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Using Porter's Diamond Model to Enhance Reindustrialisation and Export Performance in Zimbabwe

Sibanda, Brian, S. [1], Nikisi, Dennis [1], Kamoyo, Michael [1]

[1]Chinhoyi University of Technology

ABSTRACT

This study sought to enhance Porter's Extended Diamond Model by incorporating additional elements to better explain reindustrialisation and export performance in the Zimbabwean manufacturing sector. The study sought to identify the relationship between internal organisational factors and export performance in Zimbabwe's manufacturing sector; evaluate the relationship between macroeconomic conditions and export performance in Zimbabwe; examine the moderating effect of institutional quality on the relationship between reindustrialisation and export performance; and propose an enhanced Extended Diamond Model for reindustrialisation and improved export performance. Data was collected through a quantitative survey of 384 active manufacturing exporters in Zimbabwe, and analysed using multiple linear regression and structural equation modelling. Findings revealed that internal organisational factors and macroeconomic conditions significantly improved export performance, while institutional quality moderated the foregoing relationship. This provided a basis for an enhanced model for understanding the determinants of competitive advantage in developing economies, offering actionable insights for policymakers and industry stakeholders. The study concludes that Zimbabwe's reindustrialisation efforts must prioritise organisational capabilities, macroeconomic stability, and institutional reforms to achieve sustainable export growth. The study recommended that exporting manufacturers intensify investment in internal organisational capabilities; the government maintain and enhance macroeconomic stability; institutional reforms be accelerated to improve governance and regulatory quality; the enhanced Extended Diamond Model be adopted and operationalised as a policy diagnostic tool; transport and logistics infrastructure be upgraded to lower trade costs; and export diversification be promoted through market intelligence and trade promotion.

Keywords: Porter's Diamond Model, reindustrialisation, export performance, manufacturing sector

Background of Study

Over the past century, economies worldwide have undergone profound transformations, transitioning from agrarian-based systems to manufacturing-led growth and, more recently, to

service- and technology-driven activities. Industrialisation fuelled urbanisation, infrastructure development, and the expansion of the middle class as manufacturing became the primary engine of economic growth (Amsden, 1992). Industrialisation marked the transition from agrarian economies to manufacturing-driven growth, facilitating urbanisation and the rise of the middle class (Amsden, 1992). However, the late 20th century saw a shift towards a service-based economy, driven by globalisation and technological advancements (Moyo, 2020). This transition led to deindustrialisation in many developed nations, where manufacturing jobs declined in favour of service-oriented employment (Andreoni, 2018). The interplay between industrialisation and deindustrialisation reveals a complex relationship, where these processes are interconnected phases of economic development (Stearns et al., 2020).

Reindustrialisation strategies have been critical in sustaining economic competitiveness and fostering resilience in the face of global shocks. In advanced economies such as the United States and Germany (Altenburg, 2024). Efforts to reindustrialise have focused on high-tech and advanced manufacturing sectors, areas where automation, robotics, and digital technologies can enhance productivity and create new export opportunities (Altenburg, 2024; Thürer et al., 2024). The success of these models frequently hinges on robust government–industry–academia collaboration, often conceptualised through the Triple Helix framework, which underscores the importance of aligned innovation ecosystems for driving sustainable industrial growth (Cai & Etzkowitz, 2020). Similarly, export-oriented approaches in East Asia, particularly South Korea's emphasis on heavy industries and chaebol support, as well as Taiwan and Singapore's favourable trade policies, demonstrate how targeted industrial policy can integrate domestic firms into global value chains and boost export performance (Avlijas et al., 2021).

In Africa, reindustrialisation is increasingly viewed as essential for economic diversification, poverty reduction, and resilience against commodity price volatility (Tregenna, 2023). The African Union's Agenda 2063 sets forth a vision to significantly increase the continent's share of global manufacturing output, while the African Development Bank highlights industrialisation as a key driver of regional integration and inclusive growth (Dagada & Lekaba, 2024). Regional blocs such as ECOWAS and SADC have implemented trade liberalisation schemes and industrial policies to reduce barriers, attract investment, and strengthen value chains (Habanabakize & Dickason-Koekemoer, 2023). Case studies from Ethiopia's textile and garment sectors to Rwanda's investment in technology and innovation illustrate how government intervention, infrastructure development, and skills training can spur manufacturing growth and improve export competitiveness (Haraguchi et al., 2017; Tregenna, 2023).

Zimbabwe has faced significant deindustrialisation over recent decades, leading to a sharp decline in the competitiveness of its manufacturing sector (Magidi, 2024). Once a vibrant pillar of the economy, the manufacturing industry has been plagued by challenges such as outdated equipment, rising production costs, and a debilitating tax environment (Fessehaie & Rustomjee, 2018). These issues have severely restricted local manufacturers' abilities to produce competitive goods for both regional and international markets resulting in a notable decrease in export performance and a growing reliance on imports (Chinjova, 2019).

The repercussions of deindustrialisation have been dire, contributing to widespread unemployment and escalating poverty levels (Magidi, 2024). Hyperinflation has exacerbated these challenges,

eroding purchasing power and creating an unpredictable economic environment that discourages investment (Fessehaie & Rustomjee, 2018). Many businesses struggle to modernise their operations due to escalating costs and a lack of access to foreign currency, which hampers their ability to import necessary equipment and materials (Bhoroma, 2021; Mazikana, 2023). The contraction of the manufacturing sector is reflected in its contribution to GDP, which plummeted from 26.9% in 1992 to approximately 11.7% in 2014 (Kanyenze, 2022). Over 500 organisations shut down in the last decade, with several large companies on the verge of collapse (Ministry of Industry and Commerce, 2018). Additionally, at least 150 organisations collapsed in 2016, leaving hundreds without jobs as deindustrialisation continued to cripple the economy (Kuwaza, 2016). State-Owned Enterprises, including Hwange Colliery and the National Railways of Zimbabwe, were also not spared, retrenching thousands of workers in 2016 (Mambiravana et al., 2022).

From 1985 to 1991, Zimbabwe's manufacturing sector experienced substantial growth, with output peaking at US$2.08 billion in 1991, representing 24.1% of GDP (CZI, 2010). However, mid-1990s economic reforms and structural adjustment programs imposed by international financial institutions prioritised macroeconomic stabilisation over local industrial growth (ZimTrade, 2022). Additionally, the land reform programme of the late 1990s disrupted agricultural production, leading to a shortage of raw materials for the manufacturing sector (Gwacha, 2017). The years 2000 to 2008 represent severe deindustrialisation for Zimbabwe, characterised by drastic declines in manufacturing output and economic instability (Gwacha, 2017). Manufacturing output plummeted to US$0.70 billion in 2003, contributing only 12.17% to GDP (Gawe, 2021). Hyperinflation eroded purchasing power, leading to widespread business closures, rampant unemployment, and a significant contraction of the manufacturing workforce (Kuwaza, 2016; ZimTrade, 2022). Infrastructure decay, power shortages, unreliable transportation networks, and deteriorating facilities further exacerbated the crisis (ZimTrade, 2022).

From 2009, the manufacturing sector began to show signs of recovery, with output increasing to US$2.40 billion by 2012, fueled by government initiatives aimed at stabilising the economy and revitalising industries (Mambiravana et al., 2022). However, this recovery has been marked by volatility, revealing the fragility of the sector (ZimTrade, 2024). For example, the spike in output to US$4.67 billion in 2018 was not sustained, with output dropping to US$3.66 billion in 2023 (ZimTrade, 2024). This instability is attributed to factors such as global commodity price fluctuations, power shortages, and foreign currency challenges (ZimTrade, 2022). The manufacturing sector continues to face significant hurdles, including competition from imports, inadequate infrastructure, and limited access to financing (Saungweme & Odhiambo, 2021).

Zimbabwe has implemented several strategic policies over the years, such as the Short-Term Emergency Recovery Program (STERP), Industrial Development Policy (IDP), Vision 2030, Zimbabwe National Industrial Development Policy (ZNIDP), and the National Development Strategy 1 (NDS1). Despite these efforts, the manufacturing sector has faced significant challenges. For instance, the sector experienced a 1.3% decline in capacity utilisation during the third quarter of 2024, primarily due to cash flow difficulties, electricity shortages, and economic uncertainty. The sector's contribution to GDP has been declining since 1980, falling to 9% in 2023 from a high of 23%. Export performance has also been struggling, with a 17.1% decline in exports during March 2024, leading to a trade deficit of US$184.3 million. Key exports like tobacco and

nickel mattes have been affected by global price fluctuations and local production challenges (ZimTrade, 2024).

To address these pressing challenges, a robust framework for reindustrialisation is essential. Porter's Extended Diamond Model, which expands on the original framework provides a foundational tool for understanding the determinants of industrial success. While the model highlights critical elements contributing to competitive advantage, its application in the Zimbabwean context exposes certain inadequacies as the original framework does not fully capture the unique challenges and dynamics of reindustrialisation in a developing economy. This study aims to enhance Porter's Extended Diamond Model to better reflect the realities of Zimbabwe's manufacturing landscape.

Statement of the Problem

The Zimbabwean manufacturing sector is experiencing a severe and sustained contraction that undermines both its practical viability and the theoretical frameworks used to understand its performance. Practically, the sector's contribution to GDP has fallen precipitously from 26.9% in 1992 to approximately 9% in 2023 (Kanyenze et al., 2017; Zimstats, 2024), with over 500 firms closing in the last decade—150 of which collapsed in 2016 alone—resulting in widespread unemployment, heightened poverty, and a shrinking industrial base (Ministry of Industry and Commerce, 2018; Kuwaza, 2016). The cumulative effect has led to a significant reliance on imports for essential goods (ZimTrade, 2022), undermining the local manufacturing capacity and contributing to a trade deficit of US$184.3 million in March 2024 (ZimTrade, 2024). This decline reflects chronic operational setbacks, such as reduced production capacity, unpredictable supply chains, and constrained access to essential inputs, which collectively hinder manufacturers' ability to satisfy local demand or compete abroad. Institutionally, policy inconsistency and insufficient regulatory support have further eroded business confidence. Theoretically, Porter's Extended Diamond Model does not reflect Zimbabwe's unique challenges. It overlooks internal organisational constraints. It ignores macroeconomic volatility, such as inflation and currency instability and fails to account for institutional fragility, such as weak governance and bureaucratic delays. As a result, there is an urgent need for a revised analytical framework which must integrate organisational, economic, and institutional factors. Only then can reindustrialisation strategies align with the realities facing Zimbabwean manufacturers.

Objective of the Study

The primary objective of the study was to enhance Porter's Extended Diamond Model by establishing the relationship between additional elements and export performance in Zimbabwe's manufacturing sector through the evaluation of the relationship between macroeconomic conditions and export performance in Zimbabwe and examining the moderating effect of institutional quality on the relationships between reindustrialisation and export performance.

Literature Review

This literature review is divided into three sections: a theoretical overview of Porter's Extended Diamond Model, examining its applications and limitations in developing economies, and an empirical review of studies on how internal organisational factors, macroeconomic conditions, and institutional quality affect export performance in contexts similar to Zimbabwe. A critical analysis then identifies gaps and inconsistencies in the existing literature, laying the groundwork for proposed enhancements to the model.

Review of Porter's Extended Diamond Theory

The Extended Porter's Diamond Model is key in the context of reindustrialisation strategies and export performance. The extended diamond model was developed from the work by Porter (1990) as an essential analytical tool that provides useful insights into a country's competitiveness in the global market. This comprehensive tool is an expansion of Porter's original diamond framework, which was created to investigate the elements influencing a country's capacity to compete in international markets (Kumar *et al.*, 2021). Porter (1990) notes that the understanding of national advantage starts with four (4) premises, namely: (1) The nature of competition and sources of competitive advantage differ among industries and industry segments; (2) The home base is where the strategy is set for international success; (3) Competitive advantage is gained and sustained internationally through improvement, innovation, and upgrading both in technology and production methods, as well as in the accumulation of small steps; (4) The competitive advantage in an industry is gained by organisations that move early and most aggressively to exploit a new market need or potential.

Porter (1990) argued in favour of a new trade theory where competition is founded in segmented markets, differentiated products, technological differences and economies of scale, a theory able to define why organisations from certain countries implement better strategies than others competing in certain sectors (Kiran, 2019). Porter also sought to explain why some regions are more competitive than others, and tried to clarify how organisations gain prominent positions in sectors of the country on global competitiveness (Tapererwa *et al.*, 2023). Porter came up with the Diamond Model to identify factors of competitive advantage of countries and sectors and to create a structure that determines the rules of competition in a sector towards achieving a long-term competitiveness (Kiran, 2019), associating the determinants of sectors that have competitive advantage with values of the four corners of the diamond, as indicated earlier, described as factors affecting competitiveness (Alavi *et al.*, 2020).

Thus, the Extended Diamond Framework includes six critical factors that affect a country's competitiveness: factor conditions, demand conditions, related and supporting industries, firm strategy, structure, and rivalry, government policies, and chance (Porter, 1990). Figure 1 illustrates the extended diamond model.

Factor Conditions: This element pertains to the resources available within a country, such as natural resources, skilled labor, infrastructure, and technology. Porter (1990) distinguishes between basic factors (e.g., unskilled labor, raw materials) and advanced factors (e.g., skilled labor, innovation). Critically, while the model emphasizes the significance of these conditions, it often overlooks regional disparities within countries, which can significantly affect competitiveness (Butt et al., 2019). Furthermore, the interaction between macro-level national policies and micro-level firm strategies highlights the necessity for businesses to effectively leverage available resources (Saraswati et al., 2019).

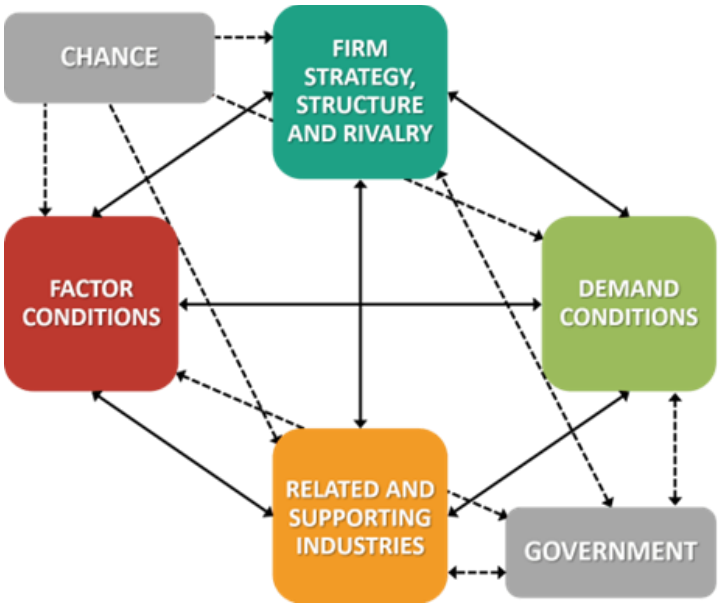

Figure 1: *Porter's Extended Diamond Model*

Source: Porter (1990:157)

Demand Conditions: Demand conditions refer to the characteristics of consumer demand, including purchasing power and preferences. Porter argues that sophisticated home demand can drive innovation (Kiran, 2019). However, critics suggest that the model may not fully account for the rapidly evolving nature of consumer preferences, especially regarding sustainability and ethical consumption (Mayer et al., 2021). As such, firms must remain agile to adapt their products to meet changing demands in both domestic and international markets (Ferrarese & Malavasi, 2022).

Related and Supporting Industries: This component emphasizes the importance of having a network of related industries that can support and enhance competitive advantage. A robust ecosystem of suppliers and partners fosters innovation and efficiency. Critics argue that the model does not adequately address the impact of global supply chains on local competitiveness (Tapererwa et al., 2023). The strength of related and supporting industries in Zimbabwe hinges on their capacity to adopt digital platforms and foster linkages that extend beyond national borders. In addition, the researcher believes that local supplier clusters must be deliberately upgraded through skills development and technology transfer to avoid dependency on volatile foreign inputs.

Firm Strategy, Structure, and Rivalry: The effectiveness of a firm's strategy and the nature of domestic competition are critical for achieving competitive advantage. This factor highlights the role of competitive rivalry in driving firms to innovate and improve. However, the model has been critiqued for not considering the role of collaboration among firms, which can also lead to enhanced competitiveness (Kiran, 2019). The researcher contends that in the Zimbabwean context, firms would benefit from formalised cooperative platforms such as industry consortia, that balance rivalry with shared research and development efforts. In addition, small and medium-sized enterprises should adopt agile organisational structures to respond swiftly to market changes and leverage collective strengths in supply chain negotiations.

Government Policies: Government intervention through policies and regulations is pivotal in shaping the competitive landscape. Supportive policies can enhance competitiveness, while restrictive ones may hinder it. Critics highlight that the model may not sufficiently explore the implications of political stability and governance quality on national competitiveness (Alavi et al., 2020). Thus, coherent policy frameworks must be paired with transparent governance to build investor confidence and encourage long-term industrial investment. Furthermore, regulatory agencies should incorporate regular stakeholder feedback loops to ensure that policy adjustments keep pace with industry needs and global best practices.

Chance: The inclusion of chance acknowledges the unpredictability of external events, such as economic crises or technological disruptions, which can significantly impact competitiveness. Critics note that while chance is an important factor, its vagueness can lead to challenges in strategic planning (Tapererwa et al., 2023). Chance events in Zimbabwe such as sudden shifts in foreign currency availability should be modelled through scenario planning rather than left to abstract interpretation. In addition, integrating real-time risk monitoring systems to mitigate the impact of unforeseen disruptions on manufacturing competitiveness.

Criticism of Porter's Diamond Theory

Porter's Diamond Theory, while influential, faces substantial criticism. Management scholars (Rugman & D'Cruz, 1993) argue its focus on the home country's diamond neglects the significant influence of a nation's largest trading partner and is unsuitable for smaller nations, overlooking multinational corporations' roles (Namburete, 2023). Economists (Davis & Ellis, 2000) contend its generality renders it inexplicably vague, failing to distinguish between domestic productivity and international competitiveness. The theory's overemphasis on geographic proximity (Jambor et al., 2018) and dismissal of comparative advantage (Davis & Ellis, 2000), contradicted by the success of East Asian economies (Cho et al., 2009), are further weaknesses. The assertion that nations compete internationally like firms (Narayan & Bhattacharya, 2018) is also contested, with evidence suggesting factors like labour costs and exchange rates significantly impact exports (Davis & Ellis, 2000), contrary to Porter's view. Furthermore, the model's interpretation of FDI (Porter, 1990) is challenged by findings linking inward FDI to successful development (Kiran, 2019; Liu et al., 1997).

The Diamond model's limitations extend to its inadequacy as an export stimulation model (Tsai et al., 2021), neglecting crucial export-related infrastructure and external factors like global demand (Nandi & Nandi, 2020). Its developed-country bias (Petroni et al., 2019) overlooks the constraints faced by developing economies regarding factor mobility, macroeconomic stability, and institutional frameworks (Petroni et al., 2019; Tsai et al., 2021; Nandi & Nandi, 2020). The model's insufficient consideration of multicurrency dynamics (Morrison, 2022; Butt et al., 2019) and its neglect of political and economic instability (Petroni et al., 2019; Kharub & Sharma, 2017; Vlados, 2019) further restrict its applicability, particularly in volatile environments. Finally, the model's oversight of crucial infrastructure deficiencies (Vlados, 2019; Elida et al., 2023) highlights the need for a more comprehensive framework, especially for developing economies.

Bridging the Limitations of Porter's Extended Diamond Model

This study extends Porter's Diamond model to address its limitations in analysing developing economies, specifically focusing on Zimbabwe's reindustrialisation and export performance. The original model, while useful for developed nations, inadequately captures the challenges faced by countries with economic volatility and infrastructural deficiencies (Petroni et al., 2019; Nandi &

Nandi, 2020). This necessitates the inclusion of internal organisational factors, as firm-specific strengths are paramount in driving competitive advantage, particularly during reindustrialisation, a facet under-represented in the original framework (Barney et al., 2021). Furthermore, macroeconomic conditions, directly impacting industrial growth and export activities (Haraguchi et al., 2019), and institutional quality, crucial for fostering a stable investment climate (Acemoglu & Robinson, 2012), are incorporated to provide a more holistic and contextually relevant analysis.

The incorporation of internal organisational factors – encompassing distinct capabilities, manufacturing capabilities, and export market orientation – directly addresses the original model's insufficient consideration of firm-level resources and capabilities (Rugman & D'Cruz, 1993). Similarly, the inclusion of macroeconomic conditions (economic growth, exchange rates, and inflation) rectifies the original model's neglect of external economic forces that significantly impact industrial growth and export performance (Davis & Ellis, 2000). These factors are particularly crucial for economies vulnerable to external shocks.

The addition of institutional quality (rule of law, government effectiveness, and governance and accountability) explicitly addresses the original model's lack of focus on institutional factors, a critical oversight for developing economies where institutional weaknesses often hinder economic development (Tsai et al., 2021; Chen, 2023). By incorporating these additional elements, the extended model offers a more robust and context-specific analysis of Zimbabwe's reindustrialisation and export performance, leading to more effective policy recommendations tailored to its unique economic context.

Empirical Studies Review

Internal Organisational Factors and Export Performance

The literature on internal organisational factors and export performance consistently highlights the positive impact of various capabilities on export success. Distinct organisational capabilities, such as technological innovation, market research, and quality management, are shown to significantly enhance export outcomes, underscoring the necessity for firms to cultivate unique resources (Antonioli et al., 2022; Chen et al., 2021). Additionally, R&D capabilities and brand reputation further contribute to this positive relationship, indicating that firms with strong internal competencies are better positioned to navigate international markets and achieve superior performance (Rehman et al., 2020; Teguh et al., 2020).

Moreover, the relationship between manufacturing capabilities and export success is generally positive but can vary by context. While studies indicate that effective quality management, innovation, and supply chain management are beneficial for export performance (Awuah et al., 2021; Saeed et al., 2019), some research suggests these capabilities may not yield significant results in every context (Mostafiz et al., 2021; Kwon & Kim, 2019). Additionally, export market orientation emerges as a crucial internal factor linked to enhanced export performance, reinforcing the importance of a market-focused approach within firms (Kolbe et al., 2022; Elia et al., 2020). Overall, these findings highlight the critical role of internal organisational factors in driving export success, while also calling for further research to explore the contextual nuances of these relationships.

Macroeconomic Conditions and Export Performance

The relationship between macroeconomic conditions and export performance has been extensively studied, with a particular focus on economic growth, exchange rates, and inflation. Economic growth, as defined and explored by various researchers, plays a crucial role in enhancing export capacity and demand. Oyetade et al. (2020) found that higher GDP growth supports increased export capacity, while Hendrasto et al. (2023) concluded that economic growth improves competitiveness, which is essential for boosting export demand. Avagyan et al. (2021) discovered that economic growth leads to better living standards, boosting export demand, and Khairova et al. (2023) showed that job creation resulting from economic growth increases disposable income, thereby stimulating export markets. Laksono and Tarmidi (2021) highlighted the importance of growth in developing economies, where labor force enhancement can expand the export base. Zaena et al. (2023) emphasized the role of strong institutions in improving trade policies, ultimately affecting exports positively. Wulandari et al. (2020) found that economic growth correlates with increased manufacturing capacity, leading to higher exports.

Exchange rates and inflation significantly influence export performance as well. Nweke et al. (2020) established that favorable exchange rates enhance a country's export competitiveness, while Kiptarus et al. (2022) indicated that stable exchange rates reduce uncertainty, encouraging export activities. However, exchange rate fluctuations can have mixed effects on trade balances (Gebremariam & Ying, 2022). Understanding inflation is essential for managing export pricing strategies, as Ektiarnanti et al. (2021) explained. High inflation can reduce consumer purchasing power and shift consumption patterns negatively, affecting export demand (Arifah & Kim, 2022; Javed et al., 2020). Persistent inflation can destabilize currencies, adversely impacting export performance (Purnamasari et al., 2022), and rising manufacturing costs due to inflation can diminish competitiveness in export markets (Kibet & Kiprop, 2023). Monetary policy can stabilize exchange rates, boosting export performance, as Hussain et al. (2024) demonstrated. These interrelated macroeconomic factors contribute to the complexity of enhancing export performance in various economic contexts.

Moderating Effect of Institutional Quality

The research on the mediating effect of institutional quality on the reindustrialisation-export performance nexus underscores the importance of governance structures, particularly the rule of law and government effectiveness. Studies indicate that a strong rule of law fosters a conducive environment for trade, enhancing export performance through legal certainty (Edeme & Mumuni, 2023). Furthermore, the rule of law promotes accountability and builds trust among trading partners, which is essential for facilitating reindustrialisation (Gabriel, 2023). In contrast, weak legal systems can deter foreign investment and hinder domestic export capabilities (Gogić, 2021), while declining rule of law in regions like Zimbabwe has been linked to negative impacts on foreign investment and export performance (Moyo, 2018).

Government effectiveness also plays a critical role in this dynamic. Effective governance mobilises resources for industrial growth, thereby improving export performance (Androniceanu & Georgescu, 2023). Studies highlight that strong governance leads to better infrastructure investment, which supports industrial activities and exports (Barra et al., 2023). Additionally, high institutional quality fosters trust and encourages both industrialisation and export growth (Dubey et al., 2023). The relationship between governance, accountability, and reindustrialisation is vital, as transparent governance reduces corruption and increases public trust, attracting foreign

investment (Bandini et al., 2023). Overall, these findings illustrate that robust institutional frameworks significantly influence the reindustrialisation-export performance nexus, necessitating further investigation into the specific mechanisms at play.

Critique of the Existing Literature Relevant to the Study

The existing literature provides valuable insights into the factors influencing export performance, including internal organisational factors and macroeconomic conditions. It is evident that distinct organisational capabilities, such as technological innovation, market research, and quality management, significantly enhance export outcomes. However, the relationship between manufacturing capabilities and export success can vary by context, and export market orientation is crucial for enhanced export performance. Macroeconomic conditions, such as economic growth, exchange rates, and inflation, also play a significant role in export performance. While higher GDP growth, stable exchange rates, and low inflation support increased export capacity and demand, persistent inflation and exchange rate fluctuations can have adverse effects. The moderating effect of institutional quality on the reindustrialisation-export performance nexus highlights the importance of governance structures, particularly the rule of law and government effectiveness, in fostering a conducive environment for trade and industrial growth. However, there is a need for further research to explore the specific mechanisms at play and the contextual nuances of these relationships.

Methods

Research Philosophy

This study adopted a positivist research philosophy. The adoption if the positivist philosophy was informed by the fact that it enables objective measurement and statistical testing of hypothesised relationships between organisational, economic, and institutional variables. By using structured questionnaires to gather numerical data, positivism supported the deductive approach needed for regression and modelling techniques. This philosophy also fostered methodological rigor and allowed findings from the sampled exporters to be generalised to the wider Zimbabwean manufacturing sector. Thus, positivism was selected to ensure objectivity, replicability, and clear causal inferences.

Research Design and Target Population

This study adopted a quantitative survey research design focused on the Zimbabwean manufacturing sector, specifically targeting exporting organisations. The target population comprised 931 active manufacturing product exporting organisations. The sample was drawn from senior export managers and finance officials, ensuring that the data collected reflected the perspectives of individuals directly involved in export operations. This focus allowed for a detailed examination of the relationships between various internal and external factors influencing reindustrialisation and export performance.

Sampling Frame and Sample Size

The sampling frame included senior management, export managers, and finance officials from the identified exporting organisations, categorised by product group. A stratified random sampling technique was employed to ensure adequate representation across different export product categories. The sample size was calculated using Cochran’s formula, resulting in a target of 384

respondents. This sample size was deemed sufficient to provide robust data for statistical analysis, facilitating generalisation of the findings to the broader population of Zimbabwean exporters.

Data Collection, Processing and Analysis Procedure

Data collection involved the administration of structured questionnaires designed with a 5-point Likert scale. This approach was selected to quantify respondents' attitudes and perceptions regarding various factors influencing export performance. The questionnaires were distributed electronically to enhance efficiency and ensure timely responses. The structured format of the questionnaire allowed for the collection of consistent data across all respondents, making it easier to analyse the relationships between variables systematically.

Data processing was conducted by systematically entering quantitative responses into statistical software (SPSS). Descriptive statistics were utilised to summarise the main features of the data, providing an overview of respondent demographics and key variables related to export performance. The analysis included measures of central tendency and variability, which helped identify trends within the data. For further analysis, inferential statistical techniques such as multiple linear regression were employed to examine the relationships between internal organisational factors, macroeconomic conditions, and export performance. The use of these statistical methods aimed to provide insights into the significant predictors of export performance and to uncover any underlying patterns.

Results obtained

Descriptive Statistical Analysis

The descriptive statistics are given in Table 1 as they relate to the perceptions of the respondents to the role of the independent variables on export performance within the Zimbabwean context.

Table 1: *Descriptive Statistics*

Variables	Mean		Std. Dev
	Statistic	Std. Error	Statistic
Internal Organisational Factors (IOF)	4.34	.018	.292
Macroeconomic Conditions (MEC)	4.18	.023	.368
Institutional Quality (IQ)	1.68	.018	.292
Export Performance (ExPerf)	3.90	.016	.256

The descriptive statistics given in Table 1 reveal key insights into respondents' perceptions regarding factors influencing export performance. Internal Organisational Factors (IOF) had a mean of 4.34 (SD = 0.292, SE = 0.018), indicating strong agreement on their positive impact on export success and a consensus on their importance. Macroeconomic Conditions (MEC) scored a mean of 4.18 (SD = 0.368, SE = 0.023), reflecting a generally favorable view of how economic stability benefits exports, though the moderate standard deviation suggests some variability in experiences. Conversely, Institutional Quality (IQ) had a low mean of 1.68 (SD = 0.292, SE = 0.018), highlighting concerns about the effectiveness of institutions in supporting export activities, with respondents agreeing on the need for improvements. Export Performance (ExPerf) averaged 3.90 (SD = 0.256, SE = 0.016), indicating a positive perception of overall export outcomes, but

also suggesting that some sectors may face greater challenges, underscoring the need for targeted interventions to enhance competitiveness.

Before conducting inferential statistical analysis, several assumptions of multiple linear regression were assessed. Specifically, tests for normality of residuals, multicollinearity among independent variables, and autocorrelation were performed to ensure the validity and reliability of the subsequent analysis.

Test for Normality

Normality testing assesses whether a dataset follows a normal distribution. This is key because many statistical tests assume normality; violating this assumption can lead to unreliable results. In this study, Kolmogorov-Smirnov and Shapiro-Wilk tests were employed to evaluate the normality of eight variables (IOF, MEC, IQ, and ExPerf). The findings are given in Table 2.

Table 2: *Results of the Kolmogorov-Smirnov and Shapiro-Wilk Tests*

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
IOF	.307	259	>0.05	.713	259	>0.05
MEC	.145	259	>0.05	.900	259	>0.05
IQ	.145	259	>0.05	.920	259	>0.05
ExPerf	.103	259	>0.05	.951	259	>0.05

a. Lilliefors Significance Correction

The results of the Kolmogorov-Smirnov and Shapiro-Wilk tests in Table 2, indicate that the distributions of Internal Organisational Factors (IOF), Macroeconomic Conditions (MEC), Institutional Quality (IQ), and Export Performance (ExPerf) do not significantly deviate from normality, as all significance values are greater than 0.05. Specifically, the Shapiro-Wilk statistics for each variable suggest that the residuals are normally distributed, which is essential for validating the assumptions of multiple linear regression.

Test for Autocorrelation

The Durbin Watson tests was used for the purposes of testing for autocorrelation and the findings are given in Table 3.

Table 3: *Results of the Durbin Watson Test*

Model	**Durbin-Watson**
1	1.783

The Durbin-Watson statistic is 1.783, which is within the acceptable range of 1.5 to 2.5 which signalled the absence of autocorrelation in the data.

Test for Multicollinearity

The study applied the Tolerance and VIF tests to assess the extent to which the data displayed multicollinearity. The findings in that regard are given in Table 4.

Table 4: *Results of the Tolerance and VIF Tests*

Model		Collinearity Statistics	
		Tolerance	**VIF**
	(Constant)		
1	IOF	.278	3.583
	MEC	.519	5.714

The Tolerance values for Internal Organisational Factors (IOF) and Macroeconomic Conditions (MEC) are 0.278 and 0.519, indicating no severe multicollinearity, as both exceed the 0.1 threshold. The corresponding VIF values of 3.583 for IOF and 5.714 for MEC are below 10, further confirming that multicollinearity is not a concern. Thus, multicollinearity results indicated minimal overlap among predictors, the independent variables are sufficiently uncorrelated, ensuring that the regression analysis will yield reliable estimates.

Examining the relationships factors

The study used the multiple linear regression analysis to examine the nature of the relationship between internal organisational factors, macroeconomic conditions and export performance. The structural equation modelling approach was used to examine the moderating effect of institutional quality on the reindustrialisation and export performance relationship. The findings from the multiple linear regression analysis are given in Table 5.

Table 5: *Multiple Linear regression Analysis Results*

Model	**Variable**	**R^2**	**F/Sig**	**Unstandardized Coefficients (β)**	**Standardized Coefficients (Beta)**	**T-test, P-value**
	Constant	0.724	335.972 / 0.000	1.668		17.302 / 0.000
1	IOF			0.300	0.433	6.968 / 0.000
	MEC			0.241	0.452	7.274 / 0.000

The findings from the multiple linear regression analysis (Table 5) reveals that both Internal Organisational Factors (IOF) and Macroeconomic Conditions (MEC) significantly contribute to explaining the variation in export performance in Zimbabwe, with an R^2 value of 0.724 indicating a robust model. The F-value (335.972) and the significance level ($p = 0.000$) of the overall model confirm its effectiveness in predicting export performance. The findings show that IOF ($\beta = 0.300$, $p = 0.000$) and MEC ($\beta = 0.241$, $p = 0.000$) have significant positive effects on export performance, suggesting that improvements in internal organisational practices and stable macroeconomic conditions are crucial for enhancing export competitiveness. The results from the SEM are given in Table 6.

Table 6: *Indirect and Total Effects (SEM)*

Effect Type	Estimate	Std. Error	z-value	p-value	Std. Latent Variable Effect	Std. Total Effect
Direct (ReInd → ExPerf)	0.582	0.022	26.059	<0.001	0.582	0.723
Indirect (ReInd → IV_IQ → ExPerf)	0.057	0.021	2.642	0.008	0.057	0.070
Total (ReInd → ExPerf)	0.639	0.030	20.948	<0.001	0.639	0.793
Proportion Mediated	0.088	0.031	2.876	0.004	0.088	0.088

The SEM analysis reveals significant direct and indirect effects of reindustrialisation on export performance in Zimbabwe. The direct effect of reindustrialisation on export performance (Estimate = 0.582, $p < 0.001$) is strong, indicating that increased reindustrialisation efforts are closely associated with improved export performance. Additionally, institutional quality significantly mediates this relationship, with an indirect effect (Estimate = 0.057, $p = 0.008$) and a total effect (Estimate = 0.639, $p < 0.001$) demonstrating its crucial role in enhancing export performance. The proportion mediated (Estimate = 0.088, $p = 0.004$) further underscores the importance of institutional quality in facilitating reindustrialisation and boosting export performance.

Discussion of study results

Relationship between Internal Organisational Factors and Export Performance

The multiple linear regression analysis reveals that Internal Organisational Factors (IOF) significantly contribute to explaining the variation in export performance in Zimbabwe, with an unstandardized coefficient (β) of 0.300 and a p-value of 0.000. This indicates that improvements in internal organisational practices, such as management efficiency, technological innovation, and operational effectiveness, are crucial for enhancing export competitiveness. In the context of Zimbabwe, where the manufacturing sector faces challenges like outdated equipment and rising production costs, these internal capabilities play a vital role in navigating international markets and achieving superior performance. These findings align with the literature, which highlights the positive impact of organisational capabilities on export success (Antonioli et al., 2022; Chen et al., 2021), underscoring the necessity for firms to cultivate unique resources to boost their export outcomes.

Relationship between Macroeconomic Conditions and Export Performance

The analysis also demonstrates that Macroeconomic Conditions (MEC) have a significant positive effect on export performance, with an unstandardized coefficient (β) of 0.241 and a p-value of 0.000. This suggests that stable macroeconomic conditions, such as economic growth, inflation control, and currency stability, are essential for enhancing export capacity and competitiveness. In Zimbabwe, where economic instability and hyperinflation have created a challenging business environment, ensuring stable macroeconomic conditions can provide a conducive environment for business operations and encourage export activities. The literature supports these findings, emphasizing the role of economic growth, exchange rates, and inflation in boosting export capacity and competitiveness (Oyetade et al., 2020; Hendrasto et al., 2023).

Moderating Effect of Institutional Quality

The SEM analysis reveals that institutional quality significantly moderates the relationship between reindustrialisation and export performance. The direct effect of reindustrialisation on export performance is strong, with an estimate of 0.582 and a p-value of less than 0.001, indicating that increased reindustrialisation efforts are closely associated with improved export performance. Furthermore, institutional quality demonstrates a significant indirect effect, with an estimate of 0.057 and a p-value of 0.008, highlighting its crucial role in enhancing export performance. In Zimbabwe, effective governance, legal certainty, and stable institutions are essential for fostering a supportive environment for reindustrialisation and export growth. The literature corroborates these findings, emphasizing the importance of governance structures, rule of law, and government effectiveness in enhancing export performance and facilitating reindustrialisation (Edeme & Mumuni, 2023; Androniceanu & Georgescu, 2023).

Proposing an Enhanced Extended Diamond Model

Based on the findings from this study where internal organisational factors (IOF) and macroeconomic conditions (MEC) each demonstrated significant, positive effects on export performance ($\beta\_IOF = 0.300$, $p < 0.001$; $\beta\_MEC = 0.241$, $p < 0.001$) and institutional quality (IQ) emerged as a significant moderator (indirect effect = 0.057, $p = 0.008$), it is clear that the traditional extended Diamond model must be augmented to capture these critical dimensions. As such, the model should explicitly incorporate IOF, which encompass firm-level capabilities such as technological innovation, quality management systems, and export market orientation. By embedding IOF as a distinct pillar, the model acknowledges that, in Zimbabwe's manufacturing sector, firms with robust internal systems and R&D capacity consistently outperform their peers in foreign markets. This addition aligns with Antonioli et al. (2022) and Rehman et al. (2020), who highlight the centrality of firm-specific resources and capabilities in driving export success.

In addition, the enhanced model must formally integrate MEC, specifically, indicators such as GDP growth, exchange-rate stability, and inflation control, as a core determinant of national-level competitiveness. In the context of Zimbabwe, the empirical results show that macroeconomic volatility (e.g., hyperinflation, erratic forex availability) can severely undermine export capacity, even when companies themselves are well managed. By incorporating MEC, the model captures the cyclical and structural economic fluctuations that affect cost of production, pricing strategies, and international demand. This extension is supported by Oyetade et al. (2020) and Hendrasto et al. (2023), who demonstrate that economies with stable macroeconomic environments provide a more predictable climate for exporters, thereby enhancing their ability to plan, invest, and compete abroad.

Institutional Quality (IQ), comprising rule of law, government effectiveness, and regulatory transparency should be positioned as a moderating layer that influences how both IOF and MEC translate into export outcomes. The current study's SEM results indicate that stronger governance and accountability mechanisms amplify the positive effects of reindustrialisation efforts on export performance (proportion mediated = 0.088, $p = 0.004$). This suggests that even with optimal internal and macroeconomic conditions, weak institutions can throttle export growth by increasing transaction costs, deterring foreign investment, and eroding stakeholder trust. Incorporating IQ into the model addresses critiques such as those by Tsai et al. (2021) and Chen (2023) that the

original framework does not sufficiently account for institutional fragility in developing economies.

Therefore, by combining the original Diamond dimensions—factor conditions, demand conditions, related and supporting industries, firm strategy/structure/rivalry, government, and chance, with these three new elements (IOF, MEC, IQ), the proposed framework offers a holistic structure for analysing Zimbabwe's manufacturing competitiveness. Policymakers can use this enhanced model to diagnose specific bottlenecks: for instance, whether low export performance stems from inadequate firm capabilities, macroeconomic instability, or institutional weaknesses. Industry stakeholders can likewise identify targeted interventions such as strengthening R&D grants, stabilising fiscal and monetary policies, or reforming regulatory processes, that collectively foster a more resilient, export-oriented manufacturing sector.

As a way to show the proposed enhancements to the Porter's Diamond Model so that it is compatible as a model for export performance in volatile economies such as Zimbabwe, Figure 2 shows the original Porter's Extended diamond model

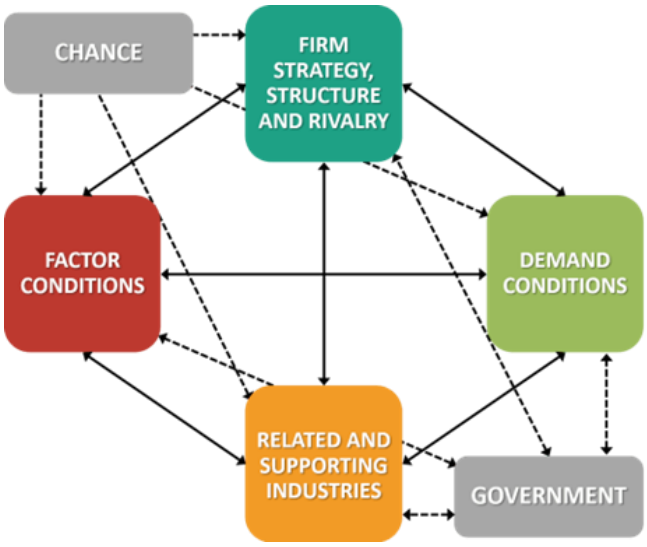

Figure 2: *Porter's Extended Diamond Model*

Source: Porter (1990:157)

Figure 3 is the proposed model, which takes into account and incorporates internal organisational factors, macroeconomic conditions and institutional quality (moderating variable) along with expert performance as the dependent variable.

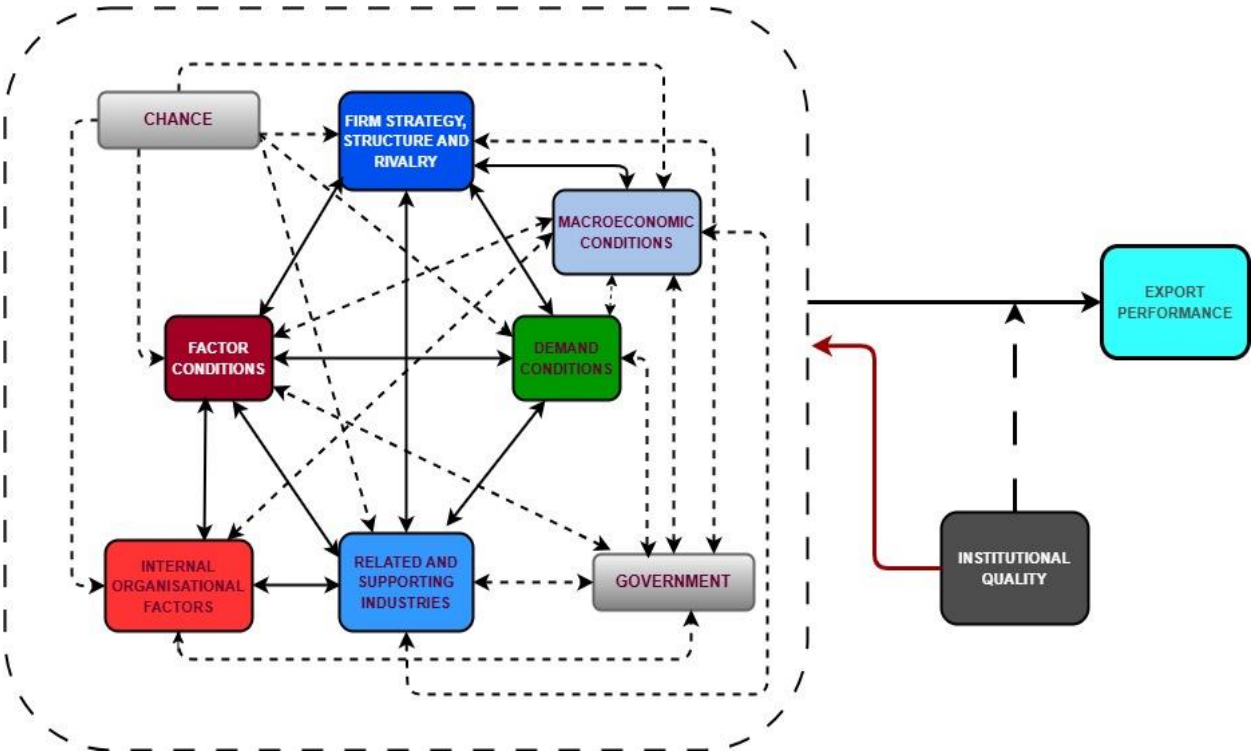

Figure 3: *Proposed Extended Diamond Model*

Conclusion

The study concluded that strong internal organisational capabilities are a key driver of Zimbabwean manufacturing firms' export success. This conclusion was informed by the finding that IOF had a significant positive effect on export performance ($\beta = 0.300$, $p < 0.001$). This implies that targeted investments in R&D, workforce skills, and market-oriented processes are crucial for building the firm-level competencies needed to compete abroad. The study further concluded that a stable macroeconomic environment is essential for sustaining export performance ($\beta = 0.241$, $p < 0.001$). The conclusion is supported by the finding that macroeconomic conditions, captured through inflation control, exchange-rate stability, and GDP growth, had a significant positive relationship with export outcomes. This means, therefore, that government policies aimed at maintaining price stability and predictable fiscal and monetary frameworks will directly enhance firms' ability to plan, price, and execute cross-border sales.

It was also concluded that institutional quality had a significant positive effect on reindustrialisation initiatives on export performance. This conclusion was informed by the finding that institutional quality mediated 8.8 % of the total effect of reindustrialisation on exports (indirect effect = 0.057, $p = 0.008$). This implies that without strong governance, streamlined regulations, and transparent policy implementation, even well-designed reindustrialisation strategies will yield suboptimal export gains. In the main, the study arrived at the conclusion that extending Porter's Diamond Model to include three weighted, measurable pillars, IOF, MEC, and IQ, provides a more predictive and diagnostic framework for Zimbabwe's manufacturing exports. This conclusion was informed by the finding that each of these dimensions made distinct, statistically significant contributions to export performance beyond the original Diamond factors, implying that policymakers can use the enhanced model to pinpoint specific firm-level, economic, or

institutional bottlenecks and tailor interventions for sustainable reindustrialisation and export growth.

Recommendations

The following recommendations were made:

1. **Exporting manufacturers intensify investment in internal organisational capabilities:** The manufacturing exporters should develop and implement structured R&D programs, upskill employees through targeted training, and adopt market-oriented decision-making processes. Establish clear KPIs for innovation and export market penetration to track progress and ensure accountability at the firm level.
2. **Government maintain and enhance macroeconomic stability:** The government should empower the Reserve Bank of Zimbabwe to set and adhere to clear inflation-targeting guidelines and communicate these targets transparently to anchor public and investor expectations. Establish a two-tier foreign-exchange auction system that balances market-driven rates with sufficient reserves, and introduce periodic FX forward auctions for exporters to hedge currency risk. Implement a multi-year budget framework that caps non-priority spending, prioritises infrastructure and export-oriented subsidies, and regularly publishes debt sustainability analyses. Finally, create a ring-fenced Commodity stabilisation fund to save windfall surpluses in boom years and cushion export revenues during price downturns.
3. **Accelerate institutional reforms to improve governance and regulatory quality:** Establish a centralised, digital Export Facilitation Authority as a one-stop portal for all export-related permits, certifications, and customs clearances to reduce processing times from weeks to days. Mandate Regulatory Impact Assessments (RIAs) for all new regulations, evaluating costs, benefits, and effects on business competitiveness, and publish the results online for stakeholder scrutiny. Fast-track amendments to the Commercial Courts Act to create specialised economic courts for export disputes and codify robust property-rights protections under an updated Investment Promotion Act. Roll out e-governance platforms for licensing and public procurement, paired with whistle-blower protections and periodic public audits, to deter rent-seeking and ensure that policy implementation matches legislative intent.
4. **Adopt and operationalise the enhanced Extended Diamond Model as a policy diagnostic tool:** Integrate the three weighted pillars, internal organisational factors, macroeconomic conditions, and institutional quality, using quantifiable indicators (R&D intensity, inflation rates, World Bank governance scores) to identify specific bottlenecks. Develop a user-friendly dashboard for policymakers that visually tracks each pillar's performance over time, enabling targeted interventions for sustainable manufacturing and export growth.
5. **Upgrade transport and logistics infrastructure to lower trade costs:** Invest in modernising key corridors (roads, railways, ports, and cold-chain facilities) to reduce transit times and spoilage for manufactured goods. Leverage public-private partnerships to finance and operate logistics hubs, and streamline customs clearance processes through digital manifests and pre-arrival risk assessments. This will directly cut export lead times and improve Zimbabwe's competitiveness in perishable and time-sensitive markets.
6. **Promote export diversification through market intelligence and trade promotion:** Establish a dedicated Export Market Intelligence Unit within the Ministry of Industry to

provide firms with real-time data on demand trends, regulatory requirements, and competitive landscapes in target markets. Organise regular trade missions, virtual buyer-seller meets, and negotiation of bilateral/regional trade agreements to open new corridors for Zimbabwean made goods. By broadening the country's export portfolio beyond traditional commodities, firms can mitigate price shocks and capture higher-value segments.

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