

RESEARCH ARTICLE

Paradoxes and dilemmas of responsible leadership in the mining industries of emerging economies – it is complex [version 1; peer review: 1 approved, 2 approved with reservations]

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Abstract

Background: Amid increasing leadership failures in the global business context, the mining industry is one of the industries with many adverse incidents, affecting employee safety, the environment, and surrounding communities. Emerging economies tend to have unique socio-economic challenges and greater relative economic dependence on mining, presenting unique challenges to leaders. The purpose of this research was to study the realities of responsible leadership in the mining industry in an emerging economy.

Methods: A qualitative research study, consisting of semi-structured interviews was conducted. Nine senior mine managers were selected to represent perspectives from different operations and mining houses. Data was gathered from August to October 2020 in South Africa, an emerging economy with significant mining operations. A thematic analysis of interview transcripts was conducted through the use of software, rendering five themes, with 12 sub-themes.

Results: The research found that requirements on mining leaders in emerging economies demand consistent balancing of a complex set of competing risks, whilst attending to paradoxical requirements among operations, and internal and external stakeholders. Leaders face several competing requirements from stakeholders, the environment, mining practices, and time frames. Responsible leaders must navigate a paradoxical maze of needs and time horizons, with several conflicting forces and dilemmas, and dichotomous relationships. Responsible leadership in the mining industry of an emerging economy is a proverbial minefield of paradoxes and dilemmas between responsible intentions and practical realities. These paradoxes and dilemmas are specifically acute in the context of emerging economies due to the dire socio-economic situations. A total of 10 competencies emerged as essential responsible leadership

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requirements in this context.

Conclusions: The study provides an in-depth understanding of the intricacies of responsible leadership in the mining industry of an emerging economy. This understanding will contribute to capacitating leaders in the mining industries of emerging economies to act responsibly.

Keywords

Emerging economies, Leadership trade-offs, Mining, Responsible Leadership,

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Introduction

Increasing incidences of environmental damage and exposure to ethical scandals gave rise to a surge of public concerns and dented society's trust in business (Pless & Maak, 2011). In particular, the mining industry was tainted with responsibility failures over the past decade, including environmental disasters (Fernandes *et al.*, 2016) and worker-safety-related tragedies (Lamm & Lips-Wiersma, 2018). The destructive impact of the industry on the natural environment as a silent stakeholder is well documented (Sonter *et al.*, 2018). Moreover, "mining remains the most hazardous occupation when the number of people exposed to risk is taken into account" (International Labour Organization [ILO], 2021). As result, there developed an increased societal expectation on mining companies to conduct business responsibly and incorporate stakeholders in business strategies and decision-making (Freeman, 2004). In contrast to developed economies, emerging economies tend to have a greater relative economic dependence on mining, and mining in these countries is often associated with a larger imbalanced wealth distribution toward those in power, at the expense of the environment, communities and employees (Maier *et al.*, 2014). Indeed, most of the tragic mining incidents happened in emerging economies, where mining activities often are at the expense of local communities (Maier *et al.*, 2014).

The construct of responsible leadership (henceforth RL) emerged in an attempt to close the gap between established leadership theories and corporate social responsibility (CSR) (Pless & Maak, 2011; Waldman, 2011). Responsible leaders are expected to recognise, balance, prioritise and influence the concerns of all business stakeholders ethically and sustainably (Maak & Pless, 2006; Pless & Maak, 2011). However, although "significant advances have been made in recent years towards a better understanding of the concept of RL, a gap exists in the understanding of RL in emerging countries, specifically how leaders resolve prevalent moral dilemmas" (Pless *et al.*, 2021, p. 1). Moreover, most research on RL has been conducted in Western countries and developed economies (Marques *et al.*, 2018).

While some research has been done on the construct of "responsible mining" (Goodland, 2012), no existing literature could be located, that specifically examines RL within the mining industry. Similarly, although corporate social responsibility (CSR) received much research attention, CSR is a firm-level construct and does not sufficiently address the leadership component on an individual level (Waldman *et al.*, 2020). There is a shortage of research to examine and improve understanding of the challenges and dilemmas of RL in emerging economies (Pless *et al.*, 2021) and the mining sector. An improved understanding of RL in mining within emerging economies will contribute to enhancing RL and preventing responsibility failures. A better understanding of the challenges and requirements to establish a culture of responsibility in which leaders will be enabled to manage the paradoxes and dilemmas originating from the opposing challenges between short-term business viability requirements and long-term business sustainability requirements, in a complex relationship stakeholder environment.

Literature review

Mining in emerging economies

The legacy of safety, environmental and social incidents in the mining industry contributed significantly to growing public concern about mining leaders' sense of responsibility (Warhurst, 2014). Mining is one of the most environmentally and socially disruptive commercial activities (Peck & Sinding, 2003), causing leaders to face unique responsibility challenges. Mining activities typically involve a high level of safety risk to employees and remain among the highest-risk professions in the world (Coleman & Kerkering, 2007). The 10 largest global mining disasters alone have claimed more than 5,000 lives (Sheth, 2017), emphasising the legitimacy crisis that mining leaders are facing. In 2020, the 10 emerging economies with the largest mining activities accounted for 63% of the mining hours worked globally, and 50% of the global recordable mining fatalities (International Council on Mining and Metals [ICMM], 2021). The high-risk nature of mining creates a potential for activities that could harm employees. Investigations consistently indicate ineffective leadership as a major cause of mining incidents and accidents (Patterson & Shappell, 2010; Sanmiquel *et al.*, 2015). Although ore bodies can be mined in a variety of ways (Scott *et al.*, 2010), mining leaders often pursue mining methods and workplace designs for the sake of maximising short-term profits at the expense of employee safety and health (Broad, 2014).

The detrimental impact of mining on the environment is well documented (Goodland, 2012; Sonter *et al.*, 2018). Open-pit mining is particularly damaging, including land degradation, erosion, and the pollution of both surface and underground water. Measures to mitigate the impact of open-pit mining on the environment often is costly and might therefore be neglected (Oltean *et al.*, 2018). The destruction of biodiversity because of mining is routinely associated with far-reaching environmental impacts. Deforestation due to mining in the Peruvian Amazon increased six-fold from 2002 to 2009 (Swenson *et al.*, 2011). Some scientists estimated that pantropical deforestation could double the rate of global warming, leading to drier climates and impairing food production (Lawrence & Vandecar, 2015). Numerous incidents of mine dam failures have led to environmental and social catastrophes (WISE Uranium Project, 2021). For instance, the Mariana and Brumadinho tailings dam failures in Brazil killed hundreds of people, displaced thousands and caused extensive environmental damage (Cheng *et al.*, 2021). Reports alleged that leaders were made aware of potential risks long before the events, but pursued cost reductions and productivity gains rather than heed the warnings (Phillips, 2018). The apparent lack of taking responsibility for the catastrophe exacerbated the perception of irresponsible leadership in the mining industry.

The mining industry has a history of collective bargaining and unionisation, especially in emerging economies, often accompanied by hostile conflict. One example is the Marikana Massacre in South Africa, which left 34 employees dead and 78 wounded when negotiations on demands such as living wages, worker safety and health, community contribution, and

concerns over disrespectful and antagonistic leaders boiled over in violent conflict (Chinguno, 2013). Although, the mining entity “attempted to absolve itself of responsibility” (Alexander, 2013, p. 608), there exists a view that “the massacre could have been avoided if Lonmin’s management had listened to the workers’ concerns”, giving rise to the plea that “mining bosses must start learning to understand the workers and to treat them as important stakeholders and not just employees” (Seoka, 2012, p. 1).

Mining in emerging economies often happens in remote areas, populated by rural and indigenous communities. The International Labour Organisation (ILO) Convention No 169 makes specific reference to indigenous and tribal peoples’ right to participate in the use, management and conservation of natural resources about their lands (Marchegiani *et al.*, 2020). These rights include benefit-sharing from the proceeds of these resources and operations. However, mining often has detrimental effects on rural communities due to its destructive nature on the ecosystems that sustain them (Goodland, 2012). Gilberthorpe and Banks (2012) found that a gold mine in Papua New Guinea placed a greater emphasis on performance requirements rather than focusing on social context, resulting in inequality, fragmentation, and socio-economic insecurity. From studying several mining communities in South Africa, Manson (2013, p. 422) concluded:

sharing the benefits of mining with local communities through their ‘Traditional Authorities’, through royalties, shares or employment, is at best precarious and at worst disastrous. Every ethnic group holding mineral assets in the platinum mining fields of the Province has experienced some form of economic or political turmoil.

Community-related conflicts can result in substantial losses for mining entities. (Davis & Franks, 2014) estimated that if disputes stall the consultation process, it can typically incur losses of around US \$20 million per week of delayed production. It is thus not surprising that the number of conflicts between mining companies and communities increased fourfold since 2002 (ICMM, 2015). Some of the primary reasons include lack of consultation, abuse of corporate power, and the use of force. Whitmore (2006) lists several examples of how mining houses abused the rights of communities. He claims that leaders often strategically choose non-governmental organisations (NGOs), who supposedly represent civil society, and speak on behalf of communities, but who are not informed, and do not necessarily endorse agreements as per their supposed representatives. Similarly, Marchegiani *et al.*, (2020) found that although local communities in Argentina were consulted and gave consent for mining projects, concerns were raised regarding the reliability and selective framing of information provided in the consultation process. Local communities in Peru were concerned about the impact of new mining projects on the water quality and the land used for farming (Maier *et al.*, 2014). However, their ensuing protests eventually led to the government criminalising social protests and exempting soldiers and police from criminal responsibility if they cause injuries or deaths

(Triscritti, 2012), prompting several ethical and human rights concerns. As a solution, Patzer *et al.*, (2018) propose an environment where discussions are not based on financial facts alone, but include societal sentiments, needs, and sustainability. This approach requires responsible leaders who can facilitate honest discussions toward shared values that both the corporation and the community want to endorse.

Responsible leadership

RL can be viewed as a multilevel response, from shortcomings in existing leadership frameworks and theories to high-profile business scandals and emerging challenges in the business world (Pless & Maak, 2011). Corporations are no longer measured against their ability to generate profits alone but are also assessed according to their ability to ensure the sustainability of the natural environment and their contribution to the greater wellbeing of society (Pless *et al.*, 2021). The long-term success of any firm is therefore dependent on the ability of the firm’s leaders to establish and foster functional relationships with impacted stakeholders (Maak & Pless, 2006), who can withdraw an entity’s “license to operate” at any time (Freeman, 2004). As the demand for responsible and accountable leadership increased, the research field of RL started to take shape (Miska & Mendenhall, 2018).

Maak and Pless (2006) defined RL based on a company’s accountability to shareholders for financial performance and to stakeholders who may be impacted by the company on an economic, environmental or societal level. Waldman and Siegel (2008) emphasised meeting non-financial stakeholders’ needs, even if the financial benefit to the firm is minimal, while Stahl and De Luque (2014) reason that RL is dependent on situational or systemic factors. Responsible leaders embody altruistic characteristics and are likely to partake in societal welfare activities and make decisions that avoid harmful consequences for all stakeholders (Maak & Pless, 2006; Maak & Pless, 2009). Responsible leaders consider the consequences of their decisions on all impacted stakeholders (Voegtlin, 2011), also in challenging leadership situations (Waldman *et al.*, 2020). Stahl and De Luque (2014) emphasise two integral components of RL, namely ‘avoiding harm’, which refers to complying with regulatory requirements and ‘doing good’, which entails activities beyond what is required by legislation.

Responsible mining leadership challenges in emerging economies

When a mining project is seen as “having the broad, ongoing approval and acceptance of society to conduct its activities”, it will obtain a social license to operate from society (Prno & Slocombe, 2012, p. 346). Similarly, Jenkins and Yakovleva (2006) called for social responsibility by mining companies to restore their tarnished public opinion and legitimacy, to obtain a social ‘license to operate’ and prevent social uprisings and resistance. However, responsible mining attempts often stop at corporations allocating some of their profits for philanthropic causes rather than fundamentally redesigning production processes to minimise impacts on employees, the environment or communities (Broad, 2014). This passivity represents an

RL failure rather than responsible mining or CSR failure. Goodland (2012) called for responsible mining principles such as transparency and social and environmental assessment to ensure acceptance by stakeholders. Indeed, mining stakeholders demand community participation in decision-making and commitment to sustainable development (Prno & Slocombe, 2012). Institutional investors react positively to the demonstration of environmental and social responsibility by leaders (Flammer, 2013). However, leaders face significant challenges in balancing moral principles, cultural differences, and different developmental standards “in an interconnected and multicultural global stakeholder society, moral dilemmas are almost inevitable” (Maak, 2007, p. 330).

Although there is much research available on responsible mining (Broad, 2014), existing literature does not sufficiently address leadership as an individual-level construct concerning the concept and requirements of social responsibility (Waldman *et al.*, 2020). RL require mine managers to constantly make trade-off decisions. For instance, there is a potential conflict between the demands of communities and an obligation to mine in a way that promotes safety and protects the environment, with the business need generate to short-term profits (Jenkins, 2004). Although research on RL has been conducted predominantly in the highly developed Western economies (Marques *et al.*, 2018), leaders in different national systems are likely to encounter diverse RL-related pressures (Aguilera *et al.*, 2007). Responsibility requirements for mining leaders in developed economies are likely to differ from those for mining leaders in emerging economies.

Contextual differences are likely to have significant implications on responsible decision-making since it influences the leader’s perception of the legitimacy of certain constituents to the firm and their propensity to consider them as priorities (Stahl & De Luque, 2014). The contribution of mining to the GDP of several emerging economies is typically more than 80% higher than in developed economies (ICMM, 2016; United Nations, 2019). Mining accounts for more than 25% of total exports in 41 countries, 38 of which represent emerging economies. The relative size of mining revenues in mineral-rich emerging economies makes it an attractive business prospect and often leads to increased ethical risks in terms of obtaining mining rights (Søreide, 2009). Mining leaders might experience more pressure toward unethical and irresponsible leadership behaviour. The phenomenon of the “resource curse” (Kolstad & Søreide, 2009) is common in emerging economies, meaning that resource wealth fails to translate into economic performance. Mining in emerging economies tends to be associated with imbalanced wealth distribution toward those in power, at the expense of the environment, communities and employees (Maier *et al.*, 2014).

The stakeholder context in emerging economies presents notable differences from that of developed economies. For instance, in South Africa and India, the two emerging economies with the largest mining production volumes, mining

union membership is around 80% in both countries (Bhorat *et al.*, 2014; Pal, 2008). In contrast, only 5% of mining employees are affiliated with unions in the USA (U.S. Bureau of Labor Statistics, 2021), and 18% in Australia (Gilfillan & McGann, 2018), the two developed economies with the largest mining production values (ICMM, 2016). Responsible leaders in emerging economies are thus likely to face unique employer-employee relationship dynamics from employee stakeholder groups.

Four of the five largest global mining houses, based on earnings, are multinational enterprises with footprints in both developed and emerging economies (Statista, 2021). Some of the difficult ethical choices their leaders often need to make pertaining to the enforcement of safety, health, and environmental (SHE) standards. International laws do not govern SHE standards; it depends on the regulations of national governments and are typically lower in emerging economies (Massachusetts Institute of Technology [MIT], 2016). Multinational entities can either enforce stringent standards consistently across all operations or conform only to the minimum requirements of a host country. Higher levels of SHE controls are typically associated with increased costs. The pressure on leaders to produce short-term profits is likely to tempt leaders to merely conform to the lower standards with an adverse effect on SHE.

Sustainable business success depends on the ability of leaders to establish successful stakeholder relationships (Maak & Pless, 2006) and a growing group of institutional investors are reluctant to hold shares in entities that are not deemed socially responsible (Waldman & Siegel, 2008). RL is an outcome of both individual characteristics and specific contextual factors (Stahl & De Luque, 2014). Notable different contextual factors exist between emerging and developed economies where mining is practised (Kolstad & Søreide, 2009; MIT, 2016) and these pressures are likely to impact RL behaviours and outcomes significantly. It is thus important to study the realities and dilemmas of responsible leadership in the mining industry in emerging countries to understand how leaders can resolve the prevalent moral dilemmas (Pless *et al.*, 2021).

Methods

Ethical statement

Ethical clearance to conduct this study was reviewed and granted by the Research Ethics Committee: Social, Behavioural and Education Research of Stellenbosch University (Project No: 17139). Written informed consent was obtained from participants prior to the study.

Setting and data collection

The research was conducted in South Africa, the country that globally worked the most mining hours in 2020 (ICMM, 2021), as an archetypal emerging economy. An interpretivism paradigm (Creswell, 2014) was followed to gain a deeper understanding of RL in this context. Data was collected using semi-structured interviews with operations managers from international mining houses operating also in South Africa. Waldman (2020) suggested that leaders at the operational level

should be studied when assessing RL accountability. In the mining industry, the operations manager is typically the most senior operational leader who assumes responsibility for the broadest range of stakeholders and engages with stakeholders. The sample was identified through purposive sampling, and all participants were required to be operations managers who have had prior experience at international mining houses with a footprint in emerging economies. The participants were selected to represent different operations, preferably with experience in more than one mining operation. Although 12 participants were identified for the study, only nine participants made themselves available for the interviews.

The structured interviews were conducted from August to October 2020, and were guided by 18 open-ended questions to stimulate the disclosure of essential, but often hidden, elements of human behaviour (Qu & Dumay, 2011). The questions were developed from the specific contextual considerations explicated in the literature review. Through the literature discussion, shareholders, employees/unions, the environment, and communities emerged as prominent stakeholders in the mining industry. The interview schedule was developed to incorporate questions related to the importance of these stakeholders. Specific contextual considerations within mining in emerging economies that also emerged through the literature review, including the prominence of organised labour, the role of regulators or government, and the part played by environmental activist groups, were also considered in compiling the interview schedule. The questions in the interview schedule were designed to address the leader's interaction with all the most prominent stakeholder groups, and also sought to understand the influence of some of the most apparent contextual influences in emerging economies. Follow-up questions were used to clarify responses or to further explore responses where necessary (Table 3). All interviews were conducted in English.

Despite the reduced sample size of nine interviews, data sufficiency (LaDonna *et al.*, 2021) emerged from the seventh interview, providing sufficient information power for the breadth of this study (Malterud *et al.*, 2016). Interviews were conducted over Zoom.us or Microsoft Teams, recorded and transcribed *verbatim*. The data generated were analysed using thematic analysis (Clarke & Braun, 2013).

The trustworthiness was enhanced by following a systematic approach in conducting the study (Saldaña, 2011) and doing the thematic analysis, using Atlas.ti software. As a publicly accessible alternative, QualCoder is a freely accessible software which reportedly can perform the same function for this study's analysis. Conducting research within a qualitative paradigm implies that meaning is interpreted within a particular context. The researcher who conducted the interviews and was responsible for the primary data analyses had 10 years of leadership experience within the mining industry in South Africa and was deeply familiar with the environment. To ensure the standpoint of the researcher is objective, yet responsive to the engagement with the data collected (Clarke *et al.*, 2015), the

researcher who conducted the interviews practised self-reflection and continuously scrutinised his thinking through continuous journaling to enhance the integrity of the study (Elo *et al.*, 2014). A code-decode strategy was employed (Vaughn & Turner, 2016) to enhance the trustworthiness of the analyses and enhance the trustworthiness of the study, the "likelihood that it will present the same results if someone else were to repeat the study" (Groossoehme, 2014, p. 111). The code-decode process involved coding the data twice, with a period of two weeks between coding sessions. Comparative results suggested that the data was coded dependably. The final step was that the second researcher reviewed the coding process and analyses independently and made suggestions where applicable.

Results

Sample description

Eight of the participants were men and one was a woman. They ranged from 36 to 65 years of age, with an average of five years' experience in the role of operations manager. Eight of the participants had experience in more than one mining operation. Participants represented operations managers from two large international mining houses. The commodities mined at the participants' mines included coal, manganese, gold, platinum, chrome, and diamonds.

Overview of research findings

The thematic analysis of the interview transcriptions after all interviews were completed rendered five themes and 12 sub-themes (Table 1).

The themes and sub-themes are discussed in the following sections. To ensure anonymity of participants and confidentiality of their contributions, participants were randomly allocated a number. Respective *verbatim* quotes are referenced according to the respective participant's number (e.g., P1).

Theme 1: There is a drive for responsible leadership in the mining industry, but achieving it is challenging

Sub-theme 1: Moving beyond compliance is challenging

Several participants emphasised their drive to act responsibly, with responsibility surpassing mere compliance with regulations. A compliance-oriented approach was viewed as self-seeking behaviour to avoid legal persecution:

"If ... something is the right thing to do and hence you do it, then it would make you a responsible leader. But if you're doing it just to be compliant, I don't know if you're a responsible leader then, or just a compliant leader." (P2)

"The responsible narrative says I want to go beyond compliance. And I not only want to prevent aspects of pollution, but I want to think proactively about how I return the land to a sustainable form of use... ... that kind of thinking is better because it transcends compliance." (P3)

Participants affirmed that responsible leaders must assume responsibility for their impact on the health and safety of

Table 1. Themes and subthemes derived from the interview transcriptions.

Theme	Subtheme description
Theme 1: There is a drive for RL in the mining industry, but achieving it is challenging	<ol style="list-style-type: none"> 1. Moving beyond compliance is challenging 2. Responsibility demands balancing personal interests and the need for short-term organisational profits, with long-term sustainability and stakeholder interests
Theme 2: Responsibility towards employees and employee representatives is important, but complex	<ol style="list-style-type: none"> 1. Historical legacies still compromise employee health and safety 2. Requirements to ensure safety, while there are urgent productivity and profitability issues are conflicting 3. The paradoxical need to optimise labour costs and societal need for employment presents a dilemma 4. Healthy relationships with labour unions represent complex paradoxes and dilemmas
Theme 3: Responsibility towards communities is important, but complex	<ol style="list-style-type: none"> 1. The prominence and influence of local communities present significant challenges 2. Paradoxical misalignment between community requirements and legislation creates conflicting demands 3. Responsibility towards local employment and upskilling is complex and precarious 4. Discerning underlying motives when dealing with communities is complex
Theme 4: Environmentally sustainable mining presents paradoxical and complex leadership requirements	<ol style="list-style-type: none"> 1. Long-term responsible mining and short-term business survival present paradoxical requirements 2. Environmentally sustainable mining is at the mercy of the paradoxical relationship between short-term profit-making and satisfying environmental pressure groups
Theme 5: Resulting from the complex set of paradoxes and dilemmas, stringent leadership competencies are required to act responsibly.	

people beyond the operation. For example, mining characteristically requires large quantities of material to be moved, with unavoidable environmental and safety impacts. This condition present leaders with responsibility challenges:

“the impact that that [thousands of trucks] have on the roads ... Is that the most responsible way to move your product?” (P6)

“there was a truck which was delivering material to the mine. So, while it was parked outside the gate, the operator was run over... he may not have been under your direct control, but the fact that he was just outside the boundary does not make you not responsible.” (P1)

The emerging view was that responsible mining leaders need to assume responsibility beyond the direct boundaries of the operations that they are leading. This perspective suggests a mindset of ownership and responsibility for areas where the operation can have an impact on stakeholders. The findings contradict Pedersen’s (2010, p. 160) finding that “very few managers think that responsibility means going beyond legal requirements”.

Sub-theme 2: Responsibility demands balancing personal interests and the need for short-term organisational profits, with long-term sustainability and stakeholder interests

Participants consistently noted that responsibility require prioritising the interests of both the operation and its stakeholders

above personal interests. They reasoned that self-serving approaches are detrimental, not only to the internal and external stakeholders, but also to longer-term business sustainability. Four participants noted instances where leaders acted irresponsibly due to short term incentives, leaving successors with safety risks and impairing the mine’s ongoing profitability after they left:

“leadership failures ... would have been the way people acted out of self-interest and made decisions that were not necessarily the best decisions for the greater good ... and if there’s a strong incentive for people to make short-term decisions that destroys value in the medium or longer-term, then very often people would do that.” (P5)

“leaders are currently short-sighted because of career progression or what the market looks like or from a business perspective.” (P9).

A critical RL dilemma emerged between prioritising short-term profits to ensure cash flow and business continuity, against the need to ensure long-term business sustainability through adhering to responsible practices and considering stakeholder priorities in a responsible manner. Participants felt that incentive systems typically favoured a short-term perspective rather than a longer-term responsibility perspective.

Responsibility requires willingness considering both the company’s short-term needs when dealing with stakeholders and

the ability to empathise with stakeholder' issues. Several participants noted the importance, yet challenges of caring and empathising with stakeholders:

“Empathy suggests that I want to understand the other party's perspective from another view, from their perspective, to better augment my view of the world.” (P3)

“as long as you all your conversations happen from the true context that I care, ... then you don't have issues with unions” (P6)

Participants accentuated the importance of senior leaders modelling behaviours, such as listening and engaging with intent, so that frontline leaders can replicate it. These observations confirm that RL is “rooted in an ethics of care driven by a desire to serve others” (Pless, 2007, p. 450) and that collective problem solving, and successful collaboration depended amongst others on leaders “valuing the positions of others” (Voegtlin, 2016, p. 600).

Engaging with stakeholders is essential but requires much time investment from leaders. Participants emphasised that responsible leaders need to prioritise and balance the time and effort they spend on different stakeholders to be successful:

“Because I had taken a view to building relationships with them [external stakeholders], I found myself and my management team spending a massive amount of effort to keep their content ... I'm taking away time to do the things that management requires” (P3)

These observations emphasise leaders' responsibility to assemble competent and multiskilled teams, empowering them sufficiently to deal appropriately with stakeholders.

Theme 2: The importance of responsibility towards employees and employee representatives

Sub-theme 1: Historical legacies still compromise employee health and safety

Most participants noted how historical legacies and their resultant cultures could be detrimental to safety and health. For instance, apartheid legacies in South Africa and traditionally autocratic cultures adversely influence safety:

“Our people that don't speak up much ... I don't know if that is a legacy of our political [apartheid] past, but largely people would not like to challenge authority. A valid question is still seen as challenging authority” (P2)

“Mining has a lot of risks, and in managing those risks, you must take a fairly militaristic view of safety ... you then see why leadership in mining is predominantly an autocratic and militaristic” (P3)

Detrimental organisational culture elements can lead to an environment where employees are instructed to do work

that is unsafe or work in an environment that is intrinsically unsafe, without the capacity to voice safety concerns:

“Unfortunately, ... leaders don't know what's going on because people don't let them know what's going on.” (P6)

“There is a fairly strong culture of being told what to do.” (P5)

To combat prevalent legacies and constrictive organisational culture, leaders must create an environment where employees feel free to speak up when they feel that they are being put at risk. Mere engagement with workers is not enough (Lamm & Lips-Wiersma, 2018), leaders need the ability to create an environment where all stakeholders are willing and able to speak openly. However, most participants did not feel that leaders in the industry have managed to establish such workplace cultures. Most participants reflected on instances where leaders didn't model the appropriate organisational culture, perpetually displaying destructive behaviours and had to be removed:

“I don't think we are at a point where people are completely comfortable to do that [speak up], there is a lot of victimization still within the industry.” (P9)

Paradoxically, dismissing leaders also brought about business challenges, as some of these individuals' performances were high performers in other aspects. This observation confirms a necessity for leaders to understand the present culture before attempting to change or influence it (Warrick, 2017). The influence of historical legacies on organisational culture and safe work practices is arguably more significant in emerging economies, many of which experienced tumultuous and colonial pasts.

Sub-theme 2: Requirements to ensure safety, while there are urgent productivity and profitability issues are conflicting

All participants expressed unwavering commitment to the safety and health of employees as a non-negotiable responsibility and lamented the fatal accidents in their mines. However, the challenges are more complex than they appear at first glance. In a resource-scarce environment, mining leaders are challenged by the conflicting requirements of ensuring employee safety and urgent priorities to improve productivity to sustain operations:

“making the trade-offs between affordability and risk in a capital-scarce environment. A practical example is putting up a working-at-heights platform as a permanent installation versus getting employees to climb on top of machines with a fall-restraint harness.” (P5)

“there's no one way to a solution ... you always have to make sure that when your health and safety concerns are met, you also ensure the balance in terms of achieving the bottom line.” (P1)

Operations leaders are continuously presented with a spectrum of choices about safety controls or practices, which often have a dichotomous or conflicting relationship with profitability. Participants refer to this dilemma as a 'hierarchy of controls'. Participants noted their continual challenge of what basis of reasoning to apply when deciding what level of risk is acceptable. Not all situations and eventualities are covered by legislation, and legislation outlines only minimum requirements.

Sub-theme 3: The paradoxical need to optimise labour costs and societal employment needs presents a dilemma

Participants emphasised balancing business' demand to reduce labour costs, optimise productivity whilst improving safety as one of their most pressing ethical dilemmas. By 2019, almost half of the South African adult population were living below the upper-bound poverty line (Statistics South Africa, 2019). These conditions led to an increased demand for employment, especially in mining, which was traditionally labour intensive and one of the biggest employers nationally. There are high expectations and pressure from communities on mines to address employment problems:

“when people see any mine, and it doesn't matter how big, small, or what they are mining, they think there are endless amounts of money.” (P7)

“you have to think very carefully, and especially when you're interacting with them [community representatives] because there are huge expectations ... And according to them, you're making billions of Rands.” (P6)

As senior leaders in international mining houses, participants explained how they must balance their mandates as business representatives and their socio-economic responsibilities as they are operating in an emerging economy with specific social needs and requirements. Developed economies typically implement automation and mechanisation to reduce safety risk and labour cost when mining, whilst improving safety. However, this approach will have devastating impacts on unemployment in emerging economies, resulting in dire socio-economic circumstances in the communities around the mines. Mining leaders in emerging economies need to balance these conflicting priorities.:

“mines are moving towards a much more automated mining environment. Firstly, for safety, to keep people away from the danger of being at the face, but secondly, as well, to save money.” (P7)

“We operate in a capitalist society, so, you are there to represent the business, and the onus is on you to keep labour costs as low as possible. But you can't help but drive past a poor settlement and see hordes of unemployed people and wish that you could just give them all a job, even if it's just unproductive and shovelling dirt onto a conveyor or something.” (P2)

Mining leaders face much pressure from communities to employ large numbers of local people. However, mining is globally moving toward greater levels of automation, which brings

about substantial cost and safety benefits (Rogers *et al.*, 2019). These paradoxical requirements present significant challenges to emerging economies in a competitive global industry. Emerging economies have higher levels of unemployment (United Nations, 2019). Therefore, societal pressures and expectations on mines, as notable employers within local economies, are higher than in developed economies (Maier *et al.*, 2014). Neglecting the socio-economic context and employment needs in the societies around the mine leads to employees and communities feeling exploited. This often led to protests and labour strikes against that operation and puts its social license to practice at the risk.

Sub-theme 4: Healthy relationships with labour unions represent complex paradoxes and dilemmas

With a labour union membership density higher than 80% in the South African mining industry (Bhorat *et al.*, 2014), labour unions are prominent stakeholders. Labour unions function as representatives of employees while functioning within a broader national structure. Ineffective dealings and relationships with labour unions often lead to severe conflict. Most participants reflected on the importance of developing and maintaining constructive and healthy relationships with labour unions:

“Initially, they [unions] were a pain insofar as progress was concerned. Later I realised that if I looked at them differently, I might be able to reduce the amount of anguish and difficulty they cause. And I embraced a stakeholder view that said they are as much as a stakeholder as a community member, as much a stakeholder as the DMRE [Department of Mineral Resources and Energy], and that I would include them in the conversations upfront.” (P3)

“I always seek to treat them [unions] as allies, find common ground, find ways of connecting the success of the business to the success of the union organization and ultimately to the success of them as individual leaders. And if you treat folks with respect and integrity, probably 95 per cent of the time you get to reciprocity.” (P5)

These views corroborate the importance for responsible leaders to be able to build relationships with constituents to leverage social capital for the organisation (Maak & Pless, 2006; Pless & Maak, 2011). However, maintain healthy relationships with labour unions can present a paradoxical dilemma in the face of other business requirements. Most participants reflected on the importance of a leader's ability to make business decisions that might be unpopular with the labour unions. In this context, leaders must respect and protect the relationship with the union to build inter-connections that are experienced as reciprocal and not only to benefit the operation:

“you can't go with a philosophy that says I will get everything that I want all the time. Because then there's a partner that always feels like I'm not winning, I'm always on the losing side. There are certain things that you probably will need to give up.” (P1)

“It's a give-and-take relationship. You get beaten if it's only a take relationship.” (P8)

Participants highlighted the importance of balancing operational sustainability and protecting the cost base, with ensuring that the unions feel their members are fairly treated and compensated. Failure to find a balance leads to detrimental consequences for both parties, including the destruction of shareholder value as a result of industrial action. Relationships with both unions and employees need to be developed and maintained in a healthy proportion to avoid resistance and ensure sustainable relationships.

Labour unions drive collective negotiations and communication through them as the official representatives of employees. However, participants emphasised that although they need to respect this role of unions, unions should not replace direct engagement with employees. The relationships with labour unions needed to be balanced with engaging relationships with one's workforce:

“the one thing that you shouldn't do is expect the unions to give feedback to your employees on your behalf because you never have an assurance that it will be done the right way with the necessary context. So, whenever you give feedback to the unions, there needs to be feedback to the employees as well.” (P9)

These reflections highlight the potentially paradoxical, and often conflicting, requirements of the necessities for maintaining healthy relationships labour unions as well as employees, whilst with achieving financial business objectives.

Theme 3: The importance and complications of responsibility towards communities

Sub-theme 1: The increasing prominence and influence of local communities present significant challenges

Most participants felt that the prominence and influence of the community as a stakeholder has increased in the mining context as the socio-economic environment deteriorated. Communities are becoming more educated and aware of the broader legal responsibilities of mining operations and became better equipped to hold mining houses accountably to deliver on their responsibilities than before:

“Their level of understanding of mining rights and legal processes was very low, and that means that mining companies can get away with more ... it is [now] exactly the opposite. The coal mining communities have destabilised the natural way of working.” (P3)

Participants noted that the increased significance and influence of communities are placing new demands on senior leaders at mining operations, both in terms of the time spent on community engagements, as well as the complexity of situations that leaders must navigate. The ability or inability to lead community affairs effectively is having a more significant impact on the business outcomes than before. Indeed, integrative leadership with local communities is emerging as a critical requirement for leaders:

“over the five years, the community started playing a much more important role. At this stage, they regularly close our roads ... Mostly your mines are situated

in areas where poverty is for some reason very, very high. [You have] unemployment and all these things ... mines are being seen as one of the biggest economic drivers in the country.” (P7)

All participants had to deal with operational stoppages due to community protests, either directly at their operations or due to protests on access roads to their operations. Although the severity of the situations varied, they often led to hostility, tension and violent conflict. This stakeholder dynamic challenges mining leaders in unprecedented ways in their striving to act responsibly:

“if a group [community] wants to engage, and they follow the right processes, it might take up to two or three weeks to get a session for an engagement, because the approval process for us to engage goes up to the Vice President ... community has noted if they come to the mine to block your gate, then they force you to engage on the day.” (P9)

“You'd think a General Manager is here to look after the mine, but you are here to be a community liaison. We spend more time trying to keep the gates open with the communities than we are busy with the technical mining stuff.” (P7)

The increasing levels of poverty and desperation in many mining communities in emerging economies resulted in increased tension with a high potential for escalation if not dealt with effectively. Participants experienced that complex community-related situations place immense psychological and time demands on them. The facilitating this complexity is essential for reaching sustainable agreements and solutions.

Sub-theme 2: Paradoxical misalignment between community requirements and legislation creates conflicting demands

According to all participants, there are two main demands from local communities: 1) employment and 2) business opportunities in the form of local sourcing. To improve the socio-economic conditions of mining communities in this emerging economy, the South African government compel mining entities to submit and execute a Social and Labour Plan (SLP) to obtain mining rights. The intention is to ensure that the proceeds of extraction also benefit the local communities. Participants noted that notwithstanding this obligation on mining houses, or perhaps because thereof, community expectations led to intensifying levels of discontent and protests. Participants experienced misalignment between community expectations and requirements of SLPs as significant causes of frustration for communities. For instance, an over-emphasis on infrastructure development in SLPs does not directly address communities' employment expectations:

“we build clinics there, and we build schools there ... But at the end of the day, they [communities] want a salary, and they want money. And it's understandable. I mean, these guys have no work” (P6)

“we said let's create local economic development opportunities. But then when we went to the DMRE

they said no, we want you to focus on infrastructure, they started using the SLP budgets to build and erect their infrastructure. So currently our whole SLP is on roads, it's on electricity, and it's on water... and when they are done, the people have got a nice road, but they still don't have jobs." (P7)

The misalignment between SLPs and communities' need for employment puts operations managers in a compromised position. Operations managers need to face communities and answer their concerns, sometimes in very tense situations. However, they are not at liberty to spend community investments in ways that will be most beneficial to local communities:

"you work with the municipalities to see what is in their long-term plans. What the municipality has in their plans isn't necessarily the same as the needs of the smaller communities ... it's frequently disconnected and very farfetched compared to what the community wants" (P9)

The misalignment between the government's and communities' requirements presents a performance paradox – different stakeholders having opposing demands (Smith & Lewis, 2011). Participants had to deal with such paradoxical requirements in ways that take the needs of all parties sufficiently into account. Some participants attempted to facilitate complex conversations between the different parties to create acceptable outcomes for both the regulator and communities, but it was not always possible. The paradoxical misalignment between community requirements and legislation is arguably more significant in emerging economies due to communities' relative poverty, compared to more affluent communities in developed economies.

Sub-theme 3: Responsibility towards local employment and upskilling is complex and precarious

Participants noted local communities' significant resistance against mining operations practice of employing workers from other regions. This practice often occurs when there is a lack of appropriate skills and competencies in local communities, especially for urgent or short-term requirements, such as opening new mines. Skilled workers must then be brought in from elsewhere to ensure safe and productive operations. Although the lack of available skills in local communities can be addressed through appropriate training and development, it comes at a cost in an industry that is cash-constrained:

"When we moved to Town X, we started up this mine in a community which was not a mining community. Your dilemma is that you do not have a labour pool to support you ... If you bring most of the workers from the outside that have got mining experience ... in the first week or the first month, they are producing results. Whereas if I take the locals now before I can get them producing, they first need to spend three months in the training centre." (P1)

Participants described the balance between local employment, coupled with development and skills upliftment as a dichotomy.

They have a mandate to uplift and develop local communities, but there are simultaneous requirements to reach levels of production, not only to shareholder value within a reasonable timeframe, but also to ensure continued employment.

Sub-theme 4: Discerning underlying motives when dealing with communities are complex

The desperate economic position of local communities stimulates the potential for exploitation. Participants experienced that some individuals with self-serving agendas pretend to be legitimate stakeholders representing the community but are only interested in personal gain.

"And that's these businessmen if I can call them that, that come in there, they see an opportunity. They know they can use the community to influence the decision of the mine to turn business their way. And physically, you need to know those stakeholders." (P6).

Participants had to have the ability to discern the intentions of opportunity-seeking individuals who do not represent the groups they claim to represent. Failure to do so would lead to spending that was misaligned with the community's needs. Even with the best intentions by the leader, it could deteriorate relationships with legitimate stakeholders:

"[you need to] understand why people are doing what they what they are doing, and whether it's for personal gain or whether they are there to support the community and to look at what the gain for the community will be" (P9).

Participants noted they had to have the ability to engage extensively with such individuals before pursuing a specific course of action. Mining leaders need to improve the effectiveness of their engagement with communities to end up with social responsibility strategies that are truly meaningful and impactful (Gilberthorpe & Banks, 2012):

"you always need to have a relationship with community leaders. And if you don't, you always find that they will do quite a few things to get your attention, which includes blocking access to the mine and marching to your site" (P1)

"You need to make time to hear the people's [communities'] frustrations. So, I made time, and when we committed to give them feedback, we did that... ... think it is important to sympathize or understand what their frustrations or needs are, to understand what they want." (P8)

These observations confirm the importance of leaders to be willing and able to build relationships through effective engagements with stakeholders, including communities. Per the findings by (Voegtlin, 2016), participants experienced this relationship-building and engagement process to be time-consuming, yet particularly important in building stakeholder social capital for long-term success (Maak, 2007).

Theme 4: Environmentally sustainable mining presents paradoxical and complex leadership requirements

Sub-theme 1: Long-term responsible mining and short-term business survival present paradoxical requirements

A responsibility consideration mentioned most by participants deals with how resources are mined. The grade of the ore varies in different layers or regions within mining areas, and mines often choose to mine only the high-grade ore bodies because of profitability yield. However, in doing so they sterilise the rest of the lower grade material. This practice has both environmental and economic sustainability implications:

“A company will come and extract all the high-grade deposits and then leave that area and move to the next high-grade deposit, which is not sustainable mining because everything else that's left behind has been sterilised.” (P1)

“the profitability of a resource diminishes over time to the point where there's then a marginal portion of resource which is no longer economically viable, but it's because the cream of the resources has been mined ... You could have maybe stretched the life of the mine for much longer if you mine the full resource, but we don't.” (P2)

Participants were confronted with trade-off decisions between short-term profitability to stay in business as opposed to exploiting the full economic potential the resource has to offer if it is mined responsibly:

“what is the longest we can exploit the resource and not make the most money in the shortest time? ... Some leaders will want cash, and the others will push the life of mine.” (P8)

“Leaving good quality ore for some point in the future is of no value to the actual valuation of the business, compared to turning it into cash today.” (P2)

Participants noted that these environmental considerations were not overtly visible to stakeholders outside of a mining operation. However, leaving lower-quality ore bodies could have a vastly different outcome regarding beneficial operations, versus its full potential to provide economic benefits to society and reduce the environmental footprint of mining in other places. These findings suggest that a main driver behind environmental RL decisions in the emerging economy context, still emanates from the ultimate objective of maximizing shareholder returns or minimizing shareholder losses. Institutional investors within mining tend to react positively to environmental responsibility (Flammer, 2013). However, if reputation is the primary motivation on the part of firms, this motivation can be seen as self-serving, self-focused, and perhaps less responsible.

Sub-theme 2: Environmentally sustainable mining is at the mercy of the paradoxical relationship between short-term profit-making and satisfying environmental pressure groups

Participants regarded increased societal awareness of environmental consequences and its related reputational risks as the

biggest drivers of pro-environmental decisions made by mining companies, rather than environmental conscientiousness. Participants did not advocate this perspective, but shared it as reflections of their experiences with the drivers for environmentally responsible mining:

“NGOs are pushing companies to operate more sustainably. And normally, these kinds of pushes results in litigation, litigation results in a finding, a finding results in a fine, and a fine result in a change in the law ... So, I see organizations moving based on punitive measures that affect their priority, which is economic.” (P3)

It seems that mining might appear to be more sustainable, but only due to the indirect risk that irresponsible mining practices may pose to reputation and eventually the business's financial position. Similarly, almost all participants experience unfair (and irresponsible) competition from smaller mining companies, which are less exposed to broad-based public shareholder scrutiny, are guilty of greater irresponsibility towards the environment than their higher profiled peers:

“smaller organisations get away with those kinds of [irresponsible] practices. The big organisations are at the mercy of more scrutiny and the smaller organisations kind of get the wheeling and dealing out of things.” (P3).

“there are small operators that are in there to make a quick buck and would neglect their duties from a rehabilitation point of view.” (P5)

“At the same time, you've got smaller operations that could go in these days, there's barely a fence, but they are already loading coal and trucking it up.” (P9)

The lower attention to sustainable environmental mining practices by smaller mining operators, increases the profit competition in the industry, which puts environmental responsibility by all mining practices under pressure. This situation is likely to be more acute in emerging economies due to lower legislation and control, presenting significant long-term sustainability concerns.

Theme 5: Resulting from the complex set of paradoxes and dilemmas, stringent leadership competencies are required.

The complex set of paradoxes and dilemmas discussed require unique attributes from responsible mining leaders. Much of the paradoxes occur as the leader is confronted with the requirement to maximise stakeholder, but at the same time must fulfil the business mandate to make tough decisions that enable the operation to continue as a going concern over the longer term. Ten stringent competencies emerged that are required for responsible mining leaders in an emerging economy (Table 2).

Table 2 indicates require a wide range of considerable leadership competencies for leaders to act responsibly within a high degree of relational complexity. These competencies require an ability to work effectively within paradoxical complexity

Table 2. Competencies required of responsible leaders in mining.

Competency	Description
Integrator	An agent that leads and influences various stakeholder relationships through effective engagement and negotiation
Emotionally intelligent and discerning	Navigating the significant relational complexity requires responsible leaders to be emotionally intelligent, with an ability to discern true motives
Selflessness	Responsibility requires that a leader does not prioritise personal interest at the expense of operations or stakeholders
Compassionate	Displaying genuine empathy and care through active listening and understanding of each stakeholders' specific needs and concerns
Flexible strategist	Continuously balance the short-term requirements for profit and financial return with the long-term health and sustainability of their operations.
Courageous beyond compliance	Driven by an innate desire to improve the well-being of all stakeholders and improve the well-being of society as a whole, beyond compliance requirements, yet able to make hard and unpopular decisions
Role model	Modelling behaviours to build a transparent and open culture, and build a team of responsible leaders who engage in relationship-building with stakeholders at various levels
Resilience	Leaders who can recover from setbacks through personal reflection and learning.
Adaptability	Ability to adjust their thoughts and behaviours to enact appropriate responses to novel, yet, ill-defined, changing and evolving situations
Wisdom	Leaders who can make the right decisions amid tense situations and high levels of pressure, with the ability to resolve

and with paradoxes and dilemmas. As Voegtlin (2016) noted, responsible leaders “require cognitive, relational, and behavioural capacities” to “deal successfully with the relational complexity that comes with extended stakeholder engagement”. However, the participants indicated that mining leaders are not purposefully developed and equipped for the level of relational complexity encountered in dealing with various external stakeholders. Understanding of stakeholder paradoxes and dilemmas is largely neglected or omitted from leadership developmental programmes.

Discussion

This study provides insight into prevalent paradoxes and dilemmas RL in emerging economies and how they can be resolved, as called for by Pless *et al.*, (2021). The requirements on mining leaders in emerging economies to be responsible and work effectively with all the stakeholders, puts tremendous pressure on them. They need to consistently balance a complex set of competing risks that operations and employees are exposed to, whilst attending to paradoxical requirements of operations, internal and external stakeholders. Responsible leaders consistently must make difficult trade-off decisions to prioritise and balance both short-term gains as well as a longer-term sustainable performance. At the same time, leaders face several competing requirements from stakeholders, the environment, mining practices, and time frames. Responsible leaders must navigate a paradoxical maze of needs and time horizons, with several conflicting forces and dilemmas, and dichotomous relationships with one another. Although these paradoxes and dilemmas are somewhat inherent to the mining industry, they

are specifically ferocious and acute in the context of emerging economies due to the dire socio-economic situations and needs of emerging economies with a high dependency on mining activities.

Research confirms that entities that have embraced socially responsible practices focused on stakeholder value have even been found to financially outperform peers over longer time horizons (Korschun *et al.*, 2014). However, in most cases, mining leaders are not faced with a binary choice of one or the other but are presented with a spectrum of paradoxical options for which there are no clear answers. The findings indicate that RL represents unavoidable and significant realities when mining in an emerging economy. This onus on responsible leaders requires them to consistently search for, negotiate, and find a suitable balance somewhere on the continuum between extreme poles. The balance must be found within the confines of what their operational situation and stakeholders allow for and can digest over both the short and long terms.

By studying RL within the context of an emerging economy, this study contributes to filling the gap in the literature, as most existing studies were conducted in developed economies (Marques *et al.*, 2018). Improved understanding of the complexities of RL within the context of emerging economies is significant. The study provides unique insights into the challenges faced by responsible mining leaders in emerging economies. The findings provide specific insight into distinctive stakeholder dynamics within one of the most environmentally and socially disruptive industries (Peck & Sinding, 2003). These

Table 3. Interview schedule to obtain data from the participants.

Interview Question	Purpose of the question
1. Please provide a high-level overview of your career in the mining industry to this point?	Put the participant at ease by allowing the participant time to talk about content familiar to him/her. Verify that the participant conforms to the purposive sampling criteria (experience in more than one commodity)
2. How old are you? How many years of experience do you have as an operations manager?	For detail required regarding the sample composition.
3. What comes to your mind when you think of the term 'responsible leadership'?	Question directly related to the primary research objective, seeking to understand how this participant understands and views responsible leadership.
4. What do you feel is the most pressing responsibility issues in the mining industry currently?	Understand which issues leaders in different contexts highlights as important and prevalent.
5. Which stakeholders (both internal and external) would you deem to be most important in the mining industry?	Gain an understanding to which stakeholders the participant in a particular context makes reference to and deems important enough to call out from front-of-mind perceptions.
6. What are your biggest challenges related to employee safety at your operation? how can I bring the trade-off concept across better.HSE	Question related to the employees as one of the primary stakeholder groups, in reference to safety, one of the key responsibility issues discussed.
7. What are some of the most difficult decisions you were faced with in relation to employee health and safety in your career to this point?	Question aimed at understanding to what extent this leader incorporates employee safety in his/her decision-making process, specifically when the leader is confronted with conflicting stakeholder requirements.
8. To what extent do you think the mining industry fosters an environment where employees are comfortable to voice safety concerns to the leadership of the operation without fear of retribution?	Question related to the employees as one of the primary stakeholder groups, in reference to safety, and in reference to the Pike River coal mine disaster where the operational culture discouraged conflict or questions pertaining to issues that could affect operations.
9. How do you feel about the role of government/ departmental officials in the industry?	Question related to local or national government as one of the primary stakeholder groups, gaining an understanding of the nature of the relationship with this stakeholder.
10. What are some of the most difficult ethical challenges that are typically confronted in the mining industry?	To gain an understanding of the ethical challenges leaders in different contexts are faced with?
11. In what ways are labour unions influencing operational outcomes/results at mines?	Question related to labour unions as one of the primary stakeholder groups identified in the literature, aimed at gaining an understanding of how leaders value this relationship and the impact it has on operational results.
12. What leadership challenges have you been confronted with in your dealings with labour union representatives?	To gain an understanding of the challenges related to the relationship with this stakeholder
13. What are the most prominent driving forces influencing your operation to mine in a more environmentally sustainable manner?	The environment is a silent stakeholder which gets represented in various forms depending on the context, the question is aimed at understanding what drives environmental compliance and sustainability improvements in a particular context.
14. How do you view the role of operations managers in relation to environmentally sustainable mining?	To indirectly understand how this leader considers environmental impacts of his or her decisions/endeavours.
15. In what ways do the shareholders of your company influence your decision making?	To gain a better understanding of the awareness of the perceived shareholder interests in the strategy and future plans of the operation being managed. Also, exactly how involved are shareholders in the decision-making process at operational and commodity level.
16. What role should shareholders be playing in the mining industry?	To gain a better understanding of how this leader views shareholders and the role they are expected to play as a key stakeholder within the industry.
17. Tell me about your interactions and relationships with communities or community representatives?	Question related to local communities as one of the primary stakeholder groups identified in the literature, aimed at gaining an understanding of how leaders interact with this stakeholder group in different contexts.
18. What are some of the most prominent concerns and requirements you are faced with from local community representatives?	To gain a better understanding of the nature of requests and demands from community representatives.

dynamics include a complex set of paradoxes and dilemmas that confront responsible leaders, through which they consistently have to make difficult trade-offs and find optimum spots on a continuum between extreme poles to allow their operations to continue sustainably.

The explication of some of the most important competencies required from responsible leaders should inform the recruitment, selection, and development of senior managers in the mining industry of emerging economies. The competencies could also be used in assessing the career path potential of junior candidates and to inform developmental areas and paths of prospective high-potential candidates. The themes and sub-themes described should form a core element of tailor-made developmental programmes to inform mining leaders for what will be expected and preparing them how to deal with the complex set of paradoxes and dilemmas that awaits. The sub-themes could be used for the development of key performance indicators for leaders at a senior or operation's manager level, leader performance evaluation, and key metrics of operational success in organisations that want to be more responsible. The sub-themes could be used to inform more appropriately balanced scorecards or performance evaluations. Developmental programmes should purposefully expose high-potential leaders to broader stakeholder engagements earlier on in their leadership journeys to fast-track their development and improve operational continuity when new leaders take over in senior roles. Specifically, multinational entities should consider tailoring development programs and measurement systems for leaders, given the specific economic and social context.

Although the sample included experienced operations managers, the relatively small sample size presents a potential limitation. The study was also restricted to participants of two multinational entities in one emerging economy. Having worked in the mining industry for 10 years, the interviewing researcher may have formed views and perceptions on some of the topics studied before the research process. Even though participants' anonymity was guaranteed, they might have been prone to a degree of social pressure and provided politically correct opinions rather than providing honest opinions in their responses. This is especially a risk because of well-communicated organisational stances on some of the matters addressed through the questions.

It is recommended that the study be expanded to include a larger sample of participants, preferably across multiple emerging economies, to promote the generalisability of the findings. The study could also be replicated in developed economies to directly compare potential differences in requirements and challenges between RL in emerging economies with that in developed economies. Future studies could investigate how leaders could prioritise between stakeholders in a way that is effective and sustainable from an RL perspective. This study only focused on a few socio-economic RL paradoxes and dilemmas of mining in emerging economies. Several other aspects require more research. For instance, the situation in other industries or the dichotomy of the environmental impact of coal mining in face of the dependency of many emerging economies on coal require more research.

RL in mining operations involves responsibility toward a wide array of impacted stakeholders. Leading responsibly is about continuously making difficult trade-off decisions between stakeholder needs to stay in business, both short and long-term. This complex set of paradoxes and dilemmas represent unique challenges and requirements for leaders, especially in the mining industry of emerging economies. No mining entity can exist sustainably without generating a return on investment for its shareholders. However, no entity can exist sustainably if the needs of other stakeholders are not appropriately attended to. Unless mining houses in emerging economies put a special and sincere effort into developing, capacitating, and supporting their leaders regarding the challenges of RL, the dream of RL in this industry might remain just that – a dream.

Data availability

Due to the identifiable information in the data and confidentiality agreements with the research participants, the qualitative data is restricted due to data protection issues as stated in the ethical clearance application. In order to access the underlying data, applicants must contact Mias de Klerk at mias@sun.ac.za and provide motivated reasons for getting access to the data and how data will be secured if provided. If data is required for any reasons that are related to another study, applicants must provide evidence of ethical approval for the study.

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Open Peer Review

Current Peer Review Status: ? ✓ ?

Version 1

Reviewer Report 21 June 2023

<https://doi.org/10.21956/emeraldopenres.15999.r28926>

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Joana Eva Dodoo

Department of Business Programmes, University of Cape Coast, Cape Coast, Ghana

The study provided an interesting dimension to leadership in the context of mining work. The methodology is appropriate and presentation of results is adequate. However, the introduction could be reorganised to focus on the variable of interest in this study. For example, the first sentence of paragraph one is not speaking to the main issue.

- Consider deleting " In particular,"
- The last sentence of paragraph one would be an interesting read if researchers include examples of those most tragic mining incidents which happened in emerging economies.
- The second paragraph appears detached from the first. Bridging this gap is important.
- Under the literature review (paragraph 1), the claim of ineffective leadership as the cause of mining incidents could be supported with a more recent citation(s).
- Paragraph two: there is sharp shift of the discussion to the impact of mining on the environment. Researchers should consider bridging the gap.
- Paragraph 3: it would read better if the aspect of leadership is made more conspicuous.
- Generally, reorganisation of the literature review to focus more on the main interest of the study will improve this study.
- Overall, providing a separate section for conclusion and recommendation will be good.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

No source data required

Are the conclusions drawn adequately supported by the results?

Partly

Is the argument information presented in such a way that it can be understood by a non-academic audience?

Yes

Does the piece present solutions to actual real world challenges?

Yes

Is real-world evidence provided to support any conclusions made?

Yes

Could any solutions being offered be effectively implemented in practice?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Occupational safety and health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 07 Jul 2023

Jeremias De Klerk, Stellenbosch University, Bellville, South Africa

The introduction could be reorganised to focus on the variable of interest in this study. For example, the first sentence of paragraph one is not speaking to the main issue.

Consider deleting " In particular," *Done*

Thank you for your comments and suggestions. After carefully considering your suggestions we've made some changes to the Introduction. Although most of the suggestions have been incorporated, some were omitted as we believed that it would not improve the flow of the discussions.

The last sentence of paragraph one would be an interesting read if researchers include examples of those most tragic mining incidents which happened in emerging economies.

Thank you for the suggestion. Three examples have been added. However, in an attempt to keep the Introduction short, crisp and compelling, these examples are discussed in the later sections

The second paragraph appears detached from the first. Bridging this gap is important.

Thank you – a bridging sentence was added.

Under the literature review (paragraph 1), the claim of ineffective leadership as the cause of mining incidents could be supported with a more recent citation(s).

More citations have been added.

Paragraph two: there is sharp shift of the discussion to the impact of mining on the environment. Researchers should consider bridging the gap.

Thank you – a bridging sentence was added.

Paragraph 3: it would read better if the aspect of leadership is made more conspicuous.

The role of leadership in the Marikana disaster has been made more conspicuous

Generally, reorganisation of the literature review to focus more on the main interest of the study will improve this study.

The literature review was reconsidered and amended as deemed necessary to improve the flow of the discussions. However, the literature review was largely deemed to adequately focus on the main interest of the study as explicated in the additionally added research questions

Overall, providing a separate section for conclusion and recommendation will be good

The discussion section has been separated into 3 sections under their own sub-headings.

Competing Interests: None

Reviewer Report 20 June 2023

<https://doi.org/10.21956/emeraldopenres.15999.r28882>

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Taryn Miller 

University of Cape Town, City of Cape Town, South Africa

This study identifies and describes the complex challenges facing Responsible Leaders employed at mining companies within an emerging economy. The results are presented as themes and sub-themes, that usefully target the key complexities pertaining to mining companies' relationships with its stakeholders. Core competencies required of leaders in these organisations are also

identified.

The study was engaging and well-written. The quotes (and their interpretation) provided interesting insights that gave one a sense of what it is like to try to lead responsibly within such contexts. Helpful recommendations were drawn. I enjoyed the read - thank you.

My only recommendations for improvement relate to two citation corrections, and two sentences that appear to be missing words, as follows:

It is a matter of moving the brackets to the correct place, and using 'and' instead of "&". The narrative should read:

1. Davis and Franks (2014) estimated that...

2. Per the findings by Voegtlin (2016)

Sentence requires clarity/words:

1. Missing an "and" after the comma: "scrutiny, are guilty of greater irresponsibility towards the environment than their higher profiled peers"

2. Missing word at end: "with the requirement to maximise stakeholder,"

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Is the argument information presented in such a way that it can be understood by a non-academic audience?

Yes

Does the piece present solutions to actual real world challenges?

Yes

Is real-world evidence provided to support any conclusions made?

Yes

Could any solutions being offered be effectively implemented in practice?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Responsible leadership, specifically within accounting education.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 07 Jul 2023

Jeremias De Klerk, Stellenbosch University, Bellville, South Africa

My only recommendations for improvement relate to two citation corrections, and two sentences that appear to be missing words

Thank you and my apologies for these errors – they have now been corrected.

Competing Interests: None

Reviewer Report 05 June 2023

<https://doi.org/10.21956/emeraldopenres.15999.r28884>

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Ken Kalala Ndalamba

Professor of Strategic Management, Organization and Leadership, Universidade Gregório Semedo, Luanda, Angola

I have been privileged to read your manuscript of which I commend your efforts in producing such very well structured and organised piece of writing. The topic is very relevant and spot on. I have to admit and recognize how difficult and challenging it might have been for you particularly during fieldwork. Nevertheless, congratulations for the product although not complete yet.

To start, I will share two publications to help enrich your arguments and ideas with the two constructs/concepts you intend to engage with:

1. Responsible Leadership (explored in: Ken Kalala Ndalamba, Neusa Joaquim Ndalamba & Cam Caldwell (2023) Leadership Ethos: Addressing Leadership Dilemma in the 21st Century Business Environment, Public Integrity, 25:2, 150-161, DOI: 10.1080/10999922.2022.2026663

1)

2. Corporate Social Responsibility (explored in: Anderson, V., Ndalamba, K.K. and Caldwell, C. (2017), "Social responsibility in a troubled world", *International Journal of Public Leadership*, Vol. 13 No. 2, pp. 98-115. <https://doi.org/10.1108/IJPL-10-2016-00342>)

The manuscript presents a few major weaknesses which require immediate attention:

1. There is need to formulate the research question and the subsequent hypothesis/propositions, which would be verified in the end, as conclusions will be based on such information.
2. The framework of the study. It is of the utmost importance to present the framework of the study based on a comprehensive literature review. The stakeholders (shareholders, employees/unions, the environment, and communities emerged as prominent stakeholders in the mining industry) presented in the study could be understood as the framework of the study. However, it is not clear how they were identified and most importantly they were not sufficiently explored in the literature review as such.
3. With regard to the methodology, it is not clear what was codified and how was it codified. In other words, how was the Atlas.ti software used to codify data? What was its output? how was the output interpreted? Data analysis technique appears to be content rather than thematic analysis.
4. Discussion is done within the context of the study framework. In this case, the study framework has not been sufficiently explored though barely defined.

Unless the above mentioned points have been taken into consideration, it will prove difficult to conclude or accept the conclusions of the study.

I hope these comments have been helpful and constructive.

Thank you
All the best

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1. Ndalamba K, Ndalamba N, Caldwell C: Leadership Ethos: Addressing Leadership Dilemma in the 21st Century Business Environment. *Public Integrity*. 2023; **25** (2): 150-161 [Publisher Full Text](#)
2. Anderson V, Ndalamba K, Caldwell C: Social responsibility in a troubled world. *International Journal of Public Leadership*. 2017; **13** (2): 98-115 [Publisher Full Text](#)

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

Partly

Are the conclusions drawn adequately supported by the results?

No

Is the argument information presented in such a way that it can be understood by a non-academic audience?

Yes

Does the piece present solutions to actual real world challenges?

Yes

Is real-world evidence provided to support any conclusions made?

Yes

Could any solutions being offered be effectively implemented in practice?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Corporate Strategy, Public Administration, Economics

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 07 Jul 2023

Jeremias De Klerk, Stellenbosch University, Bellville, South Africa

To start, I will share two publications to help enrich your arguments and ideas with the two constructs/concepts you intend to engage with:

Responsible Leadership (explored in: Ken Kalala Ndalamba, Neusa Joaquim Ndalamba & Cam Caldwell (2023) Leadership Ethos: Addressing Leadership Dilemma in the 21st Century Business Environment, *Public Integrity*, 25:2, 150-161, DOI: 10.1080/10999922.2022.2026663 1)

Corporate Social Responsibility (explored in: Anderson, V., Ndalamba, K.K. and Caldwell, C. (2017), "Social responsibility in a troubled world", *International Journal of Public Leadership*, Vol. 13 No. 2, pp. 98-115. <https://doi.org/10.1108/IJPL-10-2016-00342>)

Thank you – both these sources were incorporated

The manuscript presents a few major weaknesses which require immediate attention:

There is need to formulate the research question and the subsequent

hypothesis/propositions, which would be verified in the end, as conclusions will be based on

such information.

Thank you for this suggestion - two research questions were developed and added at the end of the literature review. However, as the research is exploratory in nature, we did not believe it would be appropriate to present hypotheses or propositions.

The framework of the study. It is of the utmost importance to present the framework of the study based on a comprehensive literature review. The stakeholders (shareholders, employees/unions, the environment, and communities emerged as prominent stakeholders in the mining industry) presented in the study could be understood as the framework of the study. However, it is not clear how they were identified and most importantly they were not sufficiently explored in the literature review as such.

The stakeholders were not identified in terms of making them part of the research as the research was focused on the lived experiences of senior managers. A limitation in this regard has now been included in the discussions on limitations and a recommendation for future research has been made.

The needs from stakeholders were not the main focus of the study. The RL challenges presented to leaders in the mining industry, based on needs and other aspects such as stakeholder dynamics as the focus of the study. As such, the needs from different stakeholders was not discussed in detail in the literature review due to space constraints as it would make the manuscript too lengthy.

With regard to the methodology, it is not clear what was codified and how was it codified. In other words, how was the Atlas.ti software used to codify data? What was its output? how was the output interpreted? Data analysis technique appears to be content rather than thematic analysis.

More detailed information was presented in the Method section to explicate the analysis method. Atlas.ti (well-known software to analyse qualitative data) was just the software used to do the 6-step thematic analysis that I've now described in more detail in the manuscript, to enhance an objective and systematic thematic analysis, in order to advance the trustworthiness of the findings.

This analysis was indeed a thematic analysis as the themes emerged from the discussions, rather than from counting aspects noted in the content.

Discussion is done within the context of the study framework. In this case, the study framework has not been sufficiently explored though barely defined.

Unfortunately, it was not clear what was meant by this comment. The research followed a clear and commonly used study framework - exploring the literature, developing research questions, explicating a method to answer the research questions, deriving findings from the applied methodology and discussing the findings, limitations, recommendations for future research, and presenting a final conclusion.

Competing Interests: None