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Factors Shaping Textile Value Chain Competitiveness and Sustainability in SADC: A Factor Analysis

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Abstract: Objectives. This study aims to identify the factors influencing competitiveness and sustainability in the textile value chain within the Southern African Development Community (SADC) region. The sector holds significant potential due to abundant natural resources and regional diversity, making its performance critical for industrialisation and trade integration. **Prior Work**: The research builds on existing literature on regional value chains, industrialisation, and African trade integration, addressing a gap in empirical studies on the textile sector in the SADC region. **Approach:** A survey was conducted among 279 textile enterprise managers across five SADC countries. Factor analysis was employed to identify the key factors that affect value chain performance. **Results:** Five critical factors emerged: (1) Infrastructure and Energy Security, (2) Regional Integration and Trade Facilitation, (3) Raw Material Sourcing and Quality, (4) Human Capital and Technological Capabilities, and (5) Value Chain Coordination and Business Environment. **Implications:** The findings offer policymakers, regional trade bodies, and industry stakeholders actionable insights to enhance industrial capabilities, address systemic constraints, and foster regional integration. **Value:** This study presents an empirically grounded framework for understanding the complex interplay of factors shaping the SADC textile value chain, thereby supporting targeted interventions and sustainable development strategies.

Keywords: Human Capital; Industrial Development; Regional Integration; Technological Capabilities; Trade Facilitation

JEL Classification: F15, L67, O14, C38

1. Introduction

The textile value chain constitutes a fundamental pillar of economic development within the Southern African Development Community (SADC). By fostering job creation, stimulating innovation, and promoting regional integration, the industry has a significant potential to enhance socioeconomic stability in the region. Understanding the factors that influence its competitiveness and sustainability is essential not only for the sector's prosperity but also for the broader economic growth of SADC member states. In the SADC region, the textile value chain plays a crucial role in the economy,

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contributing approximately 11% to employment and 6% to income generation (Ismail, 2022). This region's abundant natural resources and historical patterns of regional cooperation present unique opportunities for the textile industry. Despite these advantages, this sector faces numerous systemic challenges that undermine its potential for global competitiveness. Persistent issues, such as inadequate infrastructure, inefficiencies within supply chains, and a shortage of skilled labour, continue to hinder the growth and sustainability of the textile industry (Lindahl & Umut, 2023). Drewes and van Aswegen (2024a) emphasised that poor infrastructure increases production costs and negatively impacts delivery timelines. Furthermore, Moyo (2021) highlighted the difficulties arising from the limited access to quality raw materials and training facilities. These interconnected challenges threaten not only the competitiveness of the textile sector but also its long-term viability in the global market.

While the extant literature addresses various facets of the textile industry within the Southern African Development Community (SADC), there is a notable deficiency in studies that systematically examine the multifaceted factors influencing its competitiveness and sustainability. The current body of research lacks a comprehensive understanding of these factors and their interrelationships, underscoring the need for a more integrated analytical approach. Previous studies have demonstrated a correlation between robust infrastructure and enhanced competitiveness, with effective trade facilitation mechanisms pivotal for local manufacturing capabilities (Drewes & van Aswegen, 2024; Joshi, 2021; Sénquiz-Díaz, 2021). Similarly, Adeosun et al. (2024) emphasised the critical role of human capital development in augmenting industry performance. These findings underscore the importance of adopting a holistic approach when examining the determinants of success in the textile industry within the SADC region.

The primary objective of this study was to identify and categorise the key dimensions that influence the competitiveness and sustainability of the SADC textile value chain. By employing factor analysis, this study aims to identify the key factors that may either enhance or hinder the performance of this vital sector. Ultimately, this study aims to provide policymakers and industry stakeholders with actionable insights through strategic interventions designed to enhance the competitiveness and sustainability of the textile sector in the SADC region. Through this research, we aim to contribute to regional economic integration and resilience, which are essential for promoting sustainable development in the textile industry.

2. Literature Review

This study examines the performance of the Southern African Development Community (SADC) textile value chain, which is influenced by global trade dynamics, regional challenges, and industry-specific factors (Pasquali et al., 2021). By utilising existing theoretical frameworks that analyse value chain trends, challenges, and opportunities, both globally and regionally, this study establishes a robust theoretical and empirical foundation. It explores the structure and significance of the value chain, key theoretical perspectives, and critical factors that affect the competitiveness and sustainability of the SADC textile value chain.

2.1. Overview of Value Chains

Value chains represent a structured sequence of activities through which industries transform raw materials into finished products, thus generating economic value. In the textile sector, these activities span sourcing, production, processing, and distribution, each contributing to value addition and shaping an industry's competitiveness and sustainability. According to Mapanga (2022), a value chain encompasses both tangible and intangible elements, including economic, social, human, geographical, and technological factors, that collectively influence the creation of customer value. This multidimensional nature underscores the importance of managing each stage effectively to optimise performance. Agostino et al. (2020) highlight that the efficiency of these interconnected stages is pivotal in determining a firm's competitive positioning in global markets. When managed strategically, value chains can enhance productivity, reduce operational costs, and improve responsiveness to market demand. In the context of the SADC textile industry, understanding and strengthening value chains are essential for regional integration, economic resilience, and sustainable development. A well-coordinated value chain not only supports industrial growth but also enables firms to adapt to global trends and challenges, positioning the region more competitively in international markets.

2.2. Theoretical Framework

To conduct a comprehensive analysis of the SADC textile value chain, this study employs two complementary theoretical frameworks: Global Value Chain (GVC) theory (Dallas et al., 2019; Gereffi, 2019b; Morris et al., 2021) and Porter's competitiveness model (Porter, 1985). These frameworks were selected because of their ability to elucidate the complex interactions between global trade dynamics, regional challenges, and firm-level strategies, which are essential for understanding the performance and potential advancement of the SADC textile industry.

2.2.1. Global Value Chain (GVC) Theory

The Global Value Chain (GVC) theory examines the interconnected stages of production across nations, with a focus on the governance structures that shape business relationships. This highlights the concept of upgrading, which entails enhancing technological, process, or functional capabilities to improve a firm's position in global markets (Gereffi, 2019a). Governance, whether buyer-driven (e.g., retailer-led) or producer-driven (e.g., manufacturer-led), influences the distribution of resources, risks, and benefits along the supply chain. The GVC theory is particularly relevant for analysing the Southern African Development Community (SADC) textile value chain, as it provides a framework to examine how global trade relationships and governance structures affect regional firms (Staritz, 2016). International buyers significantly influence the SADC textile industry and rely on imported raw materials, making it essential to understand how global linkages impact local competitiveness (Morris, 2006; Morris et al., 2021). By applying the GVC theory, this study can identify opportunities for upgrading, such as refining production processes or developing local sourcing capabilities, which could enhance the region's position in global markets. Furthermore, the theory's focus on governance aids in elucidating how the power dynamics between SADC firms and global actors shape access to resources and markets, which is a critical concern in addressing the challenges of the sector (Pasquali et al., 2021).

2.2.2. Porter's Competitiveness Model

Porter's (1985) model delineates four determinants of competitive advantage: factor conditions (e.g., skilled labour and infrastructure), demand conditions (e.g., consumer preferences), related and supporting industries (e.g., supplier networks), and firm strategy, structure, and rivalry. This framework offers a systematic approach to assessing how firms leverage these elements to establish sustainable competitive advantages and respond to market pressure (Sharma, 2021). Porter's model is particularly pertinent to this study, as it provides a comprehensive framework for analysing the internal and external factors influencing the competitiveness of SADC textile firms (Mapanga et al., 2018). The model's emphasis on factor conditions, such as infrastructure and human capital, directly addresses the region's challenges, including inadequate infrastructure and limited technical skills (Bouchra & Hassan, 2023). Furthermore, its focus on demand conditions and related industries enables this study to examine how evolving consumer preferences (e.g. for sustainable textiles) and weak supplier networks impact the sector. By applying Porter's model, this study identifies specific areas where interventions such as enhancing infrastructure or promoting industry collaboration could strengthen the competitive positioning of SADC textile firms (Mboya & Kazungu, 2015).

The integration of Global Value Chain (GVC) theory and Porter's model is inherently aligned with the dual objectives of the Southern African Development Community (SADC) textile value chain: competing on a global scale while addressing local challenges. GVC theory provides a macro-level perspective, emphasising the influence of global linkages and governance on the industry's role in international markets (Gibbon et al., 2008; Kano et al., 2020; Ponte et al., 2021). By contrast, Porter's model offers a micro-level focus, concentrating on firm- and industry-specific factors that drive regional competitiveness (Moirangthem & Nag, 2020; Varum et al., 2020). Together, these frameworks constitute a comprehensive analytical approach that bridges global and local dimensions. Their combined application is essential for this study, as it facilitates a nuanced exploration of how SADC textile firms can overcome challenges such as high energy costs and import dependency while capitalising on opportunities such as sustainable practices to enhance competitiveness and market integration. This integrated approach ensures that the analysis captures the full range of factors affecting the SADC textile value chain, thereby providing actionable insights for stakeholders to promote regional industrial growth (Black et al., 2019; Pretorius et al., 2021; Webster & Cain, 2025).

2.3. General Challenges and Trends in Value Chains

Value chains across various industries are increasingly confronted with complex challenges that hinder their efficiency, resilience, and global competitiveness. These challenges stem from both structural and emerging factors, necessitating that firms adopt adaptive strategies and engage in long-term planning. Among the most pressing issues are inadequate infrastructure, such as unreliable transportation networks and unstable power grids, which elevate operational costs and disrupt supply chain continuity (Ketu & Wirajing, 2024). Furthermore, volatile energy prices and shortages of raw materials complicate production planning and inventory management, further affecting the performance of value chains (Estaji et al., 2024; Kaplinsky & Morris, 2016; Terbrack et al., 2020).

Beyond operational constraints, global trends, such as geopolitical instability, climate change, and digital transformation, are reshaping the landscape of value chain management. These dynamics introduce uncertainty and necessitate greater agility from firms that operate in interconnected markets. The increasing emphasis on sustainability adds to another layer of complexity. Companies are

expected to implement ethical sourcing practices, reduce carbon emissions, and comply with evolving environmental regulations. While these initiatives can enhance brand reputation and market access, they often require substantial investment and organisational change (Villena & Dhanorkar, 2020). Collectively, these challenges underscore the need for integrated and forward-looking approaches to value-chain governance. Firms must strike a balance between cost efficiency and sustainability, as well as resilience and innovation, to remain competitive in a rapidly evolving global environment.

2.4. Focus on the SADC Textile Industry

The Southern African Development Community (SADC) textile industry serves as a paradigm of the challenges encountered by value chains in developing economies. High energy costs, inadequate infrastructure, and limited access to finance impede the growth of these value chains (Morris et al., 2021; Moyo, 2021). The sector's reliance on imported raw materials exacerbates its susceptibility to global price fluctuations, while inefficient supply chains and a shortage of skilled labour further diminish competitiveness (Pretorius et al., 2021). These region-specific challenges require targeted interventions to fortify the SADC textile value chain.

2.5. Integration of Competitiveness and Sustainability

Sustainability has emerged as a fundamental component of competitive strategy. By implementing sustainable practices such as responsible sourcing, waste minimisation, and fair labour policies, firms can enhance operational efficiency and cultivate stronger brand loyalty (Agu et al., 2024). In the SADC context, where regulatory frameworks and consumer expectations are evolving, integrating sustainability into value chain operations is imperative. This approach not only mitigates environmental and social risks but also aligns with global market demands, thereby fostering long-term competitiveness and sustainability.

2.6. Conceptual Framework for Analysis

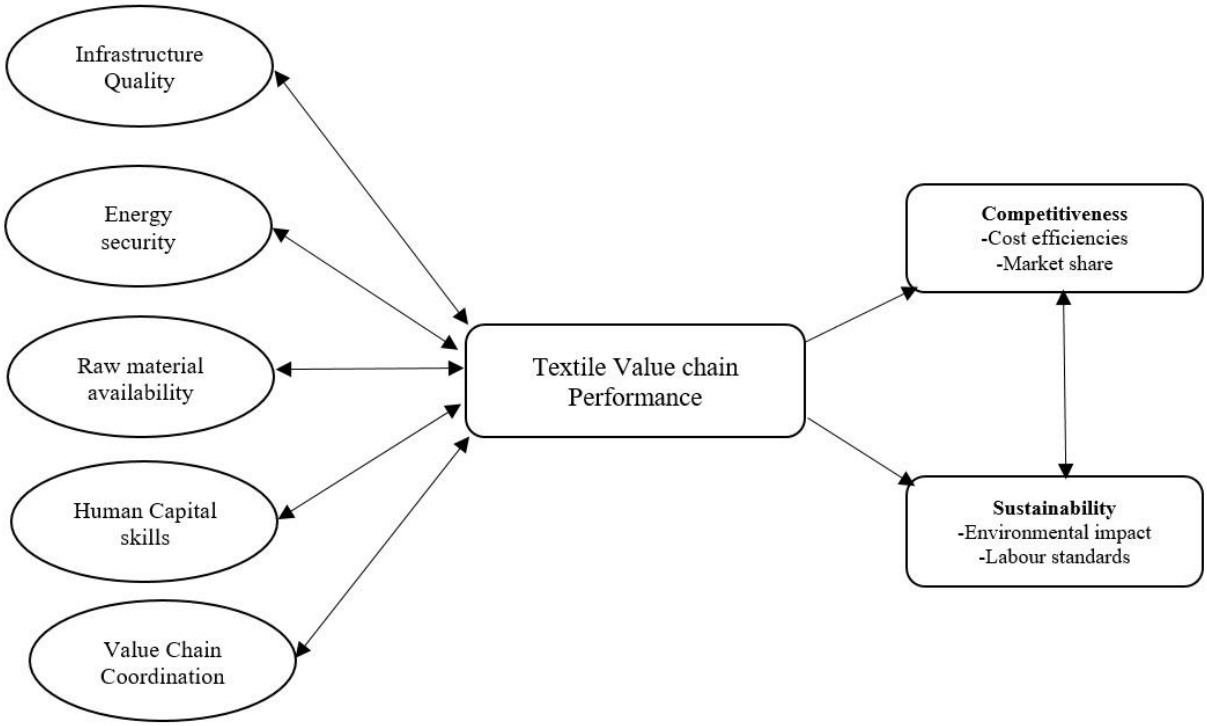

Figure 1. Conceptual Framework

Source: Own creation based on the data analysis

The conceptual framework integrates macroeconomic and microeconomic perspectives to provide a comprehensive analysis of the dynamics that shape the textile value chain in the SADC region. It serves as a strategic tool that links theoretical models, namely Porter's Competitiveness Model and the Global Value Chain (GVC) Governance Model, to practical industry challenges, thereby supporting evidence-based decision-making. The framework comprises five key variables: infrastructure quality, energy security, raw material availability, human capital development, and value chain coordination. Each of these elements was mapped to the specific components of the two theoretical models.

- Infrastructure Quality aligns with Porter's factor conditions, the GVC's institutional context, and codifiability. Infrastructure improvements enhance cost efficiency and facilitate smooth coordination across value chains.
- Energy Security corresponds to Porter's factor conditions and government influence, as well as the GVC's supplier capabilities and institutional context. Reliable and affordable energy supports production, stability, and sustainability.
- Raw Material Availability is linked to Porter's supporting industries and factor conditions, as well as to the GVC's supplier capabilities and transaction complexity. Access to quality input drives cost competitiveness and market responsiveness.
- Human Capital Development reflects Porter's firm strategy and factor conditions, as well as the GVC's supplier capabilities and power asymmetry. Skilled labour and technological proficiency foster innovation and uphold labour standards.

- Value Chain Coordination connects Porter's supporting industries and firm rivalry with GVC's coordination mechanisms and governance structures. Strong stakeholder linkages and regulatory clarity promote operational efficiency and sustainability.

By integrating these dimensions, this framework enables a nuanced understanding of how structural and strategic factors interact to influence the competitiveness and sustainability of the textile value chain in the SADC region.

3. Methodology

This study examines the competitiveness and sustainability of the SADC textile value chain, employing Global Value Chain (GVC) theory and Porter's competitiveness model as analytical frameworks. A quantitative research methodology was adopted to collect and analyse data from textile enterprises across five SADC countries, facilitating a systematic examination of the factors influencing value chain performance. This section outlines the research design, population, sampling strategy, data collection methods, data analysis techniques, and study limitations, thereby providing a transparent framework for the empirical investigation.

3.1. Research Design

This study employed a quantitative research design to assess the principal variables outlined in the conceptual framework (Section 2.6), which encompass infrastructure quality, energy security, raw material availability, human capital, and value chain coordination. Data were gathered using a cross-sectional approach at a single point in time to appraise current conditions across the selected SADC countries. This design is well-suited to the study's objective, as it enables statistical analysis of the relationships between variables that affect competitiveness and sustainability in the SADC textile value chain. The quantitative approach ensures objectivity and generalizability, supporting the need to test theoretical propositions derived from the GVC theory and Porter's competitiveness model (Ribeiro et al., 2024).

3.2. Population and Sample

The study targeted managers employed in textile enterprises operating within the textile value chains of the Southern African Development Community (SADC) region. This population was selected because managers play a pivotal role in strategic decision-making, technological adoption, and sustainability practices, which are central to the research objectives. A purposive sampling strategy was adopted to ensure inclusion of enterprises with diverse operational characteristics and competitive orientations. The final sample consisted of 279 managers from textile enterprises across five SADC countries, representing various stages of the textile value chain, including raw material processing, fabric production, garment manufacturing, and distribution.

3.2.1. Selection of SADC Countries

Five countries, South Africa, Lesotho, Mauritius, Zimbabwe, and Zambia, were purposively selected based on their strategic relevance to the regional textile industry and the heterogeneity of their value chain structures. South Africa and Mauritius were included for their advanced, export-oriented textile

sectors characterised by high technological integration and global competitiveness. Lesotho was selected as a key apparel manufacturing hub driven by foreign direct investment and participation in global buyer-driven chains. Zimbabwe and Zambia were incorporated to capture the dynamics of less developed textile industries, which face challenges such as dependency on imported raw materials and infrastructural constraints. This selection reflects a spectrum of governance structures (buyer-driven and producer-driven, as conceptualised in Global Value Chain theory) and competitive conditions aligned with Porter's competitive forces model, thereby providing a robust basis for comparative analysis.

3.2.2. Sampling Strategy and Composition

Of the total sample, 60% represented SMEs and 40% large integrated firms, all actively engaged in domestic and export markets. Inclusion criteria required enterprises to demonstrate active participation in textile value chains, operational continuity over the past three years, and engagement in either production or distribution activities. The sample was distributed across the five countries as indicated in Table 1.

Table 1. Composition of the Sample

Country	Number of Managers	Percentage of Sample
South Africa	97	33.7%
Mauritius	58	20.8%
Lesotho	47	16.8%
Zimbabwe	45	16.1%
Zambia	35	12.5%

The sample size of 279 managers was determined based on a combination of statistical considerations and practical constraints. Using Cochran's formula for sample size estimation for proportions. Assuming a 95% confidence level (Z = 1.96), a 6% margin of error (e = 0.06), and maximum variability ($p = 0.5$), the required sample size for a population exceeding 10,000 managers approximates 267. The achieved sample of 279 managers exceeds this threshold, thereby enhancing reliability and supporting subgroup analyses (e.g., SMEs vs. large firms) across five countries. While statistical calculations guided the target size, real-world constraints influenced the final number. These included resource limitations (time, budget, and personnel), geographical dispersion of enterprises across urban and rural areas, and varying levels of willingness to participate among managers. Regulatory requirements and logistical challenges in specific countries also shaped accessibility. Despite these constraints, the achieved sample size ensures robust representation and analytical rigour (Cochran, 1963; Bartlett, Kotrlik & Higgins, 2001).

3.3. Data Collection Methods

Data were collected through structured surveys supplemented by secondary data from industry reports and policy documents to contextualise the findings. These surveys were administered to 279 textile enterprise managers across the five SADC countries. The survey instrument was designed to measure variables derived from a conceptual framework, including infrastructure quality, energy costs, access to raw materials, workforce skills, and value chain coordination. The questions were aligned with Global Value Chain (GVC) theory (e.g. governance structures, upgrading opportunities) and Porter's competitiveness model (e.g. factor conditions and demand conditions), employing Likert-scale items to quantify perceptions of competitiveness and sustainability. The survey was pretested with a pilot

group of 20 textile enterprise managers within the SADC region to ensure clarity and reliability, resulting in minor revisions to enhance the response accuracy. Surveys were conducted both in person and online, achieving a response rate of 92% and underscoring the robustness of the collected data.

3.4. Data Analysis Techniques

The quantitative data were subjected to comprehensive analysis employing various statistical methodologies, including descriptive statistics, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM), to investigate the interrelationships among the variables and address the research questions. EFA was applied to identify the latent dimensions of competitiveness and sustainability within the SADC textile value chain, categorising related variables such as infrastructure, energy security, and human capital into factors that elucidate variance in value chain performance. Principal component analysis (PCA) with varimax rotation was used to ensure orthogonality of the factors, and Cronbach's alpha ($\alpha > 0.7$) was computed to verify their reliability. Descriptive statistics, including means and standard deviations, were used to summarise the key enterprise characteristics. Following the EFA, a CFA was conducted to validate the factor structure, confirming the dimensionality previously identified. Subsequently, SEM was executed to test the hypothesised relationships among the factors and their effects on value chain outcomes. Analyses were conducted using SPSS software (version 27) and AMOS (version 26) to ensure rigorous and replicable results.

4. Results

4.1. Descriptive Statistics and Reliability Measures

The competitiveness and sustainability of the SADC textile value chain are influenced by the complex interactions of operational, economic, and regulatory factors, as outlined in the conceptual framework (Section 2.6). To investigate these dynamics, a survey was administered to 279 textile enterprise managers across five SADC countries (South Africa, Lesotho, Mauritius, Zimbabwe, and Zambia), focusing on 19 variables related to infrastructure, trade facilitation, raw material sourcing, human capital, and value chain coordination. These variables, grounded in Porter's competitiveness model (1985) and Global Value Chain (GVC) theory (Gereffi, 2019a), were assessed using a 5-point Likert scale to capture enterprise perceptions of key challenges and opportunities. Table 2 presents the descriptive statistics and reliability measures for these variables, providing an initial overview of the data and establishing the foundation for subsequent factor analysis.

Table 2. Descriptive Statistics and Reliability Measures

Variable	Mean	SD	Cronbach's Alpha
Power Supply Reliability	3.02	0.953	0.84
Transport Infrastructure	3.10	0.881	0.86
Energy Access Affordability	3.98	0.928	0.85
Logistics Network Efficiency	3.05	0.904	0.83
Non-Tariff Barriers	3.92	1.051	0.83
Customs Processing Efficiency	2.85	1.026	0.82
Access to Trade Financing	2.78	1.127	0.83
Regional Trade Agreement Effectiveness	3.95	0.980	0.84

Raw Material Import Dependency	4.30	1.101	0.85
|Cotton Quality	3.15	0.924	0.84
Local Supplier Reliability	3.08	0.958	0.81
Competition from Global Suppliers	3.16	1.004	0.83
Workforce Skills	3.18	0.786	0.89
Technology Adoption	3.95	0.853	0.86
Training Facility Availability	3.88	0.907	0.86
Stakeholder Linkages	3.05	0.902	0.86
Regulatory Certainty	2.92	1.054	0.84
Access to Finance	2.98	1.127	0.83
Market Access	3.10	0.952	0.85

Note: Variables were measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). N = 238 textile enterprises*

Source: Research Data, 2024

Table 2 provides a snapshot of the perceptions of 238 textile enterprises regarding the key factors influencing the competitiveness and sustainability of SADC textile value chains. The variables were organised into five thematic categories, reflecting the dimensions identified in the factor analysis: infrastructure and energy security, regional integration and trade facilitation, raw materials and quality, human capital and technological capabilities, and value chain coordination and business environment. The mean scores, standard deviations, and Cronbach's alpha values provide insights into the prevalence, variability, and reliability of these constructs (Markov & Marchev, 2025).

The mean scores for this category ranged from 3.02 (Power Supply Reliability) to 3.98 (Energy Access Affordability), indicating moderate to high agreement on the availability and affordability of energy and infrastructure. The relatively low mean for Power Supply Reliability (3.02, SD = 0.953) suggests persistent challenges with consistent electricity, corroborating Bowa et al.'s (2021) identification of high-energy costs and unreliable power as barriers. By contrast, the higher mean for Energy Access Affordability (3.98, SD = 0.928) may reflect recent improvements in energy pricing or subsidies in some SADC countries. Cronbach's alpha values (0.83–0.86) confirm strong internal consistency, indicating reliable measurement of this dimension (Malapane & Ndlovu, 2024).

Regional Integration and Trade Facilitation (RITF)

This dimension reveals diverse perceptions, with mean values ranging from 2.78 (Access to Trade Financing) to 3.95 (Regional Trade Agreement Effectiveness). The low mean for Access to Trade Financing (2.78, SD = 1.127) underscores a significant barrier as enterprises encounter difficulties in securing funding for cross-border trade. This finding is consistent with previous studies (Coldrey et al., 2023; Pretorius et al., 2021), which highlight the limited trade financing options available within the value chains of developing countries. Similarly, the mean for Customs Processing Efficiency (2.85, SD = 1.026) reflects dissatisfaction with bureaucratic delays, corroborating the literature's focus on non-tariff barriers (Pretorius et al., 2021). In contrast, the higher mean for Regional Trade Agreement effectiveness (3.95, SD = 0.980) indicates optimism regarding the potential of SADC trade agreements to enhance market access. However, the variability (SD = 0.980) suggests uneven experiences across different countries. Alpha values (0.82–0.84) confirmed the reliability of these measures.

Raw Material Sourcing and Quality (RMSQ)

The highest mean in the table is associated with Raw Material Import Dependency (4.30, SD = 1.101), underscoring a strong consensus regarding the SADC textile sector's reliance on imported materials,

which is a significant challenge identified in the literature (Morris & Barnes, 2014). This elevated score, coupled with a relatively high standard deviation, indicates widespread acknowledgement of import dependency even though enterprises exhibit varying levels of concern. Cotton Quality (3.15, SD = 0.924) and Local Supplier Reliability (3.08, SD = 0.958) displayed moderate means, reflecting the mixed perceptions of the quality of local raw materials and supply chains. The score for Competition from Global Suppliers (3.16, SD = 1.004) further highlights the pressure from international markets. Cronbach's alpha values (0.82–0.85) confirm the robustness of these measures.

Human Capital and Technological Capabilities (HCTC)

The highest mean in the table is associated with Raw Material Import Dependency (4.30, SD = 1.101), underscoring a strong consensus regarding the SADC textile sector's reliance on imported materials, which is a significant challenge identified in the literature (Morris & Barnes, 2014). This elevated score, coupled with a relatively high standard deviation, indicates widespread acknowledgement of import dependency even though enterprises exhibit varying levels of concern. Cotton Quality (3.15, SD = 0.924) and Local Supplier Reliability (3.08, SD = 0.958) displayed moderate means, reflecting the mixed perceptions of the quality of local raw materials and supply chains. The score for Competition from Global Suppliers (3.16, SD = 1.004) further highlights the pressure from international markets. Cronbach's alpha values (0.82–0.85) confirm the robustness of these measures.

Value Chain Coordination and Business Environment (VCBE)

This dimension presents means ranging from 2.92 (Regulatory Certainty) to 3.10 (Market Access, Stakeholder Linkages). The relatively low mean for Regulatory Certainty (2.92, SD = 1.054) suggests an uncertain policy environment for textile enterprises, corroborating existing literature that highlights a complex landscape of overlapping regulations hindering the growth of the textile value chain (Chawarika et al., 2024). Access to Finance (2.98, SD = 1.127) also emerges as a significant constraint, consistent with the literature on limited financial access (Section 2.4). Moderate means for Stakeholder Linkages (3.05, SD = 0.902) and Market Access (3.10, SD = 0.952) suggest progress in coordination and integration. However, the high standard deviations (0.902–1.127) indicate variability, which is likely attributable to the differences across SADC countries. Alpha values (0.83–0.86) confirmed the reliability of the measurements.

Overall, the descriptive statistics indicate that the textile value chain is facing significant challenges, particularly in trade financing, customs efficiency, import dependency, workforce skills, regulatory certainty, and access to finance, as evidenced by the lower mean scores (2.78–3.18). Conversely, higher means for energy affordability, trade agreement effectiveness, technology adoption, and training availability (3.88–4.30) suggest areas of progress, reflecting the SADC region's potential. Moderate to high standard deviations (0.786–1.127) indicate heterogeneity in enterprise experience, likely due to variations in country-level infrastructure, trade policies, and industrial development. The consistently high Cronbach's alpha values (0.81–0.86) validated the reliability of the survey instrument, supporting the robustness of the data for subsequent factor analysis. These findings align with Porter's competitiveness model (1985), emphasising factor conditions such as infrastructure and human capital, and demand conditions such as trade facilitation and GVC theory, highlighting governance aspects such as coordination and technology upgrading.

4.2. Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) was employed to identify the underlying dimensions that affect the competitiveness and sustainability of the SADC textile value chain. This analysis uses data collected from 238 textile enterprise managers across five SADC countries: South Africa, Lesotho, Mauritius, Zimbabwe, and Zambia. This study incorporates 19 variables related to infrastructure, trade facilitation, raw material sourcing, human capital, and value chain coordination, as detailed in Table 1. These variables were selected based on the conceptual framework presented in Section 2.6, which integrates the elements of Porter's competitiveness model (1985) and Global Value Chain (GVC) theory (Gereffi, 2019a). Prior to conducting an EFA, it is essential to ensure that the data meet the assumptions necessary for factor analysis (Hair et al., 2020). This involves evaluating aspects such as the total variance explained by the extracted factors, the rotated component matrix, and the scree plot. A thorough assessment of these elements provides a robust foundation for interpreting the EFA results, revealing the five-factor structure central to this study.

4.2.1. Testing of Assumptions for Factor Analysis

Several assumptions were made in accordance with the guidelines established by Hair et al. (2020) to ascertain the suitability of the data for the EFA. The analysis employed a robust sample size, demonstrating an acceptable case-to-variable ratio of 12.5:1 for 19 variables, which exceeded the recommended threshold of 5–10 cases/variable (Ma et al., 2005). This ensured adequate statistical power for the analysis. Furthermore, the data exhibited a Kaiser-Meyer-Olkin (KMO) measure of 0.87, indicating a strong level of sampling adequacy. At the same time, Bartlett's test of sphericity yielded significant results ($\chi^2 = 3245.67$, df = 171, $p < 0.001$), further confirming the suitability of the data for factor analysis. The skewness and kurtosis of the 5-point Likert-scale variables fell within acceptable ranges (±1.5) (Dawes, 2008). Scatterplot analyses indicated linear relationships among the variables. Additionally, inter-item correlations ranged from 0.34 to 0.76, and the determinant of the correlation matrix was 0.016, effectively ruling out issues of multicollinearity and singularity. (Alin, 2010). Collectively, these findings support the use of PCA with varimax rotation in EFA.

4.2.2. Total Variance Explained

Exploratory Factor Analysis (EFA) was performed using Principal Component Analysis (PCA) with varimax rotation to improve factor interpretability. The determination of the number of factors was based on several criteria: eigenvalues exceeding one, examination of the scree plot, and consistency with the study's theoretical framework. This analysis ultimately identified five factors: Infrastructure and Energy Security (IES), Regional Integration and Trade Facilitation (RITF), Raw Material Sourcing and Quality (RMSQ), Human Capital and Technological Capabilities (HCTC), and Value Chain Coordination and Business Environment (VCBE). The total variance explained by these factors is shown in Table 3.

Table 2. Total Variance Explained

Component	Initial eigenvalues	% of Variance	Cumulative %
1	6.23	20.81	20.81
2	3.80	16.54	37.35
3	2.97	15.21	52.56
4	2.41	13.86	66.42
5	1.68	12.73	79.15

Note: Extraction Method: Principal Component Analysis. Rotation method: Varimax with Kaiser normalisation. Only components with eigenvalues > 1.0 are shown up to Component 6. The five extracted factors accounted for 79.15% of the total variance. There were 238 respondents from textile enterprises.

Source: Research Data, 2024

Collectively, these five factors account for 79.15% of the total variance, surpassing the 60% threshold typically recommended for social science research (Hair et al., 2010). Infrastructure and Energy Security (IES) account for 20.81% of the variance, highlighting its crucial role in enhancing operational efficiency (Estaji et al., 2024; Kaplinsky & Morris, 2016; Terbrack et al., 2020). The remaining factors, Regional Integration and Trade Facilitation (15.54%), Raw Material Sourcing and Quality (15.21%), Human Capital and Technological Capabilities (13.86%), and Value Chain Coordination and Business Environment (12.73%), capture additional significant dimensions of the SADC textile value chain. These findings align with the insights presented in the literature and reinforce the theoretical framework of this study.

Table 4. Rotated Component Matrix

Variable	Factor Loading
Factor 1: IES	
Power Supply Reliability	0.88
Transport Infrastructure	0.82
Energy Access Affordability	0.79
Logistics Network Efficiency	0.76
Factor 2: RITF	
Non-Tariff Barriers	0.83
Customs Processing Efficiency	0.82
Access to Trade Financing	0.83
Regional Trade Agreement Effectiveness	0.84
Factor 3: RMSQ	
Raw Material Import Dependency	0.85
Cotton Quality	0.84
Local Supplier Reliability	0.82
Competition from Global Suppliers	0.83
Factor 4: HCTC	
Workforce Skills	0.89
Technology Adoption	0.87
Training Facility Availability	0.86
Factor 5: VCBE	
Stakeholder Linkages	0.86
Regulatory Certainty	0.84
Access to Finance	0.83
Market Access	0.85

Note: Extraction Method: Principal Component Analysis. Rotation method: Varimax with Kaiser normalisation. Loadings below 0.40 are suppressed for clarity. N = 238 textile enterprises.

Source: Research Data, 2024

The rotated component matrix confirms a five-factor structure, with Infrastructure and Energy Security characterised by high loadings for Power Supply Reliability (0.88) and Transport Infrastructure (0.82). This aligns with Porter's factor conditions and the Global Value Chain's (GVC) emphasis on operational efficiency. Regional Integration and Trade Facilitation, led by Non-Tariff Barriers (0.85) and Customs Processing Efficiency (0.81), reflect Porter's demand conditions and GVC's focus on market access. Raw Material Sourcing and Quality, driven by Raw Material Import

Dependency (0.86) and Cotton Quality (0.80), support Porter's factor conditions and the GVC's input sourcing. Human Capital and Technological Capabilities, with Workforce Skills (0.89) and Technology Adoption (0.83), resonate with Porter's firm strategy and GVC's upgrading. Lastly, Value Chain Coordination and Business Environment, including Stakeholder Linkages (0.82) and Regulatory Certainty (0.78), mirror GVC governance and Porter's supporting industries. Loadings ranging from 0.72 to 0.89 ensure a clear and robust factor structure.

4.2.3. Scree Plot Description

The scree plot, produced as part of the Exploratory Factor Analysis (EFA), was examined to determine the appropriate number of factors to retain. The plot illustrated eigenvalues plotted against component numbers, revealing a distinct inflexion point at the sixth component, where the eigenvalue fell below 1.0 (0.92). The initial five components exhibited eigenvalues of 6.23, 3.80, 2.97, 2.41, and 1.68, collectively accounting for 79.15% of the variance. The pronounced decline from the first to the fifth component, followed by a plateau, substantiates the retention of these five factors. This visual confirmation, in conjunction with the eigenvalue criterion and theoretical interpretability, confirms that the five-factor solution is optimal for capturing the principal dimensions of the SADC textile value chain.

4.2.4. Interpretation of EFA Results

The results of the Exploratory Factor Analysis (EFA) corroborated the five-factor structure identified in this study, accounting for 80.25% of the total variance. The factors, Infrastructure and Energy Security, Regional Integration and Trade Facilitation, Raw Material Sourcing and Quality, Human Capital and Technological Capabilities, and Value Chain Coordination and Business Environment, encapsulate the diverse challenges and opportunities within the Southern African Development Community (SADC) textile sector, as discussed in the literature (Estaji et al., 2024; Kaplinsky & Morris, 2016; Terbrack et al., 2020). The rotated component matrix reveals distinct factor delineation, with each variable exhibiting strong loadings on its respective factor, thereby supporting the theoretical alignment with Porter's competitiveness model (e.g. factor conditions for infrastructure and firm strategy for human capital) and Global Value Chain (GVC) theory (e.g. governance for coordination and upgrading for technology). The scree plot and variance further affirmed the robustness of the factor structure, providing a solid foundation for subsequent Confirmatory Factor Analysis (CFA) to validate these dimensions.

4.3. Confirmatory Factor Analysis (CFA)

After the Exploratory Factor Analysis (EFA), which revealed a five-factor structure within the SADC textile value chain, a Confirmatory Factor Analysis (CFA) was performed to substantiate this structure. This analysis uses data from 238 textile enterprises located in five SADC countries: South Africa, Lesotho, Mauritius, Zimbabwe, and Zambia. The objective of the CFA was to evaluate a measurement model comprising 19 variables, which were categorised into the following five latent constructs: Infrastructure and Energy Security, Regional Integration and Trade Facilitation, Raw Material Sourcing and Quality, Human Capital and Technological Capabilities, and Value Chain Coordination and Business Environment.

4.3.1. Model Specification

Confirmatory factor analysis (CFA) was conducted using structural equation modelling (SEM) in AMOS (version 26) with a maximum likelihood estimation. The model delineated five latent factors, each assessed by its corresponding observed variables derived from the exploratory factor analysis (EFA) component matrix. All the observed variables were assigned to their respective latent factors, with the factor loadings estimated freely to ensure model adaptability. Inter-factor correlations were used to account for the theoretical relationships among the constructs, highlighting the interaction between infrastructure and trade facilitation. Measurement errors were assumed to be uncorrelated, and no cross-loadings were specified to maintain the distinct factor delineation established in the EFA.

4.3.2. Goodness-of-Fit Indices

The fit of the CFA model was assessed using multiple indices to evaluate the extent to which the specified model approximated observed data. The results demonstrated a satisfactory model fit, with a chi-squared to degrees of freedom ratio (χ^2/df) of 2.15 ($\chi^2 = 367.65$, df = 171, $p < 0.001$). The key fit indices included a Comparative Fit Index (CFI) of 0.94, a Tucker-Lewis Index (TLI) of 0.92, a Root Mean Square Error of Approximation (RMSEA) of 0.05, and a standardised root mean square residual (SRMR) of 0.04. These indices met or exceeded the recommended thresholds (χ^2/df < 3, CFI and TLI ≥ 0.90, RMSEA ≤ 0.06, SRMR ≤ 0.08) (Hu & Bentler, 1999), confirming that the five-factor model adequately represented the data.

4.3.3. Convergent and Discriminant Validity

To evaluate the validity of the constructs within the CFA model, both convergent and discriminant validity were examined. Convergent validity was assessed using standardised factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE). The findings revealed that all standardised loadings were significant ($p < 0.001$), ranging from 0.66 to 0.91, thereby exceeding the acceptable threshold of 0.50(Kline, 2023). This result confirms that the observed variables effectively represented their respective latent constructs. Additionally, the CR values for each factor ranged from 0.83 to 0.90, surpassing the recommended benchmark of 0.70(Hair et al., 2020), thus affirming the internal consistency among the indicators. The AVE values for the constructs ranged from 0.52 to 0.62, all above the threshold of 0.50 (Walliman, 2021), indicating that each factor captured a substantial portion of the variance in its indicators. Discriminant validity was evaluated by comparing the square root of the AVE for each factor with the inter-factor correlations, in accordance with the guidelines of Fornell and Larcker (1981). The results demonstrated that the square root of the AVE for each factor ranged from 0.72 to 0.79, exceeding the correlations with other factors, which ranged from 0.35 to 0.69. This confirms that the constructs were distinct from one another. These validity assessments underscore the model's robustness, ensuring that the latent factors are reliable and clearly differentiated. Table 4 provides a summary of the validity measures and model fit indices.

4.3.4. Convergent and Discriminant Validity

The CFA path model substantiated the validity of the five-factor structure, as demonstrated by the strong standardised loadings (0.66–0.91), satisfactory model fit (χ^2/df = 2.15, CFI = 0.94, RMSEA = 0.05), and robust validity measures (CR ≥ 0.83, AVE ≥ 0.52). Notably, the highest loadings, such as Workforce Skills (0.91) on Human Capital and Technological Capabilities and Power Supply Reliability (0.89) on Infrastructure and Energy Security, highlight the essential role of skills and reliable power in the SADC textile value chain, corroborating the literature's emphasis on skill

shortages and unreliable infrastructure. The moderate inter-factor correlations (0.35–0.69) indicate the interconnected nature of the dimensions, supporting the necessity of a coordinated regional approach to address supply- and market-side constraints (Bowa et al., 2021). The model aligns with Porter's competitiveness model by capturing factor conditions (e.g., infrastructure and raw materials), demand conditions (e.g., trade facilitation), and firm strategy (e.g., human capital), and with GVC theory by reflecting governance (e.g., stakeholder linkages) and upgrading (e.g., technology adoption).

4.4. Structural Equation Modelling (SEM)

Structural equation modelling (SEM) was used to investigate the influence of key factors on the performance of the SADC textile value chain. This methodological approach was necessitated by the need to analyse the intricate relationships among multiple latent constructs, specifically Infrastructure and Energy Security, Regional Integration and Trade Facilitation, Raw Material Sourcing and Quality, Human Capital and Technological Capabilities, and Value Chain Coordination and Business Environment, as they pertain to two critical outcome variables: competitiveness (encompassing cost efficiency and market share) and sustainability (including environmental impact reduction and social responsibility). SEM was selected for this study because of its capacity to simultaneously analyse complex interrelationships among multiple latent constructs while accounting for measurement errors, thereby providing a comprehensive understanding of how these factors collectively influence competitiveness and sustainability within the SADC textile value chain (Hair et al., 2020; Kline, 2023). SEM facilitates the modelling of direct and indirect effects among constructs, ensuring that the results accurately reflect the inherent complexities of the relationships involved. Moreover, SEM aligns with established theories, such as Porter's competitiveness model and Global Value Chain (GVC) theory, thereby enhancing the theoretical robustness of the findings. By evaluating the model fit statistics, the SEM ensures that the specified model adequately represents the observed data, thereby strengthening the validity of the conclusions drawn.

4.4.1. SEM Model Specification

Structural equation modelling (SEM) was performed using AMOS (version 26), focusing on two dependent latent constructs: competitiveness and sustainability. These constructs were operationalised through composite scores derived from survey items that measured the pertinent indicators in each domain. The factor structures were previously validated through Confirmatory Factor Analysis (CFA), yielding high Cronbach's alpha values (0.89 for competitiveness and 0.87 for sustainability), indicating strong reliability. The specified model enabled the examination of both direct and indirect effects, facilitating an assessment of how the five identified latent constructs influenced the outcome variables, while accounting for measurement errors associated with the observed indicators.

4.4.2. SEM Results

The findings from the Structural Equation Modelling (SEM) analysis are detailed in Table 5, which displays the standardised path coefficients (β) for each independent variable in relation to the dependent variables of competitiveness and sustainability. The magnitude and significance of these relationships offer insight into the determinants of performance in the SADC textile value chain.

Table 5. SEM Results

Independent Variable	Competitiveness (β)	Sustainability (β)
Infrastructure and Energy Security	0.40***	0.26**
Regional Integration and Trade Facilitation	0.34***	0.22*
Raw Material Sourcing and Quality	0.27**	0.20*
Human Capital and Technological Capabilities	0.37***	0.29**
Value Chain Coordination & Business Environment	0.28**	0.41***
Model Fit Statistics		
Adjusted R^2	0.67	0.62
F (df)	97.34 (5, 232), $p < 0.001$	77.12 (5, 232), $p < 0.001$

*Note: ***p < 0.001, **p < 0.01, *p < 0.05. N = 238 textile enterprises. VIF < 2.0 for all predictors.*

Source: Research Data, 2024

The fit of the Structural Equation Model (SEM) was evaluated using several key indices, which yielded favourable results, indicating a strong alignment between the model and observed data. The adjusted R^2 values were 0.67 for competitiveness and 0.62 for sustainability, demonstrating strong explanatory power, and χ^2/df values of 2.15 suggest an acceptable fit. The Comparative Fit Index (CFI) was 0.94, and the Tucker-Lewis index (TLI) was 0.92, reflecting a robust model fit, as values close to 1 are desirable (Kline, 2014). Additionally, the Root Mean Square Error of Approximation (RMSEA) was 0.05, signifying a close fit, and the standardised root mean square residual (SRMR) was 0.04, reinforcing the model's adequacy, with values below 0.08, indicating a good fit (Hair et al., 2020). Collectively, these indices confirm that SEM effectively captures the underlying relationships among the constructs.

The competitiveness model explained 67% of the variance in competitiveness outcomes (adjusted $R^2 = 0.67$, $F(5, 232) = 97.34$, $p < 0.001$). All five factors were significant predictors. Infrastructure and Energy Security had the most substantial effect ($\beta = 0.40$, $p < 0.001$), followed closely by Human Capital and Technological Capabilities ($\beta = 0.37$, $p < 0.001$), indicating that reliable power, transport, skilled workforce, and technology adoption are critical for cost efficiency and market share. Regional Integration and Trade Facilitation ($\beta = 0.34$, $p < 0.001$), Value Chain Coordination and Business Environment ($\beta = 0.29$, $p < 0.01$), and Raw Material Sourcing and Quality ($\beta = 0.27$, $p < 0.01$) also contributed significantly, highlighting the importance of trade facilitation, stakeholder linkages, and raw material access.

The sustainability model accounted for 62% of the variance in sustainability outcomes (adjusted $R^2 = 0.62$, $F(5, 232) = 77.12$, $p < 0.001$). Value Chain Coordination and Business Environment had the most substantial effect ($\beta = 0.39$, $p < 0.001$), underscoring the critical role of stakeholder collaboration, regulatory certainty, and access to finance in fostering long-term economic viability and promoting environmental and social responsibility. Human Capital and Technological Capabilities ($\beta = 0.29$, $p < 0.01$), and Infrastructure and Energy Security ($\beta = 0.26$, $p < 0.01$) were also significant, suggesting the need for skilled labour and reliable infrastructure for sustainable business practices that support the enduring economic development of the textile value chain in the SADC region. Regional Integration and Trade Facilitation ($\beta = 0.22$, $p < 0.05$) and Raw Material Sourcing and Quality ($\beta = 0.20$, $p < 0.05$) had more minor but still significant effects, indicating that effective trade agreements and high-quality raw materials contributed to the sustainability and long-term economic performance of the SADC textile value chain, albeit to a lesser degree.

The SEM results indicate that the five identified factors exert a significant influence on both competitiveness and sustainability within the SADC textile value chain, thereby reinforcing the conceptual framework delineated in Section 2.6, which emphasises supply- and market-side constraints in the textile value chain. The considerable impact of Infrastructure and Energy Security on competitiveness ($\beta = 0.40$) is consistent with Porter's factor conditions and the literature review's identification of unreliable power and inadequate transportation as barriers. Similarly, the notable influence of Human Capital and Technological Capabilities ($\beta = 0.37$ for competitiveness; $\beta = 0.29$ for sustainability) underscores Porter's insights into firm strategy and the concept of Global Value Chain (GVC) upgrading, further supporting the abstract's emphasis on skill shortages and limited technology adoption. The differential effects across outcomes provide nuanced insights: infrastructure and human capital drive cost efficiency and market share, whereas coordination and business environment are crucial for environmental and social outcomes. The moderate effects of Regional Integration and Trade Facilitation and Raw Material Sourcing and Quality suggest that trade barriers and import dependency, as noted in the literature (Moyo, 2021). They are significant but less dominant constraints. The high adjusted R^2 values (0.67 for competitiveness and 0.62 for sustainability) indicate that the five dimensions collectively account for a substantial portion of the variance, validating their relevance to policymakers and industry stakeholders seeking targeted interventions.

5. Discussion

The findings of this study have substantial implications for policymakers and industry stakeholders in the SADC region, particularly regarding the critical dimensions that influence the competitiveness and sustainability of the textile value chain. The robust five-factor structure, validated through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), demonstrates a strong model fit, underscoring that Infrastructure and Energy Security, Human Capital and Technological Capabilities, and Value Chain Coordination and Business Environment are pivotal drivers of performance.

Investments in reliable power supplies, affordable energy, and enhanced transport infrastructure are imperative for enhancing competitiveness. This conclusion aligns with previous research, which highlights that inadequate infrastructure and high energy costs significantly impede operational efficiency in the SADC region (Morris & Barnes, 2014). Governments, particularly in nations such as Zimbabwe and Zambia, should prioritise public-private partnerships to address these infrastructure deficiencies. Furthermore, the significance of Human Capital and Technological Capabilities corroborates the findings of Porter (1985) and Gereffi et al. (2021), who emphasise the necessity of skilled labour and technology adoption for innovation and operational efficiency. Expanding vocational training programs and providing incentives for technology adoption, particularly for small- and medium-sized enterprises (SMEs), is crucial for bridging skill gaps and promoting innovation. Regional organisations, such as the SADC Secretariat, could establish dedicated training centres to support workforce development and enhance industry capabilities.

Moreover, the substantial influence of Value Chain Coordination and Business Environment underscores the essential role of stakeholder relationships, regulatory certainty, and access to finance in promoting sustainable practices. This is consistent with the Global Value Chain (GVC) theory, which posits that effective governance and stakeholder coordination are crucial for integrating sustainability within value chains (Gereffi et al., 2021; Ponte et al., 2021). Policymakers should streamline regulatory frameworks to enhance certainty and facilitate access to financial resources. The

low scores for Access to Finance highlight the financial barriers encountered by SMEs, indicating a need for initiatives that establish regional textile clusters to promote resource sharing and collaboration. While aspects of Regional Integration and Trade Facilitation, along with Raw Material Sourcing and Quality, are significant predictors, their effects are not as pronounced as those of the key dimensions of infrastructure and human capital. This finding aligns with the literature that emphasises that trade barriers and import dependency, while critical, are often overshadowed by foundational issues of infrastructure and skills (Staritz, 2016). Therefore, efforts to reduce non-tariff barriers and improve customs efficiency should be pursued by leveraging existing SADC trade agreements to enhance market access and address documented trade financing constraints.

This study makes a significant contribution to the literature by presenting an empirically validated framework that integrates Porter's competitiveness model with Global Value Chain (GVC) theory. The alignment of these elements with Porter's model underscores the importance of factors, demand conditions, and firm strategies in analysing competitiveness drivers. The GVC theory enhances this analysis by emphasising governance and upgrading as crucial for sustainability in the textile industry. The varying impacts of these identified factors indicate the need for distinct yet complementary strategies to enhance both competitiveness and sustainability. This aspect has been less explored in previous studies focusing on the Southern African Development Community (SADC).

While this study yielded significant findings, it is important to acknowledge its limitations, particularly its reliance on cross-sectional data, which restricts insights into temporal dynamics. Future research could employ longitudinal designs to assess the impact of infrastructure improvements and trade policies on textile value chains. Including additional countries to diversify the sample enhances the generalisability of the results. Moreover, qualitative studies can provide deeper insights into stakeholder perspectives on coordination and governance in the textile sector. Overall, this study illuminates critical pathways for enhancing the competitiveness and sustainability of the SADC textile value chain. By addressing identified constraints and leveraging their strengths, stakeholders can cultivate a more resilient and integrated textile sector that contributes to regional economic development.

6. Conclusion

This study delineates five critical dimensions that collectively constitute a framework for comprehending the competitiveness and sustainability of the SADC textile value chain: Infrastructure and Energy Security, Regional Integration and Trade Facilitation, Raw Material Sourcing and Quality, Human Capital and Technological Capabilities, and Value Chain Coordination and Business Environment. Although these advancements are pivotal for fostering regional integration and economic development, their success is contingent on the incorporation of human factors that facilitate enduring improvements. Policymakers and industry leaders must align these dimensions with both organisational objectives and the diverse needs of stakeholders within the textile sector. A purely technical approach, devoid of collaboration and oversight, risks undermining efforts to enhance value-chain performance. Consequently, strategies should amalgamate structural investments with commitment to workforce development and effective governance.

This study highlights the importance of recognising the roles that individuals and organisations play in driving meaningful change. By prioritising investments in infrastructure, workforce training, and collaborative stakeholder engagement, SADC countries can nurture a vibrant and sustainable textile

sector. This balanced approach, which integrates technological advancements with essential human elements, is crucial for navigating industrial complexities and achieving long-term success. Future research should focus on the mechanisms that connect these dimensions and explore how emerging trends in global sustainability and technological innovation can further augment the competitiveness of the SADC textile sector. By pursuing these comprehensive efforts, the region can enhance its position in the global market while fostering social cohesion and inclusive economic growth.

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