall, a comparative reading of the literature shows that the existing studies explain different but insufficiently integrated dimensions of Uzbekistan's textile industry. Kim and Park focus mainly on strategic priorities, Nurimbetov and Karimov on innovation policy, Umarkhodjaeva on value-chain integration, Movchan and Walter on export competitiveness, while Khurana and Ataniyazova come closer to organizational and institutional issues. However, these approaches remain fragmented: each highlights one important aspect of development, but none provides a sufficiently complete explanation of how organizational, institutional, and economic instruments should interact within a single organizational-economic mechanism. It is precisely this unresolved gap that defines the relevance of the present study.

This study applies induction, deduction, comparative economic analysis, and ARIMA-based forecasting to examine the development of Uzbekistan's textile and apparel industry. Induction is used to identify the main sectoral trends on the basis of statistical data, while deduction helps interpret these trends through broader propositions on industrial development and competitiveness. Comparative economic analysis is employed to assess the sector in the context of wider international tendencies. In methodological terms, the organizational-economic mechanism of the industry is examined through six interrelated components: institutional-regulatory support, production-investment development, technological and innovation upgrading, value-added and marketing development, export-logistics support, and human-capital and analytical support. Thus, the mechanism is evaluated indirectly through its observable economic outcomes rather than as an abstract construct. To estimate real production dynamics, nominal indicators were adjusted for price changes. The real value of total industrial output was obtained by deflating nominal growth with the producer price index for industrial products, while the real value of textile and apparel output was calculated using the producer price index for the textile division. This made it possible to distinguish real growth from inflation-driven nominal changes and to assess more accurately the production-investment and value-added components of the mechanism.

For forecasting, the study uses a non –

seasonal ARIMA (0,2,1) model. Second-order differencing was applied to reduce the trend component, while the moving-average term captured the effect of short-term random shocks. In this study, ARIMA serves as a baseline tool for identifying the medium-term trajectory of the sector and for supporting the analytical assessment of the mechanism's adaptive and developmental capacity. Accordingly, the selected methodology combines structural interpretation of the organizational-economic mechanism with statistical evaluation of the industry's recent dynamics and medium-term prospects.

Uzbekistan's textile and apparel industry occupies an important place in the country's industrial structure and remains one of the key drivers of stable economic growth [9]. Data for 2016–2025 show that total industrial production recorded positive growth in both nominal and real terms, indicating that the observed expansion was not driven by inflation alone. In 2025, the nominal value of industrial output reached 1101,13 trillion soums, while nominal growth amounted to 25,10%. The particularly high growth rate of 58.14% recorded in 2018 was associated with the expansion of production, increased investment inflows, and the acceleration of structural transformation. At the same time, real industrial output in 2025 amounted to 204,21 trillion soums, and additional real growth reached 13,62%. This suggests that the real value of production increased substantially over the period under review. According to Uzbekistan's official statistical releases, industrial production continued to expand in 2025, while the textile, clothing, leather, and related industries retained a significant share within manufacturing output, confirming the broader importance of the sector to national industrial development.

At the same time, the share of the textile sector in total industrial output declined when measured in nominal terms. This trend may be explained by the faster growth in the production value of several other industrial branches, which expanded more rapidly during the same period. Nevertheless, the sector's share of 13,13% in 2025 confirms that textile and apparel production continues to retain its status as a major industrial activity in Uzbekistan. It remains capable of making a substantial contribution not only to manufacturing output, but also to employment generation, export earnings, and the broader development of the national economy.

From the standpoint of the organizational-economic mechanism, these trends suggest that the textile industry has preserved its strategic significance despite changes in the overall structure of industry. This means that further improvement of the sector should be associated not only with increasing production volumes, but also with strengthening management efficiency, deepening value-added processing, enhancing competitiveness, and improving coordination between production, investment, and market institutions. The economic analysis of the value of textile and apparel products is presented in table 2.

Conclusions regarding the importance of the sector should be based not on nominal indicators, but rather on the dynamics of real output, since it is this measure that reflects the actual growth of production free from price effects. In 2025, real output in the textile and garment-knitwear industry reached 43,141

billion soums, while the real growth rate compared to 2024 amounted to 18,71%. In other words, in real terms, the sector expanded at a pace exceeding the average growth rate of industry as a whole. This positive trend may be explained by the accumulated effects of modernization, the expansion of production capacities, improvements in efficiency, and the consistent strengthening of the focus on higher value-added products.

Table 1

General overview of the industrial sector of the republic of Uzbekistan for 2016-2025 [10]

Year	Industrial output at current prices, billion soums	Nominal growth rate of industrial output, % compared to the previous year	Industrial output at constant prices, billion soums (base year: 2015)	Additional real growth rate of industrial output, %
2016	111869,4	14,62	98980,1	1,42
2017	148816,0	33,03	100414,6	1,45
2018	235340,7	58,14	113721,7	13,25
2019	322535,8	37,05	121616,6	6,94
2020	368740,2	14,33	129792,5	6,72
2021	456056,1	23,68	142082,6	9,47
2022	553265,0	21,32	147304,4	3,68
2023	658991,7	19,11	152955,2	3,84
2024	880198,5	33,57	179725,7	17,50
2025	1101130,8	25,10	204211,5	13,62

The statistical results presented above should be interpreted not only as evidence of sectoral growth, but also as indicators of the functioning of the organizational-economic mechanism of the textile and apparel industry. In this study, that mechanism is understood as an integrated system of institutional, economic, and managerial elements through which the processes of production, investment, innovation, processing, and market development are coordinated and supported. Its purpose is to ensure sustainable output growth, expansion of higher value-added production, stronger competitiveness in domestic and external markets, and more effective interaction among the main participants in the industry. In this sense, the mechanism extends beyond the direct organization of production and includes the broader institutional and economic environment in which textile enterprises operate. Therefore, the development of the industry should be

assessed through the interaction of several interrelated components, namely institutional-regulatory support, production-investment development, technological and innovation upgrading, value-added and marketing development, export-logistics support, and human-capital and analytical support.

Table 2

Economic analysis of the value of textile and apparel products [11]

Year	Output of the textile and apparel industry at current prices, billion soums	Nominal growth rate of textile and apparel industry output, % compared to the previous year	Share of textile and apparel industry output in total industrial production at current prices, %	Output of the textile and apparel industry at constant prices, billion soums (base year: 2015)	Real growth rate of the value of textile and apparel industry output, %	Share of the additional real value of textile and apparel industry output in total real industrial growth, %
2016	17653,8	19,07	15,78	21254,14	43,35	21,47
2017	22871,5	29,56	15,37	18643,15	-12,28	18,57
2018	32567,4	42,39	13,84	19362,90	3,86	17,03
2019	39112,4	20,10	12,13	21393,03	10,48	17,59
2020	47116,3	20,46	12,78	24661,11	15,28	19,00
2021	65965,1	40,00	14,46	26869,06	8,95	18,91
2022	80115,5	21,45	14,48	27330,69	1,72	18,55
2023	94597,6	18,08	14,35	30415,76	11,29	19,89
2024	121395,8	28,33	13,79	36342,77	19,49	20,22
2025	144537,1	19,06	13,13	43141,25	18,71	21,13

The conceptual logic of the mechanism may be expressed as follows: **OEM = f(I, P, T, V, E, H)**

where: I - institutional-regulatory support;
P - production-investment development;
T - technological and innovation upgrading;
V - value-added and marketing development;
E - export-logistics support;
H - human-capital and analytical support.

This formula shows that the organizational-economic mechanism of the textile and apparel industry should be understood as a system whose effectiveness depends on the interaction of several key components. In other words, sustainable sectoral development is determined not by a single factor, but by the coordinated functioning of institutional regulation, production and investment processes, technological modernization, value-added expansion, export support, and the quality of human-capital and analytical provision. Therefore, the stronger the interconnection between these components, the more effective the overall organizational-economic mechanism of the industry becomes.

Table 3

Main components of the organizational-economic mechanism of the textile and apparel industry

Structural component	Institutional participants	Core instruments	Functional outcome
Institutional-regulatory	Public institutions, industry associations	Industrial policy, regulation, incentives, standards	Stable rules and better sector coordination
Production-investment	Enterprises, investors, banks	Modernization, capital investment, capacity expansion	Growth of output and production efficiency
Innovation-technological	Enterprises, universities, R&D institutions	Technology transfer, digitalization, quality improvement	Higher competitiveness and technological upgrading
Value-added and marketing	Producers, processors, brands, distributors	Deeper processing, branding, product diversification	Growth of finished goods and value added
Export-logistics	Exporters, logistics firms, customs and trade institutions	Export support, certification, logistics improvement, market diversification	Stronger export performance and wider market access
Human-capital and analytical	Universities, training centers, enterprises	Professional training, forecasting, monitoring, management development	Better decision-making and adaptive capacity

Table 3 shows that the organizational-economic mechanism of the textile and apparel industry should be understood as a multi-component system rather than as a single management instrument. Its effectiveness depends on the interaction between regulatory support, productive capacity, technological upgrading, deeper processing, export development, and the quality of managerial and analytical support. Therefore, the growth of production volumes alone cannot be regarded as a sufficient indicator of successful development.

Under modern economic conditions, forecasting macroeconomic and mesoeconomic indicators is of strategic importance, as it provides a basis for informed managerial decision-making, enables the assessment of sectoral sustainability, and supports the design of long-term development programs. The dynamics of real textile and apparel production reflect not only production processes themselves, but also structural changes in industry, investment activity, external trade conditions, and overall demand. In such circumstances, simple trend extrapolation is insufficient, since time series may contain hidden regularities, inertial effects, and random shocks. For this reason, econometric practice makes wide use of time-series models that allow the formalization of indicator dynamics and the separation of systematic components from random fluctuations.

One of the most appropriate approaches for forecasting the real output of Uzbekistan's textile and apparel industry in the present study is the non-seasonal ARIMA model. This choice is justified by the statistical characteristics of the series and by the analytical purpose of the article. First, the available observations form a short annual time series, rather than a monthly or quarterly dataset. In such settings, model selection should remain parsimonious, because the number of parameters that can be estimated reliably is limited, and more complex specifications tend to produce weaker forecasts due to estimation error. Forecasting theory therefore emphasizes that, for short series, simpler ARIMA structures are often preferable, while AICc-type criteria usually favor low-parameter models. Since the series used here is annual and does not display a seasonal pattern, a seasonal specification such as SARIMA would not be methodologically necessary. ARIMA is therefore suitable because it allows the dynamics of the series to be modeled through differencing and autocorrelation, which is especially relevant when the data exhibit a pronounced trend and irregular fluctuations. The choice of ARIMA is also more appropriate than relying only on trend extrapolation or purely descriptive forecasting. In the present case, the observed dynamics of real textile and apparel output are influenced not only by long-term growth, but also by inertial effects and random shocks. ARIMA models are specifically designed to represent such processes, because the order of differencing addresses non-stationarity, while the autoregressive and moving-average components capture the internal dependence structure of the series. In contrast, ETS models provide a complementary forecasting framework based mainly on level, trend, and seasonality. However, ETS and ARIMA belong to different model classes and are not directly comparable through the

same likelihood-based information criteria. For a non-seasonal annual series whose key analytical feature is trend-driven non-stationarity, ARIMA offers a more explicit representation of stochastic dependence and of the effect of past shocks on current values. In this sense, the use of ARIMA in the article is not arbitrary, but follows from the specific time-series properties of the indicator under study.

At the same time, alternative approaches were also relevant but less suitable for the immediate objective of the article. Dynamic regression or ARIMAX-type models would be appropriate if the purpose were to estimate the impact of external determinants such as exports, investment activity, employment, or energy supply. However, such models require not only additional explanatory variables, but also a sufficiently reliable basis for forecasting those predictors over the forecast horizon. In the absence of a stable multivariate forecasting framework, a univariate ARIMA specification provides a cleaner baseline estimate of the sector's medium-term trajectory. Therefore, ARIMA (0,2,1) is used here not as a full causal model of sectoral development, but as a parsimonious baseline forecasting tool that is consistent with the short, non-seasonal, trend-dominated nature of the available annual series. This is also in line with the broader methodological logic of the article, where the organizational-economic mechanism is interpreted structurally, while ARIMA is used to assess one of its observable outcomes, namely the medium-term trajectory of real sectoral output [12]. Given the properties of the series, second-order differencing was applied to reduce the trend component, and the ARIMA (0,2,1) specification was retained as the most parsimonious form capable of capturing the influence of past random shocks after differencing. In substantive terms, this means that the recent dynamics of real textile and apparel output are explained less by a stable autoregressive structure and more by the persistence of disturbances affecting the sector over time. Such a result is economically plausible for an industry whose development depends on modernization, market conditions, and changing external demand. For this reason, the selected model is methodologically defensible for medium-term forecasting, while its limitations should also be acknowledged: as with any univariate ARIMA model, it assumes that the underlying historical pattern remains broadly relevant over the forecast horizon and does not directly incorporate exogenous structural drivers.

$$y_t = 2.0y_{t-1} - 1.0y_{t-2} + 1.0e_{t-1}$$

In this equation, denotes the real volume of textile and apparel production, while $e_t - 1$ represents random external influences or shocks. Second-order differencing serves to eliminate the long-term trend embedded in the series and to render its dynamics stationary, which is an essential condition for obtaining reliable parameter estimates. The moving-average component with q=1 captures the effect of shocks from the previous period on current changes, implying that the influence of external factors may persist for some time through inertial adjustment. In practical terms, such a specification is well suited to annual data characterized by a trend and makes it possible to assess both the general direction of

movement and the bounds of uncertainty in medium-term forecasts. On this basis, a baseline forecast for 2026–2028, together with the limits of the 95.0% confidence interval, was calculated.

Table 4

Main components of the organizational-economic mechanism of the textile and apparel industry

Indicator	Value
AIC	145,63
BIC	145,79
RMSE	1318,361
MAPE	3,65%

The reported indicators confirm the acceptable quality of the model and its suitability for medium-term forecasting. The relatively low values of AIC and BIC suggest that the selected ARIMA (0,2,1) specification is sufficiently parsimonious in terms of parameters while still providing an adequate representation of the dynamics of the series. The RMSE value of 1318,361 reflects the average magnitude of the forecast error in absolute terms and appears moderate when viewed against the actual scale of production. The main indicator of forecast accuracy, MAPE, is equal to 3,649%, which means that the average relative error remains below 4,0%; for annual economic time series, this may be regarded as a good result. The forecast of real output in the textile and apparel industry up to 2028, presented in table 5, indicates a trajectory of stable growth.

Table 5

Medium-term forecast scenarios for the output volume of the textile and apparel industry (billion soums) [14]

Year	Baseline Scenario	Pessimistic Scenario	Optimistic Scenario
2026	50 260,39	47 004,95	53 515,84
2027	57 379,54	47 398,53	67 360,55
2028	64 498,68	45 968,35	83 029,02

According to the baseline scenario, the output of the textile and apparel industry is projected to rise from 50,260 billion soums in 2026 to 64,498 billion soums in 2028. This trajectory reflects the expected continuation of positive sectoral dynamics under existing economic conditions and with ongoing state support. The pessimistic scenario assumes a slower rate of expansion, which may result from heightened economic uncertainty. Even in this case, however, the industry is expected to preserve its growth momentum, beginning from 47,004 billion soums in 2026. By contrast, the optimistic scenario envisages the strongest growth path, suggesting that output could reach 83,029 billion soums by 2028. Such a projection is based on more favorable assumptions regarding the external economic environment and sustained demand for textile products. The analysis of Uzbekistan's textile industry over the period 2016–2025 demonstrates that the sector has maintained stable growth in both nominal and real terms. The 18,71% increase in the real value of textile and apparel production recorded in 2025 confirms that the processes of modernization and sectoral development are continuing. These results are broadly consistent with global trends in the textile industry, which has also shown continued expansion. Forecasts indicating that the global textile and apparel market may reach USD 1,8 trillion by 2025 further support this conclusion. In this context, Uzbekistan is not only preserving positive development dynamics, but also gradually strengthening its position within global supply chains.

The forecasting results also have broader methodological relevance for the analysis of industrial time series in developing economies. The use of the ARIMA model in the article demonstrates its practical value not only for forecasting, but also for the analysis of economic time series in countries with similar industrial structures. In a number of empirical studies, comparable models have been applied to examine the effects of global fluctuations in raw material prices on industrial performance. Such an approach may also be useful for Uzbekistan, particularly in light of changes in the world economy and international trade. In addition, the results may contribute to broader discussions on structural transformation and the effectiveness of industrial policy. Comparisons with other developing economies, including India and Vietnam, suggest that a strategic focus on exporting higher value-added finished goods can improve financial outcomes, expand employment opportunities, and reduce dependence on raw material exports [15], [16]. Incorporating these factors into the forecasting framework could improve the quality of projections and support more informed policy decisions.

At the same time, the forecasting results may also be useful for broader assessments of structural and sustainability-oriented industrial transformation. The influence of these processes on the national economy, as well as on evolving international trade strategies, represents an important avenue for future research. Overall, the selected ARIMA (0,2,1) specification appears to be statistically sound and suitable for medium-term forecasting up to 2028. It captures both t he accelerating nature of textile output growth and the inertial effects of random shocks. At the same time, it should be noted that double differencing

increases uncertainty as the forecasting horizon extends, which leads to wider confidence intervals. For this reason, short- and medium-term projections may be regarded as relatively reliable, whereas longer-term estimates require additional testing of model stability and, if necessary, the inclusion of external explanatory factors [17].

The findings suggest that the development of the textile and apparel industry cannot be adequately explained by growth in production or exports alone. A more complete interpretation requires attention to the effectiveness of the organizational-economic mechanism underlying sectoral development. In this regard, the improvement of the mechanism should be viewed as a coordinated process that integrates institutional regulation, enterprise modernization, market expansion, and adaptive management. Its effectiveness is determined by the extent to which quantitative growth is supported by deeper processing, technological renewal, stronger external positioning, improved coordination across production stages, and a more consistent analytical basis for decision-making. In this sense, the organizational dimension ensures interaction, governance, and coordination, whereas the economic dimension provides incentives, financing, competitiveness, and value creation. Their combined operation forms the basis for the sustainable development of the industry.

Table 6

Priority directions for improving the organizational-economic mechanism of the textile and apparel industry

Priority direction	Key instruments	Expected effect
Deepening of processing	Vertical integration, product diversification, branding	Higher value-added production
Technological modernization	Equipment renewal, digitalization, innovation financing	Higher productivity and product quality
Export development	Certification, logistics improvement, market diversification	Stronger external competitiveness
Coordination within the production chain	Supply-chain integration, information exchange, performance monitoring	Lower transaction costs and better interaction between stages
Investment support	Preferential financing, leasing, project-based funding	Faster modernization and more stable growth
Human capital development	Training, retraining, managerial upgrading	Stronger labor productivity and management quality
Monitoring and planning	Forecasting, data revision, analytical evaluation	More evidence-based sector management

The directions summarized in Table 6 indicate that the improvement of the organizational-economic mechanism should be based on a combination of institutional, economic, and managerial measures. From this perspective, sustainable development of the textile and apparel industry depends not only on output growth, but also on deeper processing, technological modernization, stronger export performance, improved coordination across production stages, and continuous analytical support. This makes it possible to link the empirical findings of the article with practical priorities of sectoral development and to move from descriptive analysis toward a more substantive policy interpretation. At the same time, the forecasting results should be regarded as only one analytical component of the organizational-economic mechanism. Although ARIMA is useful as a baseline instrument for identifying the medium-term trajectory of the sector, it does not fully reflect the influence of institutional, investment, export, and technological factors. For this reason, future research may improve the analytical robustness of forecasting through comparison with alternative time-series models and through the inclusion of exogenous variables such as investment activity, export performance, employment, and energy supply.

The analysis for 2016-2025 shows that Uzbekistan's textile and apparel industry has developed steadily, with recent growth driven mainly by real production expansion rather than price effects. The sector remains an important component of the industrial structure and a significant source of economic growth. At the same time, its development should be assessed not only through output dynamics, but also through the effectiveness of its organizational-economic mechanism, which combines institutional-regulatory, production-investment, technological, value-added, export-logistics, and human-capital components. The findings indicate a generally positive development trajectory, while the ARIMA-based forecast suggests continued medium-term growth through 2028. However, the sustainability and quality of this growth will depend on the extent to which the sector can strengthen deeper processing, technological upgrading, coordination across production stages, and competitiveness in external markets. Thus, further development should be linked not only to quantitative expansion, but also to the improvement of the organizational-economic mechanism underlying the industry.

In this regard, several priorities should be emphasized. First, greater attention should be paid to constant-price indicators in order to distinguish real growth from inflation-driven changes more accurately. Second, enterprise modernization should be accelerated through equipment renewal, digitalization, and productivity improvement. Third, deeper processing, product diversification, and branding should be expanded to increase value added. Fourth, export competitiveness should be strengthened through better logistics, certification, and market diversification. Fifth, coordination among producers, processors, exporters, investors, and supporting institutions should be improved in order to reduce transaction costs and enhance sectoral efficiency. Finally, future forecasting can be improved by extending the ARIMA framework to include exogenous factors such as exports,

investment, employment, and energy supply. Overall, the study confirms that the long-term potential of Uzbekistan's textile and apparel industry depends not only on preserving growth, but on strengthening the coherence, adaptability, and effectiveness of its organizational-economic mechanism.

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