Refining the business development strategy of Grinding Media South Africa for forged steel products

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Abstract

Grinding Media South Africa (GMSA) lost almost half of its market share for steel forged grinding media in Sub-Saharan Africa since 2019. While the organisation's operational performance and product quality remained stable, the market underwent significant changes due to the implementation of economic liberalisation policies and market reforms. The objective of this study is to identify the factors that affect GMSA's loss of market share and propose possible solutions to regain its competitive edge. Drawing on a detailed literature review and theoretical frameworks, a conceptual framework was developed to support the analysis. Insights are gathered through the review of secondary data. The competitiveness of GMSA is assessed by considering the altered business context. The study found that GMSA lost market share due to the economic reforms implemented by African Governments and the substantial increase in low-priced imported grinding media from China and India. Earlier opportunities to prevent a loss in market share by entering local partnerships and joint ventures, or establishing a local manufacturing facility, were missed. Furthermore, unless GMSA swiftly acquire the resources and capabilities to trade through a local partnership or joint venture, its market share will continue to be eroded by price-competitive imports and locally produced grinding media. It is recommended that GMSA and Magotteaux incorporate the acquisition of a local manufacturing facility into their global strategy to ensure the long-term sustainability of the business. The study emphasises the critical importance of rapidly adopting a business strategy aimed at retaining and increasing competitive advantage as soon as changes in the macro-environment, the market or competitor activity become known.

competitive advantage, market share, resources and capabilities, business strategy,

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Chapter 1: Introduction

1.1 Statement of purpose

This qualitative study explores the refinements required for implementing Grinding Media South Africa's (GMSA) business development strategy, which aims to increase its market share for forged steel grinding media in Sub-Saharan Africa.

1.2 Background of the study

Market share is gained by developing a competitive advantage (Mousavi, Bossink, & Van Vliet, 2019; Teece, 2007). Magotteaux, part of the Chilean Sigdo Koppers group, is the world's leading supplier of crushers, wear parts, grinding media and milling process optimisation services (Magotteaux, 2023) and is regarded as the international technological leader (Umansky, Golovatenko & Prudnikov, 2020). The Magotteaux Group has a presence in 150 countries and obtained a majority shareholding (51%) in GMSA in July 2023 (Magotteaux, 2023). Despite the continuing growth observed in the African mining industry and its technical competitive advantage, GMSA's steel forged grinding media market share in Sub-Saharan Africa has been declining since 2019. The organisation will be able to sell only approximately half of its Ball Forge Plant production capacity in 2024 (Viseur, 2023).

1.3 Problem statement

Several studies have been conducted on the challenges faced by international organisations in expanding their markets in Sub-Saharan Africa (Maennling & Toledano, 2019; Twikalabimpa, 2023; Hansen, 2014; Signé & Johnson, 2021). Ample literature exists on the theme of increasing market share through developing a competitive advantage (Isabelle, Horak, McKinnon & Palumbo, 2020; Williams, 2022; Day, 1994). Markets and the macro environment in which organisations trade are not stagnant and continuously evolve. Therefore, organisations should respond to market shifts in an agile manner, renewing their competitive advantage to retain market share and to remain relevant (Williams, 2022; Teece, 2007). A deep understanding of the changes that have occurred in the Sub-Saharan African market, their impact on customers' requirements and the strategic responses of competitors is crucial in enabling GMSA to identify the changes its business strategy requires to regain its competitive edge.

Sub-Saharan Africa attracts the focus of many foreign investors due to its abundant mineral resources and the increasing strategic importance of critical minerals used in renewable energy technologies and the global drive towards decarbonization (Chen, Laws & Valckx, 2024). The recent business challenges and opportunities presented by the mining industry in the region have been well researched (Hansen, 2013; Zongo, 2022; Signé and Johnson, 2021). The most significant challenge involves changes to institutional and regulatory frameworks within this market, including localisation and preferential procurement policies and is presented as a threat to international organisations (Korinek & Ramdoo, 2017; Andreoni & Torreggiani, 2020; Ovadia, 2016). However, Ba and Jacquet (2022) and Caramento (2020) found that these policies are poorly implemented and enforced (Brookings, 2016; Twikalabimpa, 2023) and therefore do not pose an immediate threat to international trade. Furthermore, researchers claim that the policies do not exclude international organisations from the market but allow participation through joint ventures and partnerships with local citizens (Ramdoo, 2015; Ba & Jacquet, 2022). Hansen (2020) reported that the academic literature on the effect of local content policies on an organisation's global strategic management perspective, based on theory and concepts, is sparse.

The increasing dominance of China in local ownership of mining and manufacturing assets in Sub-Saharan Africa, as well as its low-cost imports (Hansen, 2020; Lubinda & Jian, 2018; Oshodi, 2023), and the threat it poses to other international competitors is well-documented. The establishment of local partnerships or joint ventures is again presented as an opportunity for organisations to invest in Sub-Saharan Africa and to counter these competitive threats from China. A deep understanding of the changes and developments that occurred in the African market and China's role is required before GMSA's competitiveness in the current industry can be assessed from a strategic business management perspective.

This study recognises the uniqueness of the mining industry within Sub-Saharan Africa and aims to understand suppliers' strategic responses to macro environmental changes from this perspective. Most of the research into the effect of recent macro-environmental changes on international organisations and their strategic responses has been based on case studies of the general mineral extractive or oil and gas industries (Korinek and Ramdoo, 2017). No research could be located relating to the effect on the grinding media industry in the African market. The impact on the South African capital and mining equipment suppliers trading in Sub-Saharan Africa, as well as their strategic responses, has been thoroughly researched (Andreoni & Torreggiani,2020; Kaziboni, Mondliwa & Nkhonjera, 2019). There is a clear distinction between the legal and regulatory requirements of the countries in which GMSA trades and those included in these case studies. Furthermore, the nature and value chain of grinding media products differ significantly from those of capital and mining equipment; therefore, this study intentionally distinguishes between these categories and products. A contextual understanding of the impact of the recent changes on GMSA's market and customer requirements is crucial prior to establishing the resources and capabilities required to improve the competitiveness of their products, increase market share and deliver a satisfactory return on the capital investment made in the organisation by Magotteaux.

1.4 Research objectives

i. Study the recent changes in Sub-Saharan Africa trading policies, regulations, macro-environmental forces and competitors' responses thereto and assess the impact thereof on GMSA's competitiveness.

ii. Determine the necessary changes to the GMSA Business Development strategy and identify opportunities for GMSA to enhance its competitiveness.

1.5 Research questions

RQ1: How competitive is GMSA currently in the Sub-Saharan African mining industry, as compared to its four most significant competitors?

RQ2: What resources and capabilities do GMSA need to acquire or develop to improve its industry competitiveness? What amendments are required to the GMSA Business Development strategy to ensure that its market share increases?

1.6 Rationale

The loss of GMSA’s share in the Sub-Saharan Africa forged steel grinding media market has been attributed to the mining industry’s dynamic economic and regulatory environment, as well as increased competition from both local manufacturers and imports. This study investigates the validity of this view and the changes required to GMSA’s strategy for regaining and continuously growing its market share – goals which are critical to its long-term sustainability and GMSA’s Ball Forge plant’s ongoing inclusion in Magotteaux’s global strategy.

1.7 Delimitations of the study

The study focuses solely on the forged steel grinding media products produced by GMSA, as the market share of cast high-chrome products shows continuous growth and currently exceeds available production capacity. Magotteaux divided the international market into geographical regions, and sales to the Sub-Saharan Africa market have been allocated to GMSA, making it the sole region of focus for this study. Furthermore, the cement and utilities markets are excluded due to their small size relative to the extractive market. The price competitiveness of forged grinding media is excluded from this study.

1.8 Assumptions

It is assumed that information and data provided by the Magotteaux and GMSA management and Sales teams are accurate and reliable. Sales quantities (tons sold) are used as a proxy for market share.

Chapter 2: Literature review

2.1 Introduction

This chapter provides an overview of the marketing and trade changes that occurred within the African mining sector in which GMSA competes, as well as the study's theoretical and conceptual foundations. The study is grounded in the theories of competitive advantage and business model innovation.

2.2 Changing business environment in Sub-Saharan Africa

Since the start of the 21st century, the African mining industry has undergone a period of increased economic protectionism (Korinek & Ramdoo, 2017) and intense economic liberalisation during which governments implemented changes to their institutional and regulatory frameworks (Oguji & Owusu, 2017). Localisation policies have been implemented by approximately 90% of resource-rich African nations (IGF, 2020; Lange & Kinyondo, 2016), favouring locally produced products over imported goods (Hansen, 2020; Andreoni & Torreggiani, 2020; Cimino, Hufbauer & Schott, 2014). Flaig and Stone (2023) acknowledged that the policies resulted in lost market opportunities for organisations. The Global Trade Alert (2024) and Deringer, Erixon, Lamprecht and Van der Marel (2018) classify most of these policy interventions in Sub-Saharan Africa as harmful. On the contrary, it is posited that the localisation reforms unlocked the economic potential of countries in Africa to foreign investors (World Bank, 2012; Oguji, Degbey & Owusu, 2021), attracting additional investments and ultimately an increase in the number of new local manufacturers (SADC, 2024; Dadzie, Owusu, Amoako & Aklamanu, 2018) and competitors.

As China's presence in the extractive sector has increased over the past decade (Signé & Johnson, 2021), changes have been observed in the procurement strategies of majority-Chinese-owned mining companies (Andreoni & Torreggiani, 2020). Calabrese and Tang (2020) and Lubinda and Jian (2018) report that Chinese investments are predominantly market-seeking in nature. In contrast, Vasiliev (2015, as cited by Twikalabimpa, 2023) maintains that the primary reason for the Chinese investments is resource security (Morris & Fessehaie, 2014; Lubinda & Jian, 2018). Ericsson and Löf (2020) report that Chinese investors are primarily interested in iron ore, copper and gold resources (Rapanyane, 2020), which coincide with the three main markets of strategic interest to GMSA. The value of China's African investments reached US$43 billion in 2017 (UNCTAD, 2019), with the majority being in Ghana (Calabrese & Tang, 2020), Zambia, and Botswana (Khoemacau Copper Mine, for approximately US$ 2 billion). All three countries are strategic export destinations for GMSA. African countries welcome Chinese investments and imports, as they increase productivity by creating direct competition for local manufacturers and allowing access to new technologies and improved equipment (Tang, 2019; Darko et al., 2018, as cited by Calabrese & Tang, 2020). However, Edwards and Jenkins (2015) describe the impact of Chinese imports, which showed a 15.5% increase in 2022, according to Afreximbank (2023), as destructive to African manufacturing. For the same reason, anti-dumping cases for grinding media have been brought against China in Mexico, Australia and Chile (Oshodi, 2023).

The implementation of the African Continental Free Trade Agreement (AfCFTA) in 2018 aims to foster regional trade among Sub-Saharan African countries by enabling their local manufacturers and suppliers to develop linkages within regional supply chains, thereby increasing their market size and achieving a competitive advantage over international suppliers (African Development Bank, 2024; Twikalabimpa, 2023; De Melo & Twum, 2021; Marais, 2023). Access to regional markets further enhances the attractiveness of these markets to foreign investors for establishing local manufacturing facilities and entering the GMSA market. Although GMSA was the first South African company to export goods to Ghana under AfCFTA (Sibiya, 2024), its remoteness, the poor transport infrastructure (Twikalabimpa, 2023; Adeleke, 2022; Andreoni & Torreggiani, 2020; Korinek & Ramdoo, 2017), high transport costs in Africa (Twikalabimpa, 2023) and the inefficiencies at South African national ports (AfDB, 2023) limit the potential benefit that can be gained from the AfCFTA.

Furthermore, according to the World Bank's Doing Business study, which assesses economies' performance in terms of regulatory best practices, 14 of the 20 worst and most difficult countries in which to do business are African nations (World Bank, 2020). Additional trade barriers in Africa include a lack of business ethics, cultural differences, poor leadership, governance abuse (Twikalabimpa, 2023), corruption and bribery (Calabrese & Tang, 2020; Weng, Buckley, Blackmore, Vorley, Schoneveld, Cerutti, Gumbo, Moombe, Kabwe, Muzenda, Mujeyi, Chacha, Njau & Jønsson, 2018), inadequate governance (Adeleye, Luiz, Muthuri & Amaeshi, 2019; Victor, Mahmood, Wang and Botchie, 2018), political settlements and rent-seeking behaviour (Kahn, 2010; Hilson, 2019; Hansen, Buur, Mette Kjær & Therkildsen, 2015) and stifle economic growth and development. Research found a proliferation of these unethical practices since the initiation of localisation policies, especially in Ghana and the DRC (Geenen, 2019; Kolstad & Kinyondo, 2017; Korinek & Ramdoo, 2017). Local content policies are used as a patronage tool (Caramento, 2020) and contracts are allocated to supporters and partners based on political dynamics and affiliations, rather than on competence and value proposition (Hilson, 2019; Weng et al., 2018; Hansen et al., 2016).

Research question 1: Determining GMSA's competitiveness in the market

An organisation's competitiveness is not stagnant and changes as the macro-environment and customer requirements evolve. Therefore, their effect on an organisation's competitiveness needs to be regularly assessed, using models such as Porter's (1979) Five Forces framework. The model considers the threat of new entrants, the bargaining power of buyers, the bargaining power of suppliers, the threat of potential substitute products and the level of rivalry among competitors. Isabelle et al. (2020) propose an augmented Porter's framework that takes into account the additional impacts of globalisation, digitalisation and regulation/deregulation. As globalisation and regulation have become more prevalent in the African economic environment (Twikalabimpa, 2023), the augmented Porter framework is deemed more appropriate for assessing industry competitiveness, while also considering the position of GMSA's four main competitors.

El Shafeey and Trott (2014) and Chen, Cui, Li and Rolfe (2017) postulate that an organisation can only sustain a competitive advantage and market share in a dynamic competitive environment, like the African context, when the customer value created through its resources and capabilities consistently surpasses that of its competitors (Wilden, Gudergan, Akaka, Averdung & Teichert, 2019). Hence, as the Augmented Porter five forces assessment focuses more on the competitive intensity of the grinding media industry, an assessment of the adequacy and suitability of GMSA's internal resources and capabilities for ensuring a superior competitive advantage was also required. This assessment was done using the resource-based view (RBV) and the VRIO frameworks (Barney, 2007, cited in Mora Cortez & Johnston, 2019).

Research question 2: Acquiring the necessary resources and capabilities

Mousavi et al., (2019) and Day (2011) established that organisations can gain market share by proactively responding to imminent threats and new opportunities by reorganising existing or acquiring new internal resources and dynamic capabilities. Recent research determined the importance of combining organisational agility with dynamic capabilities to enable organisations to adapt to environmental uncertainty (Mero & Haapio, 2022). Therefore, the resources and resultant capabilities that lend an organisation its competitive advantage must be dynamic and adaptive to the evolving business environment (Teece, Pisano, & Shuen, 1997; Mora Cortez & Hidalgo, 2022; Kahn, 2020; Jaworski & Lurie, 2019). Africa is a rapidly evolving market due to ongoing economic and trade regulatory changes (Fang & Zou, 2009). Mora Cortez and Johnston (2018) pointed out that the capabilities that leverage firms' performance differ across countries and industries. Tallman and Yip (2001, as cited by Cuervo-Cazurra, 2016) noted that an organisation's competitive advantage may not remain the same once transferred across country borders.

An organisation's business strategy demonstrates how these resources and dynamic capabilities are obtained and utilised to offer and deliver a unique customer value proposition (Shafer, Smith & Linder, 2005; Filser, Kraus, Breier, Nenova & Puumalainen, 2021) and maintain a competitive advantage (Purkayastha & Sharma, 2016). This implies that as organisations' capabilities become more dynamic and their competitive advantage changes, their business strategy must be renewed (Ogrean & Herciu, 2020; Williams, 2022; Bocken & Geradts, 2020; Ashkenas & Chandler, 2017; Teece, 2007). Williams (2022) corroborated this finding by affirming that the business strategy not only depends on the environment and the organisation's resources and capabilities, but also on the collaborations and partnerships formed within the value chain, the political economy and geopolitical landscape. Teece, Peteraf and Leih (2016) concurred with Williams and concluded that the impact of suppliers, competitors, and customers on the industry and an organisation's competitiveness must be considered when defining strategy. GMSA's business strategies for the period 2022-2024 and the Forged media deployment strategy (Viseur, 2023) were reviewed; however, they do not elaborate on any recent changes in the Sub-Saharan African market or customer requirements. Furthermore, no changes to GMSA's range of resources and capabilities, or Business development strategy, to address external industry factors are mentioned in these strategies.

2.3 Analytical framework

2.3.1 Theoretical framework

Porter's (1979 and 2008) Five Forces framework has been criticised for being too static and not considering changes in the competitive environment (Grundy, 2006). The augmented Porter's Five Forces framework, developed by Isabelle et al. (2020), along with the VRIO and resource-based view (RBV) frameworks (Eisenhardt and Martin, 2000), were used to assess the competitive nature of the grinding media industry and the competitiveness of GMSA from an internal resource and capability perspective. These frameworks have also been criticised as they do not indicate how resources need to be adjusted in response to changes and uncertainty in the macro-environment (Mousavi et al., 2019). Therefore, the dynamic marketing capabilities framework (Mora Cortez & Hidalgo, 2022; Teece, 2007; Barney, 2001) was used to identify the resources and capabilities required to optimise the opportunities and minimise the threats posed by Sub-Saharan Africa's dynamic trading environment and competitor evolution (Katkalo, Pitelis & Teece, 2010; Mousavi et al., 2019; Acquaah, 2009). These assessment outcomes were evaluated in relation to the strategies employed by GMSA and its competitors. By applying the business innovation model (Filser et al., 2021; Williams, 2022; Ogrean & Herciu, 2020), the resources, dynamic capabilities and process changes required by GMSA to improve its value proposition to Sub-Saharan African customers were identified.

2.3.2 Conceptual framework

The study conceptualises that GMSA can regain market share in Sub-Saharan Africa by achieving a competitive advantage above its current competitors. Such a competitive advantage can be achieved by acknowledging the impact changes in the market (macro-environment) and customer requirements have had on its competitiveness and by developing a new, unique value proposition. The unique value proposition requires the availability and utilisation of the correct combination of resources and dynamic capabilities within the organisation. The conceptual framework is illustrated in Figure 1.

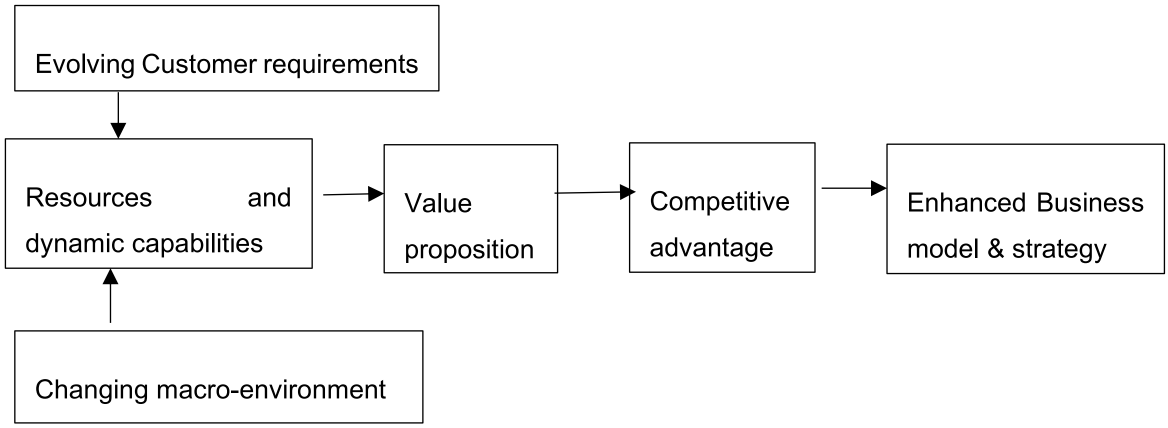

Figure 1: Conceptual framework

2.4 Conclusion

The Sub-Saharan African market has undergone significant economic, political, and regulatory changes, accompanied by an increase in direct investment, local grinding media manufacturing, and trading by foreign organisations. To maintain a competitive edge, organisations must respond to these changes swiftly to stay competitive. A delayed response by GMSA to these developments may have led to a loss of market share. It is proposed that by identifying, acquiring and developing suitable resources and dynamic capabilities, GMSA can establish a renewed competitive advantage and grow its market share in Sub-Saharan Africa. This study will explore this proposition and the adjustments needed to the Grinding Media South Africa business strategy to deliver a unique value proposition to customers, which is essential for increasing market share.

Chapter 3: Research methodology

3.1 Introduction

The applied qualitative research strategy facilitated an in-depth understanding of the GMSA business context, the complex concept of maintaining competitiveness in a dynamic market, and analysing evolving industry trends (Ochara, 2020). The study focuses on the specific case of Grinding Media South Africa (GMSA).

3.2 Research design

A qualitative interpretive research strategy is the most appropriate for answering the research questions, as it requires an exploratory approach (Mansourian, 2008; Vears & Gillam, 2020) and an in-depth understanding of the current Sub-Saharan African business context, changes in GMSA's competitiveness and the adequacy of current resources and capabilities. Inductive reasoning was employed to construct solutions to the research questions by reviewing the data, identifying patterns, formulating concepts, identifying relationships between themes and deriving conclusions and theories (Thomas, 2006; Hayes, Heit & Swendsen, 2010). Theoretical frameworks were applied inductively throughout the research process, from data selection and accumulation to the interpretation and analysis stages (Ochara, 2020; Vears & Gillam, 2020). The secondary data were collected, coded and interpreted through an iterative process rooted in the theories discussed in section 2.3.1 to verify the proposed conceptual framework in search of the changes needed to GMSA's business strategy (Walsham, 1995; Mora Cortez and Johnston, 2018).

3.3. Data collection methods

The secondary data used for the systematic review are listed in Section 4 and Appendix C and originate from three sources:

i) predominantly descriptive, document-based data from reputable online sources, literature reviews, previous research and case studies, journal articles, reports and conference papers. Data related to Sub-Saharan Africa and the mineral exploration sector were considered. Data only relevant to business strategy and contributing to answering the research questions were included. Data were collected over a period of five months using online searches and the WITS online library. Preference was given to recent data, except for information relating to theoretical principles and the timeline concerning the implementation of the economic reforms.

ii) economic, financial and trading data from reputable organisations' databases, agencies and professional institutions,

iii) data gathered, verified and maintained by GMSA and Maggoteaux, including customer feedback, sales figures, trading data, sales and marketing strategies, competitor insights and market analysis. Refer to Appendix C.

To ensure objectivity (Ochara, 2020), multiple data sources were examined to identify patterns and inconsistencies, thereby avoiding bias during sampling. Trustworthiness was achieved through detailed record-keeping of the data collected and analysed, and by avoiding bias in the interpretation and analysis of the data (Hayes, Hei & Swendsen, 2010; Stratton, 2024).

3.3.1 Population

The study's population includes businesses trading in Sub-Saharan Africa and within the resource mining and extractive industries. The research was conducted in a natural, real-life setting with no experimental or control groups.

3.3.2 Sample and sampling method

When selecting the representative data samples (Saunders & Lewis, 2012), this research applied a purposive sampling technique (a non-probability sampling technique) backed by sound professional judgment and experience. Non-probability sampling method is often criticised for being subjective and biased (since the researcher cannot continually assess the sample's representativity (Welman, Kruger & Mitchell, 2005; Stratton, 2024). To avoid this risk and generalisation of the research outcome (Saunders & Lewis, 2012), the variety and heterogeneity of data sources were maximised across all three sources: i) descriptive, document-based data, ii) economic, financial and trading data and iii) data generated by GMSA and Magotteaux.

3.4 Research instrument

This study employed a qualitative data collection process, executed through a detailed and systematic review of the documents and datasets. The methodology was designed to connect the research questions to the data collected, enabling valid and reliable conclusions to be drawn (Yin, 2004; Ochara, 2020). An outline of the research method is included in Appendix C.

3.5 Data analysis strategies and interpretation

Inductive thematic content analysis, along with the 15-point checklist developed by Braun and Clarke (2006, p. 96), was utilised to analyse the collected data. This involved identifying, coding and categorising the patterns within the data using a data collection matrix and the method described in Appendix C. The manual decision approach applied by Williams (2022) and the iterative ("read-check-read") method postulated by Maguire & Delahunt (2017), augmented by the fifteen steps of the constant comparative method (Ochara, 2020) was followed to collate these codes into themes which correlated with the conceptual framework and research questions. The method was selected based on the anticipated advantages of the rich data analysis, its potential to generate unanticipated insights into the observed trends, and to enhance the findings from GMSA's market assessment (Braun & Clarke, 2006).

3.6 Limitations of this study

The purposive sampling technique, due to its non-random nature, limits the generalizability of the findings to other populations (Memon, Thurasamy, Ting and Cheah, 2024). The samples are selected based on the student's experience and judgment. Potential bias was mitigated through triangulation of secondary data sources. The secondary data for review is limited to a Sub-Saharan African context, as the market is strategically targeted by Grinding Media South Africa.

3.7 Quality assurance

3.7.1 Transferability

Eisner's (1991, cited in Ochara, 2020) recommendations were applied throughout the research process to ensure the richness of context, data and themes. By including an in-depth contextual analysis of the Sub-Saharan African business environment and its challenges, the study's relevance to other organisations trading across borders is increased (Ochara, 2020).

3.7.2 Credibility

The five quality control questions suggested by Saunders & Lewis (2012) were used to ascertain the transferability of the research findings. An iterative process of data collection and analysis, frequent revisiting and alignment with the purpose of the research ensures consistency between the research questions, the data collected and the themes developed. This approach, along with the use of multiple data sources, lends triangulation (data, methodological, and theoretical) to the study. Furthermore, peer-reviewed articles and research papers were used to develop the theoretical frameworks (Ochara, 2020) and to correlate the observations made during the literature review, data collection and analysis with those made by GMSA. To ensure dependability (Ochara, 2020; Vears & Gillam, 2020), a thematic analysis framework was consistently applied to minimise bias and maintain a detailed audit trail of data used and its source.

3.8 Ethical considerations

The research was conducted in a respectful, honest and fair manner. Ethical approval was granted by the University of Witwatersrand prior to commencing with data collection. The research was conducted strictly according to the MBA Applied Research Project Process Guidelines and under the supervision of Dr Ndlela. Written permission to proceed with the research was granted by GMSA, and the student's conduct is subject to the GMSA Business Code of Conduct. Research data and notes were stored in a password-protected laptop that only the student had access to. Furthermore, there are minimal ethical concerns since this study does not include any human subjects and employs secondary data sources (Pedroni & Pimple, 2001).

4. Chapter 4: Data analysis and discussion

4.1 Introduction

The observed change in GMSA market share was correlated to that of similar industries in the mining sector to establish if the declining market share trend was unique to GMSA and the grinding media market. The reforms and new regulatory requirements introduced in the industry over the past decade are presented. An overview of the strategies implemented by other international suppliers competing in the same market, as well as emerging market trends in response to these changes, is provided. The competitiveness of GMSA was assessed by considering the altered business context. Finally, the required amendments necessary for the GMSA business strategy to increase its competitive advantage are identified.

4.2 Coding technique

A three-stage manual process involving open, axial and selective coding was followed (Corbin & Strauss, 1990; Neuman, 1997). This process identified five main themes: GMSA market share changes and general industry trends, the impact of localisation policies on the grinding media market, competitors' responses to localisation policies, imports from China and India, and GMSA competitiveness.

4.3 GMSA market share changes and general industry trends

GMSA's forged grinding media sales volume (a proxy for market share) showed an abrupt decline in 2020 to levels equivalent to only 56% of the average sales of 2018 and 2019. Market share in Sub-Saharan African countries, excluding South Africa, exhibited the most significant decline at 64%. On the contrary, gold and copper processing in Zambia, Ghana, the DRC and West Africa has proliferated over the past decade (Afreximbank, 2023). As the largest consumers of forged steel grinding media, the decline in GMSA sales in Ghana and Zambia is a concern. Although the impact of the COVID-19 pandemic on mining activities and grinding media consumption cannot be dismissed, sales did not recover when mining activities resumed after the pandemic. A minor 11% increase in sales was observed in 2022, but sales volumes soon thereafter returned to the earlier low levels. The short-lived sales increase is attributed to post-pandemic supply chain challenges that hampered imports into Africa from the East. GMSA's delivery, quality performance and customer services on forged steel grinding media for the period 2019-2023 were reviewed to ascertain if any of the internal factors contributed to the loss in market share observed since 2020. The indicators include the percentage of orders delivered on time, the quality reject rate, and the number of customer complaints. A customer satisfaction survey (Voice of the Customer) was introduced in 2020 and indicated that the percentage of customers retained increased from 89% in 2020 to 95% in 2024. It was confirmed that no rationalisation of the forged grinding media product range occurred and that GMSA did not withdraw or downscale marketing activities in any of the African countries. The technical specifications of the forged products, governed by Magotteaux, have also remained unchanged since the 2010s. Based on the Steel Forge performance indicators and the input of the Regional Sales Manager and CEO, the probability that a deterioration in the delivery or quality performance of the Steel Forge contributed to the loss in market share has been ruled out. On the contrary, the performance indicators and customer satisfaction survey results confirmed an improvement in performance from 2020.

GMSA is the primary local manufacturer and sole exporter of forged grinding media; therefore, there is little to no data available for comparison with GMSA's trends. As an alternative, the sales trends in Sub-Saharan Africa for primary steel products and capital and mining equipment were reviewed. It was established that the decline in sales volume observed by GMSA is not unique to forged grinding media. Export to Africa statistics provided by the South African Iron and Steel Institute indicate that South African-produced primary flat steel products' sales volumes from 2019 to 2023 showed a 67% decline and primary sections and bars sales decreased by 31%. Likewise, the value of capital and mining goods utilised in mineral processing and exported from South Africa into Sub-Saharan Africa exhibited the same downward trend (Andreoni & Torreggiani, 2020). South Africa's share in Zambia's mineral processing equipment sales decreased from 77.5% in 2002 to 19.3% by 2018 and researchers attributed the decline to manufacturers' slowness in adapting to local content policies (Kaziboni, Mondliwa & Nkhonjera, 2019). The correlation between declining sales volumes for forged grinding media, primary steel products and capital and mining equipment indicates a high probability of a macro-environmental force eroding market share in the mining sector.

4.4 The impact of local content policies on the grinding media market

GMSA’s management and Sales team have identified the implementation of economic reforms, specifically local content policies, as a significant threat to its market share in Sub-Saharan Africa. This study found that as early as the 2010s, African governments introduced local content policies to accelerate economic transformation, attract foreign investment needed to develop local manufacturing capabilities and form linkages with the global mineral extraction supply chain (Ovadia, 2016). Between 2008 and 2012, more than a hundred such policies were implemented (Hufbauer, Schott, Cimino, Vieiro & Wada, 2013) and are regarded as the reason for a reduction in annual global trade of approximately US$93 billion (Cimino et al., 2014). For this reason, these policies are often referred to as “localisation barriers to trade” (The Global Trade Alert, 2024; Cimino et al, 2014).

The grinding media market was not excluded, and the Country Mining Vision guidebook explicitly mentioned the need for Africa to develop an upstream linkage to produce grinding media locally for the mining industry. Grinding media accounts for 40-45% of the total comminution cost of minerals, is the fifth-highest expense for mines in the Copperbelt (ANRC, 2022) and the third-highest operating expense for mines in Ghana (Atta-Quayson, 2022). Hence, due to its immense monetary value, it remains within policymakers' view. Ghana, GMSA’s single largest forge grinding media export destination and Africa’s leading gold producer, led the way in terms of economic liberalisation (Dadzie et al, 2018). In addition to government-initiated localisation policies, some mining groups, including GMSA customers, have implemented localisation programs of their own (Korinek & Ramdoo, 2017). An example is Newmont’s local supplier development programme (Ramdoo, 2015), which gives preference to companies located near the mine (Ba & Jacquet, 2022). International capital and mineral processing equipment manufacturers have been circumventing localisation policies by completing the final assembly or value-adding process (for example, painting or final testing) in the country where it is intended to be used and declaring that it was locally produced. Alternatively, they supply the majority of the main components while local suppliers provide non-critical and lower-value items required in the final assembly. Unfortunately, the nature of the grinding media manufacturing process does not allow for downstream assembly or final processing after production is completed in South Africa.

GMSA's understanding has been that localisation policies require grinding media to be manufactured within the specific African country from which it is purchased. The definition of "local" as applied in the regulations and policies relevant to the African mining industry and GMSA's market was studied and the findings are summarised in Appendix D. It was established that "local" does not necessarily refer to the organisation's location or national borders but can also refer to the ownership structure. Localisation requirements can take on various forms: ownership requirements, price preference awards, quantified minimum content for locally procured domestic goods and services, hiring and training of a local workforce, production sharing agreements (Tordo, Warner, Manzano & Anouti, 2013), providing infrastructure (UNDP, 2016) and discouraging the importing of goods and services (Cimino et al., 2014).

None of the mining and localisation regulations and policies of the countries within GMSA's target market require sole or 100% ownership by a local entity or citizen. Instead, the regulations and policies require that the business be a registered business within the country and have majority ownership or shareholding by a local citizen. Zambian legislation regards organisations with 50% or more shareholding by a Zambian national as a Zambian citizen-owned organisation. The additional non-regulatory local and preferential procurement plans specify a highest minimum local content of 35%, which leaves room for GMSA to capture the remaining 65% of the market. Due to a lack of understanding of the true definition of "local" within the context of these economic and localisation regulations and policies, GMSA did not previously identify the opportunity to form partnerships or joint ventures with local citizens or investors as a means of retaining access to their markets while meeting the requirements of the localisation policies.

4.5 Competitors' responses to localisation policies

The introduction of localisation policies altered the foreign direct investment landscape in the African mining industry, as international investors, including

GMSA competitors, utilised these policies to obtain a competitive advantage through various strategies. The strategies identified through this study and relating to the grinding media market are as follows:

4.5.1 Partnerships or joint ventures with local entities

Local content policies and other barriers to entry prompt international manufacturers to form joint ventures and partnerships with local organisations through intermediate modes (Hollense, 2020, cited in Oshodi, 2023). An added benefit is that the cost of entry (Adam Smith International, cited in Ba & Jacquet, 2022) for a joint venture is lower than that for entry through other means. Thus, international organisations can gain access to the local market and knowledge of the environment while circumventing the restrictive laws on local content policies (Boateng & Glaister, 2003). The governments of emerging economies favour international joint ventures (Acquaah, 2009) as they attract foreign investment while allowing domestic control over the economic sectors.

The definition of "local" within several localisation policies assessed by the author (Appendix D) includes and approves of international joint ventures with local partners as the majority shareholders. None of the papers relating to localisation policies, which were reviewed during this study (Appendix C), prohibited the use of joint ventures or partnerships with local citizens as an entry mode to the country of interest. The governments of Nigeria, Angola, Ghana and Uganda acknowledge joint ventures between foreign firms and local organisations as valid determinants for local ownership (Ramdoo, 2015). They recognise the value that the ventures contribute towards transferring skills and technology to local partners, who gain knowledge that is not otherwise readily accessible (Hamel, 1991), and ultimately benefit from this, contributing to the country's economic growth (Ado, Su & Wanjiru, 2017). Kragelund (2017) found that fewer than 5% of the products purchased in Zambia were locally manufactured, and that the majority of sales were done by local agents or distributors representing foreign organisations. The ME Elecmetal (China) and Zambia joint venture is an example of such a partnership within the grinding media industry, competing with GMSA.

4.5.2 Foreign direct investment in local manufacturing facilities

The most rational response by international organisations, including GMSA competitors, to localisation policies has been to establish local manufacturing facilities to protect and potentially increase their market share. The grinding media industry is no exception – international organisations have rapidly commissioned manufacturing facilities in Zambia and Ghana. In 2015, three existing Ghanaian plants produced forged grinding media to meet half of the country’s demand (Atta-Quayson, 2022). In 2016, West African Forging Limited (WAFOR) commissioned its third Ghanaian plant (Modern Ghana, 2017) and planned the fourth through a collaboration between the Minerals Commission and the Newmont Mining Group. These investments receive the Ghanaian government's support as it continues to promote the use of locally manufactured grinding media, and it is included in the Chamber of Mines’ list of 28 products feasible for local production (Morris, Kaplinsky & Kaplan, 2012).

Zambia has embraced the localisation of manufacturing since the inception of local content policies. The Zambian National Vision 2030 (Government of the Republic of Zambia, 2006) and the Zambia Development Agency (Fessehai & Rustomjee, 2018) encourage collaboration between foreign organisations, investors and the mining industry through the establishment of special economic zones, which host local manufacturing facilities. Under this plan, ME Elecmetal’s Long Teng Zambia (a joint venture between China and Chile), Scaw Zambia, and Yellowstripe Resources have established forged grinding media plants in Zambia. China is making considerable investments in Zambia's economic development (Lubinda & Jian, 2018), which is no coincidence, considering China is the world’s largest copper consumer (Afreximbank, 2023). From 2019 to 2023, Ghana’s export volumes of grinding media increased by 457%, reaching levels equivalent to 80% of GMSA’s total production. Ghana is significant to GMSA and is its second-largest international export destination. The rapidly increasing number of exports from Ghana suggests that the country may no longer require grinding media from GMSA, and local manufacturing may soon meet local demand. The collaboration between Gold Fields and the local grinding media manufacturer, Tema Steel Limited, drives the growth of local manufacturing. The collaboration enabled Tema Steel to expand its market reach across the entire West African region (Atta-Quayson et al., 2015).

The implementation of the African Continental Free Trade Agreement (AfCFTA) in 2018 aims to facilitate regional trade among Sub-Saharan African countries by enabling the development of linkages within regional supply chains (African Development Bank, 2024). This unlocking of regional markets further increased the attractiveness of establishing local manufacturing facilities within Sub-Saharan Africa. The agreement offers the benefits of economies of scale and regional supply chain integration achieved through intra-African trade, should an international organisation consider acquiring a local manufacturing facility in Sub-Saharan Africa. Although the AfCFTA presents a golden opportunity for GMSA to promote trade and achieve export growth in Africa (Afreximbank, 2023), it also poses the risk of attracting additional foreign direct investment that is interested in establishing local manufacturing facilities, thereby further eroding GMSA's market.

The study established that in 2011, Scaw Metals (of which GMSA was part of prior to 2018) formed a consortium with the Guma Group and the Jospong Group, planning to build a 50 000-ton-per-annum grinding media plant in Tema, Ghana (Mining Weekly, 2014). Unfortunately, the plan was cancelled due to viability concerns from one of the GMSA shareholders. GMSA lost an opportunity as a first mover to establish a local footprint in Ghana. The escalating mining activity in Sub-Saharan Africa, fueled by the discovery of new gold and copper deposits and the increasing global demand for critical minerals, warrants a repeat study into the feasibility of GMSA establishing a new local manufacturing facility in Southern or Western Africa to increase access to local markets.

4.6 Imports from China and India

Data provided by the South African Iron and Steel Institute indicates a 30% increase in grinding media imports into Zambia from 2019 to 2023. The quantity of grinding media imported by the Democratic Republic of the Congo (140% increase), Zimbabwe (134% increase) and Côte d'Ivoire, Guinea and Mauritania (between 27 to 65% increase) also shows significant increases. Analysis of GMSA's sales statistics revealed that its export quantities to these countries declined over the same period. This finding confirms the perception of GMSA's CEO, who estimated that Chinese suppliers have captured 47% of the African market (Viseur, 2024). Data provided by Magotteaux International's Sales office indicated that the amount of forged grinding media exported by China increased by 22% from 2018 to 2023, with Ghana being their fifth-largest client and the only African country amongst their top 15 export destinations. China achieved this competitive advantage by establishing bilateral trade agreements and partnerships, becoming the largest bilateral creditor to Africa, and investing heavily in infrastructure and industrial development (for example, the Belt and Road Initiative). Additionally, it developed a controversial institutional competitive advantage (Chen et al., 2017) and Chinese ownership in mining companies leads to procurement preferences for imported Chinese grinding media. Indian suppliers have developed similar capabilities through a more diplomatic approach and a strategic investment focus.

4.7 Grinding Media South Africa industry competitiveness

Table 1 summarises the estimated market share, based on sales volume, of GMSA's top five competitors in Sub-Saharan Africa's forged grinding media market (Viseur, 2024). "Chinese organisations" refers to the collective imported grinding media from manufacturers based in China.

Table 1: Estimated market share per competitor, forged grinding media market

Competitor	Market share (%)
Chinese organisations	47
Grinding Media South Africa	16
ME Longten (Chinese)	12
Scaw Zambia	5.6
Shandong (Chinese)	4.6
Yellowstripe	3.6

Grinding Media South Africa's competitiveness in the Sub-Saharan African steel forged grinding media industry was assessed using an augmented Porter Five Forces framework, and the results are summarised in Table 2.

Table 2: Assessment of grinding media industry competitiveness using augmented Porter five forces model

Force	Description of impact
Threat of new entrants: ***High***	• High capital cost of establishing local manufacturing facilities in Africa. • Risk of new entrants in South Africa is high due to government funding (IDC) and BRICS affiliation. • AfCFTA increases the attractiveness of Africa for international investors wanting to establish local manufacturing plants and developing regional supply chains. • Mergers and acquisitions or forming of international joint ventures between Chinese or other international organisations or local manufacturers, exacerbated by China's institutional competitive advantage in Africa. ME Elecmetal already acquired a South African-based manufacturing plant in 2024. • Commissioning of Tsingshan's Dinson Iron and Steel Company in Zimbabwe increases access to round bar and increase risk of new entrant into market.
Bargaining power of buyers: ***Medium***	• Local content policies and preferential procurement programmes favour local suppliers • Private ownership of mines, especially by Chinese companies, favours grinding media from investors' countries of origin. • Non-local suppliers use corruption, bribery and their institutional competitive advantage to circumvent localisation regulations.
Bargaining power of suppliers: ***High***	• Single bar supplier to Grinding Media SA, which is highly price-competitive, directly impacts the price competitiveness compared to cheaper Chinese imported media.

	• Improved availability and quality of locally produced bars to Zambian- and Ghanaian-based grinding media manufacturers due to development of local steel suppliers.
Threat of substitution: ***Low***	• Remains the most cost-effective grinding media option. • Limited threat posed by high chrome cast and ceramic bead grinding media.
Competitive rivalry: ***High***	• Highly price-competitive, with China remaining the price setter for the industry. • Inferior quality of small local producers. • The importance of quality is increasing, which is technology-driven. Superior quality of ME Elecmetal Zambia. • Preference to local suppliers should Governments change localisation requirements and enforce 100% ownership by local citizens. • China's unrivalled competitive advantage, which is rooted in the strong Sino-Africa relationship
Globalisation: ***High***	• The development of international supply chains, new ports outside of South Africa and China's economies of scale increase the competitiveness of imported media. • China and India have a strategic focus on extending their supply networks into Africa.
Regulation ***High***	• The majority of local content policies currently allow intermediate modes of trade (local agents and joint ventures). However, draft regulations already drawn up aim to change these policies to favour only locally manufactured products (excluding trade), which will create a barrier to trade.

The competitiveness of GMSA within the grinding media industry was assessed using the resource-based view framework and performing a VRIO analysis. The results of the study are summarised in Table 3 (Note: V =Valuable; R=Rare; I=Inimitable and O=Organisation).

Table 3: GMSA competitiveness assessment using VRIO analysis

Resource or capability	V	R	I	O	Competitive advantage
Manufacturing facilities and equipment	Yes	No	No	Yes	Competitive Parity
Technology (process control)	Yes	Yes	Yes	Yes	Sustained Competitive Advantage
Human resources, knowledge & experience	Yes	No	No	Yes	Competitive Parity
Magotteaux brand	Yes	Yes	Yes	Yes	Sustained Competitive Advantage
Raw materials	Yes	No	No	Yes	Competitive Parity
Customer relationships	Yes	No	No	Yes	Competitive Parity
Price leadership (to Chinese imports)	No	No	No	Yes	Addressed via the Operations strategy
Qualified as “local” supplier via JV or partnership	No	No	No	No	Not competitive
Product range and quality	Yes	Yes	No	Yes	Temporary Competitive Advantage
Sales and marketing competencies	Yes	No	No	Yes	Competitive Parity
Manufacturing facilities in Sub-Saharan Africa (	No	No	No	No	Not competitive
Supply chain including infrastructure	No	No	No	Yes	Not competitive

The industry analysis revealed that the grinding media industry in the Sub-Saharan Africa market is highly competitive, with the main forces being the threat of new entrants, the bargaining power of buyers, competitive rivalry and regulation. The underlying origins of these forces are the attractiveness of the growing Sub-Saharan African mining industry, opportunities presented by the localisation and procurement policies and low-priced imported grinding media from China and India. The resources and capabilities that GMSA require to achieve higher competitiveness include access to supply chains in the Sub-Saharan African market, qualifying as a “local” supplier through either establishing partnerships and joint ventures or acquiring local manufacturing facilities, and offering competitive pricing to compete with imported grinding media. GMSA has implemented an Operations strategy in 2023 to reduce production costs and to empower the Sales team to offer more competitive pricing. The findings of these assessments align well with the unofficial evaluation of the cause of market share loss conducted by the GMSA Sales team prior to the commencement of the study.

5. Conclusion

5.1 Summary of results

The study revealed a correlation between the loss in market share noted by GMSA, the economic reforms implemented by African Governments and the substantial increase in low-priced imported grinding media from China and India. Local content policies do not prohibit trade in Sub-Saharan Africa by international organisations, such as GMSA, but allow for partnerships and joint ventures with local citizens as an acceptable entry mode. Access to African markets through such agreements, combined with their ability to produce grinding media at a significantly lower cost, has enabled China and India to import grinding media at a highly competitive price, which GMSA cannot match due to excessive transportation costs. The impact of the strong Sino-African relationship and China's ability to leverage its institutional competitive advantage should not be underestimated and falls outside the scope of this study. Unless GMSA swiftly acquire the resources and the critical capabilities to trade through a local partnership or joint venture, its market share will continue to be eroded by price-competitive imports and locally produced grinding media. The risks associated with current supply chain challenges, high transportation costs, the imminent threat posed by AfCFTA implementation and the increasing interest of foreign investors in Sub-Saharan Africa's mining industry should be considered in the context of Magotteaux and GMSA's global business strategy. GMSA has the potential to achieve a competitive advantage and grow its market share by combining its strong technical capabilities with the ability to meet localisation policy requirements through the acquisition of a local manufacturing facility and offering grinding media at a price competitive with that of China and India.

5.2 Research contributions

Contribution of this study to the theoretical perspectives

Inadequate market monitoring, impact assessment, and delayed responses to trade and economic reforms in the mining industry diminished GMSA's competitiveness in Sub-Saharan Africa. The study emphasises the importance of continuous evaluation of political and economic changes, industry competitiveness and competitive advantage within the macro environment. Agility by organisations in identifying and acquiring the resources and dynamic capabilities required to retain and further develop competitive advantage and consequently increase their share in a highly competitive market is a minimum requirement to ensure the sustainability of organisations.

Contribution of this study to the practical and marketing perspectives of stakeholders

Establishing local partnerships and joint ventures will provide temporary capabilities to GMSA – that is, they can become obsolete when amended economic regulations no longer allow such collaborations. Several developing countries have issued amended policies introducing more stringent and specific requirements on majority local citizen ownership in corporate structures. Likewise, it is anticipated that once local content policies have achieved their objectives of transferring skills, technologies and intellectual property, partnerships and joint ventures may no longer be permitted as alternatives to complete local ownership. The impact of AfCFTA on the market dynamics and attracting additional international interest requires careful assessment of the strategic business development options and resource acquisition in Sub-Saharan Africa. GMSA's marketing capabilities and presence in Ghana and Zambia should be maintained, primarily due to the potential posed by the Kamoa-Kakula project and the Anglogold Ashanti and Goldfields merger. However, due to the limited potential to increase market share in these countries because of their evolving localisation requirements and increasing local manufacturing capacity, the focus of GMSA's business development should also include West and East African countries. The underexplored mineral resources of the Birimian Greenstone Gold Belt and Kobada gold project (GBR Macig, 2022) make Burkina Faso, Guinea, Mali and Côte d'Ivoire (Signé and Johnson, 2021) markets with significant growth potential.

5.3 Limitations of the study

This study is not without its limitations. First, there is a lack of prior research on the effect of localisation policies and economic reforms on international suppliers and typical strategic responses. Second, due to the exploratory nature of the study and time constraints, the study focuses on the Sub-Saharan African countries in which GMSA is currently trading. The unified economic liberalisation approach amongst African countries supports the generalizability of the findings to other Sub-Saharan African countries.

5.4 Recommendations for future research

The critical minerals sector in Mali, Nigeria and Mauritania, driven by the transition to green energy, presents significant economic potential. Future research is recommended to assess the likelihood of these countries implementing economic reforms and localisation policies like those of the countries included in this study. The research outcome will aid potential suppliers to these markets, including GMSA, in developing their business models. Furthermore, the potential benefits of the AfCFTA to South African-based manufacturers who can acquire a local manufacturing facility in West Africa as an entry point into the region should be investigated.

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Appendix A: Ethical clearance certificate

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

Wits Business School Ethics Committee

10/07/2

Ethics clearance number: **WBS/BA1568283/104**

This letter is only valid with a legitimate ethics clearance number and signed by the Researcher (below).

RE: Mrs Jacoline Botha

To whom it may concern

Mrs Jacoline Botha (1568283) is currently registered as a MBA (Research Article) student at the Wits Busin School, University of the Witwatersrand, Johannesburg.

This letter is to confirm that, at the time of writing, Jacoline Botha does not need ethical clearance for the study entitled:

Refining the business development strategy for Grinding Media South Africa

This decision has been reached based upon a description of the project supplied by Jacoline Botha to the Business School Ethics Committee, constituted as a subcommittee of the University Human Research Ethic Committee (Non-Medical), which has been evaluated by the subcommittee chair. This decision has then b ratified by the University Human Research Ethics Committee (Non-Medical).

If, however, Jacoline Botha changes the methods of data collection and analysis for this project, this decisi may no longer be valid. If such changes take place, this should be communicated to the Wits Business Scho Ethics Committee.

Please feel free to contact me or the supervisor should you require any further information.

Yours sincerely,

Ethics Chairperson
Dr Ayanda Magida
☎ +27 11 717 3953
✉ ayanda.magida@wits.ac.za

Supervisor:
Dr T Ndlela Ndlela
✉ Thubelihle.Ndlela@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Et Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research a guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

2024/8/14

Date:

Appendix B: GMSA Permission letter

GMSA GRINDING MEDIA SOUTH AFRICA

Union Junction, Black Reef Road,
Germiston, 1400

Private Bag X1056, Germiston, 1400

T: +27 11 842 9000
F: +27 11 842 9721
E: info@grindingmedia.co.za

www.grindingmedia.co.za

30 April 2024

RE: Permission for conducting research on Grinding Media South Africa (GMSA)

GMSA hereby grant permission to Jacoline Botha, student number 1568283, to conduct research on the company as part of the Assisted Research Project in partial fulfillment of the requirements of the MBA qualification. The research is aimed at refining the business development strategy for GMSA in Sub-Saharan Africa for forged grinding media.

She is allowed to use information and data shared with her by the Regional Sales Manager, Deputy Chief Executive Officer and Chief Executive Officer. All GMSA data will be treated as confidential and only stored on her company laptop and no additional copies made. Data required to be included in written submissions will be pre-approved by the above-mentioned managers.

Yours truly

Mr L Naicker
Deputy CEO

GMSA GRINDING MEDIA SOUTH AFRICA
Grinding Media South Africa (Propriety) Limited
Registration No: 2017/057531/07
Vat Reg No: 4860279191

Appendix C: Outline of applied research methodology

The research methodology employed was developed based on the theoretical framework proposed by Ochara (2020) and the research approach adopted by Williams (2022) in his study of business development strategies and single currency in Africa during the era of globalisation.

A1: Selection and evaluation of documents used for secondary data collection

Secondary data were collected from online documents (Google Scholar, ScienceDirect, ProQuest), the WITS library, and documents from Magotteaux and GMSA. The documents were selected and filtered for use by applying the following criteria:

i. **Suitability in answering the research questions.** Literature reviews, research articles and journal articles provided data that was beneficial in answering both research questions. Conference papers, market analysis and trade review reports, and annual and strategic reports provided valuable data on policy, regulatory, and strategic developments at national and regional levels, necessary to answer Research Question Number 1.

ii. **Relevance to the current market challenges and conditions.** Documents and data sources since 2010 were reviewed to understand the changes in the Sub-Saharan African market and trading environment. Only more recent documents and data (published in 2018 or later) were used to study organisations' responses to these macro-environmental changes. The decision to use more recent documents was made to ensure the relevance of the data and observations to the current practices and strategies employed. Data older than 2017 was considered only for establishing theoretical frameworks or grounded theories.

iii. **Relevance to the context of GMSA.** The documents used for the analysis were limited to the extractive and mining industries of Sub-Saharan Africa and were specific to the countries in which GMSA currently trades or anticipates trading. Furthermore, the relevance of the data collected from the analysis of the documents mentioned above was assessed by correlating it to independently acquired trade and sales secondary data from international and local organisations and the Magotteaux S.A. sales team. The websites, annual reports, marketing material and brochures of GMSA's competitors and their customers were reviewed to collect data included in the competitive advantage assessment.

iv. **The documents' authenticity, trustworthiness and credibility** based on their origin, age, intended use and reliability of content

Table 4 summarises the filtered documents selected for data collection based on the above criteria.

A2: Thematic analysis

The collected data and observations were summarised and indexed in a data collection matrix to ensure traceability and reference to the original documents. Patterns were identified during the iterative data review process. Codes were assigned to these patterns and subsequently grouped into the following broad categories:

i. **Changes in the Sub-Saharan African mining industry supplier market, trade policies and regulations** which impacted GMSA's competitiveness. The codes included in this category are economic policies, economic liberalisation, bilateral agreements, trade policies, trade regulations, trade barriers, import duties, interregional trade and procurement policies, AfCFTA, localisation and local content policies.

ii. **Data relevant to importing grinding media into Africa and manufacturing outside South Africa**; both factors contributed to the erosion of GMSA's market. The category includes codes relating to imported grinding media, Chinese imports, global value chains, backward and forward linkages.

iii. **Data relevant to competitor activity, developments and strategies.** Codes used include localised production, international subsidiaries, Chinese investments, Vega, ME Elecmetal, Scaw.

iv. **Strategies applied by suppliers to the Sub-Saharan African mining industry** in response to the changes identified in i. The codes within this category include joint ventures, mergers, acquisitions, subsidiaries, foreign direct investment and local manufacturing.

v. **Trends observed amongst new entrants to the market** and the challenges they face within the African mining market context. The codes used include foreign direct investment, corruption, institutional theory, network theory, institutional competitive advantage and rent-seeking.

Codes that did not contribute to answering the research questions were omitted. Subsequently the causes, consequences, interactions and interrelationships between these categories and codes and the frequency with which each appeared in the analysis were ascertained and applied in determining the clustering of the codes. The research's theoretical frameworks (augmented Porter Five Forces, VRIO, RBV, dynamic marketing capabilities and business model innovation) and conceptual framework were also considered when identifying the themes used for clustering the codes. The relevance of each cluster to the research questions posed was determined and only the codes that were found relevant to answering the questions were collated into the following themes and sub-themes:

Theme 1: GMSA market share changes and general industry trends,

Theme 2: The impact of localisation policies on the grinding media market

Theme 3: Competitors' responses to localisation policies

Subtheme 3.1: Partnerships or joint ventures with local entities

Subtheme 3.2: Foreign direct investment in local manufacturing facilities

Theme 4: Imports from China and India

Theme 5: GMSA industry competitiveness

As per the study's conceptual framework, themes 1,2 and 5 contribute to answering research question number 1, while themes 1,3 and 5 provide insights into answering research question number 2.

Table 4: Summary of documents and sources used for secondary data collection

ID	Title	Author (s)	Year
D1	International joint ventures research on Africa: A systematic literature review, propositions, and contextualization	Oguji, N. et al.	2021
D2	International joint venture partner origin, strategic choice, and performance: A comparative analysis in an emerging economy in Africa	Acquaah, M.	2009
D3	Learning and Knowledge Transfer in Africa-China JVs: Interplay between Informalities, Culture, and Social Capital	Abdoulkadre, A. et al.	2017
D4	Strategic motives for international joint venture formation in Ghana	Boateng, A. & Glaister, K. W.	2003
D5	Acquisition or greenfield entry into Africa? Responding to institutional dynamics in an emerging continent	Cen, R. et al	2017
D6	Corruption in international business	Cuervo-Cazurra.	2016
D7	Do Strategic Motives Affect Ownership Mode of Foreign Direct Investments (FDIs) in Emerging African Markets? Evidence from Ghana	Dadzie, S. A., et al.	2018
D8	International joint venture partner selection: The role of the host-country legal environment	Roy, J. P. & Oliver, C.	2009
D9	The Impact of Corruption on Entry Strategy: Evidence from Telecommunication Projects in Emerging Economies	Uhlenbruck et al.,	2006
D12	Local content policies and petro-development in sub-Saharan Africa: A comparative analysis	Ovadia, J. S.	2016

D15	Local Content and Value Addition in Ghana's Mineral, Oil, and Gas Sectors: Is Ghana Getting It Right?	Atta-Quayson, A. et al.	2015
D16	The Economics and Politics of Local Content in African Extractives: Lessons from Tanzania, Uganda and Mozambique	Hansen, M. W, et al	2016
D17	Alternatives to local content requirements in resource-rich countries	Kolstad, I. & Kinyondo, A.	2017
D18	Unpacking local content requirements in the extractive sector: What implications for the global trade and investment frameworks	Ramdoo, I.	2015
D19	Local content and natural resource governance: The cases of Angola and Nigeria	Ovadia, J. S.	2014
D20	Local content policies in West Africa's mining sector: Assessment and roadmap to success	Ba, D. G. & Jacquet, J. B.	2022
D24	A proposed code to discipline local content requirements. St. Louis: Federal Reserve Bank of St. Louis	Cimino, C. et al.	2014
D25	Resource nationalism and local content in Tanzania: Experiences from mining and consequences for the petroleum sector	Lange, S. & Kinyondo, A.	2016
D26	Defining the "Local" in Local Content Requirements in the Oil and Gas and Mining Sectors in Developing Countries	Nwapi, C.	2015
D27	Resource-based industrialisation in southern Africa: Domestic policies, corporate strategies and regional dynamics	Fessehaie, J. & Rustomjee, Z.	2018
D28	The making of local content policies in Zambia's copper sector: Institutional impediments to resource-led development	Kragelund, P.	2017

D29	China's outward foreign direct investment	Cheng, L.K. & Ma, Z.	2010
D30	Using local content policies to engender resource-based development in Zambia: A chronicle of a death foretold?	Kragelund, P.	2020
D31	Who is in charge? State power and agency in Sino-African relations	Carmody, P. & Kragelund, P.	2016
D32	Toward a strategic management perspective on local content in African extractives: MNC procurement strategies between local responsiveness and global integration	Hansen, M. W.	2020
D33	From enclave to linkage economies? A review of the literature on linkages between extractive multinational corporations and local industry in Africa	Hansen, M. W.	2014
D40	An overview of the obstacles to the African economic integration process in view of the African continental free trade area	Pasara, M. T.	2020
D42	China-Zambia Economic relations: Current developments, challenges and future prospects for regional integration	Lubinda, M. C. & Jian, C.	2018
D43	African Economic Outlook 2024	African Development Bank	2024
D44	Options for Establishing a Local Content Regulatory Unit for Zambia's Mining Sector	ANRC	2022
D45	Africa's mining potential: Trends, opportunities, challenges and strategies	Signé, L. & Johnson, C.	2021
D46	Local procurement in the mining sector: Is Ghana swimming with the tide?	Atta-Quayson, A.	2022

D48	Gold and godfathers: Local content, politics, and capitalism in extractive industries	Geenen, S.	2019
D49	Localization measures: A global perspective	Flaig, D. & Stone, S.	2023
D58	Africa's Readiness to Welcome Foreign Businesses : A study of Multinational Corporations (MNC) market selection and choice of entry into Emerging Frontier Markets in Africa (EFMA)	Oshodi, A. R.	2023
D59	Partnering Local Suppliers To Increase Local Content	Modern Ghana	2017
D60	Ensuring Local Manufacturing of Quality Grinding Media for the Ghana Mining Industry	Francisco, S.	2024
D61	GMSA medium - long term objectives & strategy. Presentation to Magotteaux Board. January 2024	Viseur, P.	2024
D62	Grinding media quality assurance for the comminution of gold ores	Moema, J.S. et al.	2009
D63	The role of lead firms in the development of production ecosystems in process equipment and aerospace	Kaziboni, L., et al.	2019
D64	The impact of China on sub-Saharan Africa	Kaplinsky, R. et al.	2007
D65	African Trade Report – 2023: Export Manufacturing and Regional Value Chains in Africa under a New World Order	Afreximbank	2023
D66	Growth Research Programme: Africa's economic transformation: the role of Chinese investment	Calabrese, L. & Tang, X.	2020
D67	African Trade Report – 2024: Climate Implications of the AfCFTA Implementation	Afreximbank	2024

D68	Local content policies in the mining sector	Korinek, J. & De Sa, P.	2023
D69	COMESA Regional local content policy guidelines: Enhancing regional benefits from industrialisation	Common Market for Eastern and Southern Africa	2018
D70	(2024) New local ownership requirements for mining companies in Mali. Accessed on 12 Nov 2024 via https://www.pinsentmasons.com/out-law/news/new-local-ownership-requirements-for-mining-companies-mali	Bustin, O.	2024
D71	Agenda 2063 – The Africa we want	African Union	2022
D72	New mining code enacted in Burkina Faso: major changes to reinforce local regulation, ownership and transformation	Blanc, G.P.	2024
D73	ME Elecmetal, Annual Report 2023	-	2024
D74	Exploring local content in Guinea's bauxite sector: Obstacles, opportunities and future trajectories	Wilhelm, C. & Maconachi, R.	2021
D75	MACIG report	Global Business Reports (GBR)	2022

Appendix D: Summary of definitions of "localisation" and principles of localisation policies in Sub-Sahara African countries of interest to GMSA

ID	Origin/ Source	Initiation date	Relevant policy or legislation	Definition or description
1	World Bank	n/a	n/a	Employment and procurement (inputs) are determined as local based on ownership of the firm, i.e., "domestic preference qualification (Lange & Kinyondo, 2016).
2	African Development Bank	n/a	n/a	Local is defined based on the place of registration, the nationality of the majority of board members, and the shareholding of local nationals (Lange & Kinyondo, 2016).
3	Nigeria			Nigerian/local companies must be registered in Nigeria, and Nigerians must hold 51 or more of the equity shares (Nwapi, 2015).
4	Tanzania	2018 2010 (amended 2017)	Mining (Local Content) Regulations and the Mining (Local Content Amendments) Regulations, 2019 Mining Act	A local business is a "Business which is incorporated under the applicable laws of Tanzania and is wholly owned by Tanzanians or with at least 51% of shares owned by Tanzanian Nationals and is registered to offer goods or services in the oil and gas industry." (Nwapi, 2015, p201). Procurement quotas are set for goods from domestically owned providers. Mines must submit an annual local content plan to the Local Content Committee and review the plan at least annually (Korinek & De Sa, 2023). The Mining Act does not specify Tanzanian ownership and allows 100% foreign-owned companies and imported goods to be classified as local purchases (Lange & Kinyondo, 2016)
5	Ghana	2012	Minerals and Mining General Regulations, 2012-LI 2173 Minerals and Mining (Support	A Ghanaian company must be incorporated under the Ghanaian Companies Act 1963 and Ghanaians must hold 51% or more of the equity shareholding and 80% of senior or managerial positions. The Minerals Commission (Korinek & De Sa, 2023) monitors and regulates the mandatory procurement of goods and services through a list of 28 products with Ghanaian content, including grinding media, which must be procured in Ghana.

6			Services) Regulations, 2012 (LI2174) Minerals and Mining (Licensing) Regulations, 2012 (LI2176).	Regulation LI 2173 states a preference for Ghanaian products to the maximum level possible. Mines must submit a five-year procurement plan and product list to the Minerals Commission for approval and an annual report demonstrating their compliance with the plan (Atta-Quayson, Tuffour & Aubynn, 2015). Procurement bids with the highest level of Ghanaian content must be selected, provided their price is within 2% of the lowest bid. Mines that are non-compliant can receive penalties as high as US$10 000 per day and payment of import duties. To verify compliance, the Minerals Commission performs spot inspections at the various mine sites approximately twice a year (ANRC, 2022). The regulations do not define Ghanaian content and the products need not be locally produced (Atta-Quayson,2022).
6	Zambia [a]	2006 2013 1995 (amended in 2015 and 2016)	Citizen Economic Empowerment Act Mineral Resources Development Policy Mines and Minerals Act	Sector codes were to be used for voluntary and mandatory local procurement by mines but were never implemented (Kragelund, 2017). Local firms include citizen-influenced (5-25% Zambian ownership), citizen-empowered (26-49% ownership) and citizen-owned companies (50% or more ownership). Adherence is poorly monitored (Fessehaie & Rustomjee, 2018) and the majority of regular suppliers to the mines are firms that have branches, offices or agents in Zambia (Carmody & Kragelund, 2016; Kragelund, 2017). Mines are legally compelled to give preference to Zambian products. A minimum of 25% of products purchased must be from citizen-owned companies (Kragelund, 2017). The act requires mines to submit local procurement plans and annual progress plans illustrating the measures they are taking to increase purchases from local suppliers (Korinek & De Sa, 2023). However, the government admitted to poor adherence to monitoring (Ministry of Commerce Trade and Industry, 2018). At least 35% of the mines' input and/or products must be locally produced and the requirement applies only to "component/materials/services where

				the country has a comparative advantage" (Ministry of Commerce Trade and Industry, 2018). Local agents of foreign manufacturers are regarded as local (ANRC, 2022). The 2019 draft regulation includes a proposal for more stringent compliance monitoring by the Local Content Unit Committee and the use of the Free Trade Area's Rules of Origin guideline to define a local product as a product with a maximum of 50% imported content (ANRC, 2022).
		2012	Zambia Mining Local Content Initiative	This is a private-public partnership facilitated by the World Bank and International Finance Corporation that aims to promote industrialisation and enhance local procurement by developing suitable policies (Kragelund, 2017).
		2016	Mines and Minerals Development (General) Regulations	No local procurement requirements included (ANRC, 2022).
		2020	Mines and Minerals Development (Local Content) Regulations	Mines must submit annual reports to the Director of Mining Cadastre (GRZ, 2020) to demonstrate their compliance with license requirements, obligations and local business development.
7	Zimbabwe	2007	Indigenisation and Economic Empowerment Act	Open General Import License Scheme is used along with Statutory Instruments SI 164. It includes a list of goods that must be sourced locally. The act requires that Indigenous Zimbabweans own at least 51% of enterprises valued over $500,000. (COMESA, 2018) Mining lease applications must submit a plan which indicates the extent to which local goods will be procured.

8	Democratic Republic of the Congo	2013 2017	Ministerial decree Law on Subcontracting	International companies were instructed to subcontract to local firms. Local firms were identified as firms with headquarters in the DRC, majority shareholding by Congolese citizens and majority managerial positions held by Congolese citizens (Geenen, 2019). The only exceptions occur when the required quantity or quality of the goods required are not available locally Only Congolese firms which are a legal entity and Congolese capital may be used (Geenen, 2019).
9	Mali	2019	Mining Code Amending the Mining Code 2012	Law No 2023-041 of 29 August 2023 on local content. A supplier must be a Malian-registered company with a minimum of 35% local ownership (Bustin, 2024).
10	Burkina Faso	2024	Mining Code 2014 Amended to include Act No 016-2024/ALT in 2024	Included "Legislation on Local Content in the Mineral Sector" as Act No 017-2024/ALT requires that mining companies holding industrial exploitation permits must have local citizens as shareholders. No requirements yet for suppliers to the mining industry (Blanc, 2024).
11	Guinea	2013	Mining Code of 2011, revised in 2013	During the one-to-five-year duration of exploitation, an international mining company must purchase 15% of its goods and services from local SMEs. All non-qualified employees must be local citizens. Participation in local content policies is voluntary (Wilhelm & Maconachie, 2021). Also supported by Local Economic Development Fund (FODEL) and the National Fund of Economic Development (FNDL)

a. The Government of the Republic of Zambia (GRZ) published the Local Content Strategy, 2018–2022 in 2018. This strategy promotes using local goods and services (Ministry of Commerce Trade and Industry, 2018) and proposed increasing local product sourcing to 35% (MTCI, 2014, cited in Kragelund, 2017)