

**The role of corporate social responsibility and
stakeholder engagement on social licence to operate in
the mining industry**

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ABSTRACT

Mining companies need to attain their social licence to operate (SLO) from their host communities and municipalities to operate. However, SLO is a challenging variable to measure or quantify, with there being no agreement on its measurement.

SLO literature points toward an inverse relationship between socio-political risks and SLO. Mining companies, therefore, need to attain and retain SLO to minimise socio-political risks. This research aimed to quantitatively determine the role of corporate social responsibility (CSR) and stakeholder engagement (SE) on the level of SLO for mining companies in South Africa. Secondary data from a mine in South Africa, spanning five years, was collected. This panel data was analysed using descriptive statistics, Ordinary Least Squares (OLS) model, Fixed Effects and Random Effects empirical models. The research showed that there is a statistically significant relationship between CSR and SE and between SE and SLO. However, the relationship between CSR and SLO was found to be statistically insignificant.

The findings of this research demonstrate that SE is a key construct in the attainment and retention of SLO and that there is little benefit in CSR spend in isolation.

KEYWORDS

Social Licence to Operate, Corporate Social Responsibility, Stakeholder Engagement

PLAGIARISM DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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LIST OF ACRONYMS

CSR	Corporate Social Responsibility
CSV	Creating Shared Value
DMRE	Department of Mineral Resources and Energy
GDP	Gross Domestic Product
MCIII	Mining Charter Three
MPRDA	Mineral and Petroleum Resources Development Act
Obs	Observations (number of)
OLS	Ordinary Least Squares
PPI	Policy Perception Index
SE	Stakeholder Engagement
SLO	Social Licence to Operate
SLP	Social Labour Plan
Std. Dev.	Standard Deviation

CHAPTER 1 INTRODUCTION TO THE RESEARCH PROBLEM

1.1 Introduction

The mining industry in South Africa is one of the oldest industries and remains a key contributor to the country's economic growth and development. Mining companies are granted mining licences and renew these during the life of the mine. To ensure that mining houses share their wealth with the neighbouring communities and compensate them for the adverse impacts of mining, they are mandated by the Mineral and Petroleum Resources Development Amendment Act (MPRDA, 2008) to promote the social and economic well-being of surrounding communities through the execution of several requirements, including a Social Labour Plan (SLP) (Baskaran, 2021; Mining Charter III, 2018; MPRDA, 2008).

In addition to receiving their mining licences, however, mining houses also must gain acceptability (Boutilier & Thomson, 2011), approval and support (Lacey et al., 2012) of the locals to operate in their community. This has come to be known as SLO.

Boutilier and Thomson's diamond model (Boutilier & Thomson, 2011) is a dominating conceptual model in the SLO literature. They posit that an inverse relationship exists between the strength of SLO given to a company and the level of socio-political risk it is exposed to. There is consensus that SLO is a complex and often intangible concept that is challenging to quantify and is often easier to identify when it has been withheld than when it has been granted (Yates & Horvath, 2013).

Studies aimed at exploring methods to mitigate the operational risks stemming from conflicts have shown that mining companies invest in CSR initiatives to offset these risks (Bezzola et al., 2022).

With the growing acknowledgement that businesses are not only concerned with benefiting the shareholder (Friedman, 2007; Hühn, 2023) but stakeholders as well (Clarkson, 1995; Freeman, 2009; Harrison et al., 2020), studies have attempted to understand this vast landscape of stakeholders and how to engage with them. These works have found that not only are there complex stakeholder networks (Miles, 2017; Prno & Slocombe, 2014) but that there are also individual and sometimes divergent

actors (Haslan, 2021; Meesters et al., 2021) in these stakeholder groups whose action, expectation and perceptions evolve (Cesar & Jhony, 2021), adding to the complexity of managing them.

While each of these variables has been studied, they individually cannot assist the mining industry to effectively adhere to the regulated requirements in the increasing socio-political risk environment in which it finds itself (Bohler-Muller et al., 2017; Lancaster, 2018; Vhumbunu, 2021).

There is, therefore, a need to explore these three variables, namely, SLO, CSR and SE, to understand the relationship between them.

This research aims to quantitatively determine the role of CSR and SE on the level of SLO for mining companies in South Africa.

1.2 Background to the Research

Mining is an important sector globally (Andeobu et al., 2022), and South Africa is a key contributor to global exports as one of the 50 mining countries (Sarupria et al., 2018). The South African mining industry is known for its exports of gold, diamonds, platinum, coal, iron ore, and other minerals.

In South Africa, the mining industry contributed R493.8 billion (7.5% contribution) to the country's Gross Domestic Product (GDP) (Minerals Council South Africa, 2023) in 2022. The industry is an overall employer of over 470,000 workers and contributed company taxes of R89 billion in the 2021/2022 fiscal year (Minerals Council South Africa, 2023). However, the mining industry's contribution and influence extend beyond these high-level economics and employment figures, and mining houses also collaborate with their host communities and municipalities.

These are key ingredients in attaining the SLO and are also included in the Mining Charter (Mining Charter III, 2018) and support the National Development Plan by contributing to important infrastructural projects aligned to education and health (Department of Mineral Resources and Energy [DMRE], 2023).

SLO is an increasingly important business risk (Ernst & Young, 2019) in the mining industry, and without it, mining operations can be interrupted or halted (Jijelava &

Vanclay, 2018). This SLO is attained through various mechanisms: SE and CSR. A systematic literature review by Santiago et al. (2021) showed that SLO is a widely used concept in mining and has gained popularity in other productive sectors.

This Chapter aims to introduce the phenomenon of SLO and the importance for mining companies to increase the strength of their SLOs. This Chapter includes the background of the South African mining industry, the business and theoretical basis of the study, the purpose, and the contribution this study aims to make to the mining industry.

Owen and Kemp (2013) noted that while the SLO concept has been effective in bringing attention to social issues within the industry, it has not established a clear method for rebuilding the eroded trust of communities and stakeholders. The success or sustainability of CSR projects is difficult to quantify, with various stakeholders, including communities, believing that this spending brings "little to no benefit to local communities" (Bezzola et al., 2022, p. 1). Instead of uplifting the communities, these CSR projects create dependency for the mining companies, which later turns into expectations that are not always met (Harvey, 2014; Menghwar & Daood, 2021). These expectations, if not met, become a risk for the mining company as they lose their SLO from the host communities (Baskaran, 2021; Khubana et al., 2022).

Haslam (2021) postulates that mining companies can improve the perception of community members through a focus on CSR practices that aim to diminish perceptions of risk and uncertainty. However, the community has different actors; some actively oppose mining operations (Buddu & Scheepers, 2022) objectives (Wöcke et al., 2023). When these activists act first and reduce the community's perception of the mine's risks and intentions, there is a higher likelihood of community grievances, which results in community protests; this, in turn, results in the loss of the SLO (Sichone & Lew, 2021). Early, formal, consistent SE is therefore essential as this can reduce the likelihood of community protests (Laudal, 2018; Porter & Kramer, 2018).

1.2.1 Governance and Regulatory Frameworks

Mining companies are mandated by the Mineral and Petroleum Resources Development Amendment Act (MPRDA) (MPRDA, 2008) to promote the social and economic well-being of surrounding communities through the execution of several requirements, including a SLP (Baskaran, 2021; Mining Charter III, 2018; MPRDA, 2008). This involves negotiating terms with the host community (Christensen, 2019) and is a prerequisite for granting or renewing mining licences (Minerals Council South Africa, n.d.; Mining Charter III, 2018, MPRDA, 2008). Public consultations with the affected community are a prerequisite to determining the SLP and, in turn, allow the mining company to secure an SLO.

The 2018 Mining Charter originated from the MPRDA. Its principal aim is to transform the mining and minerals sector to allow for a more inclusive and widespread benefit to the country's citizens, not only the mining companies (MPRDA, 2008). The Mining Charter mandates the transformation within the industry, including elements such as Procurement, Supplier and Enterprise Development and Mine Community Development that, if implemented appropriately, would directly benefit host communities by improving their social and economic while retaining the economic competitiveness of the mining industry (MCIII, 2018).

The mining charter outlines reporting requirements to track compliance with the charter, including the requirement of consultation with all stakeholders in determining and reporting on the progress of the SLP projects.

1.2.2 Importance of Mining in Emerging Economies

Mining is a significant contributor to GDP in many emerging economies. It creates direct and indirect job opportunities and supports adjacent industries such as logistics, transportation, equipment manufacturing and services.

Mining also attracts significant foreign direct investments, which lead to overall economic growth. Mining activities often lead to infrastructure development that aids mineral transportation to manufacturing hubs and the export market. The economy also benefits from other infrastructural developments such as schools, hospitals, and community centres through their social investments.

The Fraser Institute carries out a global Annual Survey of Mining Companies. One of the measures they track is the Policy Perception Index (PPI). This index thoroughly evaluates the attractiveness of mining policies in a region (Mejía & Aliakbari, 2023). The index collects the perspectives of managers and executives regarding the impact of policies within various jurisdictions through questions such as administrative uncertainty, enforcement of existing regulations, regulatory duplication and socioeconomic agreements.

South Africa's performance has declined 54% from 2018 to 2022, with a 40% depreciation between 2021 and 2022 alone, as illustrated in Figure 1.1 (Mejía & Aliakbari, 2023).

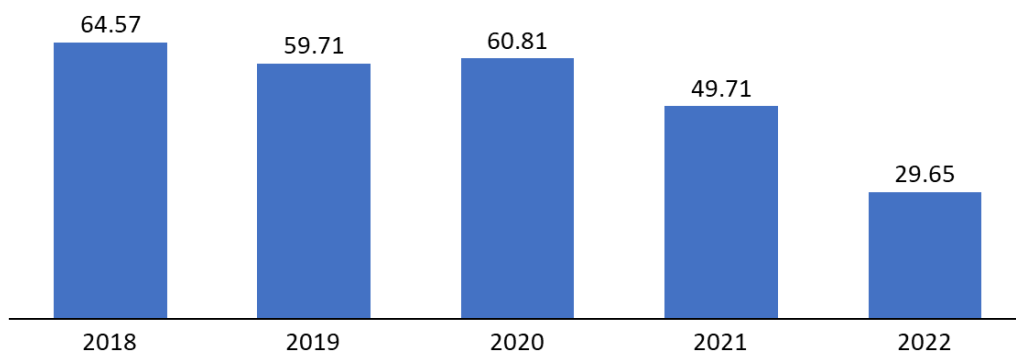


Figure 1.1: South Africa's Policy Perception Index

Environmental, Social and Governance (ESG) is a growing field that aims to address the impact of these three areas by industry (BDO, 2020). To a large extent, mining companies have reported on these areas, but the framework has allowed them to navigate toward ESG reporting. Corporations need to understand the dynamics between them and their stakeholders (Lipshaw, 2020), the difficulties of SE and its implications for corporate governance (Watson et al., 2018).

1.3 Business Rationale of the Study

To maximise revenues, mining companies need to optimise the operating hours of their operations. This holds true for mining operations involved in extracting valuable minerals from the ground, processing them, and selling refined products.

Globally, there has been a notable increase in conflicts between host communities and mining companies (Cesar & Jhony, 2021; Haslam, 2021). These drivers vary, and each mine needs to determine the drivers relevant to their host communities. Community protests increase business risk as these can temporarily disrupt a business or, in extreme cases, result in permanent closure. Community unrest is a lagging indicator of loss of strength of SLO, and this construct needs to be well understood by businesses as it directly impacts SLO.

SLO is increasingly becoming an important leading indicator of risk in the mining sector (Andeobu et al., 2022; Kujala et al., 2022; Pedrini & Ferri, 2019; Singal, 2021). Ernst and Young (2019; 2022) highlight SLO as a significant risk factor, placing it at the forefront of business risks confronting the mining and metals sector in both 2020 and 2021 (Mitchell, 2020; Sankaran, 2020). SLO has remained in the top five of these industry reports, demonstrating its significance. The authors of the report recommend that organisations identify leading indicators of SLO and measure and communicate their commitments broadly to effectively manage the risk (Mitchell, 2020; Sankaran, 2020).

Attaining a Social Licence does not always eradicate community unrest, as there could be other triggers for unrest due to other external factors (Christensen, 2019; Fraser, 2021). External factors include service delivery protests and political factors, as seen in the July 2021 riots in South Africa (Vhumbunu, 2021).

The importance of this research pertains to the South African mining industry. This study assists mining companies in determining to what extent the drivers of community unrest impact their SLOs, thus increasing socio-political risk and impacting business continuity. The companies will be able to plan for cyclical external factors and apply learnings from history.

To attain this Social Licence, companies must understand their host communities and recognise their needs and current challenges. Methods include engaging community leaders, conducting surveys, analysing public data like census or economic statistics, and performing social and economic impact assessments. The organisation can then determine the strategy to close this need (PricewaterhouseCoopers (PwC), 2021).

1.4 Theoretical Relevance of the Study

This research aims to answer some gaps identified in the literature. Baskaran (2021) collectively refers to mining companies' royalties, CSR and local procurement activities as bridging strategies. He states that there is a need for increased attention to strengthening these bridging activities to ensure that firms can maintain their SLO. Furthermore, Baskaran (2021) highlights that these bridging activities are not currently integral components of firms' business strategies but rather operate on the periphery and, to a great extent, an afterthought. The existing literature gap that demands attention pertains to obtaining a thorough understanding of the impact of these bridging activities on the SLO. This will allow the industry to focus on strengthening these with an understanding of their impact on SLO. To develop sustainable bridging strategies that work, Verk et al. (2021) emphasise the importance of relationships between corporations and their stakeholders. They also posit that a nuanced approach is essential for understanding the dynamic forces them.

Cesar and Jhony (2021) explored various drivers of social conflict within the context of maintaining an SLO. In their work, they suggest exploring additional drivers, such as cultural drivers and the impact of weak social capital, along with their corresponding factors, to understand social conflicts' complexities comprehensively. This sentiment is echoed by Achoru et al. (2020), who emphasise the importance of stakeholder and ethical theories in the application of CSR.

Fraser identified several factors that have not been adequately considered in the existing literature and warrant further investigation (Mejía & Aliakbari, 2023). These elements include the leadership viewpoint and decision-making processes, authority given to teams, and long-term focus required for sustainable development programmes' success. The factor of interest in this research is shareholder commitment to the long-term vision, as this construct is closely aligned with the quality of the CSR initiatives, as seen in Baskaran (2021). Understanding the level of shareholder support and alignment with sustainable practices can contribute to the overall success of a firm's SLO. Ashraf et al. (2022) focused their study on observing the strategic CSR activities specifically related to crisis management during times of crisis. To contribute to the existing literature, they recommended future research expanding the scope to examine a broader range of CSR activities

beyond crisis management to understand the impact of strategic CSR initiatives on overall stakeholder perceptions.

When sustainable CSR is the objective, ESG needs to be brought into the conversation. Watson et al. (2018) provide insights into the complexities of SE and the importance of finding complementarity and synergistic links between stakeholders' resource allocations and societal and business demands.

By addressing these research gaps and investigating some of these drivers resulting in different levels of SLO, this research aims to contribute to fostering a deeper understanding of the various factors that influence company-community relationships and the ingredients required for sustainability. The results can inform strategies to effectively manage social conflicts, strengthen social capital, and ensure a Social Licence's long-term sustainability.

1.5 Purpose Statement

This research aims to examine the role of CSR and SE practices in attaining and retaining the SLO variables within the framework of South Africa's mining sector.

1.6 Contribution of the Study

Although research on CSR, SE and SLO exists in the literature, there is no exhaustive literature exploring the relationship between them in mitigating socio-political risk in mining companies.

This research is useful for business as it was the basis of a practical framework for decision-making and allocating resources. This will allow mining companies to transform socio-political risks into opportunities through fit-for-purpose, quality CSR projects and timely, quality SE to reduce inherent risk. The companies will be able to better plan during years with external factors that have been experienced in previous years and apply learnings from history.

Policymakers can use these results to shape regulations and incentivise mining companies to prioritise high-quality CSR implementation, thereby advancing host

communities' social and economic well-being in line with the Mining Charter objectives.

1.7 Chapter Outline

The remaining sections of this proposal are structured as follows: Chapter 2 is the Theory and Literature Review and presents a comprehensive review of existing literature within the field of the study and explores other fields with applicable principles and learnings. Research objectives were formulated by the end of the Chapter. The research hypotheses were outlined based on the insights gleaned from the literature review presented in Chapter 2. Each hypothesis was presented with a rationale, linking back to the objectives of the study. Chapter 4 describes the data sources utilised in the study and expands the research methodology, including the techniques used in collecting and analysing the data. Chapter 5 presents the findings of the study, while Chapter 6 delves into a detailed discussion of these results. The concluding Chapter, Chapter 7, outlines recommendations for business and theory, study limitations and areas for future research.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

The attainment and retention of SLO is a key factor in the South African mining industry. This Chapter aims to review relevant literature on the key variables that impact the SLO within the mining sector. This Chapter presents a comprehensive overview of the South African mining industry's landscape, defining key variables, definitions, and key relationships between them.

This literature endeavours to demonstrate the importance of attaining SLO in the mining industry in South Africa. Thus enabling the industry to de-risk their operations. It explored various perspectives that have emerged on this topic, drawing on insights from global mining practices with the aim of discovering best-in-class strategies and approaches.

In South Africa, mining companies are mandated by the MPRDA (MPRDA, 2008) to develop SLPs containing social investment spending into the host communities. SEs are a key input into the process of developing these SLPs through public participation.

The CSR spending and the level of engagement with these communities were explored as variables. Incidents that take place between the host community and the mining houses were used as a proxy to determine the reduction and/or loss of SLO. These incidents included formal and informal disgruntlement and physical demonstrations against the mine. The socioeconomic environment and municipal and government service delivery levels also need to be understood as mediating factors.

Drawing from a range of academic works, this Chapter was engaged in attribution, comparing various perspectives and highlighting contradictions with the aim of finding potential gaps in the literature. The research aims to map these diverse views, offering a holistic understanding of the topic. Structured around key research questions, this review systematically addressed each question, providing insights and outlining subsequent chapters.

2.2 Social Licence to Operate

This paper reviews the concept of SLO in the mining industry, its relevance and the actions that the mining companies can take to attain and strengthen it. There are various theories applied in the literature in this body of work, with the context of the study being the mining industry in South Africa (Bezzola et al., 2022; Cesar & Jhony, 2021; Fraser, 2021).

Social licence is when the community accepts, approves of and is supportive of a company's presence in the area (Boutilier & Thomson, 2011; Jijelava & Vanclay, 2017; Lacey et al., 2012; Yates & Horvath, 2013). Social licence is a fluctuating concept gained by companies over time but can be lost due to community perceptions (Cesar & Jhony, 2021), which can result in halted operations (Jijelava & Vanclay, 2018).

This concept has grown in popularity and is widely used in the extractive sector (Bice et al., 2017). The SLO literature has four main conceptual models, with Thomson and Boutilier's (2011) diamond model dominating.

This knowledge has resulted in the construct gaining importance in the mining industry, with executives increasingly ranking SLO as one of the key business risks (Ernst & Young, 2019; Ernst & Young, 2022; Fraser, 2021).

To enhance the SLO, mining companies need to understand the community's characteristics as stakeholders, their relative power, and effective methods of engagement. The SLO literature has four main conceptual models, with Thomson and Boutilier's (2011) diamond model dominating. Initially, the diamond contained four levels of SLO on a continuum from withheld/withheld to psychological identification. They later modified their model to show an arrowhead model that consists of four quadrants: economic legitimacy, socio-political legitimacy, interactional trust and institutionalised trust (Figure 2.1).

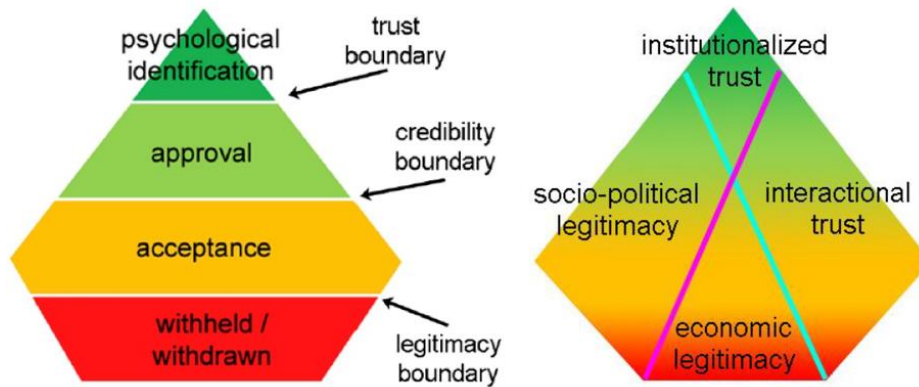


Figure 2.1: The "pyramid" model of social licence to operate continuum and modified "arrowhead" model of the SLO

Source: (Boutilier & Thomson, 2011, p. 2 & 5).

The requirements to move from no SLO to psychological identification require the attainment of legitimacy, credibility and trust in that order. In the arrowhead model, companies offering only economic benefits to the community can attain SLO. In this quadrant, the strength of the SLO can range from withheld to acceptance, with it remaining in the "red" zone for most stakeholders. The mining company needs to gain socio-political legitimacy or interactional trust to increase the proportion of stakeholders in the acceptance zone. The highest form of SLO is institutionalised trust, which most stakeholders will accept, and many approve SLO. The bottom quadrant represents short-term actions, and to move up, the company need to engage in longer-term activities.

Prno and Slocombe's (2014) SLO framework demonstrated that SLO did not operate in a vacuum but rather in a system. Their conceptual framework consists of four parts: SLO, local variables, multi-scale variables and system characteristics (Appendix A). This system approach acknowledges that the ease of attaining SLO will depend on these variables that contain varying levels of complexity and change. When comparing mines in similar contexts, one must consider the different systems. Similarly, when comparing mining industries in different countries or different industries, considerations need to be made for these different systems.

2.2.1 Legitimacy

Economic legitimacy is gained through the perception by the community of the company offering financial benefits (Boutilier & Thomson, 2011). This is the lowest strength of SLO, as only a small portion of the community can be sustainably satisfied by this. To increase the strength of SLO, the company would need to be more intentional and focused on longer-term actions. Watson et al., 2017 posit that companies have evolved from merely seeking "social acceptance" to aiming for "public participation", as this active engagement requires explicit approval from affected groups rather than being based on perceived legitimacy.

Eabrasu et al. (2021) developed a model to evaluate "contact quality" as a metric for determining the legitimacy of an SLO. The research revealed that a company's position on the legitimacy scale could vary according to the quality of its interactions with stakeholders. Social or socio-political legitimacy involves the impact on community well-being, fairness and respect for local customs (Jijelava & Vanclay, 2017).

2.2.2 Credibility

Credibility refers to the company's consistent provision of accurate, clear, and believable information and its commitment to fulfilling promises made to the community. Mak et al. (2021) define credibility as originating from stakeholder approval, achieved through negotiating stakeholder responsibilities. To establish credibility, a company must demonstrate a commitment to social performance through addressing social issues and effective community engagement (Jijelava & Vanclay, 2017). Boutilier et al. (2012) argued that SE can demonstrate credibility through listening, reciprocity, fairness and keeping promises.

2.2.3 Trust

Integrating CSR and SLO methods is essential to cultivate a relationship founded on trust between mining companies and their stakeholders (Verrier et al., 2022). Trust is an essential element in both collaboration and conflict resolution, serving as an integral aspect of the processes involved in managing natural resources (Stern &

Coleman, 2015). Trust takes time to build but can be quickly eroded, especially when people are directly impacted. The broader public's trust is primarily based on external sources like media coverage, civil societies, and the company's global image (Verrier et al., 2022). While Boutilier and Thomson (2011) place institutionalised trust as the ultimate SLO level, Lehtonen et al. (2022) warn that not enough is known about trust to make this proclamation, as there are multiple dynamics between different levels of trust.

2.2.4 Attainment and Loss

A SLO can be challenged or lost if certain conditions are not met or if there are changes in community perceptions and values (Cesar & Jhony, 2021). Therefore, the attainment of SLO is not permanent (Nelsen & Scoble, 2006) but rather fluid in nature. This fluidity, coupled with multiple stakeholders within the community, adds complexity to obtaining and maintaining the SLO. This fluidity can be minimised through longer-term actions by the mining companies.

The drivers with the highest socio-political risk are associated with withdrawing or withholding their social licence, indicating restricted access to essential resources. Yates and Horvath (2013) highlighted that identifying instances where a community has not awarded a social licence was easier than when it has. This is because there is often no action related to communities not being unhappy.

The attainment of an SLO downplays divergent and conflicting interests within the local communities (Meesters et al., 2021). The theory of collective action recognises the challenges rational individuals face in organising themselves into groups that can pursue the collective interests of the group on an ongoing basis (Haslam, 2021). These individuals go as far as disrupting the operations of unrelated parties to achieve their objectives (Wöcke et al., 2023). Attaining a social licence does not, however, always eradicate community unrest, as there could be other triggers for unrest due to other external factors (Bohler-Muller et al., 2017; Christensen, 2019; Fraser, 2021; Lancaster, 2018; Vhumbunu, 2021). These external factors are a result of the mine operating in an ecosystem with multiple variables (Prno & Slocombe, 2014) of differing complexities and proximity to the mine.

Some indicators of having a social licence include (Vanclay & Hanna, 2019; Yates and Horvath, 2013):

Promotion and vocalisation of backing for progress and development.

The readiness of key stakeholders to engage in collaborative partnerships.

Ongoing and increasing positive engagement in dialogue with the community and stakeholders.

Collaboration in activities that benefit the community.

The reduction or lack of vocal opposition.

2.2.5 Social Conflict as a Social Licence to Operate

The inverse relationship that exists between the level of SLO granted to a company and the level of socio-political risk (Boutilier & Thomson, 2011) suggests that socio-political unrest in a community can be used as a proxy for the level of SLO in that community.

Social conflict can be driven by various factors, which can vary depending on the characteristics of communities (Cesar & Jhony, 2021; Fraser, 2021).

There are actions that companies can take to de-escalate conflict (Baskaran, 2021; Vanclay & Hanna, 2019). These include genuine interaction, effective engagement and listening to protestors. However, companies would be better suited to having a tool to manage any perceptions before they result in a loss of SLO leading to conflict.

2.3 Stakeholder Engagement

2.3.1 Shareholders and Stakeholders

Historically, business objectives were predominantly aligned with the interests of shareholders, as supported by Friedman (2007), who argued that businesses' only social obligation is to increase profits to benefit shareholders (Hühn, 2023). Freeman (2009) postulated that the purpose of the firm should be to create value for all its stakeholders, not just its shareholders. With the evolution of stakeholder theory, there is a growing emphasis on satisfying a broader spectrum of stakeholders (Harrison et al., 2020).

The term "stakeholder" has been defined in various ways across the literature. Freeman (2009) initially described stakeholders as any group or individual who can affect or be affected by the organisation's objectives. Mitchell et al. (1997) defined stakeholders as those with a legitimate interest in the activities of the company, either contributing to its success or being affected by its actions. Carroll (1999) expanded on this by including individuals and groups who currently have or will have ownership, rights, or interests in the corporation. Clarkson (1995) emphasised the power of stakeholders to withdraw their support for the organisation, which threatens its existence.

This research leans on Clarkson's definition, as the stakeholder powers and their impact on the organisation are similar to attaining or losing Social Licence, which is a key variable in this research. Clarkson (1995) suggests that such withdrawal is not instantaneous but takes place over time. He further posits that if primary stakeholders feel they are not treated fairly or adequately, they might seek alternative options and ultimately withdraw from the stakeholder system. The exit of stakeholders such as employees and customers may have a less severe impact on the organisation. However, the withdrawal of key stakeholders, particularly the host community, can have profound implications. Their disengagement can lead to the loss of the Social licence, without which the firm may find it challenging to operate.

2.3.2 Landscape of Stakeholders

Different types of stakeholders have differing levels of influence, power and interest in the organisation. This complex network is discussed in detail in section **Error! Reference source not found.** These stakeholders need to be understood and managed differently.

Given the stakeholder's diverse nature, disagreements may arise regarding the level of the social licence granted to the organisation (Boutilier & Thomson, 2011). Organisations need to understand the various actors within the community and their power and influence over the community to determine effective stakeholder management strategies.

Scholars have examined SLO through various theoretical lenses, including stakeholder theory (Andeobu et al., 2022; Khubana et al., 2022; Kujala et al., 2022;

Pedrini & Ferri, 2019; Singal, 2021; Vanclay & Hanna, 2019), theory of collective action (Haslam, 2021), SE theory (Fraser, 2021), social action theory (Hudayana & Widyanta, 2020), shared value theory, situational crisis communication theory (SCCT) (Ashraf et al., 2022), and behaviour theory of the firm (Baskaran, 2021). However, this field has no agreed-upon unifying theory (Dumbrell et al., 2021).

Stakeholder theory remains the most widely used theory in the social licence body of work. The social conflict literature primarily concentrates on the inadequacies in the relationship between communities and companies, leading to the emergence of conflicts (Haslam, 2021). These failures are attributed to company shortcomings and activist successes.

2.3.3 Stakeholder Mapping

There are diverse stakeholders that mining companies need to include in the public participation process, as outlined by the SLP (Krause et al., 2017). These stakeholders are vastly different, and these differences often result in long-winded discussions, resulting in a stalemate.

Miles (2017) performed a meta-analysis of various definitions of stakeholders, resulting in the classification of stakeholders into fifteen distinct types, which were then grouped into four main categories, namely: influencers, claimants, recipients and collaborators.

Influencer Stakeholders are individuals or groups with the capacity and active strategy to influence an organisation's operations. The attributes of these stakeholders are often power and interest and have a high potential propensity to harm or cooperate. Management needs to prioritise influencers when adopting a narrow strategic focus.

Claimant stakeholders have a specific claim against a company and employ ways to act on those claims, but they might not have the necessary power to fully address or resolve the claim.

Collaborator Stakeholders cooperate with the organisation but lack an active interest in influencing it. These could be a supplier that can influence, but the organisation is more powerful.

Recipient stakeholders are passively impacted by an organisation's activities; they are affected by the company's actions but hold no claim and lack the capacity to exert any influence.

These categories are too simplistic, and sub-groups exist, as illustrated in Figure 2.2.

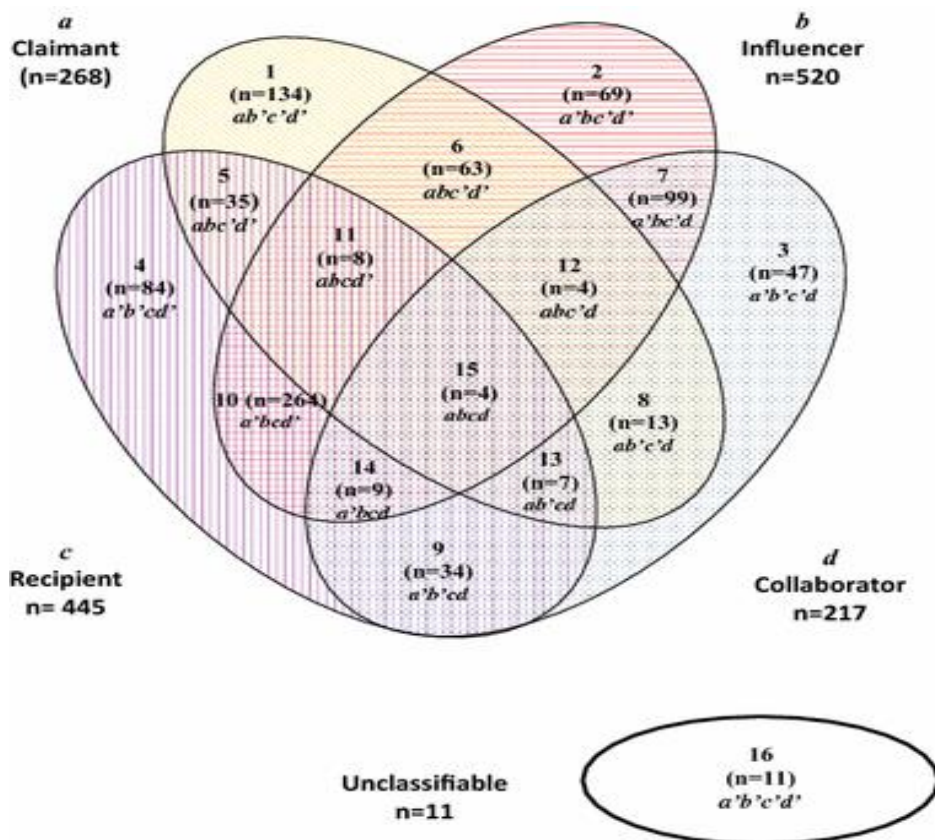


Figure 2.2: Typology of Stakeholder Definitions and Associated Classification of Stakeholder Definitions

Source: (Miles, 2017, p. 453).

Host community members would traditionally fall into the recipient category, but as SLP beneficiaries, they would transition to a subgroup that overlaps claimant and recipient. Escalating and de-escalating aspects of community engagements with

respect to mining companies were also reviewed. An overview of the main results of research questions and research methodology is also presented.

2.3.4 Engagement Principles

There are various principles that companies should consider when engaging with stakeholders to enhance their SLO (Baskaran, 2021; Dumbrell et al., 2021; Vanclay & Hanna, 2019). These include:

Implementing collaborative and ongoing SE process prior to project execution.

Acting transparently, honestly, and genuinely while treating communities respectfully and upholding human rights.

Understanding and respecting local culture to foster positive relationships with communities.

Establishing effective benefit-sharing arrangements to deliver tangible benefits to local communities.

Empowering communities through capacity building, local content policies, and involving them in decision-making.

Encouraging community-led monitoring and evaluation and ensuring transparency and accountability in impact assessment and benefit sharing.

Communities are comprised of individuals with different needs and sometimes conflicting views (Meesters et al., 2021). Therefore, a custom approach is required for each community and may differ for different circumstances.

2.4 Corporate Social Responsibility

CSR is a contribution by companies to achieve economic and social sustainability (Verrier et al., 2022) through voluntary efforts (Barauskaite & Streimikiene, 2021). In this research, CSR focuses on the contribution of the mine to its impacted communities with the aim of improving its socioeconomic environment.

2.4.1 Shared Value

Sustainability is a recurring theme in CSR literature. In 2006, Porter and Kramer defined CSR as the ability of an organisation to meet present societal needs "without compromising the ability of future generations to meet their own needs" (2006, p. 3). This definition emphasises the need for a sustainable distribution mode.

Porter and Kramer (2011) proposed the shared value concept as a sustainable alternative to current CSR. Recent literature on the South African mining industry explored the application of Creating Shared Value (CSV) in this context (Baskaran, 2021; Buddu & Scheepers, 2022; Khubana et al., 2022) and broader African context (Bezzola et al., 2022). In this literature, CSV is viewed as a more sustainable alternative to CSR initiatives as it aims to provide the community with services as well as products and their needs through local ecosystems and tapping into local businesses (Porter & Kramer, 2011) instead of just spending CSR without considering first-order and second-order impacts and implications of the spend. This view is supported by Cesar (2021), who advocates for CSR fit that will assist the organisation to earn a Social Licence.

By implementing CSV projects, which are inherently profitable (Porter & Kramer, 2011), mining companies can address sustainability concerns and reduce dependency issues. Owen and Kemp (2023) warn that while this focus on strategic and inherently profitable CSR is more sustainable, companies should not use it as a tool to secure competitive advantage but keep social responsibility at its core. There is agreement in the literature that challenges persist in measuring the impact of CSV (Khubana et al., 2022; Laudal, 2018) and understanding how value is created and distributed among stakeholders (Menghwar & Daood, 2021).

2.4.2 Distribution Modes

Mining companies can use different distribution modes when executing CSR initiatives. These are also referred to as "benefits sharing" modes (Cesar & Jhony, 2021; Tsyachnyouk, 2017) and bridging strategies (Baskaran, 2021). The company needs to engage suitably with the community and conduct relevant studies to ensure

the right mode is used. The optimal mode or selection of modes employed needs to incorporate both distributional and procedural justice (Tsyachnyouk, 2017). These modes include paternalistic, CSR, partnership and beneficiary.

Paternalistic: The mining company assumes various state functions or provides substantial financial assistance to facilitate improved support for communities residing near mining operations (Baskaran, 2021; Buddu & Scheepers, 2022; Cesar & Jhony, 2021). This mode can be beneficial to the company as deficiencies in the state functions are quicker to quantify, and there is potential for positive public relations by taking on state functions. The company can be seen as stepping in where the government has failed. The drawback of this mode is the dependency of communities that may want the company to continuously increase the scope of their functions, which, if not met, could result in resentment by the community (Harvey, 2014).

CSR mode: The mining company adopts global standards outlined in various legislations and prioritises the establishment of benefit-sharing arrangements in a minimalistic way (Tsyachnyouk, 2017). The main goal of this approach is to simultaneously meet the expectations of stakeholders and investors while obtaining an SLO (Cesar & Jhony, 2021; Haslam, 2021). The benefit of this mode is ensuring regulatory compliance, which will ensure the ability to retain the mining licence in addition to the Social Licence, thereby meeting both stakeholder and investor expectations. By adhering to global standards in addition to local ones, the organisation can enhance its global reputation, improving its investment prospects. Drawbacks include superficial efforts by the organisation that may serve its intentions in the short term but not be sustainable. Focus on global standards must be augmented with contextual needs to meet local and global long-term goals.

Partnership mode: This collaborative approach involves the mining company, government and host communities to empower all parties involved (Dumbrell et al., 2021; Ellerup Nielsen & Thomsen, 2007; Serfontein-Jordaan & Dlungwane, 2022). A collaborative approach ensures a more comprehensive understanding of the community's needs and challenges. When collaborating with other large businesses operating in the area, there is shared responsibility and risks in the region, leading to a more balanced and sustainable approach. However, in most provinces in South Africa, the mining industry would be the major and, in some

jurisdictions, the only employer, resulting in them being the only private financial contributor in the collaboration. Mining houses are increasingly using local procurement as a tool in this distribution mode as it improves the supply chain efficiencies while de-risking operations as they have the support of the community that benefits from local procurement (Wöcke et al., 2023). Local businesses are not always operating at the required level of expertise, and the government is a key enabler in skills development and infrastructure support. A key requirement of this mode is a focus on longer-term benefits, sustainability and participatory decision-making (Tsyachnyouk, 2017). Drawbacks of the partnership mode include complexities in decision-making as the stakeholders have different priorities and overdependence on some partners to contribute more than others while the benefit is for all partners.

Beneficiary/Royalty mode: In this approach, local communities are compensated by the mining companies under specific conditions such as land use of negative impact of the mine in the community (Baskaran, 2021; Cesar & Jhony, 2021; Tsyachnyouk, 2017). The benefit of this mode is an alignment of interests, as local entities receiving royalties are committed to the success of the mine and would support it. A requirement for this would be contractual agreements that provide clarity and legal backing to the distribution of benefits. However, receiving royalties might lead to decisions that place more value on short-term benefits at the expense of longer term benefits. The equitable distribution of royalties has been a problem in some communities, resulting in the failure of this mode. A survey by Flomenhoft (2019) showed a huge discrepancy between the allocation of funds by the administrator of royalties paid to a community in North West, South Africa and the requirements of distribution by the community.

Communities and various stakeholders believe that CSR initiatives are not always beneficial to the community (Bezzola et al., 2022) as CSR projects can create dependency for mining companies, leading to unmet expectations and further impacting their SLO (Baskaran, 2021; Khubana et al., 2022). This dependency is highlighted in the paternalistic mode and is not sustainable for the company.

Godfrey et al. (2009) suggest that CSR initiatives have the potential to generate goodwill between communities and mines and act as an effective risk mitigation tool. This risk of an individual's divergent or conflicting interests in a community. This can

negatively impact the SLO as its strength is based on the evolving perceptions of the community members (Cesar & Jhony, 2021; Haslam, 2021). It is present in any distribution mode and should remain as part of the risk mitigation strategy. Though time-consuming and with its own challenges, focus on the partnership mode is preferred.

2.4.3 Corporate Social Responsibility Scope and Communication

The company determines the CSR value and scope through various modes, including SE. The drawback of SE in determining the CSR scope is that some stakeholders have a short-term view (Baskaran, 2020); this is usually an issue in royalty distribution mode. In the preferred partnership mode, companies should strive to focus on strategic CSR initiatives that are linked to the company value chain (Khubana et al., 2022; Owen & Kemp, 2023; Porter & Kramer, 2011) and projects that focus on stimulating social competitiveness (Cesar, 2021). However, Dauda (2022) warned that focus on CSR initiatives that are "imported" from other countries or communities may fail. Sustainable CSR initiatives should not overemphasise infrastructure over skills, although this may result in quick results (BDO, 2020; Saenz, 2018).

Communicating CSR spend is important to funders and beneficiaries alike. This communication, whether regulated or not, is an important success factor in the continued funding and ensuring the purpose is clear. A bibliometric analysis of CSR communication by Verk et al. (2021) showed no unifying communication practice and that some were stakeholder-focused, while others focused on business cases. The communication mode should, therefore, be agreed upon to ensure transparency for all stakeholders.

2.5 Corporate Social Responsibility and Stakeholder Engagement

Cesar and Jhony (2021) propose that the effort a company invests in meeting stakeholder's expectations will play a crucial role in determining the success of its initiatives.

2.5.1 Community Engagement and Public Participation

To attain this Social Licence, companies must understand their host communities and recognise their needs and current challenges (Buddu & Scheepers, 2022). Methods include engaging community leaders, conducting surveys, analysing public data like census or economic statistics, and performing social and economic impact assessments. The organisation can then determine the strategy to close this need (PwC, 2021).

Public participation aims to gather data and community insights that serve as inputs into the SLP (MCIII, 2018). Due to stakeholders' heterogeneous composition and geographical location, this process can be resource-intensive (Pedrini & Ferri, 2019). The SLP guidelines recommend that mining companies engage with stakeholders before finalising their SLPs (Krause et al., 2017). However, these guidelines are sometimes overlooked due to the limitations expressed above, and consultation is left too late to limit onerous debates.

2.5.2 Disclosure and Reporting

If done well, disclosure of performance can build trust with external stakeholders. Often, companies only report when they are compliant, but when reporting also includes disclosure of incidents of noncompliance and actions taken to resolve such incidents, trust is further entrenched as there is a track record of transparency (Yates & Horvath, 2013).

Information shared during SE should be comprehensive enough to allow stakeholders to understand the potential impacts of the corporation's actions on them

and any alternative options that may be available. The local community development portion of spending is defined in the SLP and reported in the annual reports of listed companies. Stakeholders have different expectations of CSR (Ellerup Nielsen & Thomsen, 2007), and an unintended consequence of CSR disclosure is the creation of baseline expectations of CSR spending in the subsequent SLP cycle. Cash flow that funds CSR in mining is linked to the asset life cycle of a mine. The production period in the mine is often much longer than the other stages in the life cycle (Figure 2.4), and the company uses cash flow from this to fund CSR projects. As the production ramps down until closure, however, the company may reduce CSR spend, causing unmet expectations and potentially causing withdrawal or loss of SLO (Boutilier & Thomson, 2011; Ellerup Nielsen & Thomsen, 2007; Jijelava & Vanclay, 2018).

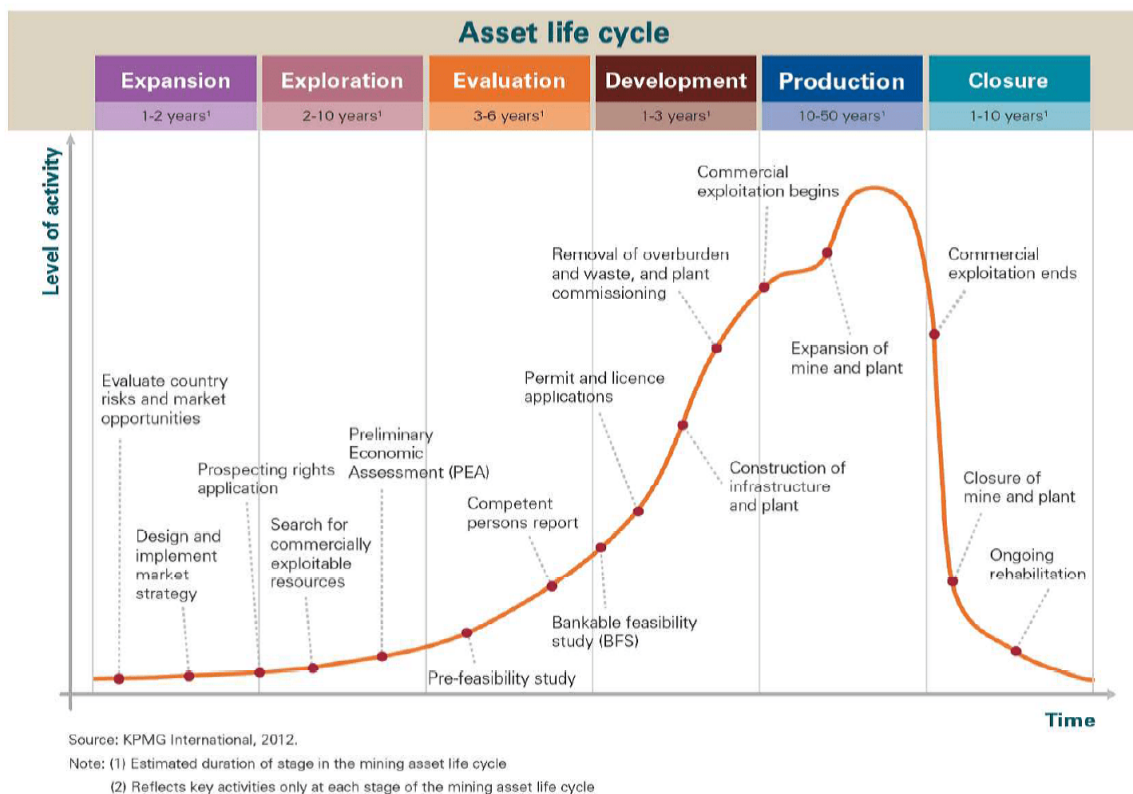


Figure 2.3: Mining Asset Life Cycle

Source: (Lightman, 2019).

2.5.3 Research Objective 1

The mining industry's relationship with host communities remains complex and multifaceted. To increase the likelihood of success and make CSR initiatives more sustainable, alignment and "fit" of CSR to the company is required (Cesar, 2021; Porter & Kramer, 2011). Different CSR distribution modes offer varied benefits, with the partnership approach emerging as preferable due to its holistic understanding of community needs (Haslam, 2021). Timely, continuous, quality communication with the community and involving them in decision-making increases goodwill between the mining companies (Godfrey et al., 2009). Understanding the relationship between these two constructs is a key determinant of success between mining companies and their host communities. Therefore, the research's first objective was to determine if CSR distribution influences community engagement in mining companies.

2.6 Stakeholder Engagement and Social Licence to Operate

A substantial body of literature examines the conflicts that take place between mining companies and their host communities. Rodrigues et al. (2022) conducted a bibliometric analysis of 149 documents on CSR and stakeholders' pressures in the mining industry. Their findings indicate that the most extensively studied constructs in this literature revolve around the significance of stakeholders, especially local communities, and the social consequences related to mining activities. Yates and Horvath (2013) indicate that although SLO is informal and intangible, it can be realised through robust actions. Central to these actions is timely and effective communication.

2.6.1 Stakeholder Management and Dialogue

A systematic literature review by Pedrini and Ferri (2019) showed that literature on stakeholder management, despite its longstanding presence, was still in its early stages. Communication is a big part of stakeholder management, with organisations making use of different tools. Increased and widespread use of the internet and social

networks opens an opportunity to implement more cost-effective online tools that can reach a broader stakeholder base. To effectively build social capital, SE must ensure engagement commences before a stakeholder is affected and continues until the resolution of the issues at hand, thereby increasing legitimacy and trust (Yates & Horvath, 2013). In addition to this, meaningful dialogue and engagement need to provide stakeholders with an opportunity to give input into decision-making processes.

2.6.2 Social Media

Increased use of social media has resulted in a shift in the communication landscape. The public is no longer a passive receiver of information (Zheng et al., 2018), which has resulted in a shift from traditional communication that was centralised and controlled by organisations. Social media has democratised information and knowledge, making stakeholders more informed (Yates & Horvath, 2013). Challenges for organisations include no longer dominating the messaging around their brands and reputation. These organisations find themselves in unfamiliar territories and need to move quickly and ensure continuous, consistent messaging. A risk that comes with increased social media adoption is the low tolerance among social media users and the freedom of opinion when certain perceptions exist.

Social media has increased access to companies by the public but has also made it easier for companies to engage their communities and other stakeholders. They should use this platform as a tool to stimulate the required level of engagement while striving to be the first to communicate both good and bad messaging to manage their reputational risk (Iazzi et al., 2022). However, Castelló and Lopez-Berzosa (2023) warn that individual actors will also use this increased access in societies to mobilise civil society to drive their own agenda.

2.6.3 Research Objective 2

Drawing from the literature (Baskaran, 2021; Vanclay & Hanna, 2019), it is apparent that increased SE is a key contributor in positively influencing the attainment of an SLO for mining companies. This engagement is central in the context of the rapidly

evolving communication landscape, marked by the growth of social media and the widespread availability of information. The broad and complex ecosystem of stakeholders within the mining sector demonstrates that this engagement is resource-intensive and complex, with varying actors with differing opinions, powers and intentions. This research focuses on the 'host communities' as defined by the SLPs of the mining entities.

Therefore, the second research objective of the research was to determine if community engagement influences the strength of the SLO.

2.7 Corporate Social Responsibility and Social Licence to Operate

2.7.1 Influence of Trust in Government Entities

Trust in governmental entities plays a role in the community's propensity to trust the mining company. This relationship between trust in the government and local resource management has been observed in contexts where individual autonomy and scepticism are relatively high (Smith et al., 2013).

2.7.2 Sector Reputation

Extractive companies often face mistrust in both poorer and wealthier societies (Cesar, 2019; Harvey, 2014; Lehtonen et al., 2022). This mistrust arises from past behaviours by extractive companies and the choices available to people.

2.7.3 Risk Management

The mining sector faces inherent risks related to social conflict, which can have severe consequences for companies operating in this industry. To mitigate these risks, companies must embrace effective CSR practices and ensure the successful implementation of CSR initiatives. Godfrey et al. (2009) suggest that CSR activities have the potential to generate goodwill and provide a safeguard against risks,

effectively acting as a tool for risk mitigation. The attainment or loss of SLO is influenced by the evolving perceptions and values held by the community (Cesar & Jhony, 2021). The abstract nature of SLO makes it challenging to measure or quantify, and not everyone agrees on its measurement. There is growing interest in understanding SLO measurement with scholars such as Bice et al. (2017), who developed a model to understand social and political risks informed by CSR and impact assessment study fields.

2.7.4 Research Objective 3

There are different schools of thought on the ability of CSR initiatives to positively influence the strength of SLO, with a majority concluding that there is a positive relationship between CSR and SLO (Godfrey et al., 2009; Haslam, 2021).

The dynamic nature of SLO, shaped by changing community perceptions (Cesar & Jhony, 2021) and differing stakeholder expectations (Ellerup Nielsen & Thomsen, 2007), adds another layer of complexity and presents challenges in measurement.

Therefore, the third research objective of the research was to determine if CSR distribution influences the strength of the SLO.

2.8 Conceptual Framework

Given the insights from the literature in this Chapter, a conceptual framework for this research was developed as outlined in Figure 2.5.

This conceptual framework was derived using existing literature and was used as a tool to guide the research. CSR is an independent variable in both hypotheses, and SLO is a dependent variable in both hypotheses. SE is a dependent variable in H1 and an independent variable in H2.

This framework highlights the critical role of SE and CSR distribution in granting SLO. The expectation is for the strength of the SLO (proxied by social cases) to increase (thus resulting in reduced social cases) with increased SE and increased CSR spend.

Positive and strong SE is expected with increased CSR spend that is guided by community requirements through a continuous feedback communication loop.

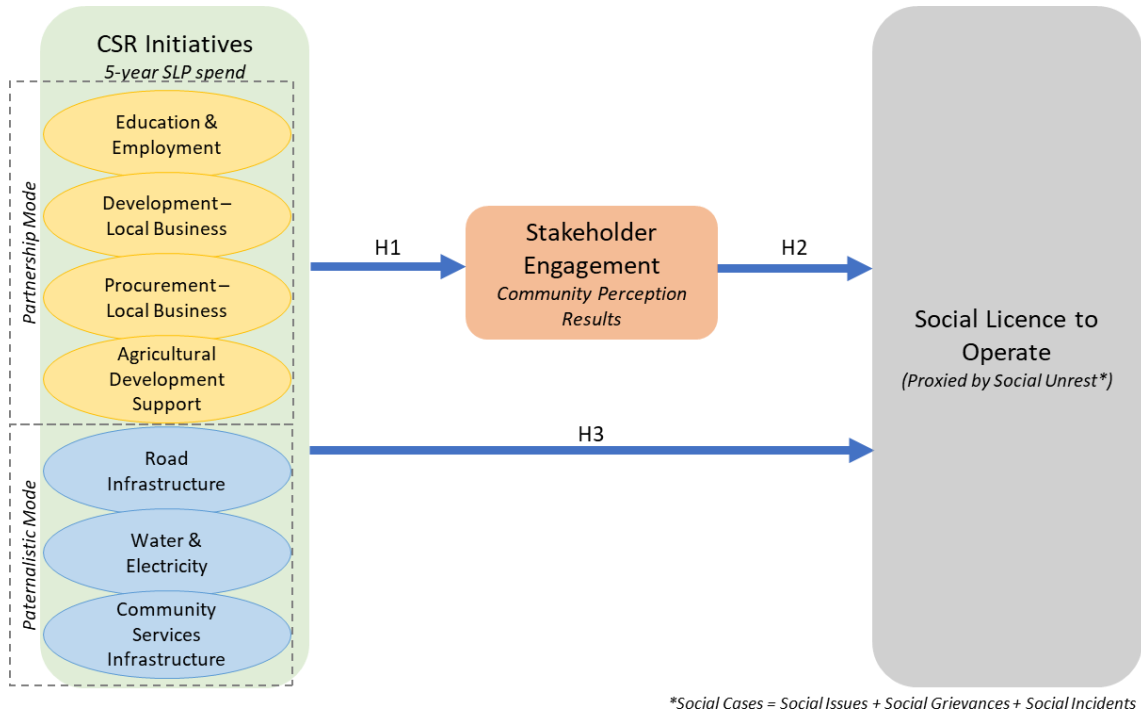


Figure 2.4: Conceptual Framework

2.9 Chapter Summary

The mining industry in South Africa is a significant contributor to the country's GDP and employment. It holds a vital role in the country's ESG sector, which requires companies to understand stakeholder dynamics and their repercussions for corporate governance. The Mining Charter of 2018 mandates transformation within the industry, including procurement, supplier and enterprise development, and mine community development.

The concept of SLO in the mining industry is crucial for business risk, with the Boutilier and Thomson diamond model defining requirements for securing an SLO: trust, legitimacy, and credibility. Companies can strengthen SLO by obtaining a Social Licence, ensuring compliance with regulations, and addressing community perceptions.

Legitimacy in the mining industry is essential for achieving social legitimacy and public participation. It encompasses various dimensions, including legal, economic, and social aspects. Credibility is essential for a company to gain approval from the local community, and trust plays a significant role in collaboration and conflict resolution.

To mitigate risks related to social conflict, companies must embrace effective CSR practices and ensure the successful implementation of CSR initiatives. Various modes, including SE, determine CSR value and scope. CSV is viewed as a more sustainable alternative to traditional CSR initiatives, supporting providing products and services to meet societal needs, accessing and utilising local ecosystems, improving productivity, and using local institutions and businesses.

CSR initiatives in the mining industry can significantly impact the socioeconomic environment of host communities, but some stakeholders argue that these can lead to dependency and unmet expectations. Monitoring and reporting are crucial aspects of CSR, but stakeholders have different expectations, and CSR disclosure can create baseline expectations in subsequent SLP cycles. The relationship with host communities remains complex, and alignment and "fit" of CSR to the company are required for success.

SE is essential for the success of CSR initiatives, and companies should focus on timely and effective communication and meaningful dialogue. Companies should consider various principles when engaging with stakeholders to enhance their SLO, including implementing collaborative and ongoing processes, acting transparently, respecting local culture, establishing effective benefit-sharing arrangements, empowering communities through capacity building, local content policies, and encouraging community-led monitoring and evaluation.

Public participation in the SLO process is crucial for mining companies to gather data and community insights. Stakeholder mapping is essential for understanding host communities and recognising their needs and current challenges. Evaluating socio-political risk in the mining sector is crucial for understanding the difficulties faced by companies operating within communities.

CHAPTER 3 RESEARCH HYPOTHESES

3.1 Introduction

The study examines the role of CSR and SE in the SLO in the mining industry. The independent variables being tested are CSR and SE, with a focus on host communities. The dependent variables are SE and SLO.

The hypotheses were formulated by thoroughly reviewing existing literature related to CSR, SE and SLO in the mining industry. The South African context, background information and research questions were considered in developing these hypotheses.

Based on the literature, the expected relationship between the independent and dependent variables was determined, and these informed the hypotheses listed below.

3.2 Model Development

3.2.1 Hypothesis One – Corporate Social Responsibility

Distribution and Community Engagement

Although there are many stakeholders pertaining to the mining industry, the stakeholders of interest are the host communities as defined by the SLPs of the mining company. The research aimed to determine if CSR distribution influences community engagement in mining companies.

In this research, the annual CSR spending of the mining company was reviewed. Hypothesis 1 refers to the distribution of CSR initiatives.

- Null Hypothesis (H₁₀): The distribution of CSR by mining companies in the host community is not a significant variable in the prediction of high levels of stakeholder engagement.

- Alternate Hypothesis (H1_{Alt}): The distribution of CSR by mining companies in the host community is a significant variable in the prediction of high levels of stakeholder engagement.

3.2.2 Hypothesis Two – Community Engagement and Social Licence to Operate

Literature suggests that increased levels of SE positively influence the attainment and strength of SLO in mining companies (Baskaran, 2021; Vanclay & Hanna, 2019).

The second research objective of the research was to determine if community engagement influences the strength of the SLO. The second hypothesis, therefore, focuses on community engagement. Hypothesis 2 refers to community engagement.

- Null Hypothesis (H2₀): The level of community engagement by the mining companies is not a significant variable in the prediction of the strength of social licence to operate.
- Alternate Hypothesis (H2_{Alt}): The level of community engagement by mining companies is a significant variable in the prediction of the strength of social licence to operate.

3.2.3 Hypothesis Three – Corporate Social Responsibility Distribution and Social Licence to Operate

Literature (Godfrey et al., 2009; Haslam, 2021) suggests that higher levels of CSR positively influence the attainment and strength of SLO in mining companies. The third research objective of the research was to determine if CSR distribution influences the strength of the SLO.

Hypothesis 3 refers to CSR distribution and SLO.

- Null Hypothesis (H3₀): The distribution of CSR by mining companies in the host community is not a significant variable in the prediction of the strength of social licence to operate.

- Alternate Hypothesis (H3_{Alt}): The distribution of CSR by mining companies in the host community is a significant variable in the prediction of the strength of social licence to operate.

3.3 Chapter Summary

The study investigates the impact of the distribution of CSR and SE on the SLO in the mining industry.

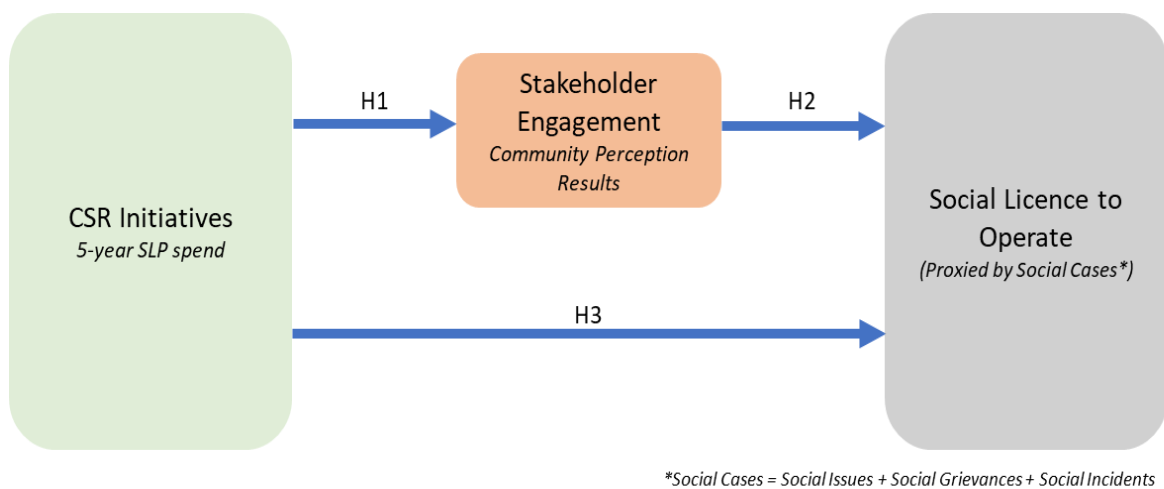


Figure 3.1: Study Hypotheses

In hypothesis 1, the independent variable is CSR, with community engagement as the dependent variable. The independent variables in hypotheses 2 and 3 are community engagement and CSR initiatives. The dependent variable in both these hypotheses is the SLO, proxied by social cases. The research hypothesises that an increase in the distribution of CSR positively influences both increased levels of community engagement and the attainment and strength of SLO in mining companies. The study also examines the role of SE in predicting the strength of SLO.

The research null hypotheses are:

- H1₀ The distribution of corporate social responsibility by mining companies in the host community is not a significant variable in the prediction of high levels of stakeholder engagement.

- H2₀ The level of community engagement by the mining companies is not a significant variable in the prediction of the strength of social licence to operate.
- H3₀ The distribution of corporate social responsibility by mining companies in the host community is not a significant variable in the prediction of the strength of social licence to operate.

The next Chapter unpacks the research methodology employed.

CHAPTER 4 RESEARCH HYPOTHESES

4.1 Introduction

This research examines the role of CSR and SE on the SLO in South Africa's mining industry. The study aims to bridge the gap between CSR and SE with SLO by providing a practical framework for decision-making and allocating resources. This chapter encapsulates the systematic approach that was used to investigate these three variables within the framework of South Africa's mining sector. The chapter outlines the methodology used in this research, detailing the research design, methodological choices and research strategy. Following these, the variables of the study, data sources and models and data analysis sections, covering descriptive statistics and hypothesis, are detailed. The analysis approach is discussed, and Ethical considerations and methodical limitations are discussed before concluding the chapter.

4.2 Research Design

The purpose of the research design was to justify the selection and the use of a relevant design in this study. This was a descriptive correlation study (Leedy & Ormrod, 2019) which sought to understand the relationship between the variables, which are CSR, SE (proxied by community perception study) and SLO (proxied by social cases). The variables that the research is testing are hypothesised in Chapter 3 and were based on the secondary data received from the mining company. This design is grounded in the post-positivist philosophy (Scotland, 2012). This is an accepted philosophy aimed at making generalisations that led to the production of credible data (Žukauskas et al., 2018). The research intended to adopt a structured methodology (Saunders & Lewis, 2018) to facilitate replicable data, emphasising quantifiable data. This was utilised with the aim of ensuring objective analysis.

This study was anchored on SLO (Boutillier & Thomson, 2018), SE (Baskaran, 2021; Dumbrell et al., 2021; Vanclay & Hanna, 2019) and CSR (Porter & Kramer, 2018; Tsyachnyouk, 2017) theories and frameworks. SLO theory describes the inverse relationship between social licence and socio-political risk and that social unrest is a

lagging indicator of SLO. There are various activities and actions that impact the strength of SLO, with CSR and SE playing a prominent role in these. A deductive approach was selected to test these variables' relationships. A deductive process allows the researcher to develop and test the hypotheses (Saunders & Lewis, 2018). As the research investigated a project related to SLO, getting a comprehensive perspective of the events and ensuing relationship is critical. As such, the study explored the topic over a period of five years (2019 to 2023). Therefore, using panel data, this study was longitudinal (Kehr & Kowatsch, 2015; Saunders & Lewis, 2018).

4.3 Methodological Choices

The maturity of a theory is an important determinant of methodological fit (Edmondson & McManus, 2007). There has been extensive literature on SLO, CSR (Menghwar & Daood, 2021), SE and social conflict variables. Areas of future studies in the literature were comprised of qualitative and quantitative research recommendations, indicating that some of the concepts while maturing, are still in the intermediate state. This suggests that the current literature lends itself to a mixed methodology. The research aim of this study is to determine the relationships between these variables and require hypothesis testing. Therefore, this research's methodological choice was a mono method using a quantitative approach to collect data (Saunders et al., 2007). This is ideal as quantitative research can assess if the relationship between variables has statistical significance. This is important for understanding the comprehensive effect of the independent variables on the dependent variables.

Longitudinal research aims to describe the direction and size of causal relationships (Lewis-Beck et al., 2004). In a longitudinal study, data that was measured over a continuous period in the panel data (Ruspini, 1999) ensures the inclusion of natural oscillation (Kehr & Kowatsch, 2015), increasing the validity and quality of the outcomes. The data in this research was continuous and did not have any time gaps.

4.4 Research Strategy

The choice of research strategy was guided by the specific research objectives where the relevant hypotheses were tested. The research strategy for this study is archival research (Saunders & Lewis, 2018), as the principal data source for the study was secondary data containing the tested variables.

Archival research strategy is significantly underestimated and underutilised within management studies (Das et al., 2018). However, recent multidisciplinary initiatives, including those in business history, social network studies, and knowledge management (KM) systems, suggest much untapped potential. Undoubtedly, archival data's principal and obvious benefits are its inexpensiveness and convenient accessibility (Gidley, 2017). Archival and documentary research can substantially contribute to academic investigations. In addition to being readily accessible and cost-effective, archival research can furnish new viewpoints on a topic, thereby uncovering hidden social processes and delineating historical links among different fields of study (Das et al., 2018; Gidley, 2017).

Another compelling reason for relying on archival data is the lack of other means of access to pertinent information (Ventresca & Mohr, 2017). This is possible because, generally, companies amass and retain substantial data concerning various entities such as employees, customers, suppliers, competitors, and more. This can also include frequently distributing feedback questionnaires on various stakeholders' issues of significance (Das et al., 2018). In this study, the archival data accessed is on CSR, SE, and SLO, measured with the social cases, including social issues, grievances, and incidents. Increasingly, research has employed archival research methodologies to establish specific relationships, such as providing proof of the impacts of historical events or explaining the mechanisms that link hypothesised relationships with observed outcomes (Allen & Easton-Calabria, 2022). The extent to which research explicitly defines evidence of effects or mechanisms can accept or reject the hypotheses.

The independent variables were tested to determine their impact on the dependent variables. The outcome of the test was used to decide whether the relationship was statistically significant or not.

4.5 Research Setting

The mining industry is one of the oldest industries in South Africa (Minerals Council South Africa, 2023) and has an extensive population as it remains a key industry in the country. The sampling frame of this study was corporate social data from the mining companies in the selected sample. The sample consisted of mines that the same mining company has operated for the duration of the SLP period to minimise variability in the study.

At the onset of the study, seven mining companies were approached. Permission letters were received from three companies, with information being sent by two. Both datasets contained SLP spend by project name with spend over the SLP period. Only one, however, documented the social conflicts or conducted community perception studies for the full duration of the SLP period. They indicated that they had started collecting the data six months before the request and intended to collect community perception. This gap in the data resulted in this company being excluded from the analysis. From the remaining four companies, no response was received from one, while the other three agreed to engage virtually to understand the request better. The representatives indicated that the information required was collected but was too sensitive to share as there was too much reputational risk associated with their data being shared externally. They indicated that even with a non-disclosure agreement, they would not share the data unless they could ensure complete anonymity, including that of the researcher.

This meant that information from one company was used in the study. Most of the works considered in Pedrini and Ferri's (2019) thematic analysis were either case studies or conceptual development, with the case studies being mostly single case study methodologies. This demonstrates that this research is relevant as it is aligned with the literature in the field.

4.6 Variables of the study

The scope of this research was restricted to investigating the factors that impact SLO pertaining to mining companies in South Africa. The study was limited to one operating mining company in the private sector. Therefore, this study was not

generalisable to companies not in the mining industry and those not operating in South Africa, as the data sources) are specific to these types of companies.

The battery limits of the study were comprised of three variables: CSR, SE (proxied by community perception study) and SLO (proxied by social cases).

CSR is a voluntary contribution (Barauskaite & Streimikiene, 2021) by companies to achieve economic and social sustainability (Verrier et al., 2022) in the communities in which they operate. In South Africa, mining companies are mandated (MPRDA, 2008) to develop Social Labour and Plans (SLPs) containing social investment spending into the host communities. Although they could be tempted to just adhere to the regulatory requirements, mining houses that focus on sustainable benefits-sharing modes (Cesar & Jhony, 2021; Tsyachnyouk, 2017) and strategies (Baskaran, 2021) will benefit from less community dependency as these strategies are inherently profitable (Porter & Kramer, 2011) and self-sustaining over time (Baskaran, 2021; Buddu & Scheepers, 2022; Khubana et al., 2022).

Stakeholders have the power to withdraw their support for the organisation, which threatens its existence (Clarkson, 1995). Although many stakeholders in the mining industry exist, host communities are the primary stakeholders who possess this power. Understanding and application of the engagement principles, such as collaborative and ongoing SE and including communities in key decisions (Tsyachnyouk, 2017), will ensure this resource-intensive process (Pedrini & Ferri, 2019) results in stakeholder buy-in, resulting in the sustainability of the mining operation.

SLO is attained when the host community is supportive of a mine's ongoing presence in the area (Boutilier & Thomson, 2011; Jijelava & Vanclay, 2017; Lacey et al., 2012; Yates & Horvath, 2013). Boutilier and Thomson (2011) assert that there is an inverse correlation between the degree of SLO awarded to a company and the level of socio-political risk faced by the company. Therefore, social conflict is a plausible indicator of loss of SLO. Social licence is a fluctuating concept and is gained by companies over time but can be lost due to community perceptions (Cesar & Jhony, 2021). Mining companies, therefore, need to ensure they gain and retain the SLO granted by the host communities to minimise socio-political risk and ensure business continuity (Jijelava & Vanclay, 2018).

4.7 Data Sources

4.7.1 Assumptions of the data sources

The mining company has collected secondary data that was used in this study. There are various assumptions that were made in the research pertaining to this data.

Data accuracy: The assumption was that the data was accurately collected for stated purposes and has not been modified in any way.

Data relevance: The assumption was that the selected mining company and its data are relevant to the study and its context. Care was taken when selecting the mining company.

Data reliability: The assumption was that the data is reliable. The research used public sources to verify publicly available aspects and information in the company's reports.

Data representativeness: The assumption was that the secondary data collected from the mining company adequately represented the sample. The fundamental assumption was that the samples from the communities are themselves representative of those communities.

4.7.2 Corporate Social Responsibility

The CSR Spend data was collected from the five-year SLP of the mine. This was for the years 2019 to 2023. This SLP budget outlined the project names and period of spend for the projects. The total CSR spend was made up of the spend per category per year, as illustrated in Equation 1 below.

$$TCSR_s_j = \sum_{i=1}^n CSR_s_j \quad (\text{Equation 1})$$

CSR_s = Corporate Social Responsibility spend

$TCSR_s$ =Total Corporate Social Responsibility spend

j =CSR categories, which are Education and employment, Road Infrastructure, Water and electricity delivery, Development (Local Business), Procurement (Local Business), Community Service Infrastructure and Agricultural Development Support.

$i=1,2,\dots,n$ is an individual year in the period from 2019 to 2023.

To determine the CSR spend per category per year, the %CSR spend per year was calculated using the amount spent in the CSR category per year, divided by the total CSR spend for that year.

$$\%CSR_j = \frac{CSR_{sj}}{T CSR_s} \quad (\text{Equation 2})$$

The %CSR spend per category for the full five years was calculated using the amount spent in the CSR category for the year, divided by the total CSR spend for the SLP period (i.e., 2019 to 2023).

$$\%CSR_j = \frac{CSR_{sj}}{T CSR_{sm}} \quad (\text{Equation 3})$$

Where m is the total number of years in the SLP period, i.e., 2019 to 2023.

4.7.3 Stakeholder Engagement

The mine collects community perceptions from the communities monthly. This data was collected from November 2019 to July 2022, when the data collection was discontinued to switch to a new system. The average response rate over this period was 14.5%.

The community perception survey was broken down into current state and future focus areas (as outlined in the survey). The current state consisted of eleven questions divided into four areas: Socio-economic development, Fairness, Environmental and Socio-political licence to operate. Each section was comprised of several questions, with the overall score being the average of the questions in the area: Socio-economic development had six (6) questions, Fairness had one (1) question, Environmental had two (2) questions and Socio-political licence to operate had two (2) questions.

The respondents were required to select an answer from pre-defined options and rate each of the eleven questions on a five-point Likert scale where 1 represented very negative/strongly disagree and five represented very positive/strongly agree.

There were average results per question monthly. Each of these questions was labelled as variable 1 to variable 11. These variables were aligned to the CSR project categories. Six (6) of these eleven (11) variables were aligned to the CSR spend, while the other five (5) were unrelated. The annual results per category were determined by calculating the mean result of all the months in the year per category.

$$SE_k = \frac{\sum_{q=1}^p var_{qk}}{p_k} \quad (Equation 4)$$

SE = Stakeholder Engagement

k = Community Perception variables, which are Average Support to Small businesses, Local Business Procurement, Local Job Opportunities, Operation Updates for the Community, Honouring Commitments, Grievance Management Satisfaction, Perception of Emissions Effects on Health, Perception of Educational Campaigns on Air Quality, Responsiveness, Trust and Support.

q = 1,2...*p* is an individual month in a year

If there were one variable aligned to a category, only the mean monthly results of that category would be calculated. If more than one variable were linked to a category, the mean of all the months of all these variables in that year would be

calculated to a single mean for the category for the year. The survey asked four questions that provided insights into some areas in which the company could focus future CSR initiatives. These included the most important issues facing the community in the next five years, awareness about emissions licensing, campaigns that they would like to see more of and preferred channels for communication.

4.7.4 Social Licence to Operate

The mine collects social issues, social grievances, and social incidents from both host communities. Social issues are defined as any social complaints by internal and external parties where no formal process is followed. Social Grievances are defined as formal complaints by internal and external parties. This is often written but sometimes verbal if the formal complaint process is followed. A social incident is an unwanted event that takes place; there should be an observable action in this case. The sum of these was defined as social cases as illustrated in the equation below:

$$\textit{Social Cases} = \textit{Social Issues} + \textit{Social Grievances} + \textit{Social Incidents} \quad (\textit{Equation 5})$$

The cases recorded per year were collated from the issues, grievances, and incidents spreadsheets to develop a consolidated list of all social cases. The cases were analysed, and the cause and root cause were extracted from the case descriptions. These were then classified into the same seven categories as detailed in section 5.2 above. There was an eighth category, "other", for incidents that did not fit into any of these categories. Only 3.5% of the cases fell into this category.

A total of 227 were collected. These were categorised by year and category as outlined in Equation 6 below.

$$TSC_j = \sum_{i=1}^n SC_j \quad (\textit{Equation 6})$$

SC = Social Cases

TSC = Total Social Cases

j = CSR categories, which are Education and employment, Road Infrastructure, Water and electricity delivery, Development (Local Business), Procurement (Local Business), Community Service Infrastructure and Agricultural Development Support.

$i = 1, 2, \dots, n$ is an individual year in the period from 2019 to 2023.

4.8 Models and Data Analysis

Data from community perception survey results, CSR spend as guided by the mine's Social and Labour Plan (annual spend by project) and social cases (as defined in equation 5) were used in the analysis.

The data analysis was conducted using Stata version 14. Initially, descriptive statistical analyses were performed, using the mean and standard deviation to evaluate the central tendency and spread of the data, respectively. Furthermore, the minimum and maximum values for each variable were also examined. The data for the different categories was visualised using the line plots for the period of interest, 2019 to 2023.

4.8.1 Descriptive Statistics

There are three main descriptive statistic types: frequency, central tendency, and dispersion or variation (Mishra et al., 2019). This research's primary focus was on measures of central tendency and measures of dispersion, as these statistical measures are commonly employed to analyse quantitative data. Prior to conducting any statistical analyses, data screening and cleaning procedures were carried out to identify and eliminate any data that may impact the statistical outcomes (Pallant, 2020).

4.8.2 Model Specification for Hypothesis Testing

This study employed the Ordinary Least Squares (OLS) model and the Fixed Effects and Random Effects empirical models, which are considered optimal for investigating the significance between the dependent and explanatory variables to examine the optimal relationship (Zdaniuk, 2014).

In statistical analysis, ordinary least squares (OLS) models are based on the premise that the objective is to develop a model that accurately represents the relationship between one or more independent variables and a continuous or at least interval-dependent variable. The goal of this model is to minimise the sum of the squared differences, also known as errors, which are the discrepancies between the observed and predicted values of the dependent variable. The model is:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \alpha_i + u_{it} \quad (\text{Equation 7})$$

Where Y_{it} the dependent variable can be between social cases or SE (based on the conceptual model in Chapter 2, Figure 2.5). This dependent variable is for the categories, Education and employment, Road Infrastructure, Water and electricity delivery, Development (Local Business), Procurement (Local Business), Community Service Infrastructure and Agricultural Development Support at time, t .

X_{1it} is the independent variable for individual categories, i at time t

β_0 is the constant and β_1 is the coefficient of the independent variable.

u_{it} is the error term that represents the unobserved factors that affect the dependent variable, Y_{it}

The OLS was followed by the use of Fixed Effects (FE), a statistical methodology employed in analysing panel data to account for individual-specific variations inside a regression model (Schunck, 2013). Panel data is a collection method wherein information is gathered from a consistent group of persons, firms, countries, or other entities across numerous periods. Fixed effects models are advantageous in analysing such data as they effectively address individual-specific variability that

remains constant (Bell & Jones, 2015). In the context of a Fixed Effects model, the individual-specific effects are seen as parameters subject to estimation. The model incorporates the fixed disparities among entities by incorporating individual-specific dummy variables in the regression equation. The fixed effects model specifies (Allison, 2009):

$$Y_{it} = \beta_0 + \beta_1 X'_{1it} + \alpha_i + u_{it} \quad (\text{Equation 8})$$

The individual-specific effects capture the unobserved heterogeneity that may be correlated with the regressors, X'_{it} and β are $k \times 1$ vectors. To begin with, the errors are denoted as u_{it} . In panel data context, the Random Effects (RE) model considers individual-specific effects as random variables (Bell & Jones, 2015). These effects are assumed to be uncorrelated with the independent variables but are associated with the error term. The general formulation of a Random Effects model for a single dependent variable and single independent variable, as in the current research, can be expressed as follows (Bell & Jones, 2015):

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \alpha_i + u_{it} \quad (\text{Equation 9})$$

α_i is the individual-specific random effect for the individual category.

u_{it} is an error term which is assumed to be uncorrelated with α_i and the independent variable.

According to Lincoln and Guba (1986), four criteria are required to evaluate the rigour of a research project, including exploring the truth of the evaluation (credibility), its applicability (transferability), consistency (dependability) and objectivity (conformability) (Schwandt et al., 2007). This research explored and adhered to the recommended techniques to meet these criteria to demonstrate the rigour and superior quality of the research project. Reliability is the extent to which multiple researchers can obtain consistent results under stable conditions (Saunders & Lewis, 2018). As secondary data is used in this research, clarity in the research

design and data analysis approach ensured reliability. Validity is the extent to which data collection methods accurately measure what they were intended to measure (Saunders & Lewis, 2018).

The Hausman test was employed to ascertain the most suitable estimator to utilise between fixed effects and random effects models in the context of panel data analysis. This is computed when both the fixed and random effects are statistically significant to decide the most optimum model.

The Hausman test is defined as :

$$H = (\hat{\beta}_{FE} - \hat{\beta}_{RE})' [Var(\hat{\beta}_{FE} - \hat{\beta}_{RE})]^{-1} (\hat{\beta}_{FE} - \hat{\beta}_{RE}) \quad (Equation 10)$$

$\hat{\beta}_{FE}$ = coefficient estimate from the fixed effect model

$\hat{\beta}_{RE}$ = coefficient estimate from the random effect model

$Var(\hat{\beta}_{FE} - \hat{\beta}_{RE})$ the covariance matrix of the difference in estimates of the coefficient between the models (FE and RE)

H uses a Chi-square distribution with DF (degrees of freedom) equal to the compared coefficients.

If the Chi-square of the Hausman effect is not significant, then Random Effect is the optimum model. However, if the Hausman test is statistically significant, that means that the null is rejected and the alternative hypothesis is accepted, meaning that the Fixed Effect is the optimum model.

4.9 Ethical Considerations

An important aspect of quality assurance is ethics compliance. Permission to use company data for a research study (Appendix B) was used to request permission from the identified mining companies to use their company's information. Some

companies then sent back a copy of a signed Permission Letter confirming that they were willing to provide secondary data for the study (Appendix C). These permission letters were included as part of the ethics application.

Following ethical clearance from the Ethics Committee (Appendix D), data was requested from the companies that had given consent. An email (Appendix E) informing the company representative that the Ethics Approval had now been obtained *was sent*, requesting the company to release the requested data.

A Microsoft Teams folder was created for data-sharing purposes. The data was shared through a combination of email and uploading the data placed in the Microsoft Teams folder. At the end of the research project, the data will be transferred to the GIBS Data Storage system to allow for storage for a minimum of ten (10) years.

Confidentiality means the names of the mines and communities that the data pertains to were not mentioned by name in the research. The data was also stored without identifiers. The records that were received from the mining companies will not be used for any other reasons except for academic purposes and will not be shared with others. Therefore, this research used aggregated data to perform descriptive and inferential statistical analysis.

4.10 Methodological Limitations

There are inherent limitations in using secondary data as the data is not collected for the purpose of the research (Saunders & Lewis, 2018). To manage this, a reputable mining company utilises a credible company with sound techniques for its community perception studies. The reputation of the company increases the validity of the raw and compiled data. This mining company is also relevant to the context of the study.

The limitations of quantitative research include its reductionist approach as it focuses on a limited scope. However, the rigour employed in the research design and data analysis approach minimised this limitation.

4.11 Chapter Summary

The study adopted a descriptive correlation design grounded in the post-positivist philosophy and used a structured methodology. The research utilised a deductive approach to develop and test hypotheses over a longitudinal period from 2019 to 2023. A mono-method quantitative approach was employed to examine the relationships between the variables, with an archival research strategy used for data collection.

The battery limits of the study were to investigate the impact of CSR and SE on SLO specific to mining in South Africa. The data was analysed using Stata version 14, employing descriptive statistics, Ordinary Least Squares (OLS) model, and Fixed Effects and Random Effects empirical models, with the Hausman test applied to ascertain the optimal model for panel data analysis.

Ethical considerations were observed, with requisite permissions obtained for using company data and confidentiality maintained by anonymising the data and restricting its use solely for academic purposes. Inherent limitations of secondary data were mitigated by selecting a reputable mining company.

The results of the study are outlined in Chapter 5, followed by a discussion of these results in Chapter 6.

CHAPTER 5 RESULTS OF THE STUDY

5.1 Introduction

The study examines the role of CSR initiatives and SE on SLO in South African mining companies. The investigations were conducted using secondary data collected for the periods ranging from 2019 to 2023, and panel data analysis was conducted to test the study's hypotheses (Porter et al., 2018). As this is metadata that was not initially intended for the exact purpose of this study, some instances required computation to align with the study. This chapter presents the results of the study, starting with the descriptive statistics followed by the hypothesis testing.

5.2 Sample Description

SLP spend for the years 2019 to 2023 was received with project names showing the spend per annum for each project. There was a total of 227 social cases from the data, each including date, case description and cause of the incidents. The response by the mine was also recorded in most cases. Community Perception Surveys with data over thirty-three (33) months from November 2019 to July 2022 were received. Below is a summary of the demographics of the survey respondents.

5.2.1 Corporate Social Responsibility Spend

A total of R177m spread across the five years with the spend by category illustrated in Figure 5.1 below.

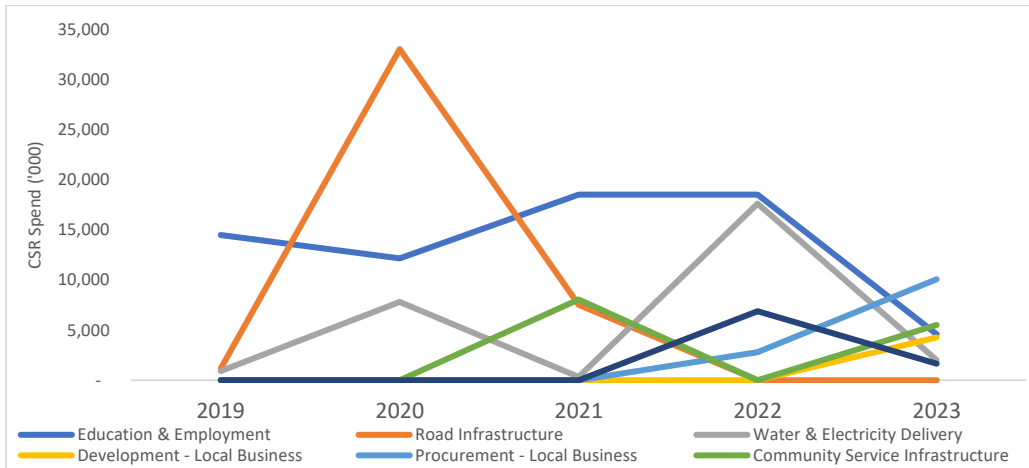


Figure 5.1: CSR spend (R' 000) over the period 2019 – 2023 across all categories

The highest annual spend was on road infrastructure and took place in 2022. The next highest spend was in the education and employment bucket and was consistent until 2023.

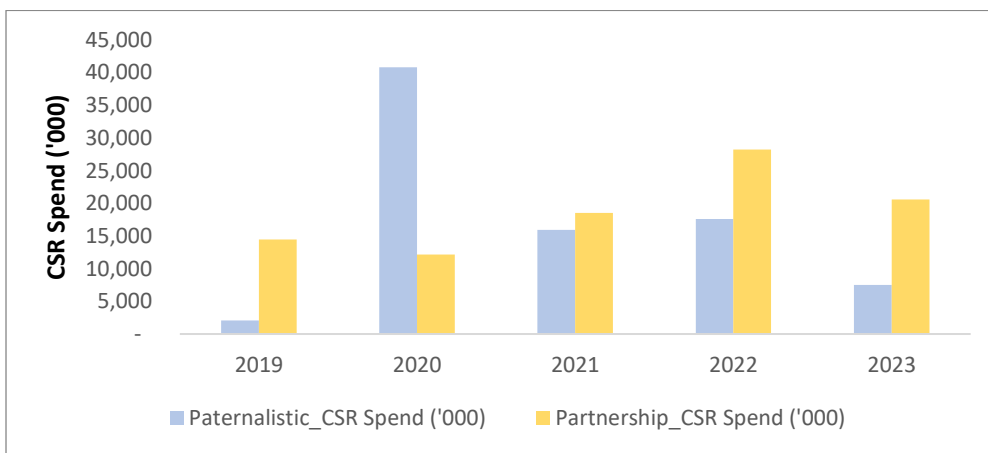


Figure 5.2: Annual CSR spend by distribution mode

The spend by distribution mode (Figure 5.2) shows that in most years, with the exception of 2020, the mine spends more money on partnership mode.

5.2.2 Social Cases per Year

Most of the cases were social grievances, accounting for 73% of the total sample. These were followed by Social Incidents and Issues with 16% and 11% of the sample, respectively; see Figure 5.3.

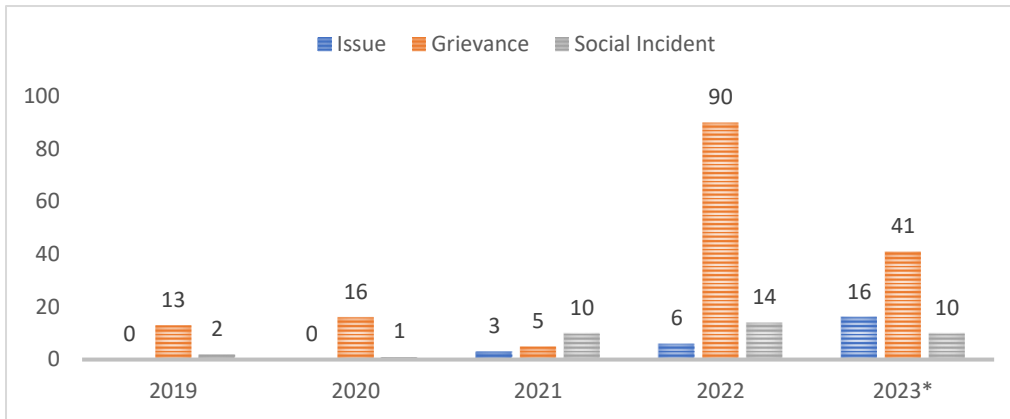


Figure 5.3: Annual Social Cases by Type

The social cases by category show (Figure 5.4) that most of the cases (80%) were related to partnership distribution modes, while (15%) were related to paternalistic distribution modes, with 5% falling into the "other" category. The spike in social cases observed in 2022 was mostly in the education and employment categories.

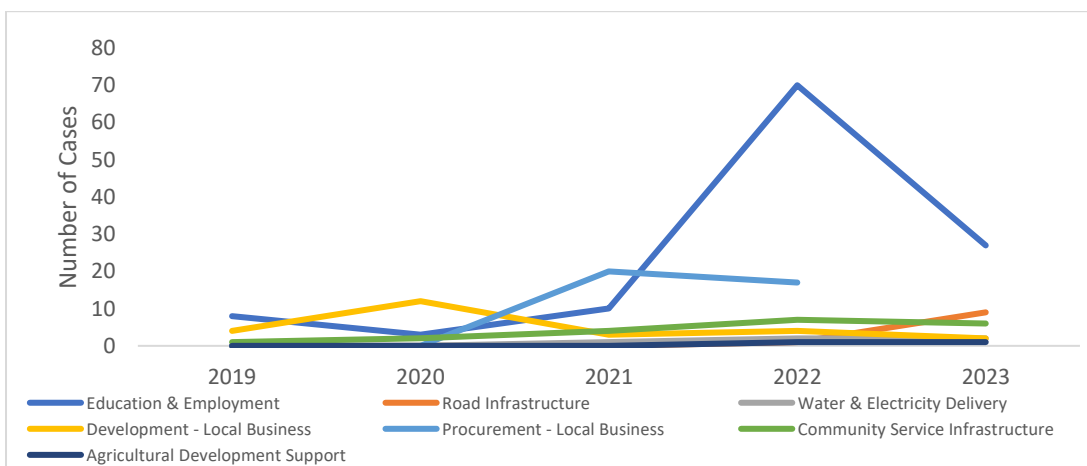


Figure 5.4: Annual Social Cases by Type

5.2.3 Community Perception Survey

Community Perception Survey reports contained survey results with the following information: number of registrants, response rate, demographic results (age, gender, participation location), questions in the survey and explanation of the Likert scale, and survey results per area (11 questions).

The demographics of the survey recipients were as follows:

Gender of survey respondents: 52% were female, and 45% were male, with 3% not specifying the gender.

Age distribution of survey respondents: Most of the respondents were in the 25-33 age group, making up 38% of the population, with 18-24 and 34-44 age groups having 20% and 15%, respectively. The balance was distributed in the 45-54 and 55-64 age groups or did not specify their ages.

Location of survey respondents: The mine straddles two communities; the responses were well represented by both communities, with 43% from one community, 39% from the second and 18% of the respondents not specifying community.

5.3 Corporate Social Responsibility Initiatives

The financial commitment to Social Spend is detailed in a Social and Labour Plan (SLP) and is spent over the 5-year SLP period. This study assessed a five-year commitment between 2019 and 2023. The details of the SLP are agreed upon with stakeholders through a public participation process that usually takes place in year 4 of a preceding SLP.

R165m was committed in the 2019 to 2023 SLP, with R178m forecast to be spent (R150m already spent in 2019 to 2022) and R28m planned for 2023. The 2023 data was also included with actuals for January to September and projected spend for the remainder of the year. No major variances are expected in this period as these values are based on firm quotations.

The CSR spend in R' 000 is presented in Table 5.1, with the detail per category in Figure 5.1. The mean spend is R5.07 million, with the minimum at 0 and the maximum spend of R32.99 million.

Table 5.1: Descriptive statistics of CSR spend (R' 000)

Variable	Obs	Mean	Std. Dev.	Min	Max
CSR(R' 000)	35	5 079.7	7 581.6	0	32 993

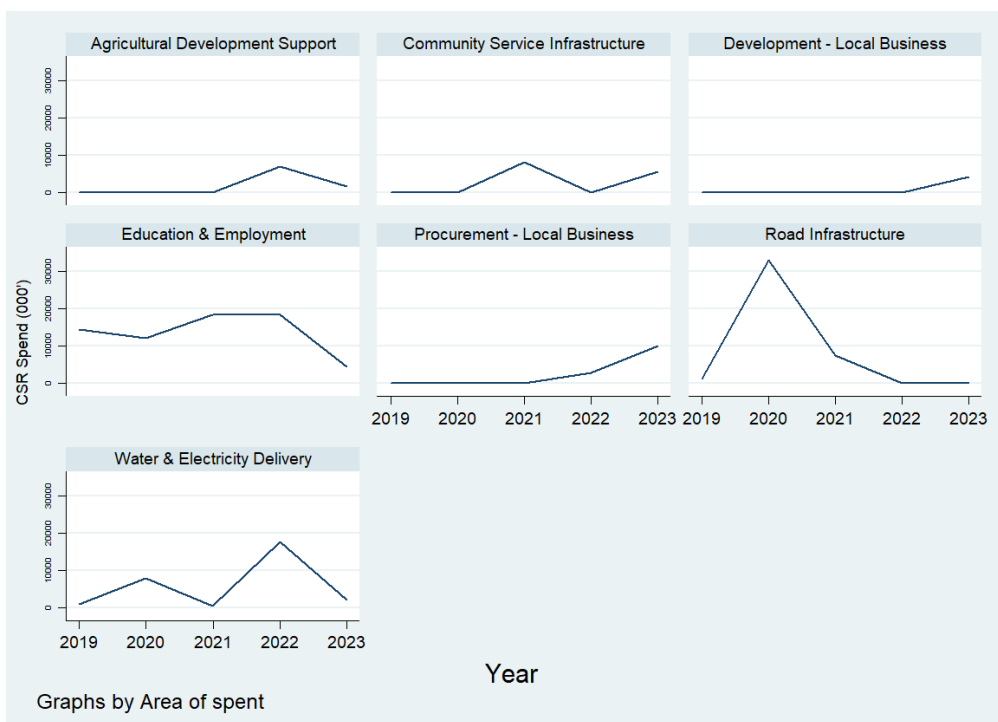


Figure 5.5: CSR spend (R' 000) over the period 2019 – 2023 across all categories

It is evident from the graph that the road infrastructure had the highest spend in the earlier period (2020), then slowed down in the subsequent years, while spend on education and employment increased. Water and electricity-related projects seem consistent over the years. The local business started low but started to pick up in the later years, increasing from 2021 to 2023.

Table 5.2 and Figure 5.6 contextualise the spend in percent, showing the emphasis on the total CSR project spend.

Table 5.2: Descriptive statistics of %CSR spend

Variable	Obs	Mean	Std. Dev.	Min	Max
%CSR spend	35	14.29	20.83	0	87.41

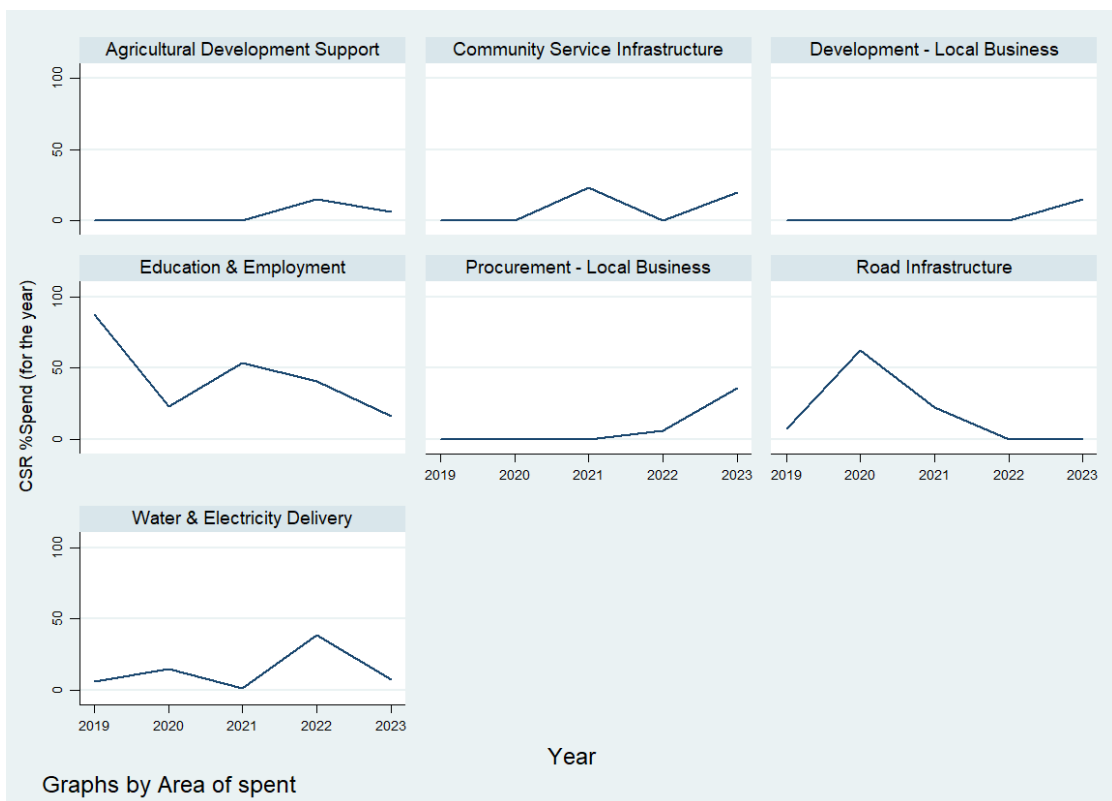


Figure 5.6: %CSR spend over the period 2019 – 2023 across all categories

The analysis shows that in 2019, the spend was focused on education and employment-related projects, but this changed in 2020 to road infrastructure. In 2021, education, employment, and road infrastructure spending were higher than the rest, with water and electricity spend increasing in 2022 and local business procurement in 2023.

5.4 Stakeholder Engagement

Monthly community perception surveys are collected from both host communities by the mine. This data was collected from November 2019 to July 2022, when collection in this system was discontinued.

Table 5.3 provides the stakeholder satisfaction levels, with a mean of 3.86 (SD = 0.098) with a minimum of 3.66 and a maximum of 4.02. The details of stakeholder outcomes per category are presented in Figure 5.7.

Table 5.3: Descriptive statistics on stakeholder engagement

Variable	Obs	Mean	Std. Dev.	Min	Max
Stakeholder	16	3.857	.0982	3.66	4.02

The SE analysis shows that the focus is linked to the community service infrastructure, education and employment, development of local businesses, and procurement in local businesses. Despite spending sizable amounts on road infrastructure, agricultural development support, and water and electricity delivery, these engagements have no stakeholders-related assessments.

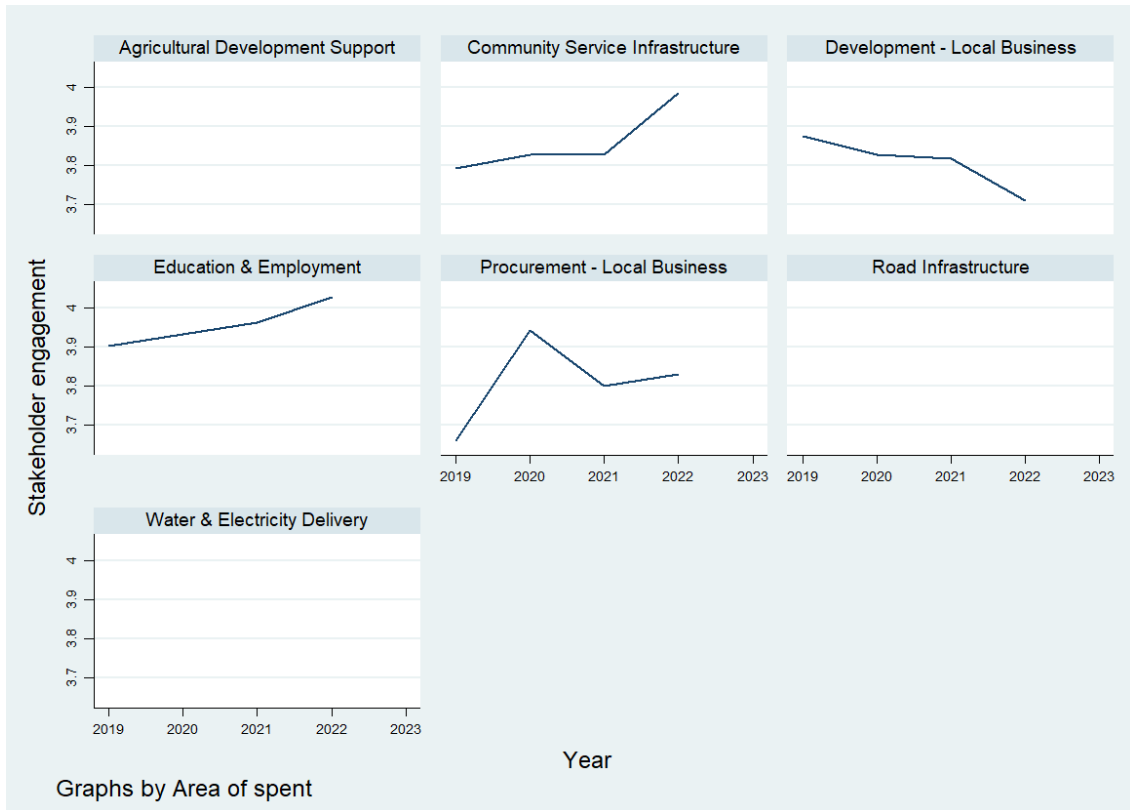


Figure 5.7: Community Engagement Survey Responses over the period 2019 – 2022 across all categories

The analysis shows that the community was consistently satisfied with company initiatives related to education and employment as scores were high, community service infrastructure scores improved year-on-year. At the same time, local business development declined over time, and local business procurement results were sporadic annually.

5.5 Social Licence to Operate Measured with Social Cases

Table 5.4 provides the social cases over the period with a mean of 6.26, with a minimum of zero to a maximum of 70.

Table 5.4: Descriptive statistics on Social cases

Variable	Obs	Mean	Std. Dev.	Min	Max
Number of case	35	6.257	12.733	0	70

Figure 5.8 shows that the main reasons for the social cases were related to education and employment, as well as local business procurement and development. There were almost no social cases related to agricultural support and few social cases related to water and electricity delivery.

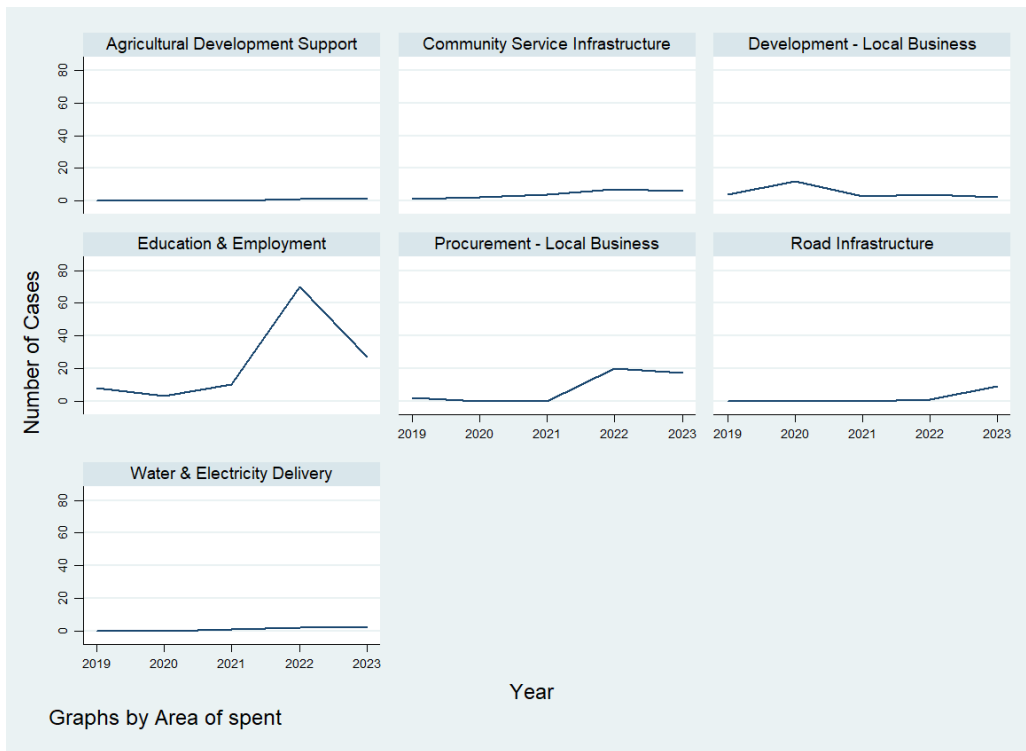


Figure 5.8: Number of cases over the period 2019 – 2023 across all categories

5.6 Hypothesis Testing

The hypotheses were tested with the ordinary least square, fixed-effect and random-effect models. This used panel data for the period 2019 to 2023, and the identified categories of CSR spend. The data was set up and strongly balanced (Table 5.5).

Table 5.5: Model setup for panel data of the study

```
xtset DummyAreaspent Year
      panel variable:  DummyAreaspent (strongly balanced)
      time variable:   Year, 2019 to 2023
                      delta: 1 unit
```

5.6.1 Effect of Corporate Social Responsibility Distribution on Community Engagement

The first hypothesis tested the effect of CSR distribution on community engagement. This hypothesis stated:

Null Hypothesis (H_{10}): The distribution of CSR by mining companies in the host community is not a significant variable in the prediction of high levels of stakeholder engagement.

Alternate Hypothesis (H_{1Alt}): The distribution of CSR by mining companies in the host community is a significant variable in the prediction of high levels of stakeholder engagement.

The ordinary least squares (OLS) regression analysis examined the relationship between CSR distribution in rand value and community engagement from 2019 to 2022 (Table 5.6). The model was developed with 16 observations, which is lower than the recommended size of 30 by Niiler (2020) for time-dependent t-tests. These results should be treated with caution. This model is statistically significant at 5%, indicating that the model fits well. $F(1, 14) = 7.81$, $\text{Prob} > F = 0.0143$. In this model, the CSR spend is a statistically significant predictor of SE ($\beta = 8.22 \times 10^{-6}$, $t = 2.79$, $P > |t| = 0.014$). This means that for every additional spend on CSR, SE increases by 8.22×10^{-6} units. The coefficient of determination, $R^2 = 0.3581$, indicates that the distribution of CSR can predict 35.8% of the SE outcome. Other factors influence SE that account for the other 64.2%.

the individual-specific effect, which is anticipated to be a random variable that is not correlated with the explanatory variables. The Wald Chi-square was 7.81, with the model fitting well with significance higher than 5% (Prob > Chi2 = 0.0052). This analysis assumed the correlations of $u_i, x = 0$.

Table 5.8: Random effect model for the CSR and Stakeholder Engagement

```

Random-effects GLS regression           Number of obs   =       16
Group variable: DummyAreas~t         Number of groups =        4

R-sq:                                  Obs per group:
  within = 0.0042                       min =          4
  between = 0.9404                       avg =         4.0
  overall = 0.3581                       max =          4

corr(u_i, X) = 0 (assumed)              Wald chi2(1)    =       7.81
                                           Prob > chi2     =       0.0052

```

Stakeholder~t	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CSR	8.22e-06	2.94e-06	2.79	0.005	2.45e-06	
_cons	3.819311	.0245369	155.66	0.000	3.77122	
sigma_u	0					
sigma_e	.08834879					
rho	0	(fraction of variance due to u_i)				

The Hausman test was employed to ascertain the most suitable estimator to utilise between fixed effects and random effects models in the context of panel data analysis. The null hypothesis (H_0) posits that the random effects estimator exhibits consistency and efficiency, while the fixed effects estimator demonstrates consistency but lacks efficiency. Therefore, there is no correlation between the independent factors and the consequences specific to each category. The alternative hypothesis (H_1) posits that the fixed effects estimator exhibits consistency, but the random effects estimator does not. This implies that there is a correlation between the independent factors and the effects that are specific to each individual category (CSR distribution mode). In the study, the Hausman's test $\chi^2(1) = 0.45$, Prob > $\chi^2 = 0.5036$. This means that the Random effect is the model of choice.

These results reject the null hypothesis and confirm the alternative hypothesis, which states that the CSR distribution by mining companies is a significant predictor of community engagement, which results in high levels of SE (Table 5.9).

Table 5.9: Hausman test

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
CSR	2.08e-06	8.22e-06	-6.14e-06	9.17e-06

b = consistent under H₀ and H_a; obtained from xtreg
 B = inconsistent under H_a, efficient under H₀; obtained from xtreg

Test: H₀: difference in coefficients not systematic

$$\begin{aligned} \text{chi2(1)} &= (b-B)' [(V_b-V_B)^{-1}] (b-B) \\ &= \mathbf{0.45} \\ \text{Prob>chi2} &= \mathbf{0.5036} \end{aligned}$$

This means that the categories spend can be a predictor of how satisfied stakeholders are on a continuous basis.

5.6.2 Effect of Community Engagement on Social Licence To Operate

The second hypothesis tests the effect of community engagement (proxied by community perception survey) on SLO, proxied by the sum of social incidents, grievances, and issues. The sum of these is referred to as social cases in this research. The second hypothesis stated:

Null Hypothesis (H₂₀): The level of community engagement by the mining companies is not a significant variable in the prediction of the strength of social licence to operate.

Alternate Hypothesis (H_{2Alt}): The level of community engagement by the mining companies is a significant variable in the prediction of the strength of social licence to operate.

The ordinary least squares (OLS) regression analysis tested the SE as a predictor of SLO (social cases). The model analysis shows that the model did not fit well, with $F(1, 14) = 4.43$, $\text{Prob} > F = 0.0538$, with no statistical significance at 5%, though it is at 10% (Table 5.10). Based on statistical significance at 10%, the SE is a predictor of social cases with $\beta = 84.78$, $t = 2.11$ $P > |t| = 0.054$.

Table 5.12: Random effect model for the Stakeholder Engagement and social Cases

Random-effects GLS regression	Number of obs	=	16
Group variable: DummyAreas~t	Number of groups	=	4
R-sq:	Obs per group:		
within = 0.1056	min =		4
between = 0.8032	avg =		4.0
overall = 0.2405	max =		4
	Wald chi2(1)	=	4.43
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0353

NumberofCases	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Stakeholderengagement	84.77657	40.26883	2.11	0.035	5.85112	163.702
_cons	-317.6557	155.3866	-2.04	0.041	-622.2078	-13.10352
sigma_u	0					
sigma_e	16.527286					
rho	0	(fraction of variance due to u_i)				

The Hausman's test $\chi^2(1) = 0.28$, $\text{Prob} > \chi^2 = 0.5999$ (Table 5.13). This means that the Random effect is the model of choice.

Table 5.13: Random effect model results

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Stakeholde~t	64.15011	84.77657	-20.62646	39.32307

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$\chi^2(1) = (b-B)' [(V_b-V_B)^{-1}] (b-B)$
 = 0.28
 Prob>chi2 = 0.5999

These results confirm that the null hypothesis is rejected, and the alternative hypothesis is accepted in that the level of community engagement by the mining companies is a significant variable in predicting the strength of SLO.

5.6.3 Effect of Corporate Social Responsibility Distribution on Social Licence to Operate

The study's third hypothesis focused on the influence of CSR distribution on SLO using social cases as the proxy. The hypothesis stated:

Null Hypothesis (H_{3_0}): The distribution of CSR by mining companies in the host community is not a significant variable in the prediction of the strength of social licence to operate.

Alternate Hypothesis ($H_{3_{Alt}}$): The distribution of CSR by mining companies in the host community is a significant variable in the prediction of the strength of social licence to operate.

The number of observations in each group was seven, resulting in 35 observations. This is higher than the recommended size of 30 by Niiler (2020) for time-dependent t-tests.

The ordinary least squares (OLS) regression analysis examined the relationship between CSR spend in rand value and as a percentage of total CSR for 2019 to 2023 (Table 5.14). The model analysis shows that the model did not fit well, with $F(2, 32) = 3.32$, $\text{Prob} > F = 0.774$, with no statistical significance at 5%, though it is at 10%. Based on statistical significance at 10%, CSR is a predictor of social incidents with $\beta = 0.000508$, $t = 1.82$ $P > |t| = 0.077$.

Table 5.14: Ordinary Least Square Model for the CSR and Social Incidents

Source	SS	df	MS	Number of obs	=	35
Model	504.312611	1	504.312611	F(1, 33)	=	3.32
Residual	5008.3731	33	151.768882	Prob > F	=	0.0774
				R-squared	=	0.0915
				Adj R-squared	=	0.0640
Total	5512.68571	34	162.137815	Root MSE	=	12.319

NumberofCa~s	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
CSR	.000508	.0002787	1.82	0.077	-.000059 .0010749
_cons	3.676747	2.517947	1.46	0.154	-1.446056 8.79955

The fixed effect model, with the spend in rand value and as a percentage of total CSR spend, also did not fit well with significance higher than 10% ($F(2,27)$ $\text{Prob} > F = 0.628$); see Table 5.15.

Table 5.15: Fixed effect model for the CSR and social incidents

```

Fixed-effects (within) regression
Group variable: DummyAreas~t
Number of obs   =   35
Number of groups =    7

R-sq:
  within = 0.0088
  between = 0.5087
  overall = 0.0915

Obs per group:
  min = 5
  avg = 5.0
  max = 5

corr(u_i, Xb) = 0.3774
F(1,27) = 0.24
Prob > F = 0.6282
  
```

NumberofCa~s	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CSR	.0001538	.000314	0.49	0.628	-.0004904	.000798
_cons	5.476024	2.506161	2.19	0.038	.3338061	10.61824
sigma_u	7.5757375					
sigma_e	11.43714					
rho	.30495115	(fraction of variance due to u_i)				

F test that all u_i=0: F(6, 27) = 1.88 Prob > F = 0.1208

The Random effects model (Table 5.16) returned a Wald Chi-square of 2.26, with the model not fitting well with significance higher than 5% (Prob > Chi2 = 0.1325). This analysis assumed the correlations of u_i, x = 0.

Table 5.16: Random Effect model for the CSR and social incidents

```

Random-effects GLS regression
Group variable: DummyAreas~t
Number of obs   =   35
Number of groups =    7

R-sq:
  within = 0.0088
  between = 0.5087
  overall = 0.0915

Obs per group:
  min = 5
  avg = 5.0
  max = 5

corr(u_i, X) = 0 (assumed)
Wald chi2(1) = 2.26
Prob > chi2 = 0.1325
  
```

NumberofCa~s	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CSR	.0004231	.0002812	1.50	0.132	-.0001281	.0009742
_cons	4.108172	2.80138	1.47	0.143	-1.382432	9.598776
sigma_u	3.4859793					
sigma_e	11.43714					
rho	.08500302	(fraction of variance due to u_i)				

In the context of this test, the null hypothesis posits that the random effect model is suitable, but the alternative hypothesis suggests that the fixed effect model is suitable

(Table 5.17). As the fixed and random effects are not statistically significant, this test is not required to decide the most optimum model.

Table 5.17: Hausman test for optimum model

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
CSR	.0001538	.0004231	-.0002693	.0001397

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2(1)} &= (b-B)' [(V_b-V_B)^{-1}] (b-B) \\ &= 3.72 \\ \text{Prob>chi2} &= 0.0538 \end{aligned}$$

These results confirm the null hypothesis, which states that the value of CSR initiatives implemented by mining companies in the host community is not a significant variable in predicting the strength of SLO, as OLS is not regarded as the most optimum model over time.

5.7 Chapter Summary

The study analysed the role of CSR and SE on SLO in South African mining companies.

Three hypotheses were tested, and the results indicated that hypothesis 1 had a statistically significant relationship over time, while the other two hypotheses had no statistically significant relationship over time. These hypotheses can be summarised as follows:

- H1 The results reject the null hypothesis and confirm the alternative hypothesis, which states that the CSR distribution by mining companies is a significant predictor of community engagement, which results in high levels of stakeholder engagement.

- H2 The results reflect the null hypothesis and confirm the alternative hypothesis, which states that the level of community engagement by the mining companies is a significant variable in predicting the strength of social licence to operate, as OLS is not regarded as the most optimum model over time.
- H3 The results confirm the null hypothesis that the value of CSR initiatives implemented by mining companies in the host community is not a significant variable in predicting the strength of social licence to operate, as OLS is not regarded as the most optimum model over time.

The results of the study are discussed in Chapter 6, with the limitation of the study highlighted in Chapter 7 to help contextualise the result.

CHAPTER 6 DISCUSSION OF RESULTS

6.1 Introduction

Chapter 6 contains a discussion of the findings outlined in Chapter Five. This Chapter aims to test three hypotheses linked to the research objectives and highlight similarities and contradictions in the literature while providing insights into contextual differences. The aim is to contribute to the mining industry's ability to predict the loss or attainment of social licence through CSR and stakeholder management. Any inferences made regarding the findings are based on the sample of this study.

This research was grounded on three objectives:

To determine if CSR distribution influences community engagement in mining companies.

To determine if community engagement influences the strength of the social licence to operate.

To determine if CSR distribution influences the strength of the social licence to operate.

The data-gathering process, as outlined in Chapter 4, resulted in usable data from one mine over a five-year period.

A conceptual framework derived using existing literature was developed to guide the inquiry. This framework highlights the role of SE and CSR distribution in granting SLO. The research expectation was that the strength of the SLO (proxied by social cases) is driven by increased SE and CSR spend. The framework also showed an expected positive relationship between CSR expenditures informed by community requirements driven by continuous SE.

The Chapter starts with a discussion of the sample demographics, enabling further understanding of the study data and research context. The results of each of the variables are then discussed before delving into the findings of each of the hypotheses. Concluding the Chapter was a summary of the conceptual framework, incorporating the findings supported by the literature.

6.2 Sample Demographics

The data used in this research is from a single mining company that spans a five-year period, encompassing their spending on SLPs, Community Perception Survey results and Social Cases.

6.2.1 Corporate Social Responsibility Spend

The mine's expenditure on the SLP amounted to 108% of the planned budget, demonstrating its commitment to fulfilling its obligations. This financial commitment was spread over five years, with the highest expenditure occurring in the second year of the SLP (Figure 5.1). The spend was categorised into seven project groups, which could be further classified as paternalistic distribution mode (Baskaran, 2021; Buddu & Scheepers, 2022) and partnership distribution mode (Cesar, 2021; Tsyachnyouk, 2017). Both these distribution modes were evident in each year of the SLP, with the spend on the partnership mode being higher than the paternalistic distribution mode each year, except in 2020 (Figure 5.2).

6.2.2 Social Cases

Data was systematically collected to document issues, grievances, and incidents. A review of the social case data showed that the data quality improved with time as case descriptions, causes, duration of incidents, and close-out comments improved in quality. This improvement suggests that the company deliberately enhanced data quality based on prior engagements and experiences. These cases are categorised based on their severity, ranging from issues to grievances, with incidents representing the most serious category. Grievances accounted for the majority, comprising 73% of the total sample, while incidents accounted for 16% of all reported cases. This suggests that the mine has been effective in managing grievances, as most of these issues do not escalate into more serious incidents. An observation of the social cases by type showed that most of the cases were related to education and employment, which is a partnership distribution mode.

6.2.3 Community Perception Survey

Community perception survey results were collected over thirty-three months, from November 2019 to July 2022, when the company transitioned to a different system. Survey participants were well represented from all age groups, by gender and from both host communities of the mine. This suggests that the survey is widely distributed, and the community are actively supportive (Watson et al., 2017).

The following sections discuss the findings of each of the variables, followed by a discussion of the hypotheses.

6.3 Corporate Social Responsibility

CSR was an independent variable in this study's hypotheses (hypotheses 1 and 3). The 2019-2023 Social and Labour Plan (SLP) was assessed to determine CSR spend by year and project. The projects were categorised into themes before statistical analysis.

The average (mean) CSR spend over the period was R5.1m (Std. Dev.= R7.5m), with a minimum spend of zero (0) as some projects had no spend in some years and a maximum spend of R33.0m and was for road Infrastructure project group in the year 2020. % CSR spend showed a mean spend of 14.3% (Std. Dev.=20.8%) with 0% and 87.4% of annual spend as minimum and maximum, respectively.

Most of the spend in the earlier years of the SLP (years 1 to 3) was paternalistic spend, with most funds allocated to road infrastructure. In later years, expenditure shifted towards partnership, primarily focusing on education and employment. The partnership distribution mode was evenly distributed over the 5-year period, while paternalistic expenditure was initially high and tapered off in the last three years.

While 53% of the total spend is directed towards the partnership distribution mode, a significant amount (47%) was allocated to the paternalistic distribution mode. Literature suggests that companies focus on a partnership rather than a paternal distribution mode, as that will yield more impactful results (Bezzola et al., 2022; Menghwar & Daood, 2021).

The partnership distribution mode is deemed as more sustainable as the paternalistic mode results in dependency (Baskaran, 2021; Buddu & Scheepers, 2022; Cesar & Jhony, 2021) and with time, resentment by the community from unmet expectations (Harvey, 2014).

The Mining Charter (MCIII, 2018) guidelines also support the partnership distribution mode, which focuses on initiatives such as supplier and enterprise development, mine community development, and procurement. The DMRE ministry (DMRE, 2023), however, has a conflicting expectation as they require mined to contribute to projects with a focus on infrastructure development to support the country's National Development Plan goals.

An example of a drawback of CSR distribution that is not linked to community expectation through continuous community engagement is in the Royal Bafokeng community, where a survey by Flomenhoft (2019). Showed that the CSR spend in the community was grossly misaligned with their needs and expectations. The spend was mostly on initiatives such as sports and recreation, while the community, living with high poverty, wanted the spend to be concentrated on SMMEs and employment.

6.4 Stakeholder Engagement

The mine collected Community perception surveys over 33 months between November 2019 and July 2022. Many scholars see This ongoing SE as a key success factor (Baskaran, 2021; Dumbrell et al., 2021; Vanclay & Hanna, 2019). This continuous interaction allows the mine to be aware of any changing perceptions and needs of the community (Cesar & Jhony, 2021).

On average, the responses from the community survey were positive, with a mean of 3.86 (Std. Dev.= 0.98) on a Likert scale ranging from 1 to 5. The minimum and maximum scores were 3.66 and 4.02, respectively. The survey focused on links to the community service infrastructure, education and employment, local business development, and local business procurement.

The scores of Education and Employment were consistently high, ranging from 3.9 in 2019 to 4.03 in 2022, suggesting that the community is satisfied with the level of focus in this area. Scores from Local business development declined over time (3.88

in 2019, trending downward to 3.7), where three would be "neither agree nor disagree" and four would be "agree" when asked, "The mine develops local small businesses to become suppliers of the mine". This suggests that the community, while relatively agreeing that the company develops small businesses, the satisfaction is reducing. When responding to whether the mine procures from local businesses, the results were sporadic annually, ending at a lower value of 3.83 in 2022 compared to 2020. The mine should consider focusing more on local business support to enable local businesses to be competent and capacitated so the mine is able to procure more from them. Local procurement is supported by regulators (MCIII, 2018), literature (Cesar, 2021; Porter & Kramer, 2011; Saenz, 2018) and industry experts (BDO, 2020) alike.

Community service infrastructure is the only paternal distribution mode that was included in the survey. The score improved year-on-year (3.83 to 3.99), suggesting that the community is satisfied with spend in this area.

The survey did not have any questions related to road infrastructure, water and electricity and agricultural development and support despite spending 44% of the CSR in this category. This could have been guided by social cases instead of CSR spend, as only 8% of the social cases came from these three project groups.

The survey, in its current form, allows the mine to have a view of the satisfaction levels of the community on the questions that are asked. A recommendation would be to include all the areas the company is spending on, focusing on paternalistic and collaborative projects. The survey could also benefit from having an open area that the community can tell the mine about, as this would be a platform they can use instead of rushing to social media.

Existing literature supports extensive engagement efforts but also highlights the challenge that it may not always be feasible to satisfy all stakeholders fully (Haslam, 2021).

6.5 Social Licence to Operate Measured with Social Cases

Descriptive statistics on Social Cases showed an average of 6.3 cases (Std. Dev.=12.7), with 0 and 70 representing the minimum and maximum number of social cases, respectively.

There were 15 social cases (the sum of social issues, grievances and incidents) in 2019, and these increased slightly in 2023, with a greater than 6-fold increase from 2021 to 2022. Analysing the 2023 data, comprised of the first nine months ending 30 September, the average number of social cases is 7.5 per month, compared to 9.2 per month in 2022, suggesting that 2023 will end lower but still significantly higher than the average of 1.5 cases per month in 2021.

The social cases related to partnership commitments accounted for 80% of all cases, while paternalistic cases constituted only 15%, with 5% falling into the "other" category.

This suggests that the community does not expect the mine to carry out any activities that are the state's responsibility (paternalistic). Rather, they should participate in partnership activities such as providing employment and stimulating local businesses. This trend is in line with the outcome of Flomenhoft's (2019) survey, which showed a considerable discrepancy between the allocation of funds by the administrator of royalties paid to a community and the expectations of the community.

Delving deeper into the social cases related to the partnership distribution mode, 65% of the cases fell into the Education and Employment category. Thirty-four (34%) of the social cases were linked to local business stimulation in the form of development (20%) and procurement (14%), with only 1% linked to Agriculture.

Most (71%) of the education and employment social cases are related to employment, with issues such as "unfair job allocation," "lack of job creation," and "employment of non-locals." Figure 6.1 below shows why the community has this view on employment.

This suggests that CSR distribution in mining in South African mines improves engagements with its communities. This is aligned with Godfrey et al. (2009), who stated that CSR spend improves goodwill between the company and the community.

The mine conducts monthly community perception surveys in the surrounding communities. This survey serves as a dipstick test, assessing the alignment between community preferences, the mine's expenditure, and the root causes of social cases.

This frequent engagement is supported by Cesar and Jhony (2021). This is also supported by Mak et al. (2021), who posit that there needs to be frequent SE through daily communication, not ad-hoc engagement. Cesar and Jhony (2021) emphasised that community needs and perceptions are not static. Although the community initially informs the SLP through public participation before its sign-off, the changing needs and expectations call for frequent checking if there is still alignment between the CSR spend and the community needs.

Yates and Horvath (2013) also advocate for frequent communication and buy-in from the community is recommended as they stated that continuous and transparent communication increases trust, which improves the quality of the relationship between mining companies and the community.

Jijelava and Vanclay (2017) indicated that increased spend that is perceived to have fair benefits distributed to the community increases economic legitimacy.

Although increased community engagement has mostly positive impacts on CSR and the general relationship with mining companies, increased use of social media, while it has removed communication barriers (Yates & Horvath, 2013; Zheng et al., 2018), has introduced some challenges. These include organisations no longer dominating the messaging around their brands and reputation but also leaving them vulnerable to opportunistic actors driving their own agenda (Castelló & Lopez-Berzosa, 2023).

To further enhance SE, the mine should consider supplementing the online responses with manual responses, albeit at a lower frequency rate, as the resource costs can become prohibitively high (Pedrini & Ferri, 2019).

6.7 Effect of Community Engagement on Social Licence to Operate

The second hypothesis tested the effect of community engagement (proxied by the community perception survey) on the SLO, which is proxied by the sum of social incidents, grievances, and issues. These results confirm that the null hypothesis is rejected and the alternative hypothesis is accepted, which states that the level of community engagement by the mining companies is a significant variable in predicting the strength of SLO. Further analysis also showed that categorial engagement (annually) can predict the SLO's strength.

This is aligned with Boutilier and Thomson's (2011) model, which was a key model used in this research. Legitimacy, the first requirement in the model, requires quality SE (Eabrasu et al. (2021) and engagements with external stakeholders (Watson et al., 2017). Credibility is gained from stakeholder approval (Mak et al., 2021) and commitment to social performance (Jijelava & Vanclay, 2018). Trust is gained through transparency between the mine and the community (Yates and Horvath, 2013). Prno and Slocombe (2014) emphasise the multi-variable system that mines find themselves in. Their framework demonstrates that it is not possible to attain SLO without SE, as these multiple layers can only be penetrated through continuous engagement with these stakeholders.

Eabrasu et al. (2021) emphasised the importance of engagement quality as it improved the legitimacy of the company. Dumbrel et al. (2021) stated that the higher quality and quantity of interactions increase the likelihood of a social licence being granted.

However, Christensen (2019) and Fraser (2021) disagreed with this view, indicating that attaining a social licence does not always eradicate community unrest as there could be other triggers for unrest.

Increasingly, SLO literature is focused on improved quality of SE (Eabrasu et al., 2021) and managing the increased influence of external stakeholders (Verrier et al., 2022) that is amplified by social media. In recent years, there has been an emergence of social protest stakeholders (Wöcke et al., 2023) whose divergent and conflicting interests (Buddu & Scheepers, 2022; Haslam, 2021) are targeted at unrelated operations and businesses near them as a means of gaining the attention

of another party. Businesses need to dial this new risk into their existing risk mitigation plans and determine whether engagement with this type of stakeholder results in escalation or de-escalation of conflict.

6.8 Effect of Corporate Social Responsibility Distribution on Social Licence to Operate

The research null hypothesis is as follows: The distribution of CSR by mining companies in the host community is not a significant variable in the prediction of the strength of the SLO. This hypothesis assumes that community members bypass the SE process (hypotheses 1 and 2) and escalate immediately to social cases when they feel unheard.

The results confirm the null hypothesis, which states that the value of CSR initiatives implemented by mining companies in the host community is not a significant variable in predicting the strength of SLO.

Literature suggests that increased spending increases the likelihood of attaining SLO. More partnership spending results in the granting of SLO. According to Mak et al. (2021), legitimisation practices are in a constant state of negotiation and must be actively performed and incorporated into daily communication. Jijelava and Vanclay (2017) are supportive of this as they indicated that social legitimacy, which would result in SLO, involves the impact on community well-being, fairness and respect for local customs; this is gained through CSR initiatives.

There are some researchers who did not agree with increased CSR being a predictor of SLO.

Bezolla et al. (2022) investigated almost 300 mining companies in 17 African countries and found that although their intention was to engage in CSR activities as a risk mitigation strategy for local conflicts, the effects were present; however, they were moderate.

Harvey (2014) supported this view as he indicated that CSR distribution to communities, although noble, created dependency on communities who, over time,

increased their demands. When these are not met, it could result in resentment by the community.

This increasing demand and ability for the mining company to sustainably keep giving is in line with Porter and Kramer's (2006) CSR definition that emphasises the organisation's ability to suitably give without compromising their future existence.

An emerging concept in strategic CSR is in the recent work of Owen and Kemp (2023), who acknowledge the benefit of this type of CSR and its sustainability. They want, however, that this has somewhat errored the responsibility that was initially inherent in CSR as this is increasingly replaced by using it as a corporate tool.

6.9 Summarised Findings

A summary of the findings of this research is illustrated in Figure 6.2 below. The relationships of CSR, SE and SLO are shown with literature supporting the identified result.

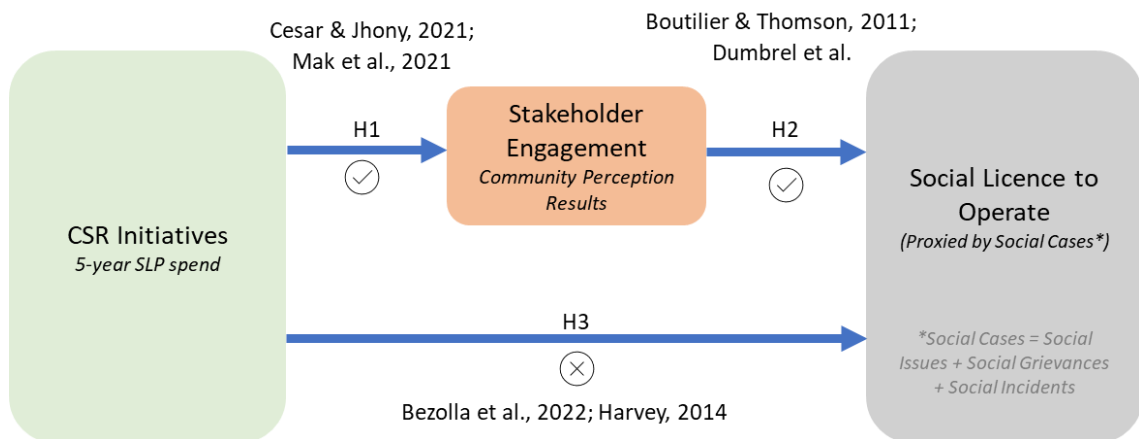


Figure 6.2: Summary of research findings with supporting literature

6.10 Chapter Summary

This Chapter provided a comprehensive exploration of the findings in Chapter Five, addressing three pivotal research questions concerning CSR, community engagement, and the SLO within the mining industry.

The research was conducted using data collected from a single mining company over a five-year span, revealing an intriguing evolution in data quality from 2019 to 2023.

The first research objective investigated the influence of CSR distribution on community engagement. Findings indicated that CSR distribution can predict the level of SE. The literature recommends that this spend be more focused on partnership as an efficient distribution mode.

The second research objective explored the effect of community engagement on the strength of the SLO. SE was found to be a significant variable in predicting the SLO. This result was supported by most literature, which suggested that higher-quality engagements with stakeholders led to a greater likelihood of obtaining a social licence.

The last research objective focused on CSR distribution's impact on the SLO. While most literature suggests that increased spending leads to a stronger SLO, the research findings found that CSR was not a significant predictor of SLO over time. Some minor literature that agreed with this stated that the current distribution of CSR was not sustainable, leading to constantly increasing stakeholder needs and resulting in resentment when not met.

The subsequent and last Chapter, Chapter 7, concludes the research study, highlighting the significance of the study for both business and literature, providing recommendations, study limitations and areas of future research.

CHAPTER 7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The mining industry in South Africa is a significant contributor to the country's GDP and employs over 470,000 workers (Minerals Council South Africa, 2023). In addition to attaining a mining licence to operate, mining companies attain their SLO from their host communities and municipalities (Baskaran, 2021; Minerals Council South Africa, n.d.; Mining Charter III, 2018; MPRDA, 2008). Over the years, mining operations' socio-political has been increasing, and they need tools to mitigate this risk. Critics argue that social licences have not restored the lost confidence of communities and stakeholders and that the CSR projects, instead of meeting the objective of uplifting these communities, have instead created a dependency that is not sustainable for the mining companies to meet (Harvey, 2014; Menghwar & Daood, 2021) and leading to conflict with these communities. Early, formal, consistent SE is expected to reduce the likelihood of community protests (Laudal, 2018; Porter & Kramer, 2018). With these communities consisting of individuals (Buddu & Scheepers, 2022; Sichone & Lew, 2021) with different expectations, bespoke SE strategies need to be defined.

This research aimed to quantitatively determine the role of CSR and SE on the level of SLO for mining companies in South Africa. This was done by testing three hypotheses. The research null hypotheses were:

- H1₀ The distribution of CSR by mining companies in the host community is not a significant variable in the prediction of high levels of stakeholder engagement.
- H2₀ The level of community engagement by the mining companies is not a significant variable in the prediction of the strength of social licence to operate.
- H3₀ The distribution of CSR by mining companies in the host community is not a significant variable in the prediction of the strength of social licence to operate.

This Chapter sets out to reflect on the research findings, summarised from the discussion in chapter 6. The implications for the mining industry and SLO theory are

emphasised with recommendations to these stakeholders. The research limitations and areas of future research are also highlighted

7.2 Research Question and Significance

This study examines the role of CSR and SE practices in attaining and retaining the SLO within the South African mining sector context. The study aims to bridge the gap between CSR, SE and SLO, providing a practical framework for decision-making and allocating resources.

This framework will allow mining companies to transform socio-political risks into opportunities through bespoke, strategic CSR projects and timely, quality SE to reduce inherent risk. Strategies to manage the complex stakeholder landscape, including individual actors and fluid community perceptions, are critical to the success of engaging with and managing stakeholders.

While prominent SLO literature (Boutillier & Thomson, 2011) points toward the inverse relationship between socio-political risks, others (Christensen, 2019; Fraser, 2021) found that achieving a social licence does not always eradicate community unrest due to external factors. Much has to be done to achieve this social licence and keep it.

The theoretical relevance of the study is highlighted, with the need for increased attention to strengthening bridging activities conducted by mining companies to ensure they can maintain their SLO. While community needs differ, the partnership distribution mode was recommended by literature as having the highest cost-benefit outcome and being more sustainable. Its implementation is, however, more onerous and avoided by some who want to see quick results.

7.3 Summary of Literature Review

The concept of SLO in the mining industry is crucial for business risk, with Boutillier and Thomson's (2011) SLO model defining requirements to move from having SLO being withheld or withdrawn to psychological identification being the attainment of

legitimacy, credibility and trust in that order. The arrowhead model further illustrated that companies offering only economic benefits to the community can attain SLO but with only a limited number of stakeholders. The model showed that to increase SLO acceptance. The mining company needed to gain socio-political legitimacy or interactional trust, with the highest form of SLO being institutionalised trust, where most stakeholders will approve the SLO. Attainment of SLO is not permanent, and companies need to continue to work on sustaining these three elements.

Stakeholder mapping (Miles, 2017) enables companies to identify the stakeholders they need to engage with and their power and influence. Mining companies can then apply relevant engagement principles (Baskaran, 2021; Dumbrell et al., 2021; Vanclay & Hanna, 2019) for the stakeholder profile. SE is a resource-intensive activity (Pedrini & Ferri, 2019) if done well due to the geographical dispersion and differing backgrounds of stakeholders. The increase in social media, while it removes geographical barriers to engaging with stakeholders, has increased company vulnerability as company reputation can be easily attacked by individual actors (Castelló & Lopez-Berzosa, 2023; Iazzi et al., 2022; Yates & Horvath, 2013).

Strategic CSR spend (Cesar, 2021; Owen & Kemp, 2023) is critical as it is more sustainable than other CSR distribution modes. It focuses on long-term impact by investing in capacity-building activities such as skills and local business development that result in Shared Value (Porter & Kramer, 2011) for all stakeholders. Several CSR distribution modes exist paternalistic, CSR, partnership and beneficiary. Different modes are suited to different contexts, such as land use and project phases. The partnership mode is the recommended distribution mode (Dumbrell et al., 2021; Ellerup Nielsen & Thomsen, 2007; Serfontein-Jordaan & Dlungwane, 2022; Wöcke et al., 2023).

7.4 Research Design

The study adopted a descriptive correlation design grounded in the post-positivist philosophy and used a structured methodology. The research utilised a deductive approach to develop and test hypotheses over a longitudinal period from 2019 to 2023. A mono-method quantitative approach was employed to examine the

relationships between the variables, with an archival research strategy used for data collection.

The scope of the study was limited to investigating the impact of CSR and SE on SLO specific to mining in South Africa. The data was analysed using Stata, employing descriptive statistics, the Ordinary Least Squares (OLS) model, and Fixed Effects and Random Effects empirical models, with the Hausman test applied to ascertain the optimal model for panel data analysis.

Ethical considerations were observed, with requisite permissions obtained for using company data and confidentiality maintained by anonymising the data and restricting its use solely for academic purposes. Inherent limitations of secondary data were mitigated by selecting a reputable mining company.

7.5 Main Results

Results from this study explained the role of CSR and SE on SLO.

CSR initiatives implemented by mining companies were found to be a significant predictor of community engagement, resulting in high SE levels. This finding was supported by most literature, with Cesar and Jhony (2021) focusing on the changing community perception. This frequent engagement will result in the mining company incorporating these changing perceptions and needs into their CSR as opposed to spending as agreed during public participation prior to the SLP (Social and Labour Plan) period, as this assumed static community requirements.

The level of community engagement by the mining companies was found to be a significant variable in predicting the strength of SLO. This finding aligns with the prominent SLO Boutilier & Thomson's (2011) model, which has three requirements for attaining SLO: legitimacy, credibility and trust. These are mostly attained through different types of SE techniques as supported by other literature sources.

CSR initiatives implemented by mining companies in the host community were found to not be a significant variable in predicting the strength of SLO. Although this finding was not expected and is not the common view in literature, two literature sources were aligned with these findings. Bezolla et al.'s (2022) study found that using CSR

activities as a risk mitigation strategy for local conflicts had moderate effects. Harvey (2014) posited that widespread CSR distribution modes resulted in increased community demands that, if unmet, could result in resentment by the community.

7.6 Recommendations and implications

Chapter 1 demonstrated that this research is relevant to both business and policymakers due to the growing importance of SLO and its abstract nature that makes it challenging to measure or quantify, with there being no agreement on its measurement.

7.6.1 For Businesses

The research findings indicate that businesses may adhere to CSR commitments and even exceed them without stakeholder communication and engagement, but this may not lead to SLO attainment. Business needs to incorporate social media as part of their communication strategy so that the public is accustomed to communicating with the company. When there is an issue, they will come to the company directly, knowing their issue will be attended to. This will minimise the impact of the other parties that may try to mobilise the community with ulterior motives. In recent years, however, the emergence of social protest stakeholders (Wöcke et al., 2023) has introduced a new, dynamic risk, and businesses need to dial this new risk into their existing risk mitigation plans.

As business remains in touch with the community and continues building trust, they will retain their SLO and quickly change and proactively deal with the issue.

CSR distribution mode is the optimum mode, and while the business understands this, it may opt to step in and take over some state responsibilities as they are an urgent need both for the business and the community. However, this almost always has negative implications, and businesses should lobby the government to work with them on partnerships that include other industries to create a sustainable regional partnership.

7.6.2 For Policymakers

The findings of this research demonstrate that CSR spending alone is not a predictor of SLO. The requirements for attainment of a SLO are SE. The complex nature of SLO requires the existence of legitimacy, credibility and trust on a continuum. All three of these require SE. Although this is recommended as part of the SLP process, it takes place as an input into the SLP. The findings and literature suggest that this engagement needs to be more frequent. As engagement is resource-intensive, the government can assist mining houses with setting up surveys that can be delineated for various mines and communities, and results can be shared with relevant parties. In contrast, the government will have a view of any issues or hotspots before they escalate into a conflict.

Furthermore, the literature states that the partnership distribution mode is the optimum mode. The government can assist by establishing and leading these partnerships with industry players in a region to join forces and benefit from regional hubs that can focus on high-quality, sustainable CSR initiatives that will benefit the region, not just the mining industry.

7.7 Study Limitations and Areas for Future Research

This research was based on a single mining company over the 5-year period of their SLP. This means that the result is very narrow as it is based on one mine in a single region in the mining community and can thus not be generalised to the mining community. An area of future research would be to source data from longer periods of time (for example, two to three SLP periods). There could be a benefit in having a study based on two or more mines to test the similarities and differences of these in their contexts (geographical, financial, and socio-economic conditions of their communities).

A limitation mentioned in the methodology section is the inherent limitations in using secondary data, as the data is not collected for the purpose of the research (Saunders & Lewis, 2018). A mixed-method study that combines secondary data and interviews could result in richer results.

An area for future research would be determining the hypothesis of different CSR distribution modes. This requires sufficient data in each of the distribution modes being tested over the duration of the period being tested. This will allow the researchers to rank the importance or strength of different CSR distribution modes.

7.8 Study Conclusion

CSR continues to be a vital topic in the mining industry. The findings from this study show that CSR alone is not a significant predictor of SLO. SE was found to be a statistical predictor of SLO, which aligns with the prominent SLO literature. When testing the relationship between CSR and SE, it was found that there is a significant relationship. It is evident that SE is a key construct in attaining and retaining SLO and that there is little benefit in CSR distribution in isolation.

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Appendix A: Systems-Based SLO Framework in Mining Industry

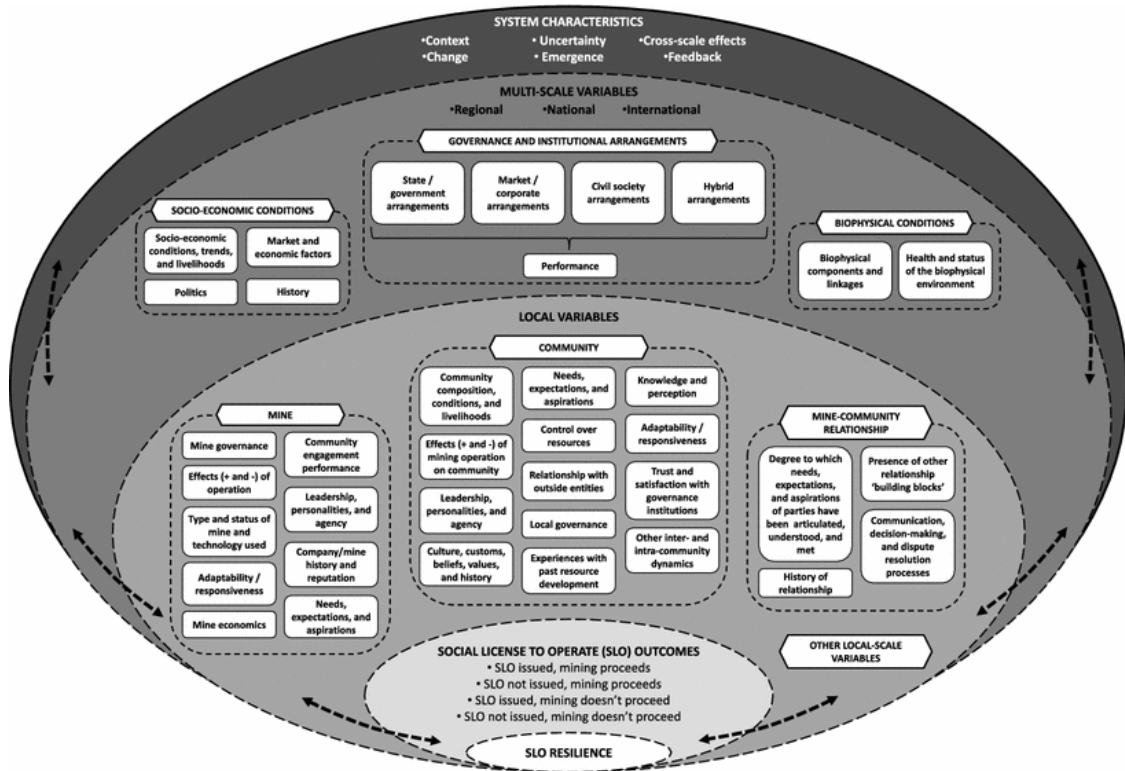


Figure A.1: Systems-Based SLO Framework in Mining Industry

Source: (Prno & Slocombe, 2014, p. 676).

Appendix B: Permission to Participate in the Study

[0+H]

**Gordon Institute
of Business Science**
University of Pretoria

Permission to use company data for Research Study

Name of Researcher, University, Telephone and E-mail:

Master of Business Administration (MBA) student, University of Pretoria's
Gordon Institute of Business Science, (27) 23212498@mygibs.co.za

Title of Project: The role of corporate social responsibility and stakeholder engagement on social licence to operate in the mining industry

Dear ARM representative,

My name is [redacted] and I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA. I am conducting research on "The role of corporate social responsibility and stakeholder engagement on social licence to operate in the mining industry".

I need access to secondary data to conduct my research and would appreciate you sharing the data outlined below with me:

1. The current and previous Social Labour Plans for your mine (in line with the periods of the incidents, split annually if possible)
 - a. Annual budget
 - b. Type of projects per year (education, construction, health, environmental, etc).
2. CSR initiatives (*if different to the Social Labour Plan*)
 - a. Annual budget
 - b. Type of projects per year (education, construction, health, environmental, etc).
3. Community Perception
 - a. This can be in a form of survey responses or reports. Raw data preferred
4. Social incidents
 - a. Incident title and description
 - b. Duration of the incident
 - c. Cause/Root cause of the incident/protest (any sub-causes if applicable)
 - d. Solution that stopped the incident/Closeout actions
5. Community characteristics

**Gordon Institute
of Business Science**
University of Pretoria

- a. Population size
- b. Employment (youth subset if available)
- c. Level of education,

Please share statistics per year (or as frequently as measured).

All data will be reported without identifiers. If you have any concerns, please contact my supervisor or me. Our details are provided below.

	Researcher	Research Supervisor
Name		
Email	23212498@mygibs.co.za	
Phone		

Signature of researcher: _____; Date: _____

Appendix C: Permission Letters from Participating Companies

[Redacted]

Permission Letter

To whom it may concern

I hereby give permission to [Redacted] to use the information below for research purposes. I understand that providing this data and any additional participation is voluntary and the company can withdraw at any time without penalty.

To retain confidentiality, all data will be reported without identifiers

The information below will be provided to Lindiwe upon receiving approval from the University's Ethics Committee:

1. The current and previous Social Labour Plans for your mine (in line with the periods of the incidents, split annually if possible)
 - a. Annual budget
 - b. Type of projects per year (education, construction, health, environmental, etc).
2. CSR initiatives (*if different to the Social Labour Plan*)
 - a. Annual budget
 - b. Type of projects per year (education, construction, health, environmental, etc).
3. Community Perception
 - a. This can be in a form of survey responses or reports. Raw data preferred
4. Social incidents
 - a. Incident title and description
 - b. Duration of the incident
 - c. Cause/Root cause of the incident/protest (any sub-causes if applicable)
 - d. Solution that stopped the incident/Closeout actions
5. Community characteristics
 - a. Population size
 - b. Employment (youth subset if available)
 - c. Level of education,

Please share statistics per year (or as frequently as measured).

Yours Sincerely

_____ Date: _____

[Redacted]

Appendix D: Ethical Clearance

**Gordon Institute
of Business Science**
University of Pretoria

**Ethical Clearance
Approved**

Dear [REDACTED]

Please be advised that your application for Ethical Clearance has been approved.
You are therefore allowed to continue collecting your data.
We wish you everything of the best for the rest of the project.

[Ethical Clearance Form](#)

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

Appendix E: Request for Company Data for Study

[OFFICIAL]

**Gordon Institute
of Business Science**
University of Pretoria

Request for Company Data for Study

Name of Researcher, University, Telephone and Email:

[REDACTED], Master of Business Administration (MBA) student,
University of Pretoria's Gordon Institute of Business Science, (+27) 83 426 4539,
23212498@mygibs.co.za

Title of Project: The Role of Corporate Social Responsibility and Stakeholder
Engagement on Social Licence to Operate in the Mining Industry

Dear <Participant Name>

Thank you for providing me with consent to use the company information for my research.

I can confirm that the Gordon Institute of Business Science Ethics Committee has approved my ethics application and has given me approval to continue with my studies. The approval document is attached to this email.

I would therefore ask that you please provide me with access to the data outlined below: |

1. The current and previous Social Labour Plans for your mine (in line with the periods of the incidents, split annually if possible)
 - a. Annual budget
 - b. Type of projects per year (education, construction, health, environmental, etc).
2. CSR initiatives (*if different to the Social Labour Plan*)
 - a. Annual budget
 - b. Type of projects per year (education, construction, health, environmental, etc).
3. Community Perception
 - a. This can be in the form of survey responses or reports. Raw data preferred

4. Social incidents
 - a. Incident title and description
 - b. Duration of the incident
 - c. Cause/Root cause of the incident/protest (any sub-causes if applicable)
 - d. Solution that stopped the incident/Closeout actions
5. Community characteristics
 - a. Population size
 - b. Employment (youth subset if available)
 - c. Level of education,

Please share statistics per year (or as frequently as measured).

All data will be reported **without identifiers**. If you have any concerns, you are welcome to exclude the sensitive data.

Regards,



Appendix F: Company Data Received for Study

The data requested and received was as illustrated in Table F.1 below.

Table F.1: Secondary Data Received from Company 1 and 2

Requested Data	Data Received: Company 1	Data Received: Company 2
Social Labour Plans for the mine	Annual Spend, 2018 to 2022	Annual Spend, 2019 to 2023
CSR initiatives	Same as SLP spend	Same as SLP spend
Community Perception	This was not yet collected. A proposal was shared.	Community Perception Survey Reports for 2019 to 2022.
Social incidents	This was not shared. The data was deemed insufficient for the study as this was collected for less than 6 months	Social Issues, Social Grievances and Social Incidents from 2018 to 2023 (January 2023 to September 2023).
Host Community characteristics	Community characteristics of the host community	Community characteristics of the host community