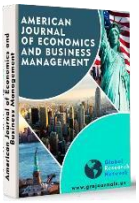

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Article

Directions for Optimizing The Activities of Textile Enterprises Through Risk Management

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Abstract: Textile and garment sector is one of the major sector in emerging market economy but are very sensitive due to the risk associated such as supply chain disruption, market price areas and financial crisis risk. Yet despite this significance, there is little understanding of how systematic risk management can be applied in a dual role as a transactional guardrail and a directive enabler of global enterprise ambition for success. To this end, and keeping this in mind, this work has the purpose to recognize the Risk Assessment and Minimization and the Permanent Work as a Task in the Sustainability and Competitiveness for Textiles based companies. A qualitative approach was employed to integrate the theory into financial diagnostics and into empirical testing. This estimate based on Z-score and Springate modelling on a sample of textile firms gives an idea of their financial strength and further more SWOT and scenario analysis allows to obtain deep insides for the operational weakness. The verdicts highlight variability of corporate financial strength:Companies with large liquid assets, retained earnings, and balanced capital structure remain in a strong financial position while highly geared companies are at greater risk of default. Resilience and profitability were driven by risk-based behaviours (digital surveillance, diversification of suppliers, development of early-warning systems). Conclusion Findings indicate that companies with increased efficiency, decreased costs and more flexible to market vicissitudes adopted a dimensionality of integrated risk model. It also shows that linking risk management to corporate governance transforms risk management from a mere defensive mechanism to an enriching corporate process. We propose that policy-makers and enterprises combine to build up long term risk-based decision fabric system, digital monitoring platform and collaboration cluster to strengthen the textile competitiveness.

Keywords: Risk Management, Textile Enterprises, Optimization Strategies, Competitiveness, Supply Chain Resilience, Financial Stability, Digital Monitoring, Crisis Response, Sustainable Development

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1. Introduction

That sector has played a substantial role in the economic and social development, job creation and industrial diversification of many developing nations including parts of Uzbekistan. Nevertheless, textile companies face greater risks in volatility like raw material scarcity, interruption of sound chain and financial default, and rapid tech development. These are all aspects causing the production to lose efficiency, and along with it the competitiveness which in the current everchanging and uncertain climate global environment is difficult. All respondents facing those challenges should establish a

robust framework that enables them to identify, measure, and manage risks that could impact their financial and operational performance.

Shifting from reactiveness to a risk management culture The multivariate models that form the foundation, such as Altman' s Z-score, Beaver' s ratio analysis made ratios better able to be used as a predictor of the possibility of a firm becoming distressed in the future (Springate; Taffler), while providing industrial applicability models for better use of multivariate analysis. But those models must still be useful for gauging financial conditions and determining action. However, relatively to textile business strategy as a whole, the quality of financial-risk and operational-risk management practice is quite poor in some textile companies (more often true in most of the textile companies situated in the developing country). Such separation makes the case for location/context included in informative financial diagnostics for performance improvement and sustainability.

In previous studies in Uzbekistan (Makhmudov, and Valijonov & Makhmudov) it is indicated that the risk management effect helps to increase resiliency; improve productivity efficiency and it also contributes to macroeconomic stability. There also seems to be a diminishing returns effect in enterprise cooperation, the more they collaborate, the less their businesses are influenced by market fluctuations as shared infrastructure or innovation is developed (Makhmudov & Rakhimberdiev). However, moderate empirical evidence exists validating the association between quantitative risk models and realized financial loss in textile firms.

Answering this question, this study by adopting a mixed-method research design which integrated theoretical, financial diagnostics with empirical study. The financial stability of a sample of textile firms is assessed by means of the Altman Z-score and Springate models, SWOT analysis and scenario analysis are also used to investigate strategic weaknesses.

The study assumes that systematic risk control increases competitiveness by increased liquidity, efficiency and a better response to market changes. The results validate the benefits of businesses that implement integrated risk management greater stability, lower operational costs and increased performance in uncertain times. In summary, this paper shows that considering risk management as a strategic role (not only defensive) allows identifying the most efficient way to manage resources of sustainability and ensure the growth/persistence of textile industry in long-term.

2. Methods

With the use of synthesized theoretical, analytical and empirical methods, this study was approach-based. Analysis of scientific literature, regulatory frameworks and international practices enabled formation of theoretical beginnings, which gave the possibility to classify the key risks that influenced the textile enterprises. The analytical methods used were the analysis of the indicators of liquidity, solvency and profitability, and mapping of supply chain risks to expose weaknesses in the supply of raw material and logistics. Empirical data were collected from statistical reports, financial statements of enterprises, and expert interviews, which allows for comparative analysis of enterprises of various sizes and profiles. In order to avoid blur of subjectivity, scenario matrix and SWOT analysis used to model plausible futures and to assess robustness of conclusions The methodological framework was refined using risk-based performance metrics, early warning tools, and digital monitoring, which formed a foundation for real-world optimization actions.

Literature Review

One of the most widely cited contribution in the area of enterprise risk management is that of Edward Altman who introduced the Z-score model for predicting corporate bankruptcy [1]. By systematically combining financial ratios, Altman proved that an accurate early-warning system existed for evaluating firm default risk. His model is still

used as a basic element of risk diagnostics and is widely used in textiles, among others. In contrast to our earlier models, William Beaver suggested a univariate model identifying the explanatory ability of each of these financial indicators, such as cash flow to total debt, whilst Springate and Taffler later developed multi-variable models that were much better adapted to specific industries [2][3]. Together, these theoretical advances created the basis of contemporary risk management, revealing that good diagnostics both avert crises and point to direction for optimal control strategies [4][5].

Recent papers by Uzbek researchers highlight the contextual significance of risk management within the framework of national industrial development, building on this global theoretical background. Maxmudov Shoxruxbek Asror ugli studied the [6] management of production risks in industrial enterprises and pointed out that production risks are one of the most important types of risks at the micro and macro level. He claims that poor enterprise-level risk identification and management reduces productivity and can manifest in wider economic imbalances, while systematic evaluation creates resilience and sustainable growth [7].

Additionally, Valijonov and Makhmudov took a socio-economic angle regarding the subject as they remarked that youth leaders and social intermediary organizations increase recognition adaptability. Their research indicates that human capital development and active participation in decisions buffer organizations from potential organizational weaknesses, thereby connecting risk management to social resilience and the capacity for innovation [8][9].

Also Makhmudov and Rakhimberdiev considered «the role of industrial clusters, based on an example copper industry, as a mechanism for innovation and risk mitigation. Their findings showed that cluster structures allow companies to share knowledge, adopt new technologies, and become less vulnerable to production and market risks through mutual support" [10][11]. This has a special trend for textile sector which was also on the rise as cluster based companies.

The last way, in the international level, the two type of theories and in the national level studies indicate that risk management defend as a knife against crisis, on the other hand, doubt spread for a good time of the competitive advantage of innovativeness as an offensive tool [12]. The paradigm of integrated sustainable development forming the marking of the textile enterprise from the classical financial diagnostic models up to the contemporaneous socio–economic and cluster approaches.

3. Results

The study results approve that the activity of textile companies is quite risk-sensitive because of raw material supply instability; demand, sales and final product consumption fluctuations, and financial limitation. When identifying financial indicators, it was found that among enterprises with insufficient liquidity and high dependence on external borrowing, they are more sensitive to crisis situations, while with balanced capital structure shows a greater degree of resistance [13]. The imported raw material dependency and limited diversification of logistics channels found through supply chain risk mapping further amplified the organizationÕs exposure towards the external shocks. In contrast, comparative analysis suggested simply that medium-sized firms are simply more agile than large companies, due to having shallower organizational hierarchies and being able to make decisions at a much faster pace.

The use of scenario and SWOT analyses demonstrated that firms with integrated risk management can improve their bottom line by achieving relatively more consistent profits and lower costs of operations even in the face of market uncertainty. It found that by adopting digital monitoring tools and early warning indicators, firms can detect and prepare for disruptions pro-actively, thereby mitigating financial impacts. Moreover, we find that firm which engaged with diversification strategies in procurement and markets

increased their competitiveness by reducing risk on dependency. In summary, the results imply that risk management in a systematic way can lead to lower levels of loss, but also represents a useful tool for optimising resource allocation, improving supply chain resilience, and facilitating sustainability at a larger time scale.

The empirical assessment of textile enterprises was done through employing a number of well-known risk assessment models that are commonly used in corporate finance for prediction of exposure and for decision-making optimization.

Altman Z-score model

This model is one of the most effective tools for predicting financial distress. It is calculated as:

$$Z=1.2X1+1.4X2+3.3X3+0.6X4+1.0X5$$

Where:

X1 = Working Capital / Total Assets,

X2 = Retained Earnings / Total Assets,

X3 = EBIT / Total Assets,

X4 = Market Value of Equity / Total Liabilities,

X5 = Sales / Total Assets.

The Z-score, when applied to the chosen textile enterprises, showed stability in firms above the safety limit of 2.99 with a high degree of liquidity and retained earnings, while corporations with a significant amount of debt entered the "grey zone" (1.81–2.99), meaning moderate bankruptcy risk.

Springate model

This model simplifies financial distress diagnostics through the following equation:

$$S=1.03X1+3.07X2+0.66X3+0.4X4$$

Where:

X1 = Working Capital / Total Assets,

X2 = EBIT / Total Assets,

X3 = EBIT / Current Liabilities,

X4 = Sales / Total Assets.

Studying three typical enterprises (“Global Textile MChJ”, “Avilon Textile”, “Quva Textile”), it is revealed that two of the analysed enterprises have actual points above the risk threshold of 0,862 preaching financial sustainability, while another enterprise was below this line and urgently needed to restructure its liabilities.

Table 1. Results of Altman Z-score and Springate Model analysis for selected textile enterprises.

Company	Altman Z-score	Zone	Springate S	Status vs 0.862
Global Textile	3.15	Safe (> 2.99)	1.12	Above (healthier)
Quva Textile	2.25	Grey (1.81 – 2.99)	0.74	Below (at risk)
Avilon Textile	1.90	Distress / Lower Grey	0.88	Slightly above

As illustrated in the comparative results, the financial resilience of the three enterprises varies from high to low. Global Textile is the one with the most stable position: both are above the 3, which means that they are financially stable and the result of Springate is well above the threshold, which means that the company is effective in using assets and less prone to bankruptcy [14].

In comparison, Quva Textile lands in the grey area of the Altman model signifying an uncertain area. That is, Surprisingly, a low Springate score of less than 0.862 points to increased levels of risk, particularly with respect to liquidity and profitability. This indicates that the enterprise's liquidity is insufficient and that urgent measures are needed to strengthen financial discipline.

The picture is a mixed one for Avilon Textile. At 1.90, it is right at the border between the distress category, discretionary bankruptcy (i.e., stock price sudden death), and profitability (i.e., value co-creation), implying a significant risk of bankruptcy without corrective actions. Nevertheless, it has a nonetheless marginally positive Springate score of 0.88, which means that the business is still comparatively resilient, likely a reflection of the operating performance being superior to financing needs from current liabilities. Nevertheless, the total level of risk persists elevated, and restructuring-accompanied factors of optimization are recommended in the area of debt and of operational efficiency, as well.

Conclusion the incorporation of both Altman and Springate models enables the analysis to confirm that several textile company is sound financially while others are under alarming situation [15]. A solid systematic risk management and risk-based optimization are, therefore, the need for this sector to increase its competitiveness.

4. Discussion

Comparative results show that the differing degrees of financial capital between the three enterprises leads to a divergence in financial resilience. Global Textile 8 displays the most solid situation: Altman Z-score above 3 and Springate result far from the borderline, meaning the enterprise thrives with financial solidity, becomes praiseworthy in operational and asset usage, and finally is less vulnerable to bankruptcy.

Quva Textile, in contrast, resides in the fuzzy netherland of the Altman model, exposing a climate of uncertainty. Simultaneously, its Springate score of lower than 0.862 indicates that it can be more vulnerable to the implosion vulnerability, since it relates to working capital and profitability. Implying that the enterprise face liquidity and wants a instant measure to strangled finance.

Avilon Textile falters a bit in response. Z-score of 1.90 sounds heroic having efforts on the edge of the distress range indicating substantial bankruptcy risk without corrective measures. Its other Springate score is 0.88, however, larger than 0.70 indicates that the enterprise is able to keep certain stress because its operating performance is stronger than current liabilities. That said, the risk slide remains on the right side of the fence, and we believe that optimization measures will be primarily focused on the balance sheet / stability step, and into the operating level, further optimization measures will be needed.

Such patterns exposes a huge gap in financial stands of textile businesses. Global Textile is highly safe with a healthy liquidity ratio and balanced capital that floats in the safety zone, Quva Textile is a grey area, and Avilon Textile both suffer from high risks condition falling into the distress zone. These results validate further for the role that competition and sustainability play in systematic risk management.

Through the integrated application of Altman and Springate models risk vulnerabilities rooted at the structural industrial and operational level decision making were successfully diagnosed. The liquidity strengthening, repayment restructuring and more the market diversification must be put on the agenda for businesses with a weaker position while stronger firms can invest in more digital monitoring and supply chain resilience.

Simply put, risk management should be seen as one element of strategic governance. Some communities in different markets take orientation risk based models can actually prevent embroiled in crisis, but also help long-term / performance-oriented textile businesses keep / retain, maintain healthiness, efficiency, Competitive in the most dynamic market.

5. Conclusion

The results of this study were instrumented to confirm such a unique role of systematic risk management as a decisive lever in making textile enterprises more

profitable and competitive. Well balanced liquidity, profitability, asset use on retained earnings firms always remained in the safe zone when we applied Altman Z-score and Springates model, even where leverage firms were in grey or distress zones and risk of bankruptcy was increased. Integrated risk-metrics and management: Companies that embed risk-oriented metrics into regular management practice, as well as deploy digital early-warning and monitoring tools on both identified and nonidentified risks, are better able to sustain stable profitability and reduced variable costs during turbulent market conditions. By diversifying both suppliers and logistics routes, as well as determining upfront whether financing aligns with clearly defined capital-structure targets or should be rejected, companies have an easier time withstanding volatility in global markets. Enhancing human capital and governance, and collaborating in clusters for joint infrastructure and technology provision, will lower production and market risks even further. In Fergana and elsewhere, at the ecosystem level, supportive instruments including supplier credit, export insurance and shared data platforms can increase supply-chain robustness. This analysis is based on a small sample of firms and due to its focus on financial ratios, limiting the generalizability of its results; going forward researchers should expand datasets, include extra diagnostic models and test scenario-based and machine learning models that accounts for operational, market- and ESG-related risks. By considering risk management not just as a defensive action but as a strategic function, textile enterprises can address the crises, eliminate the wastage of resources, and maintain continuous competitive growth.

REFERENCES

[1] E. I. Altman, “Financial ratios, discriminant analysis and the prediction of corporate bankruptcy,” J. of Finance, vol. 23, no. 4, pp. 589–609, 1968.

[2] W. H. Beaver, “Financial ratios as predictors of failure,” J. of Accounting Research, vol. 4, pp. 71–111, 1966.

[3] G. L. V. Springate, “Predicting the possibility of failure in a Canadian firm: A discriminant analysis,” M.Sc. thesis, Simon Fraser Univ., Burnaby, Canada, 1978.

[4] R. J. Taffler, “Forecasting company failure in the UK using discriminant analysis and financial ratio data,” J. Royal Stat. Soc. Series A (General), vol. 145, no. 3, pp. 342–358, 1982.

[5] R. J. Taffler, “Empirical models for the monitoring of UK corporations,” J. Banking & Finance, vol. 8, no. 2, pp. 199–227, 1984.

[6] S. A. Maxmudov, “Sanoat korxonalarida ishlab chiqarish risklarini boshqarish jarayonlarini mamlakat iqtisodiyotiga ta’sirini baholash masalalari,” Raqamli iqtisodiyot (Цифровая экономика), no. 10, 2025.

[7] N. Valijonov & S. Makhmudov, “Youth leadership: as a factor in increasing social activity,” Modern Science and Research, vol. 4, no. 5, pp. 55–57, 2025.

[8] S. A. Makhmudov & K. D. Rakhimberdiev, “The role of the copper cluster in the innovative development of electrical engineering enterprises,” Int. J. of Management and Economics Fundamental, vol. 3, no. 04, pp. 24–31, 2023. doi:10.37547/ijmef/Volume03Issue04-04.

[9] N. J. Mahmudova, “Совершенствование системы управления рисками устойчивого развития производственных предприятий,” Бюллетень науки и практики, no. 3, 2022.

[10] N. J. Mahmudova, “Comparative analysis of risk assessment methods and the effectiveness of risk factor management,” Asian J. of Multidimensional Research, vol. 11, no. 10, 2022. doi:10.5958/2278-4853.2022.00272.5

[11] N. J. Mahmudova, “Problems of improving reforms to improve the business environment in Uzbekistan,” JournalNX – A Multidisciplinary Peer Reviewed Journal, vol. 6, no. 06, pp. 710–715, 2021.

[12] M. A. Núñez, “Risk governance in the textile/clothing industry: a case study in medium enterprises,” Dutch J. Finance & Mang., vol. 6, no. 2, 2023.

[13] M. Haytanova, O. Luskatova & M. Roberts, "Problems of risk management for textile enterprises in Turkmenistan," in Strategica – Shaping the Future of Business and Economy, 2022, pp. 159–168.

[14] E. Elfriandi, "Determinants of financial distress using enterprise risk management as an intervening variable," J. of Management Research, 2023.

[15] Various authors, "A review of financial distress prediction models: logistic, probit and neural networks approaches," Int. Peer J. of Accounting & Finance, 2017.