

MOSHI CO-OPERATIVE UNIVERSITY

DISSERTATION ABBRIDGMENT

Title:

“Supply Chain Risk Management and Operational Performance of Selected Manufacturing Industries in Kilimanjaro Region.”

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INTRODUCTION

Global manufacturing industries increasingly face challenges in operational performance due to supply chain disruptions, market volatility, and pressures from globalization, creating a need for robust risk management strategies to enhance efficiency and competitiveness (Kannan & Tan, 2017). In Tanzania's Kilimanjaro region, manufacturing firms, particularly small and medium enterprises (SMEs), frequently experience inefficiencies, high operational costs, and recurring supply chain disruptions, underscoring the critical role of Supply Chain Risk Management (SCRM) in improving operational outcomes (Azeez, Ogunsola, & Omorinsola, 2021). While effective SCRM practices are essential to mitigate risks and ensure operational stability, their impact on performance metrics remains underexplored in this context (Cai & Yang, 2019).

In the African context, the manufacturing sector is pivotal for economic development, job creation, and industrialization (Chen & Paulraj, 2014). However, the dynamic and complex operational environment requires proactive SCRM adoption to maintain competitiveness (Feng, Zhang, & Wang, 2018). In Tanzania, SMEs play a vital economic role but are particularly vulnerable to inefficiencies, making the integration of SCRM strategies essential for sustainable growth (Al-Aomar & Kannan, 2015).

SCRM strategies such as supplier diversification and inventory buffering have demonstrated potential to enhance operational performance by reducing disruptions and lowering costs. For instance, firms implementing supplier diversification reported a 30% reduction in supply chain disruptions, while inventory buffering decreased production halts by 20% (Al-Aomar & Kannan, 2015; Chopra & Sodhi, 2014). Despite these benefits, many manufacturers in Kilimanjaro face persistent operational challenges due to inadequate implementation, highlighting operational performance as a critical research issue (Gunasekaran & Ngai, 2014).

Despite progress in understanding SCRM, significant research gaps remain. Implementation challenges in emerging economies, such as limited resources and expertise, hinder effective risk management (Gunasekaran & Ngai, 2014). While studies have examined SCRM in the Kilimanjaro region (Feng, Zhang, & Wang, 2018), context-specific analyses of its impact on operational performance, especially for SMEs, remain scarce. In practice, Tanzanian manufacturing firms employ strategies such as continuous risk assessment and strong supplier relationships, which have reduced supply lead times by 15% and improved forecast accuracy

by 25% through data analytics (Gunasekaran & Ngai, 2014). Nevertheless, inadequate risk assessment protocols and underutilization of technology have resulted in up to a 40% higher incidence of disruptions in some firms (Chopra & Sodhi, 2014), highlighting the need for improved SCRM integration.

Through a cross-sectional study design, focused on Kilimanjaro manufacturing industries. Out of 232 targeted population on 147 were included in data collection as study sample. Data were collected using interviews and survey questionnaires, and a subsequent analysis with SPSS offered significant insights.

SUMMARY OF FINDINGS

The study thoroughly examined the key determinants of operational performance in Kilimanjaro's manufacturing sector, using a highly reliable measurement instrument (Cronbach's Alpha = 0.946).

The combined effect of strategic Supply Chain Risk Management (SCRM) and flexibility strategies is not marginal but central to operational success, accounting for an impressive 71% of the variation in performance ($R^2 = 0.706$). This strong model reinforces the validity of the study's theoretical framework.

Employee Training Programs emerged as the most influential determinant, showing the strongest correlation ($r = 0.635$). This finding clearly demonstrates that investment in employee skills and knowledge produces the highest marginal gains in this market context.

In addition to improving internal efficiency, SCRM contributes directly to measurable business outcomes, including reduced operational costs and better resource utilization, which strengthen a firm's competitive position and improve customer loyalty.

CONCLUSION

Based on the findings the following were concluded: The findings show that SCRM is not an optional or theoretical concept but an essential requirement for organizational survival. Proactive risk identification and mitigation are fundamental to building resilience and achieving superior operational efficiency in volatile environments.

Furthermore, the strong influence of employee training validates the Resource-Based View (RBV) in the East African context. Investment in internal capabilities, particularly skills and

knowledge, proves more powerful than technology alone in securing sustainable competitive advantage.

In addition, operational flexibility is confirmed as a vital strategic capability. The ability to adopt production processes and supply systems rapidly not only reduces disruption-related costs but also enables firms to seize opportunities arising from fluctuating market conditions, thereby enhancing long-term profitability. Integrating SCRM elevates firms beyond basic compliance. By reducing waste and enhancing resource utilization, SCRM produces measurable economic benefits that strengthen financial stability and justify managerial investment.

RECOMMENDATIONS

Based on the title, methodology, and conclusion, the following recommendations are provided:

- 1) Implement mandatory, continuous SCRM training programs focusing on practical risk identification and response procedures, tailored to the predominantly young and educated workforce.
- 2) Establishment of dedicated SCRM teams and implement a formal framework that includes maintaining a risk register for categorization and using a visual risk matrix for quarterly reviews and prioritization of vulnerabilities.
- 3) Implementation of Lean and Flexible Production Systems, including strict adherence to the 5S methodology and development of modular production lines that reduce changeover time and allow rapid product switching.
- 4) Adoption of dual-sourcing strategies for all critical inputs and build collaborative supplier relationships that include joint demand forecasting.
- 5) Investing in cost-effective technologies such as IoT sensors and RFID systems for real-time tracking, feeding data into supply chain management software for predictive analytics and proactive alerts.

Suggestions for Future Research

Future research can be conducted to investigate the specific challenges and opportunities facing resource-constrained SMEs in implementing advanced SCRM practices in Tanzania.