

School of Mining Engineering



UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

**AN INVESTIGATION INTO THE SUNDAY WORK
PROHIBITIONS IN THE SOUTH AFRICAN MINING
INDUSTRY**

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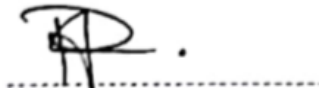
A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Engineering.

Johannesburg, 12 May 2025

DECLARATION

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12 May 2025

Date

“A winner is a dreamer who never gives up.”

Nelson Mandela

ABSTRACT

There have been different views on implementing Section 9 of the 1956 Mines and Works Act, which prohibits certain mining activities on Sundays in the South African mining industry. Mining companies must apply to the department responsible for mining for ministerial permission to perform any work on Sunday. However, some people believe that the prohibitions should be abolished or reviewed. Accordingly, the primary research objective was to develop evidence-based policy proposals to regulate Sunday work prohibitions in South Africa's mining industry. The research used quantitative methods to examine historical trends and possible implications associated with granting ministerial permissions and analysing solicited views on the prohibitions from stakeholders in the mining industry. Additionally, qualitative methods were used to gather and analyse data through literature review, case studies and interviews. Literature review showed that Sunday work prohibitions have their origins linked to Sunday work restriction laws passed by countries that made Christianity part of the State's administration. Furthermore, the results revealed that valid ministerial permissions increased yearly from 50 in 2015 to 127 in 2022. Analyses of trends and correlations between the valid annual ministerial permissions and safety, production and employment were undertaken to determine the impact of the permissions on these parameters. The results show that an increase in ministerial permissions does not negatively impact safety in most mines. The findings are consistent with the case studies' findings. Similarly, regarding production, most sectors' annual output increased with the increasing number of annual ministerial permissions. The results also show that an increase in ministerial permissions assisted a large mining industry sector in increasing employment. The case studies showed that the reasons for applying to work on Sundays were mainly related to the desire to increase production and address financial sustainability. Interviews revealed that most participants support the retention of Sunday work prohibition but would like the legislation to be reviewed through a consultative process. The international review's investigation does not

indicate the institutionalisation of Sunday work prohibitions in the mines through legislation. Therefore, it is recommended that the government be aware of the increasing number of applications for ministerial permissions to work on Sundays, consider increasing capacity to address the increase, continue granting the permissions, and initiate a process to review the Sunday work legislation. The research will assist tripartite stakeholders, including policymakers, to make informed policy decisions.

PUBLICATIONS AS PART OF THIS RESEARCH

There are no publications that have emanated from this research work.

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This report is dedicated to my grandmother, for her love,
Gomolemo “Mmalekgetho” Mokgatlhe.

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LIST OF ABBREVIATIONS

BCEA	Basic Conditions of Employment Act No. 75 of 1997
CIOM	Chief Inspector of Mines
CONOPs	Continuous Operations
COVID-19	Coronavirus Disease 2019
DoEL	Department of Employment and Labour
DG	Director General
DMRE	Department of Mineral Resources and Energy
EEA	Employment Equity Act 55 of 1998
EU	European Union
FFR	Fatality Frequency Rates
FIFO	Fly-in/Fly-out
FULCO	Full Calendar Operations
GDP	Gross Domestic Product
IFR	Injury Frequency Rates
LRA	Labour Relations Act, 66 of 1995
MCOP	Mandatory Code of Practice
MD	ministerial declaration
MHSA	Mine Health and Safety Act No. 29 of 1996
MHSC	Mine Health and Safety Council
MHSI	Mine Health and Safety Inspectorate
MoU	Memorandum of Understanding
MPRDA	Mineral and Petroleum Resources Development Act 27 of 2002
MRAC	Mining Regulation Advisory Committee
MWA	Mines and Works Act No. 27 of 1956
NEDLAC	National Economic Development and Labour Council
PGMs	Platinum Group Metals
PIOM	Principal Inspector of Mines
r	Pearson Coefficient
SARB	South African Reserve Bank
SLP	Social and Labour Plan
StatsSA	Statistics South Africa
TU	Trade Union
UG2	Upper Group 2 of the Bushveld Igneous Complex

USA	United States of America
VCR	Ventersdorp Contact Reef

1 INTRODUCTION

1.1 Research Background and Context

Mineral resource development has been and continues to be a fundamental activity in the South African economy for over a century. The country largely depends on the mining sector, which contributes significantly towards Gross Domestic Product (GDP), foreign direct investment, employment, and infrastructure development (Smith et al., 2021). Despite mining playing an essential role in South Africa's economy, its GDP contribution has dropped by more than half in the past two decades due to a decline in productivity (Minerals Council South Africa, 2023).

The decline in productivity is associated with longer underground travel times, increasingly complex operational requirements and increasing mining depth (Pelders et al., 2021; Sangqu, 2016). Exploiting minerals in South Africa, which has some of the deepest mines in the world, involves capital and labour-intensive operations necessary to ensure optimal extraction of such minerals. Thus, continual utilisation of production time, which may include working on Sundays, may be needed to increase production, realise and maximise the return on invested capital and increase mining's contribution to GDP.

However, any consideration requiring mineworkers to work on Sundays must consider the legal framework governing employees' working conditions. In South Africa, such a framework includes the Basic Conditions of Employment Act No. 75 of 1997 (BCEA) (Republic of South Africa, 1997), which, among other things, limits working hours for employees. In addition, the limitation on working days is regulated by Section 9 of the Mines and Works Act No. 27 of 1956 (MWA), which restricts performing certain work on Sundays, Good Friday and Christmas Day (Republic of South Africa, 1956) at the mines, irrespective of the size of the mine.

The law prohibiting the performance of certain mining activities on Sunday is now entrenched in the mining industry as it has been enforced for 68 years through the MWA read with the Mine Health and Safety Act No. 29 of 1996 (MHSA), as amended (Republic of South Africa, 1996a). The prohibitions imposed on certain mining activities on Sunday can only be lifted if the government grants the necessary permission. These prohibitions are referred to in this study as Sunday work prohibitions. The prohibitions cover mining activities, including accessing the production area, blasting and performing related activities. Certain mining-related activities are exempted from the prohibition and are listed in Section 9 of MWA. Therefore, Sunday work prohibitions refer to prohibitions on all activities that can be performed or carried out at a mine on a Sunday but are not in the list of activities that qualify for exemption(s) in terms of Section 9 of MWA.

With regard to prohibited mining activities, to be more specific, they can only be performed at the mines if the Minister of Mineral Resources and Energy (DMRE) (officially known as Minister of Minerals and Petroleum Resources from 1 April 2025) grants a Sunday work permission known as a Declaration of Work in the National Interest or, in short, the ministerial declaration. The MWA also empowers the DMRE's Chief Inspector of Mines (CIOM) to grant temporary Sunday work permissions and can delegate the Principal Inspector of Mines (PIOM) to grant Sunday work permissions limited to maintenance work only.

Therefore, performing such mining activities on Sunday in South African mines can only occur if an exemption is granted by the DMRE in terms of the MHSA, either from the Minister or the CIOM and the PIOM. As permissions granted by the CIOM are temporary and those of the PIOM are for maintenance, the research focuses on the Sunday work permission issued by the Minister for conducting any mining activities, which is the ministerial declaration (hereafter MD). The question that many stakeholders ask, however, is whether there is a need for the continued regulation of Sunday work in the South African mining industry.

1.2 Problem Statement

There are contrasting viewpoints by various stakeholders regarding Section 9 of the MWA, which contains Sunday work prohibitions in the South African mines. Some consider the prohibitions obsolete and, therefore, should be abolished. In contrast, others support the retainment of the prohibitions for various reasons. In addition, some views question the role of the DMRE in administering Sunday work prohibitions as this relates to working time, which is generally regulated by the Department of Employment and Labour (DEL). Accordingly, the aforementioned problems about Sunday work prohibitions in the South African mining industry necessitate investigating the matter and exploring well-thought-out policy proposals.

1.3 Justification for Research

As stated in section 1.2, there are various views about the Sunday work prohibitions that have existed since 1956. There is a view that the prohibitions should be abolished as they are archaic restrictions that do not serve any purpose. Some companies applying for the MD argue that lifting the Sunday work prohibitions will increase production and employment. On the other hand, there are strong proponents of the prohibitions for various reasons, including protecting employees' safety. There is also an issue about the appropriate department to administer the law that governs the prohibitions, as DMRE currently administers it, whilst the DEL administers similar laws.

Based on the issues above, several stakeholders in the South African mining industry have voiced a need for the government to review laws prohibiting the performance of certain mining activities on Sundays. Accordingly, this research explores the possibility of introducing regulatory reforms regarding Sunday work prohibitions in the mining industry and developing evidence-based policy proposals.

1.4 Research Objectives

The research objectives are primarily based on the different stakeholders' varying views regarding the Sunday work prohibitions in the South African mining industry and are set out below.

- Primary Objective: To develop evidence-based policy proposals on regulating Sunday work practices regarding Section 9 of MWA in the South African mining industry.
- Supporting objective: To examine historical trends and implications associated with ministerial Sunday work permission granted in terms of Section 9 of the MWA.
- Supporting objective: To solicit the views of stakeholders regarding Sunday work legislation as contained in Section 9 of MWA.

1.5 Research Questions

The questions addressed in the research to accomplish the research objectives are as follows;

- What are the historical trends and implications of granting ministerial Sunday work permissions in terms of Section 9 of the MWA?
- What are the stakeholders' views regarding Sunday work prohibitions in Section 9 of the MWA?
- What is the appropriate evidence-based policy to regulate Sunday work prohibitions in the South African mining industry?

1.6 Research Methods

A mixed method approach, which involves quantitative and qualitative research methods, is utilised in the study. The quantitative approach is used to investigate historical trends and implications associated with Sunday work permissions granted in terms of Section 9 of MWA, whilst the qualitative methods assist in gathering relevant data through literature review and interviews.

1.7 Sources of Data

The data used in the research was sourced from the literature review, DMRE, the Minerals Council South Africa, case study mines, and key industry experts from the government, employers, and employees.

1.8 Research Validation

The data and information used in the research are assumed to be correct as they are sourced from reputable organisations such as the DMRE, the official custodian of mineral economics and mine health and safety-related information and the Mineral Council South Africa, which is a reputable organisation representing key mining companies in South Africa. Additionally, the researcher used peer-reviewed publications. Also, research validation entailed diligently scrutinising the data collected to identify any anomalies.

1.9 Structure of the Research Report

This report consists of six chapters, outlined as follows.

Chapter 1, Introduction, introduces the study and covers the background of the mineral resources industry in South Africa. The chapter addresses the research problem, justification for the research, research questions and objectives, research methods, data sources and validation.

Chapter 2, Literature Review, explains the key concepts, the origin of the Sunday restriction laws and their applicability in the mineral resources industry. The international experiences on the restrictions, key debates, controversies, and recent developments are also discussed.

Chapter 3, Research Methodology, deals with how the research has been designed to ensure that the appropriate methodology is utilised. In this regard, the quantitative and qualitative data collection methods employed in the study are explained, and how each has been utilised.

Chapter 4, Data for the Study, contains the data collected for the research. This data is depicted in tables, figures and appendices and in line with the research design framework approach.

Chapter 5, Analysis and Findings, analyses the collected data and information to answer the research questions, and findings are recorded accordingly.

Chapter 6, Conclusions and Recommendations, contains the conclusions deduced from the research, provides policy proposals on Sunday work prohibitions in the mining industry and recommendations for future research.

1.10 Chapter Summary

South African mining industry has played a significant role in the economic development of South Africa. In recent years, it has experienced challenges that include lower production output and has led some stakeholders to question the role of Sunday work prohibitions in the mining industry. The research's problem statement relates to the opposing stakeholder views regarding the prohibitions to work on Sundays at the mines enforced through the MWA since 1956, which some believe could address the mining production output challenges. The research's primary objective is to develop

evidence-based policy proposals on regulating Sunday work prohibitions in the South African mining industry. The study's primary objective will be achieved through validated quantitative and qualitative data collection research methods, followed by systematic analyses. The introduction contains a brief outline of the entire report.

2 LITERATURE REVIEW

2.1 Introduction

The purpose of the literature review in this research is to provide information and gather learnings in the context of the research topic. Existing literature is scrutinised to lay a foundation and provide knowledge of key concepts, theories and studies on Sunday work prohibitions in the South African mining industry as a policy matter. A brief background on the commencement of modern mining in South Africa and an overview of how the industry became one of the country's most important economic sectors is provided, and how productivity in the sector has been declining in recent years despite the importance of mining in the economy. The chapter further provides an overview of current knowledge on continuous operations in the South African mining industry and their practices in other sectors and countries.

Key debates and controversies associated with the Sunday prohibitions are reviewed and presented to provide prevalent arguments and a perspective on the specific day (Sunday) and the relationship between the Sunday Observance and the Sabbath. The practices concerning Sunday work practices in the mining industries of other countries are also reviewed in the literature. In addition, the justification for the existence of the Sunday restrictions in the current era and the movement towards deregulation are discussed in the chapter. This chapter also presents concerns and advocacy for work-life balance as a result of shift work, including the discussion of the impact that working on Sundays at the mines has on the regulated hours of work.

2.2 Key Concepts, Theories and Studies

This section describes the key concepts, theories and studies used in this research to establish the research area and its background. Specifically, this section seeks to give an overview of the South African mining industry, the origin and history of Sunday work prohibitions, and their extent of applicability. The prohibitions and their evolution into the South African mining industry are discussed and interpreted from the MWA. Also, an overview of other legislative frameworks that govern work in South Africa is provided, including continuous operations practices in and outside South Africa and a review of the studies conducted on Sunday work restrictions.

2.2.1 Background and overview of the South African mining industry

Industrialisation in South Africa began following the commencement of modern mining in the mid-to-late 1800s, which transformed the country's economic activities from agricultural dependency to diversified economic activities (Patel, 2005). The transformation of economic dependence from agriculture to a more diversified economy continued against the backdrop of the expanding mining industry, which became an increasingly labour-intensive sector (Bhoola, 2002; Patel, 2005). Since then, the South African mining industry has become an important economic contributor and employment prospect (International Labour Conference Committee of Experts, 1994; Smith et al., 2021; Thambi, 2019). The economic linkages of the labour-intensive mining industry also contribute to other forms of employment in the country. The industry is highly unionised, with direct employment accounting for approximately 479,228 people employed in 2023 in various mines operated by many companies (Minerals Council South Africa, 2023)

South Africa is endowed with a wide variety of mineral deposits of economic significance, and it is one of the top-ranking mining countries in the world. The mining industry plays an important role in South Africa. The sector

contributed direct GDP of R474.4 billion and R483.3 billion in 2021 and 2022, respectively; this accounted for 7.6% and 7.3% of total GDP contribution measured at current market prices (Minerals Council South Africa, 2023).

Critical economic minerals include the Platinum Group Metals (PGMs), coal, gold, iron ore chrome, manganese, diamonds and other industrial minerals. The country hosts the largest deposits of PGM in the world. The reliance of the South African economy on the electricity generated by coal signifies the importance of the commodity in the economy; as such, 80% of coal mined is consumed domestically, and the remaining 20% is exported. The compositions of several South African mineral orebodies are not easily mineable because of their complex geology, profound depth, relatively low grades and other extraction parameters, resulting in lower productivity. Due to the nature of these mineral resources, the excavation and extractive methods utilised in the various mining operations differ in scale and complexity and range from very large to medium and small mines, often with different production and employment capacity levels.

These constraints complicate the methods to access and excavate the payable mining resources, thus affecting production output. The declining production output and productivity, in sectors such as gold jeopardise the industry's capability to contribute to the country's economy. Since 1994, there has been an annual decline of 0.4% in the South African mining sector GDP contribution from 10% in 1993 to 4.4% in 2022 (Minerals Council South Africa, 2023). Despite all the constraints regarding electricity supply, rail and road transportation and ports, the country remains the world's single largest producer of PGMs and hosts an estimated 80% of the world's known manganese resources.

The sector's expansion could be enhanced by addressing the constraints that impede the mining sector's employment creation and economic contribution (Minerals Council South Africa, 2023). In addition, regulatory

constraints relating to environmental permits and safety shutdowns contribute to the decline in mining productivity (Baxter, 2009). Coronavirus Disease 2019 (COVID-19), mineworkers' and communities' protests, mine accidents and enforcement stoppages exacerbated unforeseeable lost time, productivity decline and production loss in recent years.

The current and future implications of these issues, which include production loss, could result in the South African mining industry's being unable to attract investments for exploration and new mine developments, as well as experiencing job losses and reduced support for social and labour plans (SLP) commitments (Laing, 2020). However, some productivity challenges are driven by the international market forces determining commodity prices (Rangasamy, 2009; Sangqu, 2016). These challenges include things that cannot be controlled at an operational level but depend on global commodity fluctuations.

The South African open economy sources its investment capital abroad and, therefore, relies heavily on the behaviour of foreign markets (Baxter, 2009). Hence, any impact on the international markets will affect the South African mining industry. The 2008 market crash severely affected commodity prices, contributing to the industry's productivity challenges (Sangqu, 2016). Owing to the influence of the decline in mining productivity in 2008 were the existing infrastructure challenges in the country's rail logistics network, inefficient ports, and the power generation crisis (Baxter, 2009).

Due to the current South African domestic constraints, mineral commodity volumes produced and exported in 2022 were unresponsive to the improved commodity prices (Minerals Council South Africa, 2023). The challenges are still experienced and have worsened; therefore, any initiative that can contribute to rebuilding the mining industry and contributing positively to the economy is of great importance.

Over time, various stakeholders in the South African mining industry have made attempts to rejuvenate the state of mining in South Africa. At the end of the apartheid regime, a regulatory reform undertaken by stakeholders in mining challenged the then-newly elected government to prepare a new minerals and mining policy (DME, 1998). The aim of formulating the policy was to review and address the apartheid legacy challenges that existed in the mining industry at the dawn of the new democratic South Africa. One issue discussed during debates on reforming the mining policy was the issue of Sunday work in the mines, specifically restrictions prohibiting specific activities on Sunday. Details and debates on this matter will be discussed in section 2.3 of this text. Nonetheless, it has to be reiterated that the continued discussions on the Sunday work restrictions necessitate the need for this current research - as the Sunday work prohibitions in the South African mines remain to this day and have not been reviewed. As a key concept in this study, Sunday work prohibitions are explored more profoundly in the next section (section 2.2.2) to understand its origin and evolution into the South African mining industry.

2.2.2 The origins and history of the Sunday labour or Sunday work restrictions (The Blue Laws)

The Roman Emperor Constantine enacted the first Sunday work restrictive laws in 321 A.D. and made religion part of the State (Johnson, 1934; Lewis, 1888; Robbins, 2022; Sokupa, 2011; Trevelyan, 1903). The domination of religion in the State during the Roman Empire and subsequent European empires later influenced the role of religion in governing colonised Africa and many other countries. Kings in the United Kingdom first announced laws regarding Sunday work prohibitions, after which parliament in Great Britain widely spread their adoption through colonising territories such as Australia, North America, South Africa, and New Zealand (Robbins, 2022; as cited in Ismail, 2001). Specifically, the concept of Sunday work prohibitions was introduced in society as part of observing religious beliefs.

This legislation prohibiting or restricting work on Sundays is commonly referred to as Sunday Observance Laws (Ismail, 2001), Sunday Closing Laws, the Lord's Day Acts (Robbins, 2022) or the Blue Laws (in the United States of America [USA]) (Lawrence-Hammer, 2007; Robbins, 2022). The word 'blue' in Blue Laws is speculated to have been derived from two competing early colonial history theories, where one theory was purely based on the colour of the paper that was used to print restrictive laws, and the other theory referred to an old proverb which stated that "true blue will never stain" (Robbins, 2022), implying the extreme loyalty to observing Sunday laws. The strictness of the Blue Laws was highlighted in both theories.

According to Trevelyan (1903), Ismail (2001), and Lovenheim and Steefel (2011), the Blue Laws were rooted in the Christians' Biblical Fourth Commandment, wherein it is believed that all people, regardless of faith, were to be provided with a common day of rest. The restrictions were applied across different nations where Christianity was the predominant religion; therefore, other religious beliefs were not considered as Christian norms and practices shaped the long-standing recognition of Sunday as a day of rest.

In the USA, in a case law involving *McGowan v. Maryland* regarding the Sunday sale of some merchandise, the court argued that religious forces influenced the original Sunday labour restrictive laws. It asserted that such laws became a means to protect public welfare apart from their original intent (Lawrence-Hammer, 2007). Lawrence-Hammer (2007) furthermore states that there were Blue Laws records that suggested pagans initially considered Sunday as a day of rest before Christianity observed Sunday as its Sabbath.

However, concerning South Africa, the original intent of Sunday work prohibitions in the mining industry is explored as part of this research through literature and stakeholder views. The policy regarding the

prohibition of specific activities at mines on Sunday and two public holidays, namely, Christmas Day and Good Friday, declared in terms of the Public Holidays Act No. 36 of 1994 (Republic of South Africa, 1994), has been administered through Section 9 of the MWA since 1956. However, this research only focuses on the prohibited labour activities performed on Sunday in the mining industry in South Africa. After the new democratic dispensation in 1994 and the subsequent enactment of the MHSA, Section 9 of the MWA remained in force in terms of the MHSA. Despite the repeal of other components of the MWA, Section 9 and some definitions in support remain in Section 1. Furthermore, Section 9 of the MWA stipulates that written applications must be submitted by the employers or owners of the mines to the DMRE as prerequisites for permission to perform any mining activities on Sundays.

2.2.3 The evolution of Sunday work restrictions in the South African mining industry

South African Sunday laws have historically been linked to Christianity, as the country's legislative administration put substantial bans into law that prevented most activities except observing the Sabbath (Ismail, 2001). Activities such as purchasing goods, working, hunting, fishing, and travelling were forbidden, and people were only allowed to attend Sunday church services. Sunday restrictive laws were not confined to factories or mines; they impacted other areas, such as the retail sector.

In South Africa, Sunday work activities are restricted in some areas and industries. According to the general provisions in the Noise Control Regulations in terms of Section 25 of the Environment Conservation Act No. 73 of 1989, no person is allowed to use any equipment for construction, earth drilling or demolition works or allow it to be used in a residential area on Sunday, Good Friday and Christmas Day (Republic of South Africa, 1989). The noise control regulations are determined by each province's local authority by-law practices and do not apply to all municipalities.

Similarly, the sale of alcohol is prohibited in terms of the Liquor Act No. 53 of 2003, wherein the days and hours of liquor retail are determined by individual municipalities at a provincial level and not by the central government (Republic of South Africa, 2004). However, Sunday work restrictions with respect to all mining operations and works fall under the Mine Health and Safety Inspectorate (MHSI) jurisdiction.

Since 1652, the South African legislative administration laws have historically been linked to Christianity as most activities were sanctioned on Sunday except observing the Sabbath (Ismail, 2001). The Western social systems and Christian cultural beliefs were put in place and reinforced in South Africa, especially in the mining industry, throughout the era of diamond and gold discoveries in the mid-to-late 19th century (Nel et al., 2012; Patel, 2005; Venter, 2000).

2.2.4 Section 9 of the Mines and Works Act, 1956

As stated, Section 9 of the MWA has been enforced since 1956. It was enacted following the review and the amendment of the Mines and Works Act of 1911, and it is the only remaining section of the MWA. During the late 1980s and the early 1990s, the state of the mineral and mining policies in South Africa drastically shifted with the enactment of the Minerals Act 50 of 1991 (Mostert, 2012). Almost all sections and regulations of the MWA, except for some definitions in Section 1 and components of Section 9, were repealed upon the promulgation of the Minerals Act No. 50 of 1991.

Following the recommendations from the Commission of Inquiry into Safety and Health in the Mining Industry, the MHSA was enacted in 1996 to address the challenges of occupational health and safety in the mining industry (Republic of South Africa, 1995a). Furthermore, the MHSA deemed any regulation concerning health and safety issues enforceable in terms of Item 4 of Schedule 4 of the MHSA (Republic of South Africa, 1996a). Hence, the remaining portions of the MWA and the regulations of the Minerals Act 50 of 1991 still exist today.

Other provisions of the MWA were further repealed by Section 4(1) of the Public Holidays Act 36 of 1994 to exclude other public holidays, which are the Day of Covenant and the Republic Day (Republic of South Africa, 1994). The resultant public holidays that remained were Christmas Day, Good Friday, and Sunday. Accordingly, Section 9 of the MWA remains enforced under item 4 of schedule 4 of the MHSA and is administered by the MHSI. The MHSI is established under the MHSA and is headed by the Chief Inspector of Mines (CIOM).

The remaining Section 9 of the MWA concerning Sunday work prohibitions is as follows:

(1) *No person shall perform, or cause or permit any other person to perform, at any mine or works, any work in connection with the operation of a mine or works, on a Sunday, Christmas, or Good Friday, or cause any other person to perform, at any mine or works, any such work on, unless the work is -*

(a) attending to or working on pumping or ventilating machinery, or machinery for the supply of light, heating power, or any boiler belonging to any such machinery;

(b) such work above or below the surface as cannot be delayed without causing danger or damage to life, health or property, including work in workshops necessary or incidental to any such work;

(c) operating any continuous chemical, metallurgical or smelting process, if a stoppage thereof during the whole of any such day would either prevent its immediate resumption on the next succeeding day or diminish the effectiveness of the process;

(d) the running of stamp mills or other machinery used for crushing ore, erected before the first day of December 1911;

(e) the policing of the mine or works, or the carrying on of medical and health services or services in connection with housing and feeding;

(f) work in respect of which the Minister, in any particular case, on the application in writing or, in general, by notice in the Gazette, declared that in his opinion, the performance thereof is necessary for the national interest.

(2) *The [Government Mining Engineer] may, on application to an inspector of mines, grant special permission for carrying on temporarily any necessary work, in addition to work described in sub-section (1), at a mine or works on the days mentioned in that sub-section.*

(3) *Any person who contravenes or fails to comply with the provisions of this Section shall be guilty of an offence and liable on conviction to a fine or to imprisonment for not exceeding six months.*

Consequently, Section 9(1) is the basis of the Sunday restrictions or prohibitions in the mining industry and prohibit persons from performing or causing any other person to work at any mine in South Africa. As seen from subsections 9(1)(a-e) - despite the prohibitions - some mining-related work, limited to maintenance, repairs and examinations of machinery and conducting services on equipment, including continuous mineral processing, may be allowed on the prohibited days. This implies that all the activities that are not exempted as per Section 9 of the MWA are referred to as Sunday work prohibitions.

However, in Section 9(2) of the MWA, the performance of the prohibited work can only be permitted on condition that an application is made and the Government Mining Engineer issues special permission temporarily for the work to be carried out. The expression ‘Government Mining Engineer’ in the MWA is replaced by the term CIOM as contemplated in schedule 3B of the MHSA. Therefore, Section 9(2) of MWA authorises the CIOM, which heads the MHSE, to permit specific work on Sundays by granting temporary permission and work limited to maintenance. Furthermore, the CIOM may delegate such powers to grant maintenance work to the PIOM at the regional offices.

In addition to the temporary permission granted by the CIOM, the DMRE (through the Minister) is empowered by subsection 9(1)(f) to issue a declaration or permission for a mine to perform certain work activities on Sunday, Christmas Day or Good Friday. Section 9 of the MWA prohibits performance of certain activities on Sundays, Christmas Day and Good Friday at the mines in South Africa. In essence, permissions that can be obtained from the DMRE to perform mining activities on the above-mentioned days are usually collectively termed Sunday work permissions and are described in three categories as listed below.

1. ***“Declaration of Work in the National Interest” (“ministerial declaration”)*** – allows for performance of any work at the mine on Sunday, as shown in Appendix A of this report. Any work at the mine refers to normal mining activities and all associated activities including repair work and maintenance work similar to those performed during any day of the week at the mine. The *“Declaration of Work in the National Interest”* is issued by the Minister of Mineral Resources and Energy at a national level and is valid for a limited period of two years.

2. **“Temporary Sunday Labour Permission”** – is issued by the CIOM, and it allows for any work, normal mining activities and associated activities to be performed on Sundays temporarily while awaiting the Minister’s decision to grant the Declaration of Work in the National Interest. The Temporary Sunday Labour Permission is valid for three months and it precedes the approval of the ministerial declaration.
3. **“Sunday Labour Permission”** - allows for the performance of specific schedule/list of required maintenance work on Sundays in line with the applicant’s operational requirements. . The Sunday Labour Permission is issued at the provincial level of the DMRE (regional office) by the PIOM as delegated to do so by the CIOM. and is valid for one year.

All the above-mentioned three categories of Sunday work permissions, namely, the Minister’s Declaration of Work in the National Interest, the CIOM’s Temporary Sunday Labour Permission and the PIOM’s Sunday Labour Permission, may be issued on application in writing and may be reissued by reapplication after expiration of the valid period.

In this study, the interest is on the first category of the application, which is the Minister’s Declaration of Work in the National Interest or in short, the ministerial declaration (MD). The MD may be issued on application in writing or by a notice in the Gazette if, in the Minister’s opinion, such work needs to be performed in the national interest. Therefore, Section 9(1)(f) implies that any Sunday work permit/declaration that the Minister has issued or granted is deemed in the national interest.

According to the *Framework Document on South Africa’s National Interest and its Advancement in a Global Environment*, the term “National Interest” is considered to be rooted in the values of the Constitution of the Republic of South Africa, as adopted in 1996 (hereafter referred to as the

Constitution) (Republic of South Africa, 2022). The document defines national interest as “the protection and promotion of its [South Africa] national sovereignty and constitutional order, its citizens' well-being, safety and prosperity, and a better Africa and world”. Notably, some of the features of national interest defined above are also elements assessed in this study, such as the constitutional order concerning religion, health, and safety in the mining industry.

Although the national interest aspects, as described in the above-mentioned framework document on national interest, are more on foreign policy and the position of a nation in becoming globally advanced, the definition above positions the policy proposal for this study to align with the greater goal of protecting the country's national sovereignty.

2.2.5 Legislative framework that governs working on Sundays in South Africa.

Section 9 of the MWA, read with schedule 4 of the MHSA, is not the only legislation that regulates working on Sundays at the mines. The broad legislative framework that governs labour relations in South Africa, including the mining industry, is discussed below.

The Labour Relations Act No. 66 of 1995

The Labour Relations Act, 66 of 1995 (LRA) is the primary law governing labour relations in South Africa. The LRA provides for a framework within which employer-employee relations are fulfilled. The LRA also advances economic development, social justice, labour peace and fairness in the workplace as enshrined in the Constitution. Section 27 of the Constitution also gives everyone the right to fair labour practices (Republic of South Africa, 1996b). This provision is captured and expanded in the LRA (Republic of South Africa, 1995b). Of importance is that the LRA requires employers to address working time arrangements in line with the relevant sector legislation but does not explicitly refer to Sunday work.

The Mine Health and Safety Act No. 29 of 1996

The MHSA aims to protect the health and safety of persons working at the mines and those who may be affected by mining activities. The Act is unique and only applicable to the mining industry in South Africa. However, an exception is made for the LRA to have exclusive jurisdiction in dealing with matters that affect registered trade unions at the mines, which are major stakeholders in the mining industry.

Section 9 of the MWA, which prohibits certain mining activities on Sunday, is enforced under Schedule 4's transitional provisions of the MHSA. It states, "Any regulation made or deemed to be made under the Minerals Act that relate to health and safety issues that can be regulated under this Act remains in force until amended or repealed" (Republic of South Africa, 1996a: Schedule 4). Accordingly, Section 9 remains applicable and is regulated by the MHSI.

The Basic Conditions of Employment Act No. 75 of 1997

The BCEA aims to advance economic development and social justice. The Act forms part of employees' employment contracts (Nel et al., 2012). Employment contracts must specify that work on public holidays depends on the agreement between the employer and the employee, and there should be no religious discrimination against employees (Republic of South Africa, 1997). Its application to Sunday work is limited to remuneration and does not have restrictions on performing work. In addition, the BCEA limits working time in that employees categorised within a defined threshold should not work more than 48 hours a week.

The Employment Equity Act No. 55 of 1998

The Employment Equity Act 55 of 1998 (EEA) focuses on forms of unfair practices in the workplace and aims to achieve a diverse workforce through equal work opportunities (Nel et al., 2012). However, there is no specific reference in the Act to Sunday work.

2.2.6 The adoption and the practice of continuous operations in the South African mining industry

Continuous operations in the South African mining industry were adopted and practised before the enactment of the prohibitions of working on Sundays in the mines in 1956. Prior to the introduction of Sunday work restrictions in the South African mining industry, Sunday was regarded as a normal working day because a three-shift cycle system was employed during the early years of gold mining in South Africa (Katz, 1976, as cited in Stewart, 2012). Therefore, this three-shift cycle implied that continuous work was performed 24 hours every day of the week, including Sunday. In this study, the terms 'continuous operations' (CONOPS) and 'full calendar operations' (FULCO) imply the same thing. It must be pointed out and noted that Sunday work does not equate to continuous mining or CONOPS/FULCO but can be part of continuous operations if mining activities take place on a 24/7 basis. Additionally, there are no separate permissions for FULCO and CONOPS.

According to Baulk et al. (2009), as cited in Pelders et al. (2021), longer hours can be worked in mining and other industries through an arranged shift work schedule. The DMRE describes shift work as the arrangement that allows different employees to perform the same work but one after the other so that the working hours are not exceeded, thus allowing more extended hours of operation where work is performed by different persons in consecutive shifts (DMR, 2014). In addition, according to the Code of Good Practice on the Arrangement of Working Time of the Department of

Labour, operations that run 24 hours per day every day of the calendar year are called continuous shifts.

Sunday work restrictions were not enforced at the mines until the review of the original Mine and Works Act of 1911. The reviews of the original Act were due to a 1922 industrial strike that emanated because of the reduction in gold mineworkers' wages and the substitution of well-paying jobs with cheap labour due to declining gold prices and poor working conditions (Bhoola, 2002; Nel et al., 2012).

Subsequent developments from the strike evolved into reviews and amendments to the original Act, which did not prohibit Sunday work initially. In 1956, as part of the legislation review, the government incorporated the restrictions on working on Sundays and some public holidays. The resultant review led to the enactment of Section 9 of the MWA, which forms the basis of this research as it remains enforced. This 68-year-old piece of legislation can be evaluated against other countries' Sunday work practices, as South Africa's global ranking in mining positions it well for comparison amongst its peers.

2.2.7 Continuous operations in other countries and industries

Due to technological and economic developments in many countries, continuous or shift work is not only confined to industrial sectors but has spread into retail and services sector employment (Bambra et al., 2008). Industrial sectors include those in the natural resources sector, such as the mining, and oil and gas sectors and secondary industries, such as the construction sector. Continuous production processes in natural resources industries are high-risk and labour-intensive and often require extended work schedules, including those in the offshore installation of gas and oil industries (Parkes, 2012).

In other mining countries such as Canada, the USA and Australia, continuous working arrangements known as Fly-in/Fly-out (FIFO) were

applied to address the rapid growth in labour demand in remote mining regions (Perry & Rowe, 2015; Solomon et al., 2008; Storey, 2010). The application of the FIFO includes working on Sundays as the operations are continuous. FIFO has recently been incorporated into mines' operational decisions (Storey, 2010). The mining operations involve planning for labour availability to ensure that activities are carried out optimally.

Table 2-1 below compares Sunday work practices and their implementation in selected mining countries, including South Africa. Information about Sunday work practices in Canada, China, Zambia, and Zimbabwe, was collected through literature and personal communications.

Table 2-1 Comparison of Sunday work practices in the mining sector of selected countries

COUNTRY	SUNDAY WORK PROHIBITION POLICY	SHIFT WORK/CYCLE
<u>SOUTH AFRICA</u> Sources: MWA and BCEA	- Prohibitions are applied in all mines unless written permission is issued. - Certain activities are restricted on Christmas and Good Friday.	- Determined per operational requirements. - Working hours are limited to 48 hours per week.
<u>ZIMBABWE</u> Sources: <i>Personal Communication with international colleagues in the mining industry</i>	- There are no prohibitions. - Public holiday work is voluntary and counted as overtime.	- Mining operations are continuous, and shift work is applied. - Parties can make arrangements for either a 5-day or a 7-day shift rotation. - Working hours are limited to 48 hours per week.
<u>ZAMBIA</u> Sources: <i>Personal Communication with international colleagues in the mining industry</i>	- There are no prohibitions. - Overtime may be worked for extra pay on any public holidays.	- Determined per operational requirements. - Working hours are limited to 48 hours per week.
<u>CHINA</u> Sources: <i>Personal Communication with international colleagues in the mining industry Chapter IV, Article 36 of Labour Law of the People's Republic of China (The State Council, 2014)</i>	- There are no prohibitions - The mining industry operates for 24 hours.	- Continuous operations are employed. - The working hour system practised by the State limits working hours to no more than 8 hours a day and no more than 44 hours a week. However, some companies exceed this working hour, especially when shift cycles are involved.
<u>CANADA</u> Sources: <i>Employment Standards Act Chap. E-7.2 The Days of Rest Act</i> <i>Part 7 Section 37.13 of British Columbia Mining Regulation (British Columbia, 2023)</i>	- There are no prohibitions. - FIFO is practised, which allows working on Sundays. - Work in the retail business or part of a retail business is exempted from the application of the Days of Rest Act.	- Employees may refuse to work on Sunday by notice fourteen days before such Sunday. - There is no limit to the number of hours an employee may work. - In mining, a work schedule may be instituted wherein hours of work may be 12 per day, with a 4-day shift cycle (4 days at work and 4 days off work) that repeats over a period of 8 consecutive weeks.

Table 2-1 shows that Sunday work prohibitions are applied in all mines, irrespective of size or nature of operation in South Africa, unless a written application is submitted, and a Sunday work permission is issued. Additionally, the prohibitions apply on Christmas Day and Good Friday but do not apply to other public holidays. The decision to conduct work depends on individual mines' shift cycles, which are determined by operational requirements, especially continuous operations, and the working hours are limited to 48 hours per week, as per the BCEA.

All the other selected countries, namely, Zimbabwe, Zambia, China, and Canada, have no laws prohibiting or restricting working at the mines on Sundays or any public holiday. Mining operations are allowed to be continuous through the utilisation of shift work arrangements. Therefore, reporting to work is mandatory if Sunday falls within a defined shift arrangement, either a 5-day or a 7-day shift rotation. Mining operations in these countries may operate on a 24-hour basis, depending on the individual operations requirements.

Other options are available to employees, particularly in the two Southern African countries, Zimbabwe and Zambia, wherein working during public holidays is voluntary and is considered overtime. Therefore, employees may work overtime for extra pay on any public holiday, including New Year's Day, Christmas and Good Friday. However, the decision to conduct work still depends on individual mines' shift cycles as determined by operational requirements, especially continuous operations. Nevertheless, in both cases and similar to South Africa, the labour laws of these countries prescribe that the working hours be limited to 48 hours per week.

In China, Sunday work is normal; it is not prohibited, so no permission is required. Most of the operations in the mining industry work continuously for 24 hours. In the Canadian mining industry, FIFO is practiced, which allows working on Sundays, but there is no limitation of work on the number of hours an employee may work. The differences between Canada and South Africa regarding Sunday is that in Canada, Sunday is described as a weekly day of rest in terms of the Days of Rest Act, but the law does not prevent or restrict working activities at the mines. However, employees have the right to refuse to work on Sunday by giving verbal or written notice of refusal at least fourteen days before such Sunday.

In addition to mining, FIFO work arrangements are applied onshore and offshore oil and gas industries in many countries, including Australia, Norway, the USA, England, Canada, Russia, and others (Korneeva, 2022).

FIFO arrangements are more suitable for the oil and gas industries, as commuting for daily work shifts is not feasible compared to most onshore mining sites (Storey & Shrimpton, 1989, as cited in Carter, 2008). Employers in the oil and gas industries provide food and housing for a defined period to workers from remote residential areas (Hall & Heather, 2016). The nature of the oil and gas extractive industries is continuous, and thus, because of long-distance commuting, FIFO is adopted, and continuous work and weekend work are incorporated into industries involving continuous processes.

In an article that reviewed the extended work schedules and time arrangements of the North Sea offshore installations, with a specific focus on the impact of day/night shift patterns on operational safety and individual health risks, it was reported that working for extended hours, combined with overtime, long work weeks, and night work, leads to fatigue, impaired cognitive performance, occupational accidents, and health complaints (Parkes, 2012). These findings highlight the need for further research to better understand and mitigate these risks, particularly those associated with fatigue. Bamba et al. (2008) further stated that the risk of injuries and accidents tends to increase where shift work is involved; however, none of the contributors could be solely attributed to continuous working.

The work schedules of continuous offshore installations are similar to onshore Fly-in/Fly-out (FIFO) continuous operations (work sites in the mining and construction industries), however, offshore workers become exposed to potential adverse health and safety implications more frequently than onshore operations (Parkes, 2012). These include hazardous production, drilling operations, noise, chemical exposure, heavy physical work, confined living and working space, isolated location, and unpredictable sea and wind conditions and isolated location

A survey was offered to workers in the rubber and plastics industry in rural mid-America to gather information to aid the industry in considering changes

from a 5-day to a 7-day around-the-clock work system schedule (Tepas et al., 1985). However, a concern for many managers was how a poor move to 7-day operations could contribute to loss of earnings. Therefore, it is imperative to ensure that implementing a continuous operation system is well-planned to prevent potential losses due to poor implementation.

The issues of concern regarding implementing continuous operations were associated with change management, increased demand, capital equipment costs and labour costs, excessive overtime work and market dynamics. The finding was that, in many industrial plants, the origin of the shift-work system in practice is unknown to those using it, and managers often resist change to avoid risk (Tepas et al., 1985). Furthermore, it was discovered that a blanket solution to all shift-work problems would not suffice. As sites were different, site-specific recommendations were to be made for each area, considering the characteristics of individual workers, the nature of work, the market, and other factors (Tepas et al., 1985).

The literature provided by Härmä et al. (2007) reviewed risk factors and risk reduction strategies regarding extended work periods in the petroleum industry in Norway. The review identified that the level of accident risk rose as the hours of extended work progressed.

2.2.8 Studies on Sunday labour prohibitions

There is no evidence of studies on Sunday work prohibitions or restrictions in the mining industry. However, some reflections on extended working hours in the mines are highlighted below, and one on restrictions on Sunday work has been undertaken for the retail industry, which is an entirely different sector. In this regard, a retail industry study was conducted by De Meza (1984), who examines Sunday shopping in the context of perfect competition.

De Meza (1984) determines that removing restrictions prohibiting Sunday trading in the retail sector may result in a less likely social loss for a more

competitive market, especially if traders intend to attract distant customers by reducing the prices. De Meza (1984) furthermore points out that shopping on Sundays may be advantageous to society regarding time availability and favourable to a few firms where the price greatly exceeds the marginal cost - as it offers an opportunity to trade and profit.

Skuterud (2004) also investigates the impact of Sunday shopping on employment and hours of work in the retail industry. Based on employers' decisions to open on Sundays by applying different adjustments to employment and work hours, evidence shows that labour demand was disproportionately satisfied (Skuterud, 2004). The study furthermore reveals that the general merchandisers experienced increases in labour demand more than specialised retail establishments.

Sokupa (2011) states that since World War II, certain merchandisers near residential areas in the USA have noticed consumers prefer shopping on Sundays. Noticing this trend, some retailers attempted to modernise and secularise the old Sunday Blue Laws to their advantage as a competitive strategy (Sokupa,2011). Sokupa (2011) further states that although retailers' decisions to trade on Sundays were due to the convenience offered to customers, opportunistic merchandisers supported the restrictions to manipulate and control business competition.

According to Parkes (2012), there is not much knowledge of the long-term individual health effects of working hours in excess of the standard 48-hour hours workweek or the irregular work patterns. However, in the services sector, shift work causes the health care and emergency services personnel to experience and report adverse health and work-life balance effects, including sleep disturbances, fatigue, digestive problems, stress-related illnesses, and increases in general morbidity (Bambra et al., 2008).

Concerning mines, Pelders and Nelson (2018) claim that extended working hours in South African mines, where continuous working arrangements

were employed, caused fatigue and poor well-being, including absenteeism and accident risks. Stenzel (2002), Pelders and Nelson (2018) and Pelders et al. (2021) further reveal that fatigue poses a high risk to health and safety and a subsequent decline in mining productivity. Nonetheless, these studies demonstrate that significant benefits in productivity improvement are realised, albeit at the cost of employees' health, safety, and wellness.

According to Stenzel (2002) and Pelders et al. (2021), successful implementation of continuous operations (CONOPs) or full-calendar operations (FULCO) contributed to improved productivity in some South African hard-rock mines, but risks linked with fatigue were notable. Furthermore, poor fatigue management reduces work performance and productivity and increases the potential for mine accidents. Stenzel (2002) presents results from one FULCO surface coal mine in South Africa, where a poorly planned shift schedule resulted in fatigue, contributing to haul-truck accidents. In another South African coal mine, poor implementation of FULCO affected the mine's ability to improve productivity (Phillip, 2019).

Although the studies by Stenzel (2002), Pelders and Nelson (2018), Pelders et al. (2021) and the article by Phillip (2019) may imply that continuous shift work includes working on Sunday, they neither investigated the legislation that governs Sunday work prohibitions or restrictions nor obtained views from a range of stakeholders from across the industry on this matter. In addition, their studies did not examine the safety implications of working on Sundays. Accordingly, this research will interview key stakeholders to solicit their views on the subject of Sunday work restrictions in the mines and the possible safety implications that might exist if the restrictions are removed.

Lovenheim and Steefel's (2011) study investigates public safety; they analyse whether alcohol-related blue laws have any benefit in curbing Sunday fatal accident occurrences due to drunk driving. Lovenheim and Steefel (2011) argue that if there is a secular benefit to the society where

alcohol is not sold on Sunday, there should be a considerable reduction in drunk driving cases despite any justification for their implementation.

However, it is hard to justify the existence of alcohol trade restrictions if the citizens have no health and safety benefits yet suffer a significant loss in tax revenue, which could be harnessed when alcohol sales are allowed on Sundays (Lovenheim & Steefel, 2011). Since the continued enforcement of the liquor-related blue laws did not play a role in curbing the road accidents caused by drunk driving, a similar approach can be applied in this research to check if restrictions on Sunday work have any significance in contributing to the reduction of mine accidents.

Previously published studies have highlighted the impacts of FIFO on society. These include Hussain et al. (2015), who assessed FIFO shortcomings in health care service delivery in rural communities of Australia. Another related research by Gillies et al. (1991) highlights that FIFO arrangements increasingly affected mine employees' social relationships since workforce productivity can be affected by unpleasant social circumstances (Sangqu, 2016). Thus, the productivity of mining is dependent on the well-being of the workers.

2.3 Key Debates and Controversies

Whilst the section above outlines various legislation related to Sunday work restrictions and multiple studies, the controversy surrounding this issue must be explored. The subsections below, therefore, further examine the issue of Sunday as a day of rest, justifications for Sunday restrictions, and debates about deregulation. Also, the advocacy of work-life balance has been brought forth as a notable issue in recent times, including the discussion on the regulatory aspects of limitations on hours of work as one of the basic conditions of employment in South Africa.

2.3.1 Why Sunday?

The question of why Sunday in particular, was selected from all the days can be best answered by first understanding the day's origin. Sunday is one of the days of the planetary week, named after the seven planets of the universe (Bacchiocchi, 1977). The present week has seven days, five weekdays and two days under a weekend: Saturday and Sunday. In Christianity, Sunday was chosen without reason as one day from the seven days of the week to be practised as a representative day of the Sabbath from the earliest time in history (Trevelyan, 1903). It is unclear why the Christians preferred Sunday as the Sabbath day.

However, according to Bacchiocchi (1977), in their investigation into the origin of Sunday and its observance, it was concluded that there may be two major contributory factors in the choice by Christians to observe the Sabbath on Sunday. Firstly, a new day of worship was necessary due to the Christians' anti-Judaism nature of opposing the Jewish Sabbath (Bacchiocchi, 1977), a Jewish period of prayer from every Friday evening to Saturday evening. Secondly, the Sunday observance developed from the adoration of worshipping the Sun as it was associated with light (Bacchiocchi, 1977). In South Africa, the working week comprises five days, from Monday to Friday, except for sectors such as retail that are allowed to work over weekends (Saturday and Sunday). However, as stated, there are prohibitions or restrictions from working on Sundays in the mining industry and can only be lifted through authorisation by the State.

2.3.2 Justification for Sunday restrictions and the movement towards deregulation

Trevelyan (1903) argued that the observance of the Sabbath is rooted in the biblical obligation of the strictness of the Fourth Commandment to observe the Lord's Day. Lovenheim and Steefel (2011) and Ismail (2001) assert that the Sunday restrictions were put into law for all people to have a common

day of rest, thereby justifying the lawmakers' stance that the prohibition is not discriminatory when considering other religious beliefs.

Interestingly, Sunday was a day of rest from most daily duties and work in general, including the courts and workshops, during the Roman Empire. Still, those duties identified as "...works of necessity and charity..." were excluded from resting (Johnson, 1934). During Constantine's pronouncement, agricultural work was exempted from Sunday rest but was repealed in A.D. 910 by Emperor Leo Philosophus (Trevelyan, 1903). Nevertheless, the colonial tradition of prohibiting all Sunday work, business activities and recreational events remained for a long time while allowing work performance only for 'necessity', such as agricultural activities (Trevelyan, 1903; Johnson, 1934). Food supply and provision were viewed as essential activities that were not to be compromised to ensure food security.

Another justification for these restrictive laws is that they benefit society by preventing alcohol consumption on Sundays since alcohol-related incidents can be reduced, thus providing health, safety, recreation, and general well-being to the community (Lovenheim & Steefel, 2011). However, Burda and Weil (2004) highlight that although there are many benefits related to resting and socialising communally by families and society on Sunday, the negative externalities of coordinated leisure time can affect some economic activities.

In the context of religious inclusion, Sunday-law countries must find a compromise that supports the interests of both sides of the issue (Ismail, 2001). Policymakers must consider the views of all stakeholders, and thus, policy reforms must reflect the interests of all affected parties. As a result, the views of key and relevant stakeholders in the South African mining industry were obtained regarding the regulation and implementation of Sunday work prohibitions in the mines. The stakeholders' views were obtained through semi-structured interviews to explore further this debatable research topic of Sunday work restrictions.

Several authors point out that many Western and European governments questioned the importance of Sunday work restrictions, and the issue has sparked debates concerning their regulation and implementation (Ismael, 2001; Lovenheim & Steefel, 2011; Passaro et al., 2020). Robbins (2022) indicates some concerns that modern society renders restrictions on Sunday activities irrelevant, even though they might have been suitable for past principles.

In addition, the growing trend against Christian beliefs has put Sunday observance laws (or the Blue Laws) under scrutiny based on principles of religious freedom and neutrality (Ismail, 2001). Even though Sunday laws have weakened with time and, in some instances completely fallen off on their own in some jurisdictions, most still exist today and are sometimes legislated (Ismail, 2001).

During the mid-19th century, influential groups with material interest started pressurising governments to provide exemptions on Blue Laws as they appeared to have been legislated in most countries (Robbins, 2022). The Sunday bans in the USA succeeded, even after resistance to their execution and implementation throughout the 19th century (Ismail, 2001).

Internationally, there has been a movement towards deregulating Sunday prohibition laws in recent years, as evidenced by the outlawing of Sunday work restrictions/prohibitions that is gaining momentum globally (European Commission, 2023; Ismail, 2001; Robbins, 2022; Skuterud, 2004). However, some parties still pursue the implementation of Sunday restrictive laws.

The deregulation of Sunday work restrictions gained momentum globally in some countries in the early 1990s (Skuterud, 2004). Around the same time, in the early to mid-90s, South Africa was transitioning from a non-liberal apartheid government system into a period of adjusting to a democratic institutional order. During some policy reviews to align with the then-newly

established constitutional arrangement, various stakeholders raised the issue of Sunday work restrictions in the mines. The following subsection delves into this debate.

2.3.3 The Sunday work prohibitions debate in the South African mining industry and the mining stakeholders' views on the restrictions

With regard to South Africa, the democratic government that came into being in 1994 commenced with the formulation and introduction of inclusive policies and legislative reforms. The introduction of the new constitutional dispensation following the democratic elections in 1994 paved the way for the reform of discriminatory mineral laws developed over the preceding century (Mostert, 2012). Formulating these involved aligning various policies and legislation with the then-newly adopted constitutional order.

However, some of the legislation enacted before 1994 remained in force and are seen to contain provisions that are not constitutionally compliant (South African Law Reform Commission, 2011). One such legislation is the MWA, which, as stated earlier in the text, includes a clause restricting Sunday work activities despite South Africa having some religions that do not observe the Sabbath on Sunday or regard Sunday as a day of rest.

The obvious Christian characteristics apparent in the Sunday restrictions laws have made critics of the prohibitions argue that the legislation does not consider its constitutionality (Ismail, 2001). Section 9 of the MWA does not engrain the constitutional fundamentals of freedom of religion, as it appears to favour only Christian days of worship: Sunday, Christmas Day, and Good Friday. Therefore, this piece of legislation does not conform to democratic societal values.

Following the 1994 institutional change and the need for policy reforms in South Africa, the mining industry was due to address the apartheid legacy

challenges (DME, 1998). A Mineral Policy Process Steering Committee was formed in September 1995 to conduct a review process that would address the mining industry's problems and opportunities through extensive consultative processes. The process involved stakeholders in the South African mining industry for a new minerals and mining policy (DME, 1998).

A Discussion Document on Minerals and Mining Policy was published during the consultation process, and written comments were submitted. After that, workshops, bilateral meetings and public hearings were held, and further written submissions were made in anticipation of producing the mining policy document which was ratified as a Green Paper in early 1998. The resulting review led to the formation of the *White Paper on Minerals and Mining Policy for South Africa*, which was approved by the South African Cabinet in September 1998 (DME, 1998).

In the White Paper on Minerals and Mining Policy for South Africa, under the Industrial Relations and Employment Conditions, the Labour Market Commission raised a view regarding Sunday work prohibitions in the South African mining industry. It regarded the prohibitions in general and the regulation of working time in mining as unfavourable to labour productivity and capital (DME, 1998). Even though the government intended to facilitate the relations between employers and employees on the matter, the views of the employers were that the government should not intervene in the industrial relations and affairs between employers and employees and instead focus on creating a regulatory environment that allows for feasible solutions (DME, 1998).

The government policy in the White Paper then concluded that the current restrictions of Sunday work will be reviewed as guided by the provisions of labour legislation. Nevertheless, these prohibitions have not been reviewed. In light of the above, this research obtained the views of key stakeholders in the mining industry through interviews to determine the best course forward for new policies. Various stakeholders have recently raised the view

that Sunday work prohibitions regarding South African mines are obsolete. Multiple authors, such as Le Roux et al. (2019), Leppan (2018) and Sangqu (2016), have underscored the issue.

Furthermore, Sangqu (2016) suggests that determining working days and shift cycles should be the prerogative of the mine employers. Ismael (2001) opines that in addition to the general opposition to these laws on religious grounds, they are viewed as obstacles to commerce. Therefore, considerations may be made to utilise working time effectively by abolishing the Sunday work prohibitions.

2.3.4 Concern and advocacy for work-life balance

A recent perspective presented by the European Parliament states that implementing the 2022 Directive of Work-Life Balance, which prohibits Sunday work in businesses, will result in a productive workforce, and absenteeism will be reduced as workers are afforded flexible working hours (European Commission, 2023).

In recent decades, working time matters have been the core of discussions in most labour market reforms and evolutions (ILO, 2023). There is a noticeable trend in organisations, increasingly moving from standard working time to flexible working time arrangements driven by the need for efficiency improvement (Anxo et al., 2006). The shortening of standard working hours has been deliberated and implemented in several countries to balance times of work and rest times (Lepinteur, 2019). The arguments for reducing working hours have led to suggestions and adoption of a shorter work week in some countries. Upon evaluating the impact of working time reforms in Portugal and France, Lepinteur (2019) found that the workers' job and leisure satisfaction increased with reduced working hours. The finding aligns with the [International Labour Organisation] ILO (2023) regarding the organisation of working hours and the provision of rest periods that can significantly impact the quality of work and life (ILO, 2023).

With regards to mining, despite the negatives and disadvantages associated with working on Sunday, some opinions are that there could be a need to allow certain economic activities, such as mining, to operate on Sundays to create job opportunities and contribute to economic development. This sentiment is shared by some trade unions in the European Union (EU), advocating for Sunday work to carry on for economic reasons, thus opposing the *Directive of Work-Life Balance* legislated in 2022 by the European Parliament from restricting Sunday work (European Commission, 2023).

The European Commission (2023) regards the abovementioned directive as a tool to modernise the current EU legislative and policy frameworks but does not include religion and focuses on work-life balance. According to Lewis & Beauregard (2018), profit-driven neoliberal values in businesses and some directives set by the International Labour Organisation (ILO) and the EU, increasingly use the work-life balance terminology to replace family-friendly concepts and therefore influence the understanding of work-life balance. Lewis & Beauregard (2018) believe that the term “work-life balance” lacks an established definition in the research literature because it is ambiguous and cannot be easily defined as the balance or equal participation between work and life despite its recent popularity in the global sphere.

Lewis & Beauregard (2018) presented broader views on the concept of work-life balance from various scholars to explain its meaning. It was pointed out that even though the notion of work-life balance tends to be defined as a social concept, it cannot be confined to a definition focused on suiting a particular societal or working-class group; it is much broader. Work-life balance focuses on the individual experience or aspiration, which refers to the personal satisfaction and fulfilment one derives from one's work and personal life for a specific category of workers (Lewis & Beauregard, 2018).

The term further points to the description of public or workplace policies or practices, which may include flexible work arrangements backing the above-mentioned individual experiences/aspirations (Lewis & Beauregard, 2018). Therefore, it cannot be concluded that social expectations and norms can be balanced with work as individuals involved in similar work routines invest differently in work, family, or personal life (Lewis & Beauregard, 2018).

2.3.5 The impact of Sunday work at the mines on the Department of Employment and Labour's hours of work

The ILO regards working time as a critical factor in any work associated with productivity (Kisting, Dalvie, & Lewis, 2007). South Africa, as a member of the ILO, has established a regulatory framework aligned with the principles of the organisation. One of the mandatory employment requirements in South Africa is for employers to regulate employees' working time per the BCEA.

The acceptable working time limitations, eight hours for daily working and 48 hours for weekly working were fixed following requests from a labour movement across the world for the reduction of working hours at the first ILO Convention and other subsequent relevant Conventions (Bosch, 1999). Most countries affiliated with the ILO, including South Africa, adopted this standard working time, incorporating the 48-hour work week in its BCEA. Therefore, to maintain consistency with the relevant international labour standards and the relevant literature on the effects of long hours of work on occupational safety and health, work-life balance, and productivity and performance, working more than 48 hours per week can be defined as long working hours (Messenger, 2018).

The BCEA is the basis of all employment contracts, setting out the minimum conditions employers must comply with and, amongst other things, limiting the number of hours employees can work per week, including overtime. The BCEA has exemptions for some categories of workers and for those within a defined threshold to work more than 48 hours a week. However, the

applicability of working time regulations depends on specific sectoral determinants, and working hours may vary depending on collective bargaining agreements (Oosthuizen & Summya, 2007). In the mining sector, work schedules of mining operations implementing continuous work practices may impact weekly working hours due to shift work.

Any Sunday mining activity under the MWA involves working time limitations. Nevertheless, mines that usually operate continuously have shift cycles that incorporate lay-off shifts during the week to comply with the BCEA regarding limitations on hours of work. Sunday work at the mines, or any prohibition thereof, does not impact the BCEA's hours of work. The application of the BCEA to Sunday work is limited to remuneration and not restrictions to perform work.

2.4 Chapter Summary

Sunday work restrictions laws were passed by Christian countries that made religion part of the state's administration. Hence, the prohibitions of Sunday work activities were introduced in most countries after the establishment of colonialism, which often coincided with the introduction of Christianity. In South Africa, Sunday work restrictive laws in the mining sector evolved with the commencement of modern mining in the late 19th century. For over a century, the mining industry has been instrumental to the development and growth of the South African economy, contributing immensely to GDP and employment. The challenges impeding the mining sector in recent years may require a review of some regulatory frameworks, such as Sunday work restrictions, to improve the sector's performance. This is so because in the early days of modern mining in South Africa, the gold mines had a shift cycle system, which included working every day of the week before Sunday work prohibitions were introduced in the mining industry. The arrangement of the shift cycle implied that continuous operations were performed. According to the Code of Good Practice on the Arrangement of Working Time of the

Department of Labour, operations that run 24 hours per day every day of the calendar year are called continuous shifts

The prohibitions on working on Sundays are administered through the MHSA, whose main objective is to protect and safeguard the health and safety of mining employees. This law has been enforced since 1956 when the MWA was implemented.

Various stakeholders in the mining industry have questioned the enforcement of Sunday work prohibitions in the South African mines. Some suggest that they are outdated and irrelevant in the current mining era. Meanwhile, others believe it is necessary to provide mineworkers with a day of rest and protect workers against possible extended working hours.

As debatable as the issue of Sunday work prohibitions or restrictions in the mining industry is, the literature review revealed that no studies specifically focus on this issue in the mining industry. However, studies have been done on other sectors, such as retail. Conducting work on Sundays in the retail industry appears to have gained traction and is acceptable to society. Continuous work practices that include working on Sundays are standard in the offshore oil and gas sector. In the mining sector, countries such as Zimbabwe, Zambia, China and Canada have working arrangements that may include working on Sundays. These countries allow continuous shift work operations, unlike South Africa, which restricts Sunday work in the mines.

The argument around the meaning of the work-life balance concept and its applicability in continuous operations remains a concern for balancing personal life and work. However, there is continued advocacy for implementing work-life balance in workplaces. Acknowledging the significant impact of continuous work arrangements on work-life balance, social cohesion, culture and traditions, and family life is crucial. However, various people view the concept of work-life balance differently and cannot

be confined to a group. Work-life balance is viewed as more satisfactory to an individual's preferences or aspirations depending on how they choose to fulfil their personal and work lives. Therefore, it is imperative to assess the impact of work-life balance on workers from a broader perspective, understanding the complexity of the concept. The assessment of the work-life balance concept is not within the scope of this research and will be recommended for future research.

The limitation on work hours is regulated under the BCEA in South Africa. Since conducting work on Sunday has some bearing on working time and labour utilisation, employers organise the arrangement of working time schedules/shifts to ensure compliance with the limitations on hours of work as per the requirements of the BCEA under the jurisdiction of the DEL. The Sunday work prohibitions and the arranged working schedules where Sunday is included as a working day do not impact the BCEA's hours of work.

The literature review indicates that there are different practices relating to working on Sundays and varying views regarding Section 9 of MWA. Accordingly, the study gathered qualitative data to investigate various Sunday work practices and solicited views from various participants in the mining industry. No previous studies were undertaken on Sunday work prohibitions and associated ministerial permissions. Therefore, a quantitative approach was followed to understand trends and possible implications of the granted ministerial permissions.

3 RESEARCH METHODOLOGY

3.1 Introduction

This research methodology chapter contains sections on research design, data collection processes, data validation process and the data analysis approach. A key finding from literature reviews conducted in Chapter 2 is that Sunday observance laws have been debated for years, encouraging a move towards deregulation. As such, the research methodology and approach focused on describing the methodology and research framework that will assist in researching evidence-based policy proposals on regulating Sunday work prohibitions in the South African mining industry.

3.2 Research Design

This section of the report outlines the research design framework and discusses limitations and ethical considerations.

3.2.1 Research design framework

The research uses a mixed-methods approach to compile evidence-based policy recommendations for South Africa's Sunday work activities administered under Section 9 of the MWA. The framework outlines the seamless flow and alignment between objectives, research questions, justification of the research, literature review, methodology, data analysis, conclusions and recommendations as presented below.

a) Objectives

The research objectives comprise a primary objective and two supporting objectives. The two sets of objectives are presented in section 1.4 of this report. The primary objective forms the basis of the research, which was conceptualised to address issues relating to Sunday prohibitions in the South African mining industry. The supporting objectives intend to assist in understanding the past and

current situation and possible implications regarding approvals to perform any mining activities on Sundays.

b) Research Questions

Three research questions are constructed to address the objectives of the report. These questions also presented in section 1.5 of the text.

c) Justification of the research

The justification of the research is discussed in section 1.3 of this report. In essence, the research is prompted by continued different views about the relevance and the need for South Africa to maintain the Sunday work prohibitions outlined in Section 9 of the MWA. These different views suggest that the issue needs to be investigated, and new policy proposals explored.

d) Literature Review

The literature review uses publications, journals and books to understand the origin and recent developments regarding Sunday work prohibitions. In addition, the literature review also assisted in undertaking an international review of Sunday work in the mining industries of selected countries.

e) Research Methodology

The research uses a mixed-method approach involving quantitative and qualitative data collection and analysis. The method assisted in addressing the three research questions stated above. The quantitative approach investigates historical trends and possible implications for granting ministerial Sunday work permissions. A quantitative approach is also used to examine data acquired to address the second research question regarding responses from stakeholders in the mining industry of South Africa. Qualitative

methods assist in gathering and analysing relevant data through literature review and interviews.

f) Data collection method

The data collection method is described in detail in section 3.3 and is subdivided into four parts: Literature review data, Document review data, Case studies data and Interview data.

g) Analysis of results

Historical trend analyses (plotted as linear graphs) and statistical correlations are used to analyse quantitative data relating to the granted ministerial Sunday permissions. Additionally, frequency analyses are performed, and themes are compiled from interviewees' responses.

h) Conclusions, Recommendations and Limitations

The results from the analysis are used to compile conclusions and recommendations as well as identify limitations.

3.2.2 Ethical considerations

The University of the Witwatersrand's committee responsible for ethics clearance provided the researcher with an Ethics Clearance Certificate (certificate number: EMINN/2022/63) for conducting this research (Appendix F). The data collected, case studies, and interviews will be kept confidential and secure and will be stored with the University.

The researcher sought permission from the mining operations selected as case study sites to use their data and information for the research. Accordingly, the mines provided relevant permissions to conduct the study. Regarding interviewees, the participants provided informed consent before participating in this research study. All participants were assured that their responses would be treated with utmost confidentiality and anonymity. There was a high potential that religion could be a sensitive subject to

research participants and, therefore, could affect their responses. The challenge was overcome by engaging all participants ethically and respectfully. Furthermore, participants were informed that there would be no costs or direct benefits to them as a result of participating in the project.

3.3 Data Collection Process

Data was collected using four independent, but related quantitative and qualitative data collection processes depicted in Figure 3-1 below. The four parts are literature review data, document review data, case studies data, and interviews data. Part 1 involved an extensive literature review that assessed the critical aspects and origin of Sunday work restrictions, their adoption into other sectors, and their application in the South African mining industry. Part 2, document review data, involved the collating data relating to ministerial permissions on working on Sunday, safety performance, production, and employment in the mines, Part 3 employed collecting case studies' data of two selected mines in South Africa. Part 4 involved interviewing seven key stakeholders in the South African mining industry.

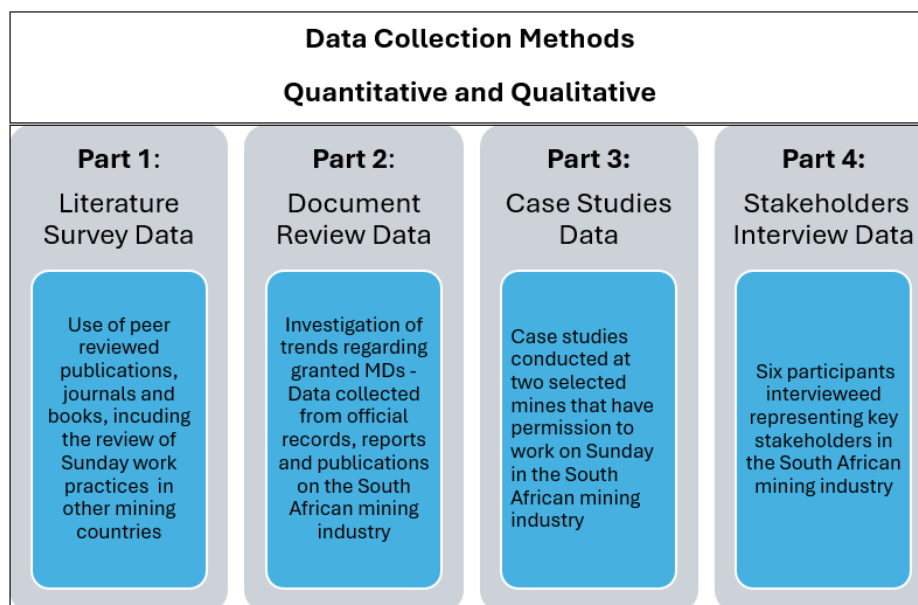


Figure 3-1 Four parts used in data collection

3.3.1 Part 1 of the research data collection methods – literature review

Part 1 involved obtaining data and information from the literature review using peer-reviewed publications, journals and book material relevant to the research topic. In addition, a review of the Sunday labour practices and policies in other mining jurisdictions was undertaken with the purpose of comparing them with those of South Africa

3.3.2 Part 2 of the research data collection methods – investigation of trends regarding granted MDs, safety performance, production and employment

Part 2 involved a document review to collect national data trends regarding the number and type of mines operating with ministerial permission, often referred to as ministerial declarations to work on Sundays, and collating data on safety performance, employment and production of mines that have been granted permission to operate on Sundays. The data used for this study were from January 2015 to December 2022 and were all collected from the DMRE.

As stated before, in terms of MHSA, read with Section 9 of MWA, permission to perform any activity on Sunday has to be granted by the Minister responsible for mines. It may be granted if the Minister deems it to be in the national interest. For ease of reference, the ministerial declarations of work in the national interest or the ministerial Sunday work permissions are referred to as "**MDs**". However, written applications/submissions from the mine employers to the DMRE are a prerequisite to be considered for approval to obtain MDs.

A list of mines operating with the MD was compiled and subsequently compared to the total mines operating in South Africa. The information about MDs was obtained from a journal/book of submission records at the DMRE. All the data and the records of all submissions directed to the CIOM for the attention of the Director-General (DG) and the Minister are manually

captured in a book. The data obtained from the records were scrutinised carefully, filtered, and sorted.

Safety performance, employment, and production statistics

Data regarding safety performance, which include the number of fatalities and injuries among mine workers, were collected from the DMRE's MHSI annual reports from 2013/2014 to 2022/2023 financial years to fall within the range of eight years of the analysis.

Although the DMRE financial year commences in April of a given year and ends in March of the following year, the mine accident statistics obtained were sorted according to the calendar year. The mine accident statistics that were collected and analysed were reportable fatalities and injuries. In terms of Regulation 23 of the MHSA, a reportable fatality is defined as loss of life at a mine as a result of a mine accident. A reportable injury is an injury that results in a loss of a limb or part of the body, including serious accidents that prevent one from performing regular work for at least 14 calendar days after the occurrence of the accident that led to such injury at a mine.

Mines granted with MDs were grouped into eight groups according to the mineral commodity being mined (Appendix B). These categories are gold, PGMs, coal, diamond, chrome ore, iron ore, manganese, and others. The "others" category includes commodities such as copper, phosphorus, and other industrial minerals. Also, the categorisation was based on the reporting format of the DMRE's MHSI annual reports, wherein copper was counted with the "others" category.

Information on the annual production and employment of various mineral commodity categories from 2013 to 2022 was obtained from the Minerals Council South Africa's annual publication, Fact Sheet. The data regarding production and employment were verified using information from the DMRE.

3.3.3 Part 3 of the research data collection methods – case studies

Part 3 entails undertaking case studies at gold and platinum mines in South Africa to analyse specific examples and provide a detailed insight into the information provided by mines that were granted MDs and the impact that Sunday work permissions, specifically MDs, had on the mines. Convenience sampling was used to select the case studies and collect the relevant data. The selection of the case studies was informed by the availability and willingness of mines to participate in the research. Necessary permissions to conduct the research were sought and received from the two selected mines, and their respective information is presented in an anonymised format.

The two mines used as case study sites were granted MDs to conduct any work on Sunday. This entails the entire mining process, including drilling and blasting activities, maintenance work, repairs and examination of machinery and equipment.

Collection of data also includes gathering information relating to written applications for working on Sunday, relevant mine standards and procedures, information about consultations with trade unions or employee representatives, and records of persons' religious affiliations at the mine. Historical mine accident statistics, comprising reportable injuries and fatalities, for the two case studies were also collected.

3.3.4 Part 4 of the research data collection methods – stakeholders' interviews

Part 4 encompassed the identification of selected participants from key stakeholders to participate in semi-structured interviews to gather information and views about the Sunday work prohibitions in the mining industry of South Africa. The participants were from the government, employers, and employees (trade unions). The interviews aimed to assess the relevance of the Sunday work prohibitions or restrictions in the South African mining industry amid the current mining era and the views of

affected stakeholders on the possible lifting of the prohibitions. As Section 9 of the MWA is enforced under the MHSA, the preamble and some of the objectives of the MHSA, together with accepted practices regarding mining policy formulation, guided the selection of interviewees.

The MHSA promotes stakeholder participation in various forums through representatives of the government, employees and employers (Republic of South Africa, 1996a). These representatives collectively participate in forums that discuss various health and safety matters through consultations. In addition, guidance was taken from how the *White Paper on Minerals and Mining Policy for South Africa* was formulated after extensive consultations with tripartite stakeholder representatives. (Republic of South Africa, 1998). Accordingly, the research's data collection followed a tripartite approach.

Before the interviews, participants were informed about the purpose of the research, ethical concerns, confidentiality, and anonymity. This information was provided to ensure they understood what their participation would entail before agreeing. Signed consent forms and permissions were obtained from participants before the commencement of interviews. An assumption was made that the participants interviewed, being senior officials of their respective organisations, provided fair responses.

Seven participants from the respective organisations were interviewed. Two senior officials from the DMRE and the DEL, a senior official from the Minerals Council South Africa and senior officials from each of the four trade unions in the mining sector, namely, the National Union of Mine Workers, the Association of Mine Workers and Construction Union, Solidarity and UASA. Participants were named S1, S2, S3, S4, S5, S6 and S7 to further protect their identities. An assumption was made that since interviewees were senior officials at their respective organisations, they offered reliable responses. It is important to note that the interviewed stakeholders' responses were anonymised to ensure confidentiality.

A semi-structured interview guide consisting of open-ended questions was prepared. Interview questions were designed based on some of the literature gathered and quantitative data collected. Invitations for the interviews were sent via emails, containing the subjects anticipated to be covered to ensure that participants were well prepared before the interview. Depending on the individual participant's preference, the interviews were in-person or virtual. The interviewers were used to solicit information and views about the Sunday work prohibitions in the mining industry in South Africa. Also, the stakeholders were allowed to suggest policy proposals for regulating working on Sunday in the industry.

3.4 Data Validation Process

The use of peer-reviewed publications data, information from official custodians and reliable sources validated the credibility of the research. Most of the data were obtained directly from the DMRE, the official custodian of mine health and safety, and mineral economics information, and from the Minerals Council South Africa, which also sourced some of its data from the DMRE.

Research data validation also entailed diligently scrutinising the data collected to identify anomalies, particularly from raw data. Several challenges were encountered during data collection relating to the records of MDs, including possible duplication of data and illegible records. The data was analysed and verified with the DMRE's record keepers to ensure correct information was obtained for this study. The collected data was sorted and arranged as shown in Appendix C, which indicates the number of MDs issued annually from 2014 to 2022 for different mines.

The research was confined to individual mines that applied for MDs from 2014 to 2022, which were 187, as earlier records dating from the end of 2013 could not be found. Notably, 10 mines could not be traced on either Google or DMR.GOV's (DMRE, 2022) list of mines, which are herein

categorised as “unclassified error” and excluded from the analysis list. Therefore, the final list collated and used for this study amounts to 177 mines granted MDs.

Appendix C contains details of 177 mines granted with 362 MDs to conduct Work on Sundays from 2014 to 2022. The details of the mines in Appendix C provide an understanding of the types of mines that operate with MDs. Other types of permissions were not considered in this study. The details of mines with MDs include commodity mined, type of excavation (surface or underground) and the associated mining method. The individual mines granted MDs were labelled Mine 1 to Mine 177 to maintain the anonymity of the mines (See Appendices B and C).

The records did not include some essential details, including the location of the mines (province or the district municipalities), the commodity mined, and the mining method. This challenge was dealt with by conducting extensive online searches about individual mines that had made submissions. These details were verified against the list of operating mines in South Africa containing unique mine codes available on the Internet for each operation with a mining license issued in terms of the Mineral and Petroleum Resources Development Act 27 of 2002 (MPRDA) (DMRE, 2022).

In addition, what could not be established was whether all the MD submissions received were recommended for approval and granted and when the decision to approve/grant or disapprove was made. The average response time between permission applied for and permission granted was not easy to determine because in some cases the date of application or receipt and the date of granting the MDs were not distinguishable.

Therefore, further assumptions were made that all submissions recorded as MDs were approved and eventually granted by the Minister. Where an application submitted in one year might have overlapped to be granted the following year, the submission date took priority, and the MD was counted

in the year of submission. Each book page was further analysed to ensure that none of the entries were omitted and there were no duplicates.

From earlier than 2014 to the last quarter of 2019, a tracking system in the book used the unique route form numbers allocated to each submission to deal with duplicates; however, in later years, no tracking was done. The duplicates could not be managed when the route form system was no longer used. Therefore, submissions recorded without route form numbers were susceptible to duplication. It was decided that if the duplicate submission appeared in the book twice or more in the same year, it was surmised as a resubmission and thus counted as a duplicate and excluded from the data.

Some notes were made in the book for submissions to be returned to the applicants or submitters at the provincial level (regional offices) for corrections, and such resubmission would then be re-recorded on a new date. Nevertheless, it was also assumed that after being fixed, the Minister eventually granted the declarations on the year of submission. Verifications were made with all applicants (mines) from one of the provinces to confirm if they had been granted or rejected by the MDs, and it was confirmed that all applications submitted were presented, including those returned for corrections and resubmitted.

It was also discovered that, before the granting of every MD, the CIOM always issued Temporary Sunday Labour Permission valid for three months while MD is being processed. Therefore, in all instances holders of Temporary Sunday Labour Permission have been granted the ministerial permission. Therefore, every mine granted an MD will be allowed to conduct work on Sundays for 27 months.

Understanding and distinguishing the difference between the MD granted and the valid MDs is important before analysing the data. A more reliable approach would be to consider the fact that MDs are (on average) valid for about 27 months - the three months of Temporary Sunday Labour

Permission and the two years of the declaration signed by the Minister. Hence, a distinction is made between the number of granted MDs and the number of valid MDs. Thus, biennial results would be regarded as more accurate. Therefore, the total number of MDs at the end of any given year is the sum of the two consecutive years.

An important aspect emanated from the DMRE internal procedures for processing the applications and submissions. It was discovered that most of the granted MDs were valid for two years. Even though it is not prescribed in the MWA, an MD for an individual mine is stipulated to expire every two years (see a template of an MD in Appendix A). Such an MD will be valid for two years until expiry/renewal.

To avoid duplicating the data, granted MDs must be cumulative for a limited time of two years. Therefore, an MD granted in 2014 will remain valid for 2015, and it will be due for renewal in 2016 and should not be featured in 2017. Likewise, the one granted for 2016 is valid in 2016 and 2017 but is due for renewal in 2018 and should not be featured in 2019, and so on. This is to avoid having the valid MDs more than the number of actual granted MDs at any given time. For this study, a distinction is made between the number of granted and valid MDs. The two terms are described below.

Table 3-1 Granted ministerial declarations for commodities per year.

Year granted	Total granted ministerial declarations	Coal	PGMs	Other	Manganese	Chrome	Diamond	Gold	Iron Ore
2014	32+	12+	7+	3+	2+	0+	2+	4+	2+
2015	18	22	11	6	2	0	2	5	2
2016	28	19	10	5	1	1	5	4	1
2017	36	30	14	4	1	4	6	4	1
2018	38	27	13	8	8	6	7	1	4
2019	58	40	13	12	8	7	7	5	4
2020	25	49	8	9	3	6	2	6	0
2021	65	44	8	10	8	7	6	3	4
2022	62	57	15	15	9	11	7	8	5

3.4.1 Granted ministerial declarations

This refers to the number of individual declaration papers/MDs recorded and counted as signed and approved by the Minister for granting in a year. Columns 2 and 3 of Table 3-1 show that the number of granted MDs in 2014 was 32, and in the following years (2015-2022), the granted MDs were 18, 28, 36, 38, 58, 25, 65 and 62, respectively. The total number of granted MDs between 2014 and 2022 was 362.

3.4.2 Valid ministerial declarations

Valid ministerial declarations refer to the number of individual MDs valid for a fixed period from a set start to an end date. Since the standard stipulated period that each granted MD is valid is two years, a more reliable approach would be to assume that the sum of all granted MDs in a given current year and the sum of granted MDs in the previous year amounts to valid MDs during that current year. The relationship between granted ministerial declarations and valid ministerial declarations is simplified using the formula below.

MD valid during a current year

$$= \Sigma(\mathbf{MD\ granted\ during\ current\ year}) \\ + \Sigma(\mathbf{MD\ granted\ during\ previous\ year})$$

Equation 1 Relationship between granted ministerial declarations vs valid ministerial declarations

Where MD is ministerial declarations

The basis for the assumption is that every mine that reapplies for a renewal of a ministerial declaration granted will do so in precisely two years, provided the application is submitted on time. The Temporary Sunday Labour Permission and the ministerial declaration are granted before expiry in the same year of submission.

3.5 Data Analysis Approach

This section of the report discusses the approach taken to analyse all the data collected per the data collection process described in the four parts above, involving the literature review, document review, case studies and interviews.

3.5.1 Data analysis of literature review

The approach taken to analyse the literature review in Chapter 2 of the report was based on harnessing information from the key aspects, the controversies and the studies on Sunday work prohibitions. In addition, the information collected about other countries was tabulated and analysed to compare different practices across the mining industries of selected countries versus South Africa. The comparison relied on the information obtained conveniently from personal contacts from the selected countries and that which was found online.

3.5.2 Data analysis of reviewed documents - national trends

This section involved the analysis of the national trends concerning mines permitted to perform any mining activities on Sunday and the impact on safety performance, production, and employment. As stated in the data collection section, the data is categorised as gold, PGMs, coal, diamond, chrome ore, iron ore, manganese, and others.

The data was analysed to assess historical trends and the possible impact of MDs on national safety performance, production and employment. A Pearson coefficient (r) correlation analysis, which is a statistical measure using the raw data to quantify a linear relationship between two metric variables, was selected as the suitable quantitative data analysis method for this study. The correlation analysis was applied to establish and quantify the linear relationship of MDs against each of the three variables: safety performance, production, and employment. Additionally, linear graphs were created to establish and demonstrate the relationship over the analysis period (2015-2022).

3.5.3 The case-studies data analysis approach

This section provides the approach taken to analyse data collected from case studies. The analysis was primarily based on documentation submitted by the mines when applying for permission to perform work on Sunday (MD) and other related information discussed below.

Analysis of the case-study sites

The data analysed related to safety performance in terms of fatalities and serious injuries. These refer to fatalities and serious injuries that occurred in the mines five years before the MD was issued compared to the number of reportable accidents, that is fatalities and serious injuries, after granting

the MD. The analysis included reportable accidents that occurred during weekdays and on weekends.

The data was readily available as Section 11.5 of the MHSA requires that every accident at the mine be investigated, and investigation reports of reportable accidents must be prepared and submitted to the DMRE. The data analysed included the days of occurrence of the accidents, weekdays versus weekends, with particular attention to the fatalities and injuries that occurred on Sundays and if the accidents occurred on the reef horizon or off-reef. Sunday accidents analysis provided outcomes that assisted in assessing the impact of granting MDs on safety performance at the case study mines.

Mine standards and procedures

Additionally, mine standards and procedures relating to working on Sunday, overtime work and working time were examined to acquire information that could assist in proposing policy recommendations based on learnings taken from the current practices at the mines regarding working on Sundays. Also, the Mandatory Code of Practice for Fatigue Management (Fatigue MCOP) were inspected to observe fatigue management in respective operations.

Consultations with trade unions or employees' representatives

Working time aspects implicate human resources, which require the involvement of labour representatives. Since the research involved working time labour policy matters, it was imperative to analyse the participation of the trade unions at the operational level to check whether the employer consulted the employees' representatives at the mine and the reasons and conditions thereof.

The existence and the percentage representation of recognised majority trade unions or workers' forums were analysed. Furthermore, the

information was analysed by scrutinising available agreements or Memorandum of Understanding (MoU) with the trade unions to assess if trade unions utilised the processes to bargain on other labour-related matters.

Religious affiliations of persons at the mine

In assessing the policy regarding the prohibitions on working on Sunday and determining the constitutional fairness of this policy, religious affiliations of persons at the mines were requested to check the percentage representation of different religious groups. The case study mines were also requested to provide documents relating to freedom of religion associated with working time.

3.5.4 Analysis of stakeholder views on Sunday work in the South African mining industry

The section provides the approach followed to analyse interview data. The analysis in the research was guided by processes followed in compiling the *White Paper on Minerals and Mining Policy for South Africa* - these included capturing and analysing views and proposals of relevant stakeholders. Accordingly, the opinions and proposals of the interviewed participants were analysed to assist in formulating policy proposals for Sunday work restrictions in the mines.

3.6 Chapter Summary

The research methodology chapter contains the research design framework and outlines the research limitations. The research objectives and questions informed the conceptualisation of the framework. The data collection process, which is part of the research design framework, involved both quantitative and qualitative methods and was undertaken in four parts: 1)

literature review, which also explored international practices of Sunday work policies, and 2) investigation of trends regarding granted MDs, safety performance, production and employment, 3) case studies and 4) semi-structured interviews with selected stakeholders. Convenience sampling was used to identify companies for the case study, and participants for the interviews were selected from key tripartite stakeholders. In this regard, two key mines that have been granted MDs were used for the case study: a gold mine (Case Study A) and a PGM mine (Case Study B). Necessary permissions were sought and received from all participating organisations and interviewees.

Quantitative and qualitative data analysis techniques were used to analyse the collected data and information. Quantitative analysis was used to assess trends and the possible impact of the granting of MDs on various categories of the mining industry regarding safety performance, production and employment. In addition, it was used to analyse responses from the interviewees. Qualitative analysis was employed to undertake an international review of Sunday work practices of selected countries and to further analyse case studies' data as well as interviewees' responses. The study concludes with compiling evidence-based policy proposals and recommendations for future research.

4 DATA FOR THE STUDY

4.1 Introduction

This chapter presents the data collected for the research and forms the pillar of the study by providing an understanding of the issue being investigated. As explained in the previous chapter, data was collected in four parts, with Part 1 entailing data collected from the literature survey, including information about international practices regarding work on Sunday in the mines, Part 2 data was collected from a document review and includes historical data on trends about mines that have been granted permission to work on Sunday (MDs), Part 3 involved case studies data and Part 4 involved data gathered from interviews with participants from industry stakeholders. Accordingly, the data collected is presented and simplified in Chapter 4 and is followed by a detailed interpretation in Chapter 5.

4.2 Data and information obtained from the literature review

The data from the literature review were extracted from the published literature and included information about international practices. The data is presented in Table 4-1 below and Table 2-1 in Chapter 2.

Table 4-1 Data gathered from literature review in line with the objectives

DATA GATHERED FROM THE LITERATURE
• Sunday work restriction laws were passed by Christian countries that made religion part of the state's administration, and this is the case for South Africa. • Stakeholders in mining have varying views regarding Sunday work activities. • No studies have been conducted on the Sunday work prohibitions in mining. • The concept of work-life balance is viewed differently by various people. • Working on Sunday does not equate to continuous operations. • Working on Sundays does not have an impact on BCEA's hours of work. • Working on Sunday is not prohibited in the selected countries' mining industries.

Information about Sunday work practices in selected mining countries, namely, Canada, China, Zambia and Zimbabwe were collected to assess and compare international practices. These global practices information regarding working on Sunday in the respective countries was collected through literature and personal communications as shown in the previous chapter, Table 2-1.

4.3 Investigation of national trends regarding safety, production and employment

This section discusses data relating to South Africa's mines issued with MDs as well as the country's mining industry safety performance (measured by accident statistics), production and employment figures. The data is crucial in analysing the impact of granting permission to operate on Sundays (MDs) on mines across the country. The data is presented in an aggregated form for the MDs, mine accident statistics, production and employment figures. Additionally, the data is presented and shown in tables throughout the section.

4.3.1 The list of South African mines issued with ministerial declarations

As stated earlier, all mines requesting exemption from Sunday work restrictions must submit written applications to the DMRE. Information from the applications was collected, sorted and filtered, and a composite list of all mines with MD records was generated. Table 4-2, read with Appendix B, shows that 362 MDs were granted from 2014 to 2022. However, the valid MDs for the period 2015-2022 were 127, as demonstrated in Table 4-3.

Table 4-2 Granted ministerial declarations as compiled from the manual records.

Year granted ministerial declarations (The year Submitted is the Year granted)	No. of granted ministerial declarations
2014	32
2015	18
2016	28
2017	36
2018	38
2019	58
2020	25
2021	65
2022	62
Grand Total	362

Table 4-3 Valid ministerial declarations for commodities per year.

Years granted (Two Consecutive Years)	Year MD valid	Total MD valid	Gold	Coal	PGMs	Diamond	Chrome	Iron Ore	Manganese	Other
2014&2015	2015	50	5	22	11	2	0	2	2	6
2015&2016	2016	46	4	19	10	5	1	1	1	5
2016&2017	2017	64	4	30	14	6	4	1	1	4
2017&2018	2018	74	1	27	13	7	6	4	8	8
2018&2019	2019	96	5	40	13	7	7	4	8	12
2019&2020	2020	83	6	49	8	2	6	0	3	9
2020&2021	2021	90	3	44	8	6	7	4	8	10
2021&2022	2022	127	8	57	15	7	11	5	9	15

4.3.2 Safety performance - Mine accident fatalities and injuries

Mine accident statistics studied in this research comprise reportable accidents which have resulted in fatalities and injuries. Table 4-4 and Table 4-5 below show recent data from the DMRE concerning the trend of reportable fatalities and injuries across various commodity sectors of the mining industry. The statistics outlined reveal that the national mine accidents have declined from 2014 to 2022 (Table 4-4 and Table 4-5).

Table 4-4 Mine accidents fatalities statistics from 2013 to 2022 (DMRE, 2023)

YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022
GOLD	44	33	30	40	40	18	26	30	15
PLATINUM	16	21	28	29	12	20	16	21	18
COAL	9	5	4	10	9	7	11	10	6
DIAMOND	1	10	3	4	2	0	0	0	2
CHROME	9	1	1	1	4	4	2	3	4
IRON ORE	1	2	3	0	0	0	0	1	0
MANGANESE	0	0	1	0	0	0	0	2	0
OTHER (incl. copper)	4	5	3	6	14	2	5	7	4
TOTAL FATALITIES	84	77	73	90	81	51	60	74	49

Table 4-5 Mine accidents injuries statistics from 2013 to 2022 (DMRE, 2022)

YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022
GOLD	1243	1250	1200	1022	895	766	621	736	568
PLATINUM	796	1329	1140	1154	1041	1156	782	1027	1041
COAL	267	206	189	202	169	224	145	170	157
DIAMONDS	42	45	53	52	55	45	42	22	42
COPPER	56	15	10	10	6	6	5	4	11
CHROME	118	91	58	30	100	76	68	76	73
IRON ORE	35	37	41	28	24	21	25	12	40
MANGANESE	47	51	19	23	29	31	26	18	21
OTHER	96	115	136	148	107	127	99	76	112
TOTAL	2700	3139	2846	2669	2426	2452	1813	2141	2065

4.3.3 Production figures

As the impact of granted MDs on mine production was important to investigate, it was therefore imperative to collate information relating to national production. Accordingly, aggregated data on annual mine production with respect to gold, PGMs, coal, diamonds, Iron ore and manganese was collected and presented in Table 4-6. The data was extracted from the Minerals Council South Africa publications and verified with the DMRE data.

Table 4-6 Production per commodity from 2013 to 2022 (Minerals Council South Africa, 2023, as sourced from DMRE, 2023)

Years	Gold (tonnes)	PGMs (tonnes)	Coal (Mil tonnes)	Diamond (10k Carats)	Chrome ore (Mil tonnes)	Iron Ore (100k tonnes)	Manganese (100k tonnes)
2013	160	264	257	816	137	717	110
2014	152	188	262	810	140	807	141
2015	145	276	252	823	157	728	160
2016	142	264	251	830	147	665	115
2017	137	262	252	968	166	748	144
2018	117	271	253	992	178	743	150
2019	105	268	258	718	177	724	170
2020	96	227	245	844	135	556	167
2021	105	285	234	971	184	731	191
2022	96	270	229	1,052	191	637	191

4.3.4 Employment figures

As with production data, it was important for the research to analyse the impact of granted MDs on employment trends. The data was also sourced from the Minerals Council South Africa and verified with the one from the DMRE. Table 4-7 provides aggregated national annual mine employment data from 2011 to 2022 for diamonds, gold, PGMs, chromite (chrome), iron ore, manganese, coal and other minerals.

Table 4-7 Employment per commodity: 2011 to 2022 (Minerals Council South Africa, 2023, as sourced from DMRE, 2023)

Employment per commodity: 2011-2022

	Total mining	Diamonds	Gold	PGMs	Chromite	Iron Ore	Manganese	Coal	Other Minerals
2011	512,878	12,046	144,799	194,745	16,911	22,361	7,460	78,579	35,977
2012	524,873	12,333	142,201	197,752	19,762	23,380	8,685	83,244	37,516
2013	509,914	13,579	131,738	191,261	18,359	21,126	9,842	88,039	35,970
2014	492,936	15,355	119,007	186,865	18,658	21,794	9,970	86,106	35,181
2015	480,209	18,314	115,030	186,465	18,449	20,554	8,639	77,747	35,011
2016	458,214	18,790	116,572	172,556	15,449	16,601	7,242	77,259	33,745
2017	463,907	18,038	112,902	172,760	16,968	17,510	7,780	82,372	35,577
2018	456,713	16,392	100,793	167,038	18,922	18,614	9,352	89,790	35,812
2019	459,528	15,091	94,731	164,674	20,847	19,778	11,220	95,416	37,771
2020	435,054	13,433	94,262	154,600	18,739	20,489	12,207	90,086	31,238
2021	448,536	12,926	93,983	165,619	18,316	21,440	13,308	90,896	32,048
2022	466,245	14,569	95,051	175,288	19,267	23,295	12,600	91,835	34,340

Source: DMRE

4.4 Case studies data and information

Case studies on a gold and platinum mine were undertaken as part of the research's analysis. In this regard, a review of applications for MDs was conducted to extract information provided to motivate individual applications (Table 4-8). Additionally, information relating to accidents in respect of fatalities and injuries was collected and presented.

4.4.1 Data from the application letters

The case studies data that was extracted from the applications submitted to the Minister for requesting MDs for the two case study mines included the background of the mines, reasons and motivations for requesting to work on Sunday, the type of work to be conducted on Sunday and shift cycles. The results are presented in Table 4-8 Table 4-8below.

Table 4-8 Reasons/motivation provided by applicants for working on Sunday.

Reasons/ motivation for working on Sunday. – Gold (Case Study A)	Reasons/motivation for working on Sunday. – PGM (Case Study B)
- Due to immediate financial implications and challenges. - Financial implications due to Covid-19. - shortage of labour due to Covid-19 isolations and quarantine guidelines. - Random stoppages per regulations - Mine is a major role player in the area where the mining activities are conducted. - Mine is an economic pillar for the local community and local businesses. - Mining old blocks of ground that are very erratic in valuation and geological structures. - Therefore, it isn't easy to obtain consistent production volumes. - Therefore, the mine must work an additional shift to remain profitable. - Has a self-funding project to ensure the continuation of employment in the local community. - The project extends the Life-of-mine by 22 years. - Without Sunday work permission [MD], production will be slowed down. - Without Sunday work permission, the viability of the mine will be jeopardised and will also put the project at risk. - Mine will be unable to mill the planned volume output in the coming year.	- Profit margins have been impacted since the decline of the PGM prices in 2009. - The general inflation increases compound the challenge, including the running cost of mine. - Increase wage demands. - Longer travelling distances to get ore to the surface due to deeper and further mining. - Viewed as a possible way to sustain the business. - Workplaces blasted on the last shift are re-entered early, thus reducing the time span of areas remaining unsupported. - Provide operations with a head start if specified mining and maintenance activities could be conducted on Sunday.

Other data obtained and analysed directly include trade representation at the mine - to determine if the trade unions were consulted and provided their support for the application. In addition, the research investigated the staffing and employment implications, financial/economic implications, SLP commitments and health and safety implications.

4.4.2 Case Study Mines – mine accident records

Mine health and safety is an essential matter for the mining industry. It is therefore important to assess the impact of working on Sunday in the mines. Accordingly, statistics relating to mine accidents in respect of fatalities and injuries were used for the analysis and is captured in Table 4-9 and Table 4-10.

Table 4-9 Gold mine fatalities and injuries before and after the ministerial declaration was granted.

GOLD		Fatalities and injuries before the ministerial declaration was granted.										Year granted for the first time in 2022	Fatalities after	
Year	2018		2019		2020		2021		2022		2023			
Fatalities(F)/ Injuries(I)	F	I	F	I	F	I	F	I	F	I	F		I	
Total	3	16	0	52	1	37	2	53	1	51	0		33	
Off-Reef	3	5	0	31	1	12	1	15	0	19	0		14	
Reef	0	11	0	21	0	25	1	38	1	32	0		19	
Weekdays	3	13	0	42	1	31	2	48	0	43	0		32	
Weekend	0	3	0	10	0	6	0	5	1	8	0		1	
Saturday off-reef	0	0	0	5	0	1	0	1	0	4	0		1	
Saturday reef	0	1	0	3	0	5	0	3	1	4	0		0	
Sunday off-reef	0	2	0	2	0	0	0	1	0	0	0		0	
Sunday reef	0	0	0	0	0	0	0	0	0	0	0		0	

Table 4-10 PGM mine fatalities and injuries before and after the ministerial declaration was granted.

PGM	Fatalities and injuries <u>before</u> the ministerial declaration was granted.								Year granted for the first time 2016	Fatalities <u>after</u>											
Year	2013		2014		2015		2016			2017		2018		2019		2020		2021		2022	
Injuries/Fatalities	F	I	F	I	F	I	F	I		F	I	F	I	F	I	F	I	F	I	F	I
Total	0	3	0	6	0	5	0	6		0	6	0	3	1	3	0	7	0	7	0	8
off-reef	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
reef	0	3	0	6	0	5	0	6		0	6	0	3	0	3	0	7	0	7	0	8
weekdays	0	2	0	6	0	5	0	6		0	5	0	2	0	3	0	7	0	6	0	8
weekend	0	1	0	0	0	0	0	0		0	1	0	1	1	0	0	0	0	1	0	0
Saturday off-reef	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Saturday reef	0	0	0	0	0	0	0	0		0	1	0	0	1	0	0	0	1	0	0	0
Sunday off-reef	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Sunday reef	0	1	0	0	0	0	0	0		0	0	0	1	0	0	0	0	0	0	0	0

4.5 Stakeholders Interviews

Interviews with relevant stakeholders were conducted to solicit their views about Sunday work prohibitions. Participants from the government, employee organisations, and employers' organisation were interviewed in this regard. Seven participants were interviewed, and their responses were coded to allow for a quantitative analysis of the data, as shown in Table 4-11 to Table 4-14. The seven interview participants are referred to in the tables as Stakeholder 1 (S1) to Stakeholder 7 (S7). Additional information regarding policy proposals by respective participants is captured in Table 4-15.

Table 4-11 Interview results regarding the intended purpose of the prohibitions

	Christianity	Score	Apartheid law	Score	Health Safety &	Score	Pay rate	Score
S1	Strict Sunday observance	1	Non-liberal society, oppressive	1	Fatigue management	1	X	0
S2	Sunday Worship	1	Non-secular state	1	X	0	X	0
S3	Law religiously based	1	Imposed law	1	X	0	X	0
S4	Christian dominated country	1	Calendar one-sided	1	X	0	Not a normal day, 2X pay rate	1
S5	Christianity-based	1	X	0	Rest from work	1	X	0
S6	Sunday recognised by Christians	1	Not inclusive	1	Guaranteed day off to rest	1	Compensation for employees required to work	1
S7	Religion and Family	1	Generally accepted industry practice	0	Rest period, fatigue management	1	X	0
ALL	Christianity	100%	Apartheid law	71%	Health Safety &	57%	Pay rate	28%

Table 4-12 Results regarding the relevance of the prohibitions

2	THE RELEVANCE OF THE PROHIBITION IN THE CURRENT MINING ERA				
	Relevant Legislation	%		Constitutional Alignment	%
S1	MHSA	1	S1	Not Aligned	1
S2	Labour-related	0	S2	Not Aligned	1
S3	Labour-related	0	S3	Not Aligned	1
S4	MHSA	1	S4	Not Aligned	1
S5	Labour-related	0	S5	Not Aligned	1
S6	MHSA	1	S6	Not aligned	1
S7	MHSA	1	S7	Not Aligned	1
	RELEVANCE			CONSTITUTIONAL ALIGNMENT	
	MHSA	43%		Aligned	0%
	Labour-related	57%		Not Aligned	100%

Table 4-13 Results regarding consultations

3	CONSULTATIONS WITH AFFECTED PARTIES			
	Trade Unions must be consulted	Score	Communities must be consulted	Score
S1	Yes, administrative justice	1	Yes, license to mine	1
S2	No, use as a bargaining tool	0	No, they may leverage some issues	0
S3	Yes, the worker element is imperative	1	Yes, those nearby	1
S4	Yes, involve all affected parties	1	Yes, involve all affected parties, SLP	1
S5	Yes, workers must have a say	1	No, communities get royalties & must not be part of business	0
S6	Yes, workers' rights and interests must be protected.	1	Yes, Sundays often serve as a day for social interactions and community involvement, including attending religious services.	1
S7	Yes, organised labour's function is to ensure safety and wellbeing of employees.	1	Yes, for specific areas where environmental laws should be considered.	1
	Consult Trade Unions	86%	Consult communities	71%
	Do not consult Trade Unions	14%	Do not Consult communities	29%

Table 4-14 Results regarding the position of stakeholders on Section 9 MWA

4	POSITION OF STAKEHOLDERS REGARDING SECTION 9 MWA AND SUNDAY PROHIBITIONS			
	Should Sunday work prohibitions in the mines be repealed from Section 9 of MWA and included in any other legislation? if so, which one?	Score	Should Sunday work prohibitions be abolished or not?	Score
S1	Yes, but not totally; consider exemptions/exceptions	1	No	1
S2	Yes, the Minister of DMRE may decide, with NEDLAC	1	No	1
S3	Yes, engagements are underway to repeal the regulation	1	No	1
S4	Yes, it must find space in other Acts	1	No	1
S5	No, traditions must be preserved	0	No	1
S6	No, any shift to regulating working on Sunday under one labour legislation can fail as mining is unique	0	No	1
S7	No, DMRE knows mining industry specific requirements, application for exemption/permission can be done	0	No	1
ALL		57%		100%
		yes		yes

Table 4-15 Policy proposals suggested by the stakeholders.

5	POLICY PROPOSALS
S1	Proposal 1: Engage stakeholders and assess the extent of prohibitions if applicable to all mines, then consider exemption in some mines with specific peculiarities, e.g. coal mines and on-reef mining.
	Proposal 2: Repeal Section 9 of the MWA and regulate all Sunday work in the BCEA without compromising the issue of safety in the mines.
	Proposal 3: Repeal the remaining Section 9 of the MWA and transfer the Section 9 of the MWA into the MHSA and then regulate it directly in the MHSA, not through the transitional arrangements in the schedules.
S2	Proposal 1: The Mining Regulation Advisory Committee (MRAC) must advise the Mine Health and Safety Council (MHSC) on Sunday work regulatory procedures.
	Proposal 2: Section 9 of the MWA must be removed from the MHSA and be regulated under the BCEA.
	Proposal 3: A way must be found for the DMRE to interact with the Department of Labour to consider these prohibitions in the BCEA.
S3	Proposal 1: All stakeholders must collaborate and work collectively as a tripartite through the MHSC to contribute to the discussion on the best way to regulate Sunday work
S4	Proposal 1: It must find space in any of the Acts, the LRA, The MHSA or the BCEA, remove it from the MWA, and seek to find balance across all stakeholders.
	Proposal 2: It must be regulated under legislation that gives expression or provides space for engagement with community representatives, trade unions, employees' representatives, and employers' representatives.
	Proposal 3: There must be prerequisites for applying, which must be presented before the regulator.
S5	Proposal 1: People should voluntarily decide whether they want to work.
S6	Proposal 1: DMRE and the DEL must work together on regulations and enforcement related to the mining industry, including matters of working time, overtime, remuneration, and fatigue management.
	Proposal 2: The MWA Sunday regulation must be amended to respect this diversity to help maintain social harmony and ensure that policies do not disproportionately impact any group.
	Proposal 3: Current policies in place must address the issue of the work-life balance.
S7	Proposal 1: The prohibitions should not be applied broadly, as some mines, such as coal mines can be exempted as they are an essential provider for power supply. Also, deep mines with longer travelling times may be allowed to work on Sundays considering that sinking additional new shafts is expensive.
	Proposal 2: Shaft schedule can be amended to include Sunday as a working day to ensure sufficient working time during the week

4.6 Chapter Summary

Chapter 4 presents data used in the research analysis section, chapter 5. The data presented is both quantitative and qualitative. The key findings from the literature review are presented in Table 4-1, including international review data in Table 2-1 which summarises international practices regarding working on Sunday in the mines. Furthermore, the country's mine data regarding the MDs including country's safety performance, production and employment statistics, are presented in Table 4-2 to Table 4-7.

Regarding case studies, data collected and presented in this chapter relates to extracted information from respective applications to perform work on Sunday and data relating to safety (fatalities and injuries). The data is presented in Table 4-8, Table 4-9 and Table 4-10, and it is essential to understand the motivations for the applications to work on Sunday and assess the possible impact of granting the MDs on safety. The stakeholder interview responses, including policy proposals, are captured in Table 4-11 to Table 4-15. The presented data was analysed systematically in the following chapter.

5 ANALYSIS AND FINDINGS

5.1 Introduction

This chapter analyses the data that is collected for the study, namely the literature review, the investigation of historical trends through document review, case studies and interviews as per the research design framework. Key findings from the data collected in the literature review are grouped accordingly and presented, including the analysis of international practices. The document review analysis consists of findings from the ministerial declarations issued in the South African mining industry, and their analyses were made to determine trends and their possible impact on safety performance, production, and employment.

The same analysis was applied to determine the impact of MDs for working on Sundays in the case study mines; however, it was limited to safety performance because the case study mines did not provide the production and employment records. In addition, aspects of the written applications submitted by the case study mines were reviewed, followed by stakeholder interviews and policy proposals suggested by the stakeholders regarding the best practices to regulate Sunday work in the South African mines. The results of the research findings are presented in this chapter.

5.2 Analysis of the Literature Review

The key findings gathered from the study's data collection Part 1, the literature survey, are highlighted and presented in Table 4-1 in the previous chapter. Based on the literature review the following is drawn regarding the 1956 Sunday work prohibition law in the South African mining industry.

Sunday work restrictions laws were passed by Christian countries that made religion part of the State's administration, and this is the case for South Africa.

Sunday work restrictions laws were passed by Christian countries that made religion part of the State's administration. Hence, the prohibitions of Sunday work were introduced in most countries after the establishment of colonialism, which often coincided with the introduction of Christianity. In South Africa, Sunday work restrictive laws in the mining sector evolved with the commencement of modern mining in the late 19th century. For over a century, the mining industry has been instrumental to the development and growth of the South African economy, contributing immensely to GDP and employment. The challenges impeding the mining sector in recent years may require a review of some regulatory frameworks, such as Sunday work restrictions to improve the sector's performance.

There are varying views of stakeholders in mining regarding Sunday work prohibitions.

Various stakeholders in the mining industry have questioned the enforcement of the Sunday work prohibitions or restrictions in the South African mining industry. Some suggest that it is outdated and irrelevant in the current mining era. Meanwhile, others believe it is necessary to provide mineworkers with a day of rest and protect workers against possible extended working hours.

Previous studies on Sunday work prohibitions in South Africa's mining industry.

As debatable as the issue of Sunday work prohibitions in the mining industry are, the literature review revealed that no studies specifically focus on this issue in the mining industry. However, studies have been done on other sectors, such as retail. Conducting work on Sundays in the retail industry

appears to have gained traction and is acceptable to society. Continuous work practices that include working on Sundays are standard in the offshore oil and gas sector.

The concept of work-life balance is viewed differently by various people.

The argument around the meaning of the work-life balance concept and its applicability in continuous operations remains a concern for balancing personal life and work. However, there is continued advocacy for implementing work-life balance in working places. Acknowledging the significant impact of continuous work arrangements on work-life balance, social cohesion, culture and traditions, and family life is crucial. However, various people view the concept of work-life balance differently and cannot be confined to a group. Work-life balance is viewed as more satisfactory to an individual's preferences or aspirations depending on how they choose to fulfil their personal and work lives. Therefore, it is imperative to assess the impact of work-life balance on workers from a broader perspective, understanding the complexity of the concept. The assessment of the work-life balance concept is not within the scope of this research and will be recommended for future research.

Working on Sundays does not have an impact on the BCEA's hours of work.

The limitation on hours of work is regulated under the BCEA in South Africa. Since conducting work on Sunday has some bearing on working time and labour utilisation, employers organise the arrangement of working time schedules/shifts to ensure compliance with the limitations on hours of work as per the requirements of the BCEA under the jurisdiction of the DEL. The Sunday work prohibitions and the arranged working schedules where Sunday is included as a working day do not impact the BCEA's hours of work.

International practices on Sunday work.

Part of the research design involve the comparison of international practices on Sunday work prohibitions in the mining industry of other countries with South Africa. A compilation of the results obtained is presented in regarding the international practices for Sunday work practices. In the mining sector, countries such as Zimbabwe, Zambia, China and Canada, have working arrangements that may include working on Sundays.

In the four countries, Zimbabwe, Zambia, Canada and China there is no law that prohibits working in the mines. Mining operations are continuous and working in the mines includes Sunday through utilisation of shift work. The decision to conduct the work depends on individual mine shift cycles determined by operational requirements. These countries' practices allow for continuous working operations through shift work, but they are not regulated and enforced like in South Africa, where there are restrictions on Sunday work activities in the mines.

5.3 Analysis of National Trends through Document Review

The MDs issued during the study period and applicable from 2015 to 2022 in the South African mining industry for the 177 mines studied are discussed below. Different categories of commodities were assessed to determine the possible impact of working on Sundays on safety performance, production, and employment, as shown in the following subsections.

5.3.1 Analysis of the ministerial declarations issued in the South African mining industry.

Understanding the scale of applicability of Sunday work prohibitions in South Africa is essential. Several facts have been established based on the document review of national trends. Based on the records' availability, the analysis period in this research was confined from 2014 to 2022. According to data from the DMRE, from 2014 to 2022, the Minister approved 362 MDs

(Appendix A shows these were granted to 177 mines). The individual mines granted MDs were labelled Mine 1 to Mine 177 to maintain their anonymity.

Figure 5-1 shows that in 2014, 32 MDs were granted, followed by a drop down to 18 in 2015. The number increased from 18 in 2015 to 28 and 36 in 2016 and 2017, respectively, and almost remained constant in 2018 at 38. After that, a substantial increase of 58 was seen in 2019 and dropped to a low of 25 in 2020. Notably, in March 2020, most economic activities were affected by the COVID-19 outbreak, hence a sharp drop from 58 in 2019 to 25 in 2020. Then, a considerable spike occurred in 2021 to 65, followed by a slight reduction to 62 in 2022. Overall, the number of MDs issued increased from 2014 to 2022, representing a 93.8% increase.

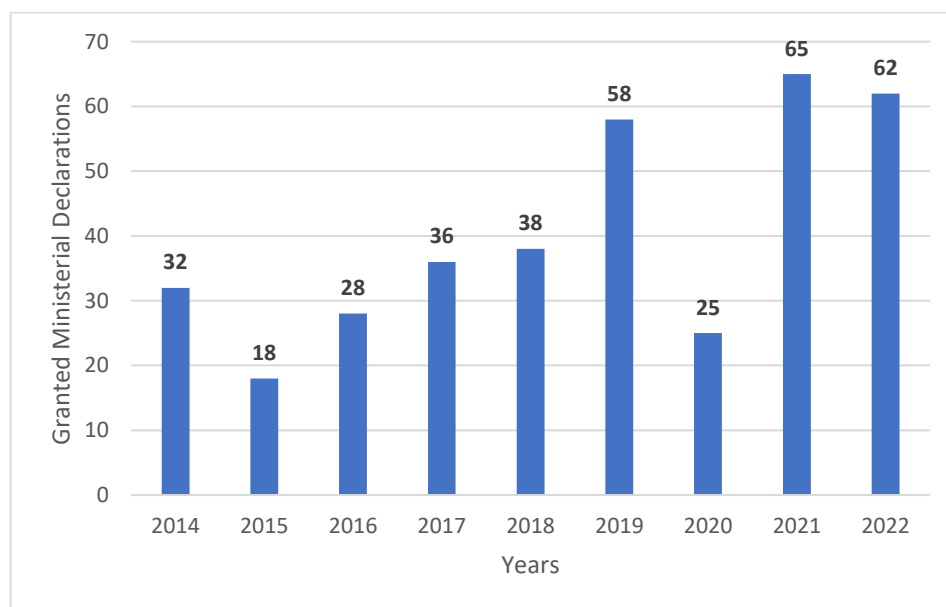


Figure 5-1 Number of MDs granted per year from 2014-2022.

As noted, it is essential to understand and distinguish the difference between the MDs granted and valid MDs before analysing the data; the relationship between the MDs granted and valid is illustrated in Equation 1. The equation shows that the sum of MDs granted in two consecutive years would be counted as valid. The summation implies that MDs granted in a

given first and second year would remain valid in two years and, therefore, are termed valid MDs.

Figure 5-2 is a graphical representation of Table 4-1 depicting the number of MDs valid each year. It is applied by adding the previous year's MDs and the current year's, which would give an idea of how many MDs would be valid at the end of each year.

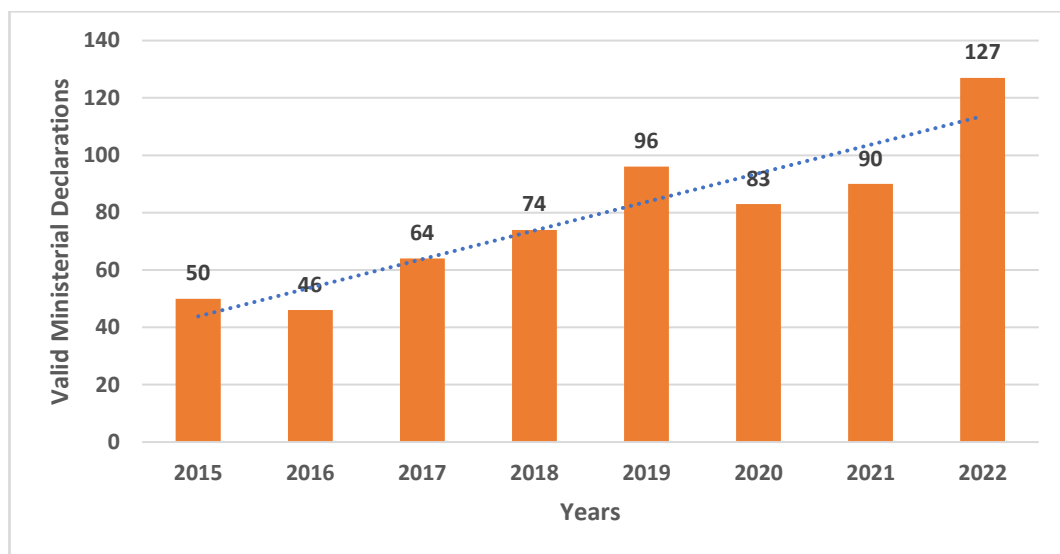


Figure 5-2 Number of valid MDs annually from 2015-2022

According to Figure 5-2 above, there were 50 valid MDs, with 18 MDs issued in 2014 and 32 in 2015. The lowest number of MDs valid in the analysis period was recorded in 2016 at 46. From 2017 to 2019, valid MDs rose from 64 to 74 to 96. However, from 2019 to 2020, there was a 14% drop from 96 to 83. The low valid MDs in 2020 show that mines did not apply during the lockdown when activities were restricted by the COVID-19 lockdown regulations, which were first instituted on 25 March 2020.

Additionally, the lockdown restrictions affected the DMRE's administrative functions. The restrictions continued intermittently until 2022. Regardless of the restrictions, in 2020, the mining industry was allowed to work at 50%

capacity through a special exemption that was granted (Minerals Council South Africa, 2023). The closing of the borders due to the lockdown restrictions also affected the intake of migrant workers, and thus, labour availability in the mines hindered the desired production ramp-up.

Therefore, the lockdown regulations in South Africa impacted the administrative processing of applications and granting MDs. There was a slight increase of 8% to 90 valid MDs in 2021, followed by a sudden upsurge of 127 valid MDs in 2022. This increase can be attributed to mines wanting to cover up for the lost time after the restrictions affected working time. Working on Sunday was necessary to compensate for lost time due to COVID-19 regulations.

In addition, 2022 was recorded as the year that most MDs were valid, which surpassed 100 for the first time. The annual increase shows that the number of mines working on Sundays is increasing. The overall rise in MDs valid from 2015 to 2022 is 154%, from 50 in the first year to 127 in the eighth year. The annual average valid MDs from 2015 to 2018 is 79, which can be regarded as a rough estimate of the number of mining operations operating on Sundays each year.

5.3.2 Analysis of valid ministerial declarations for different commodities in the South African mining industry

Figure 5-3 shows that the coal mines had the most valid MDs overall, with an increasing trend of these mines being allowed to work on Sundays. Interestingly, in 2022, the coal mines' valid MDs were just over two and a half times more than they were in 2015, from 22 to 57, which shows an increase of 159%. As mentioned, the coal mines have been leading in valid MDs from 2015 to 2022. In the first three years, from 2015 to 2017, the coal mines were about double the PGMs' valid MD, the second-ranked commodity regarding the total valid MDs.

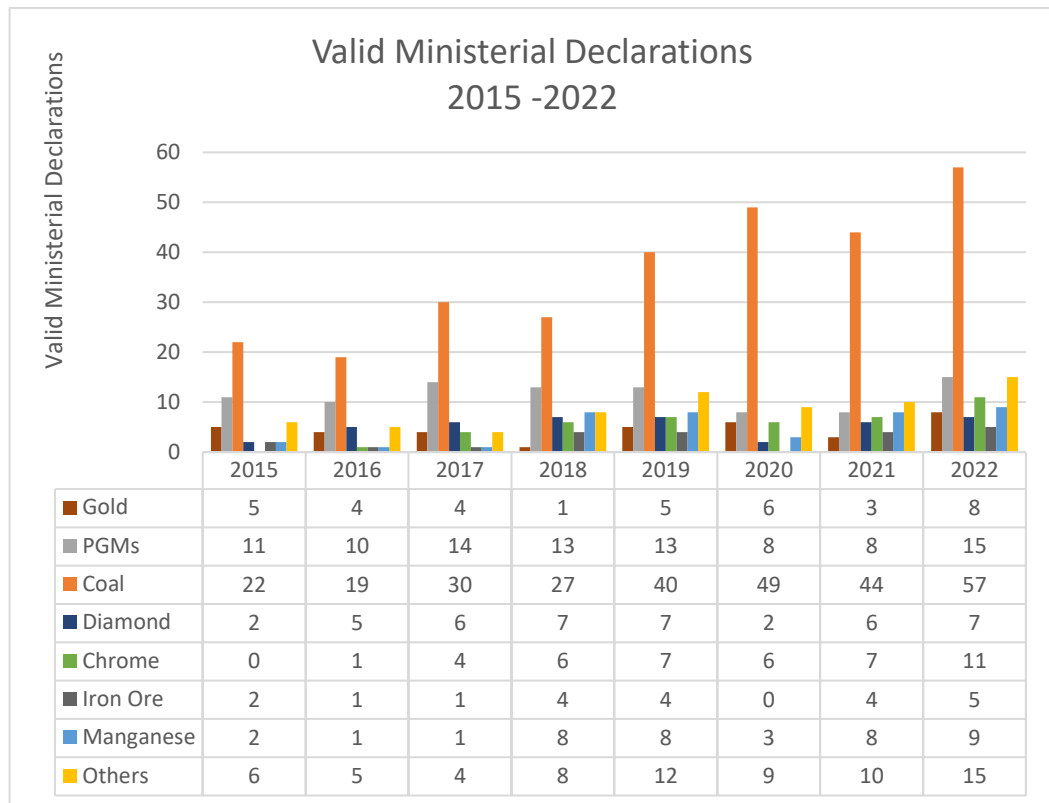


Figure 5-3 Number of valid MDs from 2015 to 2022

The PGM mines show relatively stable numbers between 2015 and 2022 (Figure 5-3) with an annual average of 12 valid MDs. A more detailed analysis of the trend shows that the number of PGM mines ranged between 11 and 13 from 2015 to 2019 and declined to eight in 2020 but went up again in 2022. The PGMs sector experienced a 36% increase from 2015 to 2022. Nonetheless, despite the increase in the number of PGM mines with MDs, there is still a very large gap between the coal and PGMs sectors regarding absolute numbers.

Figure 5-3 shows that in 2022, the coal sector had 57 valid MDs, whilst the PGMs had 15. Various factors can be attributed to the notable difference in the number of valid MDs between the coal and PGMs sectors and the significant increase in MDs for the coal mining sector. These include the fact that the coal mining sector has more mines than the PGMs sector and the

relative ease of introducing an additional working day in the coal mining sector (which has mainly open-cast mines) as opposed to the underground gold and PGM mines that require more structural changes in shifts alongside organisational operations. Additionally, the increase in the coal mining sector can be attributed to the relatively high coal prices during the period, resulting from sustained coal demand. This demand increased at the commencement of the Ukraine-Russia conflict in 2022, which could have encouraged more coal mining companies to apply for MDs to increase production.

Despite the continued increase in valid MDs, coal, PGMs and gold mines experienced a slight decline in 2018. This decline has not been investigated in detail in this study. However, the Minerals Council South Africa's Fact Sheet reported that in 2018, the South African mining sector's GDP growth rate declined by 1.7% (Minerals Council South Africa, 2019). With regard to the gold mining sector, valid MDs are proportionately lower than those in the coal and PGMs sectors, ranging from one to eight.

Nonetheless, the valid MDs for the gold mining sector have increased from five in 2015 to eight in 2022, representing a 60% growth. The manganese mines had two permissions in 2015 and reached nine in 2022 - showing a 250% increase. The diamond, iron ore and chrome mining sectors have also shown a significant increase in respect to valid MDs. From 2015 to 2022, the diamond and iron sectors showed a 250% and 150% increase, respectively. Substantial growth occurred in the chrome mining sector, increasing from zero in 2015 to 11 in 2022. Overall, there was an upward trend from 2015-2022 regarding valid MDs for all sectors (Figure 5-3).

The fluctuations, though increasing, commodity prices between 2013 and 2022 (Figure 5-4) may also substantially demonstrate the mines' motivation to work on Sundays, as they took advantage of higher commodity prices. Figure 5-4 shows the relationship between the changes in input costs in

mining and the changes in average commodity prices from January 2013 to September 2022.

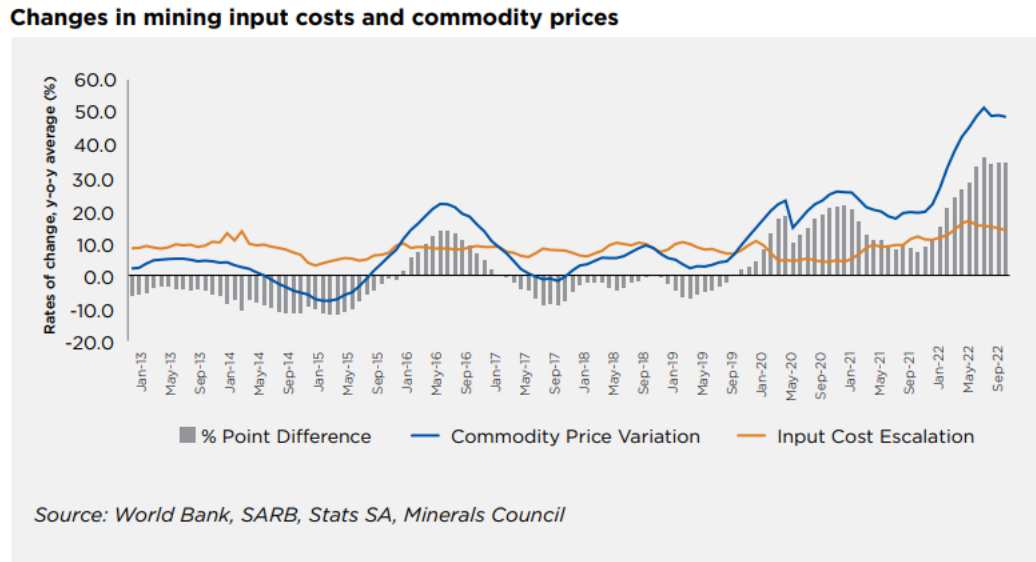


Figure 5-4 Changes in mining input costs and commodity prices (Minerals Council South Africa, 2023)

There was a slight decline in commodity prices from 2017 to 2019, followed by an upward trajectory towards 2022, resulting in increased profitability margins in the sector (Minerals Council South Africa, 2023).

Regarding the annual number of valid MDs, the ranking order shows that coal mines rank first, followed by PGMs, other commodities, and chrome. Manganese is the second last, and iron ore is the last. Based on the data, there was an increase in the number of valid MDs from 2015 to 2022. This trend is further analysed through a statistical measure of correlation analysis below to establish the comparison relationship between the MDs and safety performance, production and employment performance.

5.3.3 Comparison of valid ministerial declarations and mine accidents (fatality frequency rates and injury frequency rates) for different commodity mines

An investigation sought to establish and quantify a relationship between reportable mine accidents in the South African mining industry and the granting of MDs. Reportable mine accidents that result in mine employees' deaths and injuries are a measure of safety performance in the mining industry. Occurrence of accidents at the mine is an acceptable measure for safety performance because the South African mining industry's goal is for every mine worker to return home daily without being harmed by any hazards at the mines while working. It is important to note that reportable injuries are injuries that are a result of a loss of a limb or part of the body, including those that prevent an employee to perform regular work for at least 14 calendar days thereafter.

Figure 5-5 The relationship between valid MDs and FFR for different commodity mines in South Africa. Figure 5-5 illustrates charts showing linear trends of valid MDs and fatality frequency rates (FFR) from 2015-2022 for gold, PGMs, coal, diamond, chrome, iron ore and manganese. Each chart has two variables: the number of valid MDs per commodity on the primary y-axis and FFR on the secondary y-axis. The FFR depends on the number of fatalities at a given mine, the number of persons at work and the limitation of work hours in terms of the BCEA, which requires a person not to work more than 45 hours a week (Appendix D). Therefore, the absolute numbers of fatalities and injuries were not utilised but were normalised through the calculation of frequency rates to ease the comparison of safety performance between different commodity mines.

The linear charts in Figure 5-5 show the trend and change over time of FFR in South African mines compared to the annual number of valid MDs for different commodities. The bi-variant correlation comparison helped to determine the strength and the direction of the relationship between the FFR at the mines and the number of valid MDs. Figure 5-5 contains the

correlation results of the two variables (MDs and FFR) for each commodity, including the results for the 'others' category of commodities, however 'others' linear charts are not shown in the figure.



Figure 5-5 The relationship between valid MDs and FFR for different commodity mines in South Africa

The fatalities and injuries fluctuated over the years, indicative of unstable safety performance in the mining industry but with a notable reduction when comparing the overall fatalities between 2015 and 2022. The gold commodity line graph in Figure 5-5 shows that the trend of valid MDs in gold mines is indirectly proportional to the fatalities in the gold mines. The relationship between the valid MDs and the fatalities from 2015 to 2018 is strong, with a negative correlation of 0.73. With regard to the PGMs sector, valid MDs had a negative, weak correlation with the fatalities at 0.31. In contrast, the coal mining sector had the highest number of valid MDs during the same period and had a weak positive correlation at 0.18.

The diamond sector shows an indirect moderate relationship between the ministerial declarations and the FFR being a negative correlation of 0.46. Based on Figure 5-5, the chrome sector is the only sector showing a strong positive correlation of 0.82. The increasing number of FFR in the chrome sector can be attributed to its booming production and growing employment numbers in recent years.

Without limiting other factors that may contribute to the increasing fatalities at any mine, it appears that the level of exposure to mine hazards and risks depends on the number of persons employed and the time spent working. The more people become exposed to risks, the more accidents occur, especially during commodity booms. Figure 5-6 shows trends of MDs and injury frequency rate (IFR) in respect of mineral commodity categories. The IFR is calculated in a similar way as the FFR, as per the formula in Appendix D. Figure 5-6 also contains the correlation results between MD and IFR for each commodity as well, except 'others' linear charts.

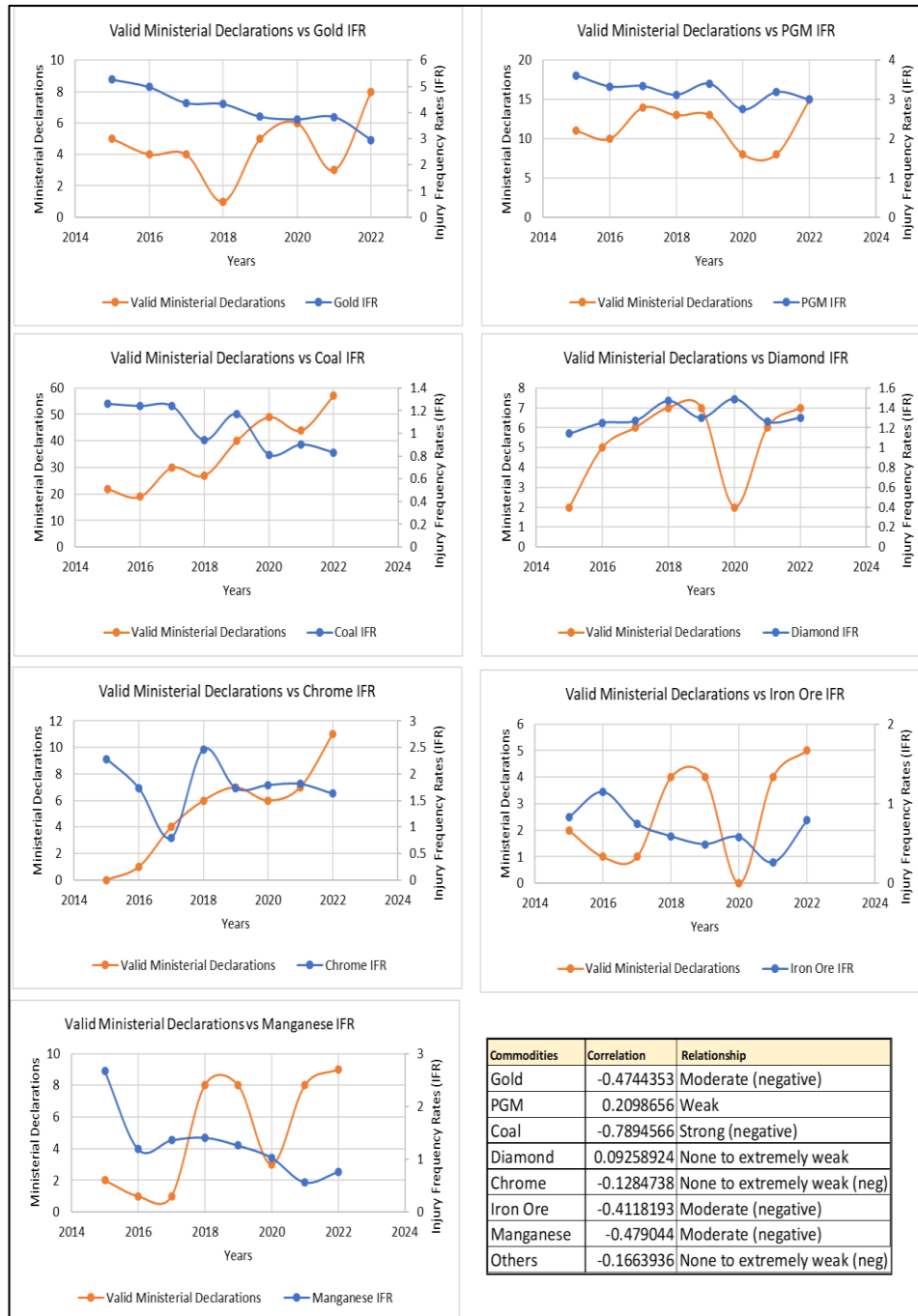


Figure 5-6 The relationship between valid MDs and IFR for different commodity mines in South Africa

Interestingly, chrome and coal commodities show an inverse relationship between MDs and IFR and, therefore, negative correlations of 0.13 and 0.79, respectively (Figure 5-6). Whilst chrome commodity had a strong

positive correlation (0.82) with regard to the FFR, it has an extremely weak negative correlation (-0.13) with regards to IFR, and with coal having strong negative correlation (-0.79) with IFR but an extremely weak correlation (0.19) with FFR. The strong negative correlation on IFR in the coal sector, however, is an indication of relatively good safety performance, but losses of life still occur.

Concerning the IFR in most of the commodities analysed in Figure 5-6, the relationship of the ministerial declaration to the injury frequency rate is mostly moderate to none or extremely weak. Based on the trends of the MD and IFR correlation data, there is no evidence that granting MDs has a negative impact on the performance of most mining sectors with respect to mine injuries.

5.3.4 Comparison of valid ministerial declarations and production for different commodity mines

Figure 5-7 shows trends regarding the annual production of gold, PGMs, coal, diamond, chrome, iron ore, and manganese plotted together with valid MDs from 2015 to 2022. The number of valid MDs is on the primary y-axis, and each commodity's production value is plotted on the secondary y-axis. The production values were rounded up to the nearest units, each unique to a specific commodity.

The comparison was made to determine if there was a correlation between production at the mines and the number of valid MDs. A correlation analysis was done on the mineral commodity categories. However, the 'other' commodities category was excluded from the production analysis because different commodities, such as copper, sand, industrial minerals, and others, could not be summed up to a singular production value.

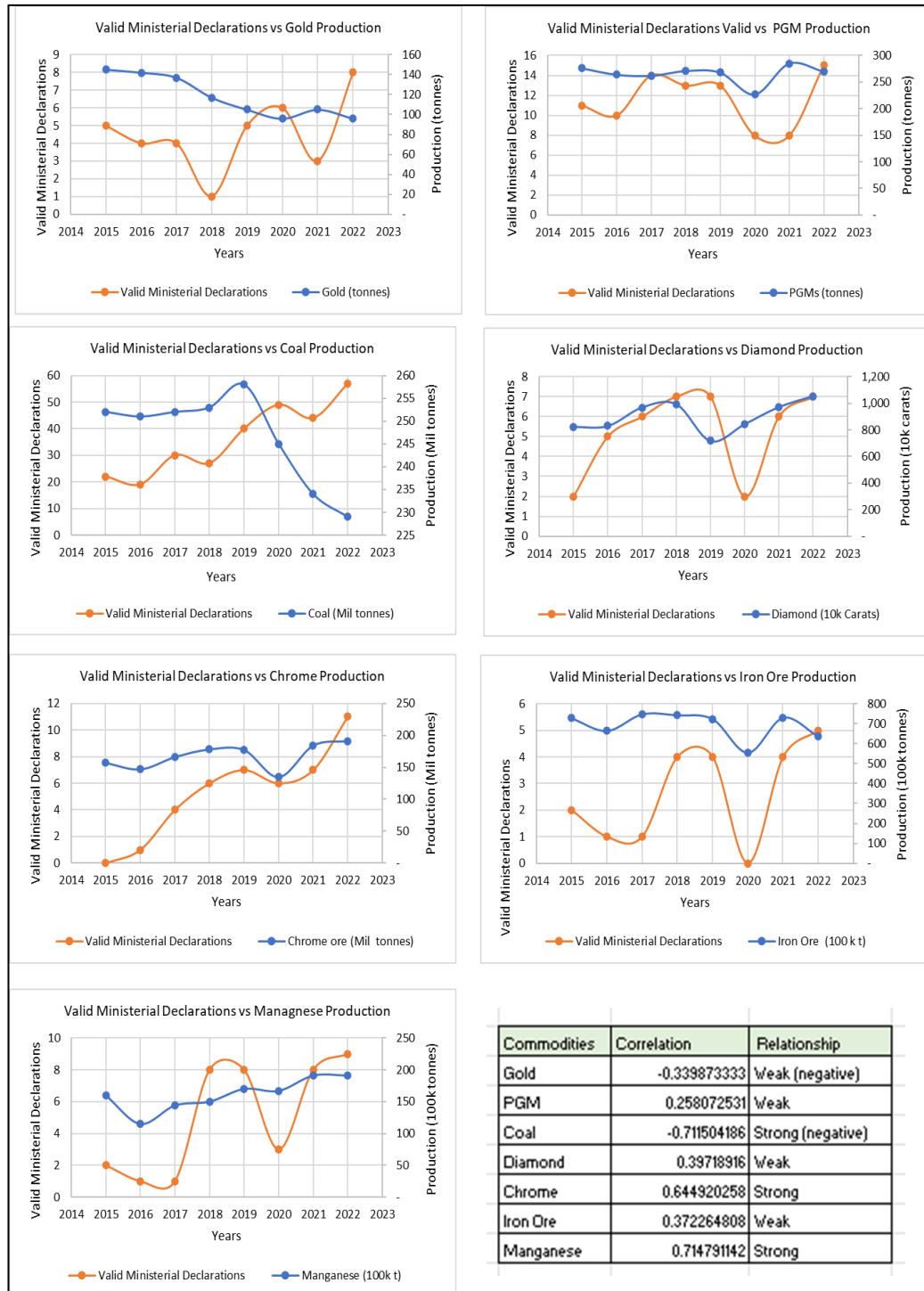


Figure 5-7 The relationship between valid MDs and production for different commodity mines in South Africa

The relationship between gold production and the number of MDs shows a correlation of -0.34, which indicates a weak and negative correlation. The

PGM production shows a weak positive correlation of 0.26. The other weak relationship is iron ore, with a 0.37 positive correlation. Diamond production had a moderate direct relationship with a correlation of 0.40. Conversely, chrome, and manganese production show a relatively strong positive correlation of 0.65, and 0.72, respectively.

The data revealed that except for the gold and coal sectors, production increased as the number of MDs increased. However, this relationship was more pronounced in two sectors, chrome and manganese. The common factor deduced from these three commodities was that these mines are bulk commodities commonly extracted through surface mining operations. The coal sector's strong negative correlation could be related to structural issues pertaining to market supply challenges, such as logistics, which caused declining production during the study period.

5.3.5 Comparison of valid ministerial declarations and employment for different commodity mines

Figure 5-8 shows the linear graphs for each commodity, with the results displayed alongside the graphs. The primary vertical axis is generally the same as the previously displayed linear graphs, with the only change on the secondary axis displaying employment numbers. A correlation analysis was once again used to interpret the relationship between valid MDs and the employment numbers of the eight categories of the South African mining industry. The period of analysis was kept the same (2015-2022). The categories weak and negative correlations are gold at - 0.20, diamond at - 0.12 and others at -0.32, which suggest that employment in the two sectors was unaffected by the number of valid MDs.

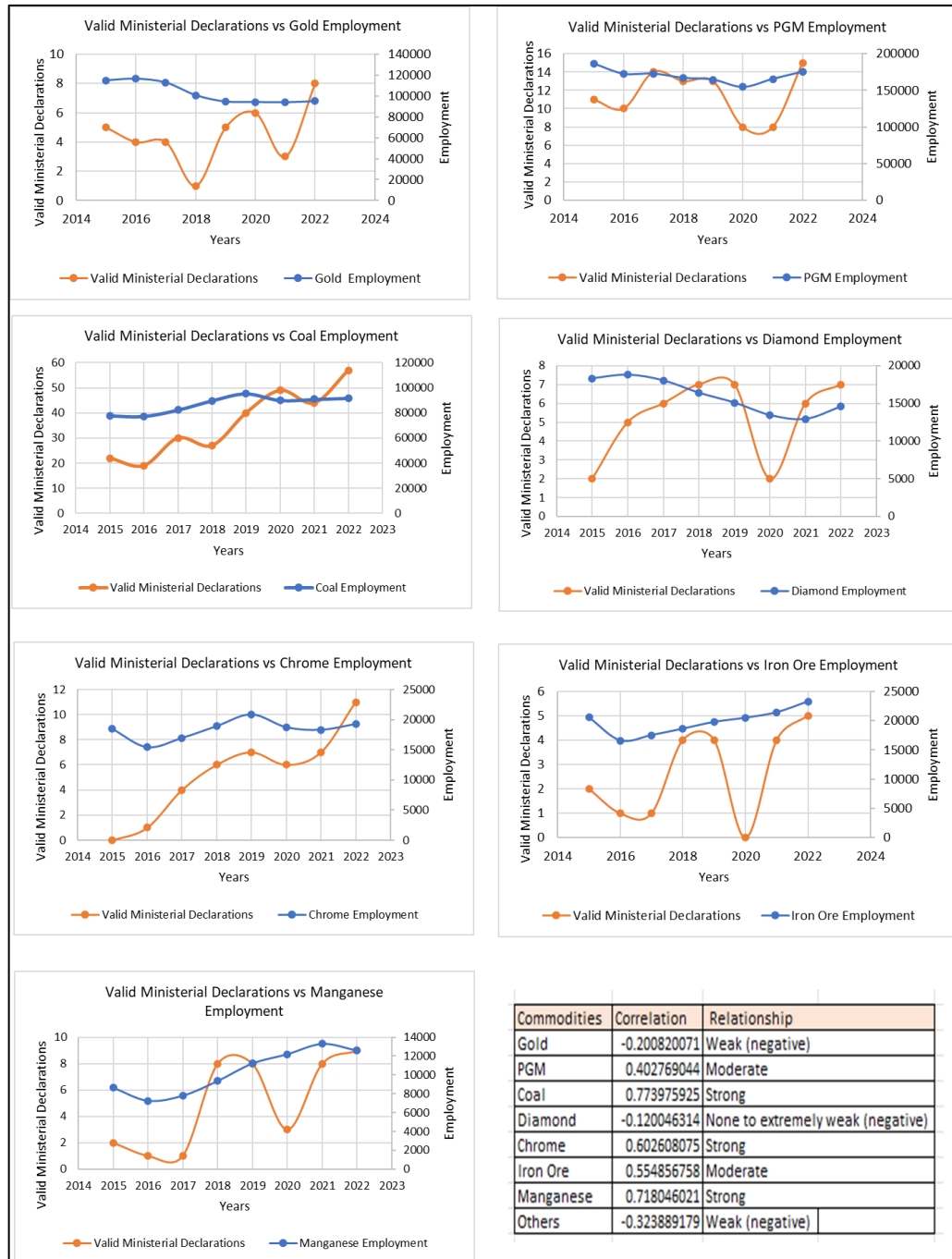


Figure 5-8 The relationship between valid MDs and employment for different commodity mines in South Africa

It is worth remembering the employment contribution made by the gold and diamond sectors to South Africa's mining industry since the commencement of modern mining in the country. However, in recent years (2015-2022), on average, the top employers in the industry were the PGMs, gold, and coal

sectors, followed by the 'others' category, minerals. The iron ore, chrome, diamond, and manganese sectors ranked lower than the 'others' in employment rankings (Table 4-7).

The largest employer between 2015 and 2022, the PGMs sector, showed a moderate positive correlation at 0.40, meaning that the relationship is neither weak nor strong but positive (Figure 5-8). Iron ore, chrome, manganese, and coal sectors showed 0.56, 0.60, 0.72, and 0.77 positive correlations, respectively. The coal sector showed the strongest correlation between employment and valid MDs of all the sectors. The data clearly showed that the higher the number of MDs, the more people are employed, especially in the iron ore, chrome, manganese, and coal sectors.

5.4 Analysis of the Case Studies Data

Two case studies were conducted to investigate the information provided by applicants applying for permission to work on Sunday and the impact of acquired permission on their operations. The two case studies were selected from the gold and PGM sectors and referred to in the text as Case Studies A and B.

5.4.1 Aspects of the written applications

As discussed earlier, Section 9 of the MWA requires MD applicants to submit written applications for the Minister's consideration. Since these written applications are a prerequisite, aspects of the written applications submitted by the case study mines were scrutinised as part of the research investigation. Information was extracted and analysed from the applications, as discussed below.

Brief background of the case study sites – Case Studies A and B

Information contained in the applications of the two case studies revealed the details shown in Table 5-1 and Table 5-2 regarding the two mines. Case Study A is a typical South African deep underground gold mine in Gauteng Province, while Case Study B is a PGM shallow mine in the North-West province.

Table 5-1 Brief details of the selected case study sites

Mine	Province	Deposit	Reef-type	Shaft	Mining Method	Depth below datum
Gold	Gauteng	Witwatersrand Basin	Ventersdorp Contact Reef (VCR)	Vertical	Underground Conventional Scattered	4000m
PGM	North West	Bushveld Complex	Merensky and Upper Group 2 (UG2)	Decline	Underground Mechanised Bord and Pillar	400m

Table 5-2 Brief details of the selected case study sites continued

Commodity	Type of work to be conducted	Shift cycle	Consultations with trade unions
Gold	- To conduct all mining operations and associated activities. - To operate the plant	- Morning, afternoon and night shifts will be in operation	Consulted
PGM	- To conduct all mining operations and associated activities.	- Two-shift cycle, a third shift on layoff for the week.	Consulted

The ore bodies of the two mines are of different deposits of high historical and economic importance in South Africa and the mining industry. Case Study A's mine is found in the rich gold-bearing deposits of the Witwatersrand Basin, and Case Study B's mine is found in the most significant platinum intrusion in the world, the Bushveld Igneous Complex.

The two mines have different mineral extraction mining methods designed optimally to suit each mine's production requirements.

An analysis of this information shows that the DMRE is interested in knowing, among other things, the type of work to be conducted on Sunday, the shift cycles and whether trade unions were consulted or not. In the case of the two case studies, both companies consulted with trade unions.

Reasons and motivation for working on Sunday

Each mine that applies to the Minister to conduct work on Sunday must provide an appropriate motivation. Table 5-3 and Table 5-4 show the reasons the two case study mines provided, as extracted from their application letters.

Earlier in this paper, it was stated that mining productivity has declined over the years and has continued to do so in recent years. According to Pelders et al. (2021) and Sangqu (2016), the decline in productivity is due to longer underground travel times, increasingly complex operational requirements and increasing mining depth. Furthermore, the complex operational and non-operational requirements, including the commodity market drivers and compliance matters, contribute to declining productivity in the sector.

In addition, COVID-19, mineworkers' and communities' protests, mine accidents, and enforcement stoppages were seen to exacerbate the productivity decline and production loss. Thus, continual utilisation of production time, which may include working on Sunday, may be needed to increase production since exploiting minerals in South Africa involves capital- and labour-intensive operations.

The analysis of Table 5-3 and Table 5-4 show that the motivating factors in the case study mines' application letters were generally related to solving

the productivity challenges described above. Table 5-3 shows the contents of the motivation letter of the gold mine, referred to as Case Study A.

Table 5-3 Reasons motivation for working on Sunday at Case Study A

Case study A: Reasons for working on Sunday - Gold mine	Categories as per the analysis
"Due to immediate financial implications and challenges"	Financial
"Financial implications due to Covid-19 "	Financial : Covid-19
"Shortage of labour due to Covid-19 isolations and quarantine guideline"	Financial : Covid-19
"Random stoppages per regulations"	Safety : Regulatory Enforcement
"Mine is a major role player in the area where the mining activities are conducted."	Employment : Local Economy Development
"Mine is an economic pillar for the local community and local businesses".	Employment : Local Economy Importance
"Mining old blocks of ground that are very erratic in terms of valuation and geological structures."	Production improvement : Complex Geology
"Therefore, it isn't easy to obtain consistent production volumes."	Production improvement : Complex Geology
"Therefore, this necessitates the mine to work an additional shift to remain profitable "	Financial : Profitability
"Has a self-funding project to ensure the continuation of employment in the local community "	Employment : Saving jobs
"The project extends the Life-of-mine by 22 years "	Production improvement : Life-of-Mine Extension
"Without Sunday work permission [MD], production will be slowed down."	Production Improvement
"And will jeopardise the economic viability of the mine and will also put the project at risk."	Financial : Risk to the business
"Mine will not be able to mill the planned volume output in the coming year."	Production improvement : Processing Plant Requirements

Case Study A reasons for working on Sunday include financial, COVID-19 challenges, regulatory enforcement, local economy development and importance, complex geology, profitability, employment, the life-of-mine extension, increased production, averting the risk to the business, and

matching up processing plant requirements to achieve the planned targeted volumes. The above factors, which are the primary subcategories, can be grouped into four broad categories: Financial, Production improvement, Employment and Safety.

Case Study B's analysis (shown in Table 5-4) reveals that the PGMs mine submitted an application to the Minister based on the desire to improve operations and address various challenges. Factors such as the decline in commodity prices due to the market crash of 2009, particularly PGM prices, economic crisis, and inflation, were highlighted in the application. In addition, operational requirements, labour availability requirements, and travelling distances were mentioned, including the reduction in risk exposure to improve safety.

Table 5-4 Reasons motivation for working on Sunday at Case Study B

Case study B: Reasons for working on Sunday - PGM mine	Categories as per the analysis
"Profit margins have been impacted since the decline of the PGM prices in 2009."	Financial: Economic Crisis
"Challenge compounded by the general inflation increases"	Financial: Inflation
" Running cost of mine."	Financial: Operational Requirements
"Increase wage demands ."	Financial: Labour Requirements
"Improved margins have a direct bearing on job security , better revenue and taxes and thus deriving benefits for the local communities and the country at large."	Employment: Local and National Economy Importance
"Longer travelling distances to get ore to the surface due to deeper and further mining."	Production Improvement: Travelling distances
"Viewed as a possible way to sustain the business ."	Financial: Business Improvement
"Workplaces blasted on the last shift are re-entered early ."	Safety: Reduction to Risk Exposure
"Thus, reducing the time span of areas remaining unsupported"	Safety: Reduction to Risk Exposure
" Social and labour commitments by the [company], of which [the Mine] is a contributor through various projects conducted in [local area] and other labour catchment areas"	Employment: Local Economy Importance
"Provide operations with a head start if specified mining and maintenance activities could be conducted on Sunday."	Production improvement: Operational requirements

The factors provided in Case Study B's application contain subcategories that can be grouped into main categories, as was done with Case Study A since they have subcategories of the same nature. Therefore, the subcategories of Case Study B were also grouped into the same four broad categories identified earlier: Financial, Production improvement, Employment and Safety.

The above elements show various reasons why mines would want to work on Sunday. Financial reasons and production improvement were the most prevalent; therefore, increasing production and improving declining productivity to enhance the state of mining and contribute to economic welfare appeared to be the ultimate goal for both mines. Once economic welfare is realised, more jobs will be secured and employment in the sector will grow and contribute towards economic development.

Type of work conducted on Sunday

In terms of the information contained in the applications of the two case studies, both mines requested to undertake continuous mining operations throughout the week and conduct all activities necessary and incidental to normal mining and processing plant activities. The specific activities include:

- Working on the reef horizon and carrying out normal mining operations, including blasting on Sundays and days covered under Section 9 of the MWA;
- Cleaning and support installation operations on the reef horizon, development ends and raising bore sites; and
- Loading and drawing rock through the conveyor belts or skips and transporting such rock to the surface.

It must be pointed out that the activities to be performed by the mines largely depend on the type of mining method conducted in the mine, either

conventional or mechanised. In the case of the two case studies, the gold mine operations were conventional, employing scattered mining methods and the PGM mine was fully mechanised, employing bord and pillar mining methods. The similarities between the two mines are that both use hard-rock-type mining methods.

Consultations with trade unions

Five recognised trade unions were involved in the Sunday work application at Case Study A mine. The five trade unions are referred to as TU1, TU2, TU3, TU4 and TU5 to maintain confidentiality. The percentage representations of each TU affiliation were as follows: TU1(3%), TU2 (20%), TU3 (32%), TU4 (2%) and TU5 (39%). The total number of TUs formed a 96% joint consultation. The application letters did not mention the 4% non-unionised employees. The assumption was that unionised employees make decisions on behalf of non-unionised employees. The documents also showed that all the TUs signed jointly on the same letter with the applicant representing the employer in terms of Section 4.1 of the MHSa to show their support for the application.

Concerning Case Study B, two TUs submitted separate letters of support for the applications, signed by each TU. The percentage of the representation for the TUs was not specified; therefore, it is unknown if there are non-unionised persons. The TUs that represented the unions at the mine were TUs referred to as TU2 and TU4 in the first case study.

According to the information on the written applications, extensive engagements took place with recognised TUs on Sunday labour availability in preparation for the submission. The involvement of the TUs proved that, as employee representatives on labour-related matters, working on Sunday matters are suitable for discussion. The TUs indicated their support for the application to work on Sundays.

Religious affiliations of persons at the mine

The two case study mines were contacted to determine whether they kept information on employees' religious affiliations; however, they did not. The intention of investigating employees' religious affiliations was to determine whether there were any concerns or disputes regarding working on Sundays or any day based on exercising the right to freedom of religion. The issue of religious affiliation or practice is not considered at either mine, as no records are kept.

5.4.2 Safety performance at the case study mines.

The documented standards and procedures of the case study mines entrenched strict adherence to health and safety measures. The health and safety interventions and strategies for working on Sunday at Case Study A mine were generic, meaning the same health and safety measures were applicable throughout the week.

However, Case Study B had a dedicated Sunday labour plan procedure to address Sunday work health and safety. The Sunday procedure required weekly meetings by all relevant persons to prepare for Sunday working, during which discussions would include relevant Sunday labour documentation, risk assessment, and labour availability. In addition, the plan was to ensure the availability of supervision on Sundays so that mineworkers could perform the planned work without endangering their health and safety.

Further, at both case study mines (regarding health and safety management standards and procedures), particular attention was paid to contributors to mine accidents and incidents during periods of fatigue, on any day of the week, including weekends. According to both mines' Fatigue MCOP documents, travelling distances and working times were identified by risk assessment as the highest potential sources of fatigue.

Thus, cognisance of the working time arrangements, the shift cycles and the type of work were assessed during fatigue risk management. The element of fatigue is put in the study to give context to the fact that the risk-based fatigue management procedure is one of the prerequisites of applications for Sunday work permissions issued by the Minister. Since intending to work on Sunday at the mine adds an extra day/shift to the work schedules, risk assessment regarding shift change is imperative to maintain health and safety at the mine. This is because long working hours have been determined as one of the contributors to mine workers' fatigue.

Furthermore, poor fatigue management reduces work performance and productivity and increases the potential for mine accidents. This, however, does not imply fatigue is caused by working long hours only, particularly on Sundays. There are other main contributors to injuries and fatalities at the mines, and similarly, mine accident occurrences are not solely caused by fatigue. While bivariate analysis was used, there are other factors that may influence the injuries and fatalities and could be explored in future studies.

Additionally, there were considerations for the need for mineworkers to spend time with their families and participate in family and community affairs.

Case study mines – Mine accident records

Analyses of the number of reportable accidents (serious injuries and fatalities) were conducted at the two case study mines. The analyses aimed to compare the occurrences of mine accidents before and after the MD was granted, thereby assisting in determining the impact of the permission on safety performance. The analyses compared accidents from Monday to Friday with those that occur over the weekends.

Table 5-5 and Table 5-6 show the number of reportable fatalities and injuries that occurred at the case study mines. The numbers displayed are records

of the reportable accidents and fatalities five years before and after the first approval of the MDs. The records in Table 5-5 and Table 5-6 distinguished weekdays from weekend accidents and separated the on-reef from the off-reef occurrences.

Table 5-5 Case study A mine fatalities and injuries before and after the ministerial declaration was granted.

GOLD MINE	Fatalities and injuries before the ministerial declaration was granted.										Year granted for the first time in 2022	Fatalities and injuries after the ministerial declaration was granted	
	2018		2019		2020		2021		2022			2023	
Fatalities(F)/ Injuries(I)	F	I	F	I	F	I	F	I	F	I		F	I
Total	3	16	0	52	1	37	2	53	1	51		0	33
Off-Reef	3	5	0	31	1	12	1	15	0	19		0	14
Reef	0	11	0	21	0	25	1	38	1	32		0	19
Weekdays	3	13	0	42	1	31	2	48	0	43		0	32
Weekend	0	3	0	10	0	6	0	5	1	8		0	1
Saturday off-reef	0	0	0	5	0	1	0	1	0	4		0	1
Saturday reef	0	1	0	3	0	5	0	3	1	4		0	0
Sunday off-reef	0	2	0	2	0	0	0	1	0	0		0	0
Sunday reef	0	0	0	0	0	0	0	0	0	0		0	0

Note: F is fatalities, and I is injuries.

Case Study A's mine (the gold mine) obtained an MD for the first time in 2022. The lowest number of fatalities recorded before this was three, in 2018, accompanied by the highest number of injuries that year at 16. Fatalities occurred at the gold mine every year except for 2019 and the year after the permission was issued. Although some accidents occurred at the mine off-reef on Sundays, none occurred on-reef. Since the MD was granted to the gold mine for the first time in 2022, there was no trend to analyse to obtain tangible results after 2022. Therefore, whether the MD could impact safety performance at the gold mine is inconclusive.

Table 5-6 Case study B mine fatalities and injuries before and after the ministerial declaration was granted.

PGM MINE	Fatalities and injuries <u>before</u> the ministerial declaration was granted.								Year granted for the first time 2016	Fatalities and injuries <u>after</u> the ministerial declaration was granted											
Year	2013		2014		2015		2016			2017	2018		2019		2020		2021		2022		
Injuries/Fatalities	F	I	F	I	F	I	F	I		F	I	F	I	F	I	F	I	F	I		
Total	0	3	0	6	0	5	0	6		0	6	0	3	1	3	0	7	0	7	0	8
off-reef	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	
reef	0	3	0	6	0	5	0	6		0	6	0	3	0	3	0	7	0	7	0	8
weekdays	0	2	0	6	0	5	0	6		0	5	0	2	0	3	0	7	0	6	0	8
weekend	0	1	0	0	0	0	0	0		0	1	0	1	1	0	0	0	0	1	0	0
Saturday off-reef	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	
Saturday reef	0	0	0	0	0	0	0	0		0	1	0	0	1	0	0	0	0	1	0	0
Sunday off-reef	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sunday reef	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	

Note: F is fatalities, and I is injuries

According to the records, Case Study B's mine had an MD to conduct work on Sunday for the first time in 2016. Mine accident records before granting the MD dated from 2013, as earlier records were unavailable; therefore, the analysis was limited to four years before the permission was issued. Between 2013 and 2016, the PGM mine experienced several injuries during weekdays compared to the weekends. However, none were fatal before the granting of the MD.

Only one injury occurred in 2013 on a Sunday on the reef before the MD was issued. After the granting of the MD in 2016, one injury happened on a reef on a Sunday in 2018, and a fatality occurred on a Saturday on the reef the following year in 2019. Based on the above, it is evident that granting permission to work on the reef horizon on Sunday did not necessarily impact the safety performance at the mine.

5.5 Analysis of the Interview Responses

This section comprises the analysis of the responses from participants regarding their views on selected aspects of Sunday work prohibitions and their policy proposals regarding the prohibitions. The analysis addressed the participants' views and policy proposals regarding the enforcement of section 9 of MWA. All the interview responses are captured from Table 4-11 to Table 4-15.

5.5.1 Views on the intended purpose of the Sunday work prohibitions in the South African mines in 1956

The interview responses were themed according to commonly provided answers and similar views, as tabulated in Table 4-11. The answers were coded and designated values as '1', '0,' and 'X' to indicate each response. The results were then designated percentages, with '1' accounting for a share of a % of the total of 7 respondents, and '0' for 0%. The 'X' was designated for the answers or responses that were not provided.

Figure 5-9 shows the interview results regarding the questions asked of participants regarding their knowledge and opinions on the intended purpose of prohibiting Sunday work in South African mines. The stakeholder participants provided various responses, and similar answers were grouped and themed. The identified themes were as follows: i) the intended purpose of the prohibitions ii) the relevance of the prohibitions, iii) consultations with affected parties, and iv) the position of stakeholders on the regulation of Sunday work prohibitions in the South African mining industry.

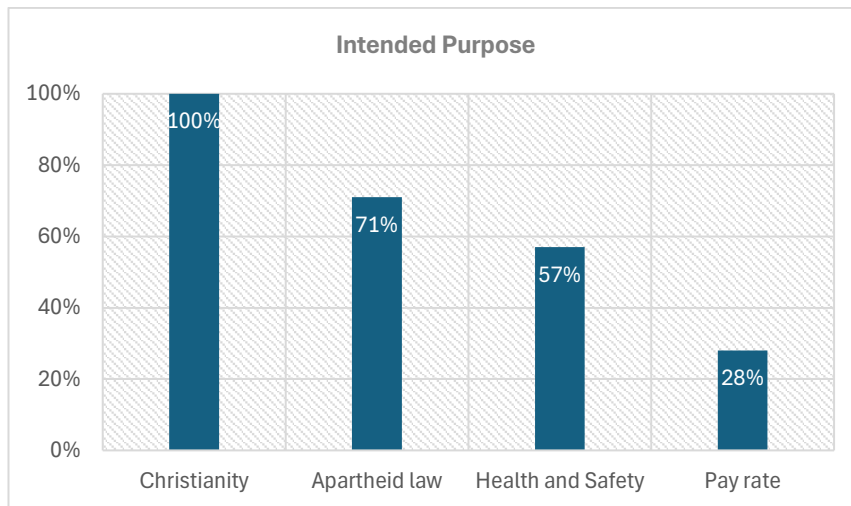


Figure 5-9 Graphical representation of the results regarding the intended purpose of the prohibitions.

Table 4-11 and Figure 5-9 show that all stakeholder participants, S1 to S7, believe that the primary reason why Sunday work was prohibited was Christianity, as Sunday had to do with the 'Lord's Day' observance and Sunday worshipping. The overall scope for Christianity was 100%. One participant also pointed out that despite Sunday being mainly taken as a day of worship or rest, service providers are unlikely to be affected negatively by lifting Sunday work prohibitions as arrangements can always be made to supply services on any day of the week. The other view that came strongly after Christianity were the reasons associated with the apartheid system, wherein 71% of the stakeholder participants believed that most laws were oppressive during the apartheid era, especially when the MWA was enacted (1956). Their perception was that MWA was part of the oppressive dictatorial laws that the then-undemocratic government introduced to govern the country, specifically the mining industry.

The responses also show a belief that the then-South African government made religion part of the State in most areas, such as the official calendar, which appeared to be one-sided and accommodated the Christian religion only. Most Christian holidays were part of the official calendar to be enjoyed

by all, such as the Day of Covenant, and some that still exist today, specifically Good Friday, Christmas Day and Easter Monday.

However, 57% of the stakeholder participants believe that the Sunday work prohibitions were introduced to protect mine workers from conducting mining activities on Sunday and assisting in managing worker fatigue. In their view, fatigue management can improve mineworkers' health and well-being, resulting in good safety performance. A minority of the stakeholder participants believed that since the Sunday pay rate was double that of other days of the week, mine owners were strategic in preventing workers from working on Sunday so that they could forfeit the benefit of attaining more money.

5.5.2 Views on the location of the administration of the Sunday work prohibitions law

The prohibitions are regulated under the MHSA, which raises the question of which legislation would be the most appropriate and relevant. Table 4-12 shows that 43% of the respondents believe the prohibitions are rightly regulated under the MHSA. However, 57% believe the prohibitions are more labour than health and safety related since its intended purpose was not for health and safety purposes.

All participants view the Sunday work prohibitions as incompatible with the Constitution (Figure 5-10). These views are premised on the belief that since the policy was formulated in 1956, it has not been reviewed even after the inception of the democratic government in 1994 and the legislation of a new Constitution in 1996. It can, therefore, be opined that Section 9 of the MWA may not be suitable in the current democratic era in South Africa. According to some participants, Sunday work policies are not inclusive as Christians recognise Sunday as a day of worship, but other religions follow different religious calendars; therefore, regulations that respect this diversity

can help maintain social harmony and ensure that policies do not disproportionately impact any particular group.

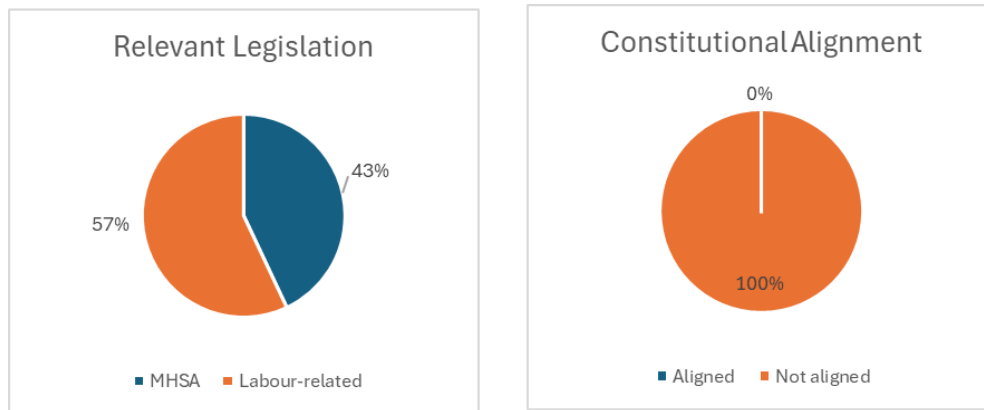


Figure 5-10 Graphical representation of the results regarding the relevance of the prohibitions.

5.5.3 Views on consultations with affected parties

The South African mining industry is a dynamic environment influenced by various role players. Mine management's operational business decisions are no longer confined to the design and science of mineral extraction and processing. To some extent, trade unions and communities surrounding the mining areas influence the decisions. Therefore, to maintain the viability of the mining business and its sustainability, affected and interested parties must be involved. The provision for joint participation by the representatives of the employers, employees, and the State on matters of health and safety is an objective of the MHSA.

The Act promotes cooperation and consultation on health and safety between the State, employers, and employees to protect mine employees and other persons affected by the mining activities. Furthermore, the MHSA's Section 5 obliges employers at every mine to ensure that there are no hazardous exposures to persons who are not employees but may be

affected by mining activities. Another provision in Regulation 4.16.2 of the MHSA requires employers to identify and consult parties within 500 metres of the mine who may be affected by blasting activities before requesting approval to blast from the DMRE.

Section 9 of the MWA and the MHSA do not contain a clause prescribing consultation of stakeholders; however, consultations are imperative to allow for inclusive participation of interested parties as legislated through the MHSA. The issue of involving other parties of interest was raised by some stakeholders, who said that consultations often open opportunistic platforms for bargaining, especially the issue of Sunday work prohibitions in the mining industry.

Specifically, it was mentioned that trade unions often use the application prepared for the Minister's consideration as a bargaining tool for matters utterly unrelated to the Sunday work subject. Figure 5-11, read with Table 4-13, shows that 86% of the interviewed stakeholder participants agree that mine management must consult trade unions when applying for permission to work on Sundays. While the inclusion of consulting workers through the trade unions was supported by interviewees based on a reasonable view that workers are affected by mining activities, there were varying opinions and sentiments surrounding promoting administrative justice and including equal input.

In terms of the interviews, 71% supported consulting communities near the mines when applying for Sunday work permission (Figure 5-11). It is assumed that mining activities close to communities may produce hazardous noise, dust, and ground vibrations, thus, consultations may be necessary. Stakeholder participants in support believe that all affected parties must partake in decision-making in matters that affect them because communities provide a social license to mine. A participant raised the concern that the South African mining industry has become a highly politicised environment and a sector that often attracts non-traditional

entrants. In the participant's view, broadening consultation regarding applications relating to Sunday work prohibitions may allow some sectors of communities to leverage specific socio-economic issues.

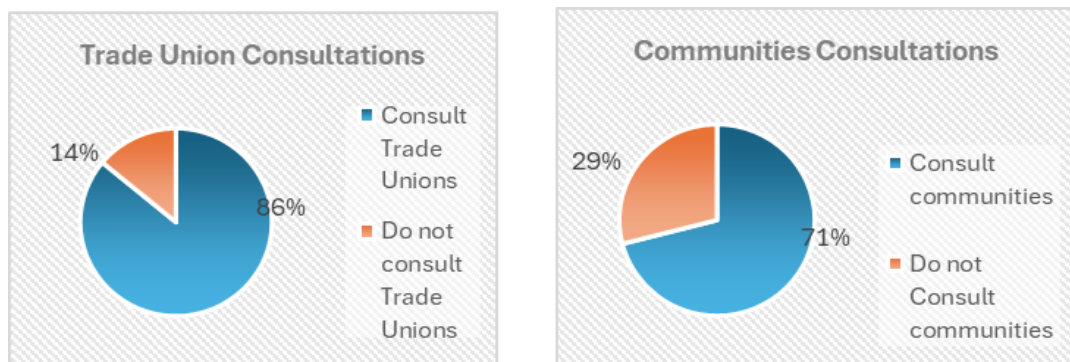


Figure 5-11 Graphical representation of the results regarding consultations

A participant indicates that consultations regarding Sunday work must be included in the SLP when applying for a mining license. Other participants believe that Sunday work may be necessary to enhance the profitability of the mines, which in turn assists in the implementation of the SLP commitments for community development. The remaining 29% disagree and believe that the communities may use the process to extract benefits without appreciating that there are some taxes and royalties paid by the mining companies to them and, therefore, must not be part of the business decision.

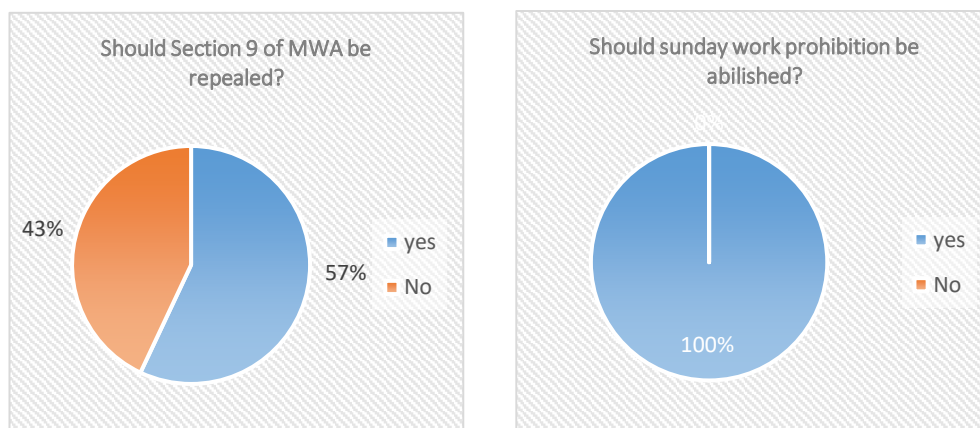
5.5.4 Views of stakeholders regarding Section 9 of the MWA and Sunday work prohibitions

The responses prompted a further question about whether abolishing Sunday work prohibitions in the mines would be viable. Figure 5-12, read with Table 4-14, shows that all the interviewed stakeholder participants

contest the abolishment. However, 57% of the participants believe that the provision of Sunday work prohibitions in the mines must not be regulated through the MWA and MHSA, and consideration should be made to include it in other legislation. The result is that less than half of the participants, 43%, believe that the Sunday work prohibitions must remain in the MHSA.

In addition, some participants suggested that the provision of Sunday work prohibitions should be reviewed to make its application flexible and should be limited to selected operations based on their nature of design and uniqueness. However, the remaining participants believe that to preserve the old traditions, the MWA must remain unchanged, and mostly because mining is a unique industry that need to be regulated by experts in the field of mining under the DMRE.

Figure 5-12 Graphical representation of the results regarding the position of stakeholders on Section 9 MWA.



5.5.5 Policy proposals on the Sunday work prohibitions

The most important question, however, remains: *If most stakeholder participants interviewed support the continuation of enforcement of Sunday work prohibitions in the mines, what policy proposal relevant to the current mining era and social environment should be put in place?* Proposals from

the participants are shown in Table 4-15 and are synthesised into several themes, discussed below.

Collaboration and engagements

Most participants (S1, S2, S3, S4 and S5) called for collaborations and engagements by all affected stakeholders to regulate Sunday work prohibitions. The participants propose that the MRAC, a research-based task committee of the MHSC, investigate and develop recommendations for regulating working on Sunday in the mines.

The MHSC is established under Section 42 of the MSHA and is mandated to advise the Minister on any health and safety regulatory matters to be addressed by the State. The chairperson of the MHSC is the CIOM, and the MHSC constitutes members of the tripartite representing the mine employers, employees, and the State. Therefore, the outcome of the engagements by all stakeholders' inputs through the MHSC can yield progressive results on Sunday work regulatory legislation and procedures in the mining industry.

Exemptions of mines and other mining activities

Participants S1 and S7 suggest that exceptions must be made for other sector commodities or other mining activities, including shaft sinking, from being regulated on Sunday work (Table 4-15: Proposal 1). In this regard, a regulatory dispensation should be put in place to exempt some mines from the application of the Sunday work prohibitions. Different mines use different mining methods depending on the type and shape of the mineral orebody to be excavated, the strength and type of rock surrounding the orebody, and the mining depth. These peculiarities of mining extend to the same commodity sector as the mineral orebody type and can affect the mining design and methods.

For example, some of the mines are at a shallow depth with a relatively flat-dipping orebody underground, which may employ mining methods that require continuous working on the reef or the seam. Mines such as PGMs, coal, and chrome often employ mechanised mining methods, where continuous mining operations may be viable to ensure optimal extraction of the orebody, such as bord and pillar or longwall coal mining, which are developed on the reef horizon. In addition, coal is a soft rock; therefore, coal mines can cut the rock continuously every day because the mining rate is not a concern compared to conventional hard rock mines, such as gold mines and some conventional PGM and chrome mines.

The hard rock mining cycles are challenging as different shifts perform different activities, such as production, cleaning, support installation, and other ancillary activities. The mining rate must be controlled in gold mines to manage ground conditions and seismicity. Therefore, it is rare for deep-level gold mines to employ continuous mining methods, which includes engaging in all mining activities on Sunday. Thus, some aspects of deep-level hard rock mining may compromise the safety of the mine workers if mining is continuous.

Surface mines may also be considered for conducting CONOPs as the risks of mining accident rates are less severe than those in underground mines. Additionally, most surface operations are bulk commodity miners such as coal, chrome, iron ore, and manganese, where continuous earth moving, including working on Sundays, may assist in increasing production.

Regulate Sunday work in the mines under a different legislation

Participants S1, S2 and S4 believe that generally, working on Sunday at the mines must be regulated under the BCEA or other relevant labour legislation. Therefore, they propose repealing the Sunday work prohibitions from the MWA. It is proposed as such because other aspects of Sunday

work, such as the double-pay rate on Sunday, are already incorporated in the BCEA.

The participants believe that regulating Sunday work under the BCEA would prevent unions from attempting to apply labour-related bargaining issues on health and safety platforms. Sunday remuneration and wage negotiations are labour-related matters. Therefore, labour matters must be addressed by the DEL's subject matter experts rather than through the MHSA. The participants reiterated that Sunday work application matters would be best handled by mines' health and safety committees and not trade unions.

Regulate Sunday work in the mines directly under the MHSA

Participants S1, S2, S3 and S6 proposed that Sunday work be directly regulated under the MHSA and not through transitional arrangements as is currently enforced in terms of schedule 4 of the MHSA. The participants believed that the safety of mineworkers would be protected on Sundays and other days because the MHSI, responsible for enforcing health and safety at the mines, is more empowered at the mines in terms of Section 50 of the MHSA than the inspectors at the DEL.

The MHSI of the DMRE has immensely impacted the mining industry's health and safety performance since the MHSA's enactment in 1996, as mine fatalities and injuries have been reduced significantly from over 1,000 deaths annually to below 100 recently. The positive impacts brought about by the MHSA contribute to responsible mining attributes which attract investors to the country. Therefore, the MHSA contributes to the country's economic prosperity because working safely at the mines saves lives. Furthermore, participant S6 indicated that it is essential to recognise that the mining sector has unique operational demands and safety concerns that experts in the field need to address. The participant pointed out that any shift to regulating Sunday work under labour legislation can fail, as the sector-specific needs must be maintained.

Sunday work must be voluntary

Participant S5 believes that working on Sundays in the mines should be optional. Other participants, however, are steadfast in involving other parties on the appropriate terms to work around the issue of Sunday work. Making Sunday work optional might disrupt labour planning as there could be a shortage of labour complements for the crews to carry out certain work activities.

In brief, an analysis of the proposals shows that 43% of participants would like the MWA to remain the legislation governing Sunday work. However, while the majority, 57%, prefer to remove the provision from the MWA, they still want to see it maintained, albeit in a reviewed form and located in the BCEA under the jurisdiction of the DEL. An alternative option that emanates from the interviews is that if the Sunday work continues to be regulated under the current situation, it should be directly incorporated into the provisions of the MHSA and implemented under the relevant authority.

5.6 Chapter Summary

In summary, the various analyses of the data set provided a comprehensive understanding of issues relating to Sunday work restrictions. The data interpretation in the analyses established the relationships and trends of the different aspects in the literature review, document review, case studies and interviews on Sunday work prohibitions. The literature review briefly highlighted that historically and, in their origin, Sunday work restrictions laws are Christian-based and are primarily applied in countries where the religious matters form part of state affairs. Also, it was identified in the literature review that there are varying views of stakeholders in mining regarding Sunday work prohibitions in South African mines, particularly relating to its relevance in the current mining era.

The analysis of national trends relating to permissions granted reveals that granted applications for working on Sunday, referred to in the text as ministerial declarations, have been increasing. Most of the increase is in the coal mining sector. Such an increase suggests a need for MDs in the industry, and capacity in the DMRE may have to be addressed to manage the increasing number.

Regarding safety, most commodity categories show an inverse relationship and a negative correlation between granted MDs and fatalities and injuries. This suggests that increasing the number of MDs does not necessarily negatively affect mines' safety. Conversely, analyses of MDs and production for various mineral categories indicate that besides the gold and coal sectors, production increased with the increasing number of MDs – with the relationship being more noticeable for the chrome and manganese sectors. The correlation between MDs and chrome and manganese production was 0.64 and 0.71, respectively. Furthermore, the historical trends of MDs and employment reveal that employment increased with increasing MDs for the PGMs, coal, chrome, iron ore and manganese sectors.

The correlation between the MDs and PGMs, coal, chrome, iron ore and manganese are 0.4, 0.77, 0.60, 0.56 and 0.72. However, it has to be pointed out that while the bivariate relationships and correlation analysis effectively reveal the association, interaction, as well as the strength and direction of the variables utilised (MDs and other variables), As stated under the limitation of the study, it is imperative to underscore that bivariate relationships and correlations do not insinuate causation and further investigation using multivariate statistical methods can assist in building upon these findings. Chapter 6 provides detailed proposals on Sunday work restrictions and suggestions for future research based on the outcomes of the various analyses in this chapter.

The case studies revealed that most reasons for applying for the MDs relate to increasing production and addressing economic and financial issues. Concerning safety, the gold mine case study provided inconclusive results on whether the MD could impact safety performance at the gold mine, while the PGMs' case study showed marginally higher figures relating to fatalities and injuries after the granting of MDs but can still be regarded as inconclusive.

The interviews of stakeholders provided essential proposals that include reviewing the policy on Sunday work restrictions. It was clear that most of the stakeholders still supported the retention of the restriction but in a reviewed way to accommodate the needs of the industry.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the conclusions and recommendations of the study titled “*An Investigation into the Sunday Work Prohibitions in the South African Mining Industry*”. The research was conducted on Section 9 of the MWA, which prohibits certain work on Sundays, Good Friday, and Christmas Day in the South African mines. The problem identified in Section 9 of the MWA is the varying viewpoints of South African mining industry stakeholders regarding prohibitions enshrined in the MWA. Some stakeholders consider the Section 9 implementation and enforcement outdated and, therefore, should be abolished, but some stakeholders support its retainment.

The primary objective of the research was to develop evidence-based policy proposals with the supporting objectives being investigating trends relating to MDs and to establish how the MDs relate and correlate with different commodity sectors concerning safety, employment and production performance. Furthermore, the research solicited views from various stakeholders.'. As such, key findings and observations were captured in this chapter.

A summary of the report's chapters is contained in this chapter, highlighting how each aspect of the study was carried out and presented. The investigation in the research revealed key findings and observations, which are also captured in this chapter, as they assisted in exploring the possibility of introducing regulatory reforms. Some limitations were identified, and they necessitated the need to put forward recommendations for the study and future research.

6.2 Summary of Chapters

This paper contains six chapters; the summary of the chapter is as follows.

The introduction in Chapter 1 covered the background of the research regarding the mineral resources industry in South Africa. The research problem and the objectives were outlined, and the justification for investigating the prohibitions of Sunday work was provided in the chapter. The chapter also provided a briefing on the scope of the research and its contents.

Chapter 2, Literature Review, explained the key concepts concerning the research topic. The chapter explained the origin of Sunday work prohibition laws and their applicability in the mineral resources industry and other sectors. A broad overview of the legislative framework applicable to working time and basic conditions of work was also covered in the context of South African labour relations. Relevant studies on the Sunday labour prohibitions were discussed, including international experiences on the Sunday work practices in the mining industry. In addition, the chapter discussed key debates and controversies regarding the regulation of Sunday work, the recent developments on the relevance of the prohibitions in the current era, and the movement towards deregulation of the restrictions.

Chapter 3, Research Methodology, dealt with how the research was designed and suitable for addressing the research problem. The data collection methods were explained in the chapter, alongside how each was utilised explicitly in dealing with raw and published data from the literature reviewed and document review records obtained, the case studies and the interviews conducted. The chapter also explained how the research design analysis was approached.

Chapter 4, Data for the Study, contained the data collected for the research, depicted in tables and figures in line with the research design framework

approach. Further detailed information is in the appendices attached to this report.

Chapter 5, Analysis and Findings, analysed data for the study to answer the research questions. The findings were recorded accordingly, comprising the data from document reviews, the case study results and the stakeholders' interview responses. Additionally, the chapter provided information about international practices regarding Sunday work in the mines of other countries.

Chapter 6, Conclusions and Recommendations, contains the conclusions deduced from the research and the policy proposals on Sunday work prohibitions in the South African mining industry. The chapter also provides recommendations for future research that could address some of the identified research limitations.

6.3 Research Observations

The research was grounded on the various stakeholders' views and the tangible results from a literature review, investigation of trends relating to MDs and possible impacts on safety, production and employment through document review, case studies and interviews. These sources all painted a picture to determine the relevance of the Sunday work prohibitions and appropriate policy proposals.

6.3.1 Initial and complimentary studies

The literature review showed that Sunday work restrictions originated from the domination of religion, particularly Christianity, in the affairs of the State during the Roman Empire. Hence, the concept was introduced to most societies, including South Africa, as part of observing religious beliefs.

There have been no studies on Sunday work prohibitions in the South African mining industry or on Section 9 of the MWA. The most relatable study in the South African mining industry was on implementing extended working arrangements, CONOPs and FULCOs, which may include working on Sundays. The research results showed that the successful implementation of such working arrangements might contribute to improved productivity but at the cost of the mineworker's health and safety. However, the study did not obtain stakeholder views regarding the Sunday work prohibitions in the mines. However, the results of the current study showed that working on Sundays may improve production output.

Many of the studies were on the retail sector outside South Africa, which is entirely different from the mineral resources industry. A study was conducted in the retail sector where the Sunday restrictions were relaxed, and Sunday shopping was allowed to attract distant customers. The findings were that the relaxation of restrictions was favourable to society regarding time availability and advantageous for a few retail firms but was a disadvantage to other retail merchandisers.

A reflection was also made on how certain merchandisers noticed that customers preferred Sunday shopping, but others supported Sunday shopping restrictions to manipulate the business competition to their advantage. In Australia, previously published studies were done on FIFO working arrangements. However, they were not focused on the business of mining per se but rather on the impacts of such arrangements on mine workers' social lives. The study showed that mine employees' social relationships were affected and could affect workforce productivity due to unpleasant social circumstances. Thus, relaxing the Sunday work prohibitions in the mines will most probably result in mixed benefits for the country and the mining industry in terms of social and economic aspects.

6.3.2 Key findings

The data analysis approach was intended to address the research problems and pursue the research objectives to provide policy proposals on Sunday work prohibitions in Section 9 of MWA. Some determinations about MDs' relationships to safety performance, production, and employment trends were found unique to specific commodity sectors - but not all. The expectation from the analysis was to find a clear guideline for recommending policy proposals to regulate Sunday work based on the findings obtained from the data gathered from the literature and document reviews, case studies, and interviews. As such, several findings were made, as discussed in the subsections below.

There is an increasing trend and interest in the mines to work on Sunday

The findings were quite clear on the general feeling regarding Sunday work. The submission of applications to work on Sundays and the granting of MDs for all commodity mines has increased by 93.8% from 2014 to 2022. The situation may require the government to increase its capacity (human resources and technology) to deal with the processing of the applications.

Coal mines had the most ministerial declarations compared to the rest of the commodities.

The MDs granted to the coal mines between 2015 and 2022 were 164 out of a total of 362 granted to all commodities, thus accounting for 45% of all MDs. Whilst coal mines were first in the rankings, they were followed by PGMs and other commodities and chrome mines. Finally, manganese was second last, and iron ore was the last.

The correlation between working on Sundays and safety performance favours some mines, but FFR or IFR remain high therefore safety performance is not solely dependent on ministerial declarations

Commodity sectors responded differently to the relationship between the number of granted MDs, and FFR and IFR. The MDs in the gold mines were indirectly proportional to the FFR and directly proportional to the chrome sector. The FFR and the IFR fluctuated over the years, indicative of unstable safety performance in the mining industry but with a notable reduction when comparing the overall fatalities during the 2015-2022 period. Gold mines accounted for many fatalities throughout the study period but have fewer MDs than other sectors.

The relationship of coal mines' FFR with MDs shows an extremely weak positive correlation but a strong negative correlation with the IFR, and vice versa with chrome. It can be concluded that safety performance at the mine is not negatively affected by the granting of Sunday work ministerial declarations, as other factors could contribute to poor fatality and injury at any mine.

The surface mines, which mostly produce bulk commodities, responded positively to working on Sunday regarding production performance and employment in the mining industry

The prevalence of surface mines working on Sundays may be attributed to the relative ease of introducing an additional working day as opposed to the underground, which requires more structural changes in shifts and organisational operations. Additionally, accessing and mining the surface mining operations is not as complex as compared to the gold and PGM underground mines.

The data revealed that production increased in all commodities as MDs increased, except for the gold sector. The production relationship to MDs

was more pronounced in three sectors: coal, chrome, and manganese. The coal sector showed the strongest correlation between employment and valid MDs of all the sectors. The data showed that the higher the number of MDs, the more people gain employment, especially in the iron ore, chrome, manganese, and coal sectors.

International comparison of Sunday work practices in the mining industry

A comparison of South Africa with the selected countries reveals that South Africa is the only country with legislated restrictions on Sunday work practices in the respective mining industry.

Financial, Production improvement, Employment and Safety are the four primary reasons for working on Sundays in the South African mining industry

This research determined and categorised four primary motivating reasons why mines seek to work on Sundays. The categories (parameters) were Financial, Production improvement, Employment and Safety. The motivating factors above can be used to solve the productivity challenges facing the mining industry in the current mining era. The finding on production improvement aligns with the literature review finding that proper implementation of the continuous operations contributes to production.

Consultations regarding Sunday work prohibitions with trade unions and affected parties are imperative to allow for inclusive participation

Section 9 of the MWA does not contain a clause prescribing consultations of affected parties. However, consultations are imperative for the inclusive participation of interested parties. Trade unions and affected communities surrounding the mines are relevant parties to consider for consultation when employers intend to conduct work on Sundays. Consultation and

engagement emerged as one of the important issues interview participants raised.

Consensus amongst stakeholders that Sunday work prohibitions must not be abolished; however, the decision on policy review is complex and stakeholders have made proposals

The relevance of Sunday work prohibitions in the current mining era is greatly debated, and stakeholders are anticipating the review of the prohibitions. Key proposals emanating from stakeholders are as follows:

- Collaboration and extensive engagement among all affected parties and relevant stakeholders should take place to allow for the investigation and development of approvals for regulating Sunday work;
- Considerations should be made to exempt some categories of mines or categories of activities from being regulated with respect to Sunday work; and
- The decision to work on Sunday may be left with the individual mining companies and determined according to each operation's unique mine design and challenges.

Furthermore, debates on whether the MHSA or the labour-related legislation should regulate Sunday work were raised. Arguments were raised regarding which legislation seems relevant for regulating Sunday work in the mining industry. Therefore, the following opposing proposals were made:

- Sunday work prohibitions law in the mines must be regulated under different legislation and the jurisdiction of the DEL; and
- Sunday work prohibitions law must continue to be regulated in the MHSA, under the jurisdiction of the DMRE, but not through the transitional arrangements currently regulated by the MWA.

Section 9 of the MWA must be repealed, but Sunday work prohibitions in the mining industry must not be deregulated

None of the policy proposals suggested by the stakeholders in this research supported the abolishment of Sunday work regulation. However, stakeholders asserted its repeal in the MWA.

6.3.3 Key observations

The key observations in this research (based on the findings) were that the results matched the expectation and, therefore, evidence-based policy proposals could be made from all the data gathered and the information obtained per the research design framework. The methodology effectively addressed the objectives, particularly the relevance of Sunday work prohibition and comparing the stakeholder views on the subject.

The research clearly illustrated that stakeholders continue to raise views on Sunday work prohibitions in the mines. However, it also raised the question of why this prohibition legislation has not been reviewed 68 years after its enactment in 1956 and even more so 30 years after the creation of a new democratic dispensation in the country and the subsequent implementation of the new constitution in 1997.

6.4 Research Contributions

Relevant and effective regulatory reforms can play an important role in promoting economic growth and job creation. Accordingly, this research has explored the possibility of introducing regulatory reforms regarding Sunday work prohibitions in the mining industry as all the objectives have been achieved. The collected information and data contained key findings to this research. These results will assist policymakers, mining companies and

mine employees in making informed decisions on the issue of Sunday work prohibitions in the mining industry.

6.5 Research Limitations

The notable limitations of the study were identified during case studies and interviews data collection process and analysis of the data.

- There were difficulties experienced in accessing case study information from some mines as the additionally identified mines did not approve participation and some that initially agreed to participate in the research withdrew later. Therefore, case studies were limited to two commodity mines available for case study analysis. The two mines used in the case study were a gold mine operating in the Witwatersrand gold field (referred to as Case Study A) and a PGMs mine operating in the Bush Complex (referred to as Case Study B). The two case studies were selected from the two sectors, which in 2022 combined represented 58% of employment in the mining industry of South Africa. Although the remaining 42% is not included in the analysis, the two sectors provide a useful understanding of the critical issues relating to Sunday work prohibitions in South African mines.
- The other limitation of the study is the sampling size and distribution of the sample. There is a relatively small number of interviewees who were identified as key stakeholders in the mining industry, purposively selected as they are senior members in the mining industry from critical institutions, namely, the government, recognised trade unions and the private sector, provided the necessary diversity of views and perspectives. However, the trade unions' participation is more than that of the government and the private sector. The reason is that the South African mining industry is a highly unionised environment with different unions representing

various workers with various views across multiple commodity sectors. Therefore, all recognised trade unions actively participate in the industry. Time constraints and the difficulty in accessing participants and acquiring official mandates from them also caused additional limitations to the research. Notwithstanding the limitations, the findings offer beneficial contributions, and future research with an extensive and broader pool of participants and acquiring written official inputs from stakeholders is recommended to validate and extend the findings.

- The analyses of relationships between the number of Ministerial permissions to perform any work on Sunday and selected variables used bivariate linear relationships and correlations, which do not imply causation. Future studies using multivariate statistical methods and probabilistic study can assist in building upon the research findings.

6.6 Recommendations

The following are future research recommendations and policy recommendations proposed based on the findings and observations.

6.6.1 Recommendations for future research

Due to the limitations presented above, an opportunity for future research may effectively address some of the insights that arose from the study. The following recommendations are made for future research work:

- Future studies could involve studies at the coal mines, considering that there are fewer fatalities and higher production in this sector. However, the number of MDs has been increasing over the years. Therefore, important lessons could be drawn from these mines to improve their safety.

- Statistical analysis involving multivariate regression methods and probabilistic studies could be considered to further examine the relationship between MDs and various variables such as safety performance, production and employment.
- Engagement should be promoted through workshops, public hearings, and official written inputs from key stakeholders, similar to how the White Paper on Minerals and Mining Policy for South Africa was developed to obtain a broad range of views.
- A future study could focus on the effects of religious views on mine workers' willingness to work on Sundays and the effects of ignoring other religions by the current policies that are in place.
- Future studies could investigate if working on Sunday is associated with fatigue and also explore issues relating to work-life balance.

6.6.2 The policy recommendations

The following recommendations are made:

Urgent interventions should be implemented by the Department of Mineral Resources and Energy to deal with increasing applications as there is an increasing trend of MDs

- Since the number of applications is increasing, it is recommended that the capacity of human and technology resources be increased in the DMRE. Alternatively, the decision to undertake any mining activity be left to individual mines to reduce the burden of processing the applications.

- The validity period of MDs is not prescribed in the Act- there are renewals every two years, which may create uncertainty in making business decisions by companies. Therefore, the renewal period could be revised and extended to align with the mines' long-term planning.

The parameters investigated in this research should be incorporated into the Sunday work prohibition applications

- One of the research objectives was to assess the implications of the MDs on safety performance, production, and employment trends. Therefore, these parameters and financial implications should be considered when granting a ministerial declaration.

Shift cycles should be analysed and revised

- In light of the successful implementation of continuous working arrangements in the two South African mines, CONOPs and FULCO, there is a valuable opportunity to learn from operations that were once continuous but did not succeed. By studying these cases, we can gain insights into the factors that led to the abandonment of such arrangements, thereby enhancing our understanding of effective operational strategies.

Mines should apply for exemptions from being regulated on Sunday work prohibitions

- Since different commodity mines are affected differently by the Sunday work prohibitions, the employers at the mines should apply to the Minister under Section 79 of the MHSA to be exempted from any regulation under the MHSA.

- Impact analysis should be made on all commodity sectors to see if exemptions can be granted to some sectors uniquely different from others depending on their mine design, mining method, and mode of operation.
- Considering that most of the coal mines account for more MDs (Sunday permissions) valid from 2015 to 2022, the Minister should consider issuing a declaration regarding his powers in the MHSA to exempt the coal mines from working on Sundays.
- Technological advancements in mining methods should be considered where other mines are designed to work continuously; therefore, exemptions may be appropriate in such cases.

The Chief Inspector of Mines should consider issuing a guideline for a Mandatory Code of Practice to conduct work on Sunday, as there are guidelines for fatigue management

- Section 9(1) of the MHSA requires employers to prepare and implement a code of practice in any aspect relating to health and safety, which may be in addition, in terms of Section 9(2) of the MHSA drafted according to the guidelines issued by the CIOM, after consultation with the MHSC which comprises of the state, employers' and employees' representatives. Therefore, if the Sunday work prohibitions remain under the jurisdiction of the MHSA, the CIOM should consider drafting guidelines for Sunday work to compel the mines to work under specified minimum guidelines.

The Mine Health and Safety Inspectorate should be removed from regulating the Sunday work prohibitions

- The MHSI should be removed from regulating Sunday work prohibitions, as it is not the relevant authority to enforce or regulate Sunday work in the mines. This research assessed the impact of safety performance at the mines against the MDs at selected commodity mines, and it was found that safety had no impact on the MDs. In addition, safety was identified as the fourth and last parameter, which was often provided as the reason for wanting to work on Sunday on the application letters.
- The administration process of dealing with the abovementioned applications is MHSI, with expertise in occupational health and safety at the mines. However, some documents required as prerequisites for the application encompass aspects of the LRA AND the BCEA (remuneration and consultations involvement of the trade unions) and the MPRDA (SLP commitments), except for the Mandatory Code of Practice for fatigue management. The relevant regulators or officials of the LRA, the BCEA, or the MPRDA should be involved in processing the applications.

Workshops for engagements and collaborations

- Since the participants interviewed believe that Sunday work prohibitions should not be abolished, the MHSC, as a research-based institution led by the CIOM, should hold a summit or workshops with all affected stakeholders to consider the above recommendations and advise the Minister on the way forward regarding the regulation of Sunday work prohibitions.

6.6.3 The validation of the recommendations

The research findings and the recommendations were presented and discussed with the additional participants, one from the MHSC and the other one from the Mandela Mining Precinct. The participants were consulted to determine the relevance of the research recommendations, and they considered the outcomes sound (see Appendix “G”).

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APPENDICES

Appendix A: Template for Declaration of Sunday Work Permission, referred to herein as ministerial declaration (MD) issued by the Minister of the DMRE



**MINES AND WORKS ACT, 1956
(ACT No. 27 OF 1956)**

DECLARATION OF WORK IN NATIONAL INTEREST

Under Section 9.1(f) of the Mines and Works Act, (Act No 27 of 1956), I, Samson Gwede Mantashe, Minister of Mineral Resources and Energy, hereby declare that, in my opinion the performance of normal mining operations and associated activities including charging up and blasting operations on Sundays at NAME OF MINE, owned by MINING COMPANY in the district of NAME OF MUNICIPAL DISTRICT in NAME OF PROVINCE, is necessary in the national interest for a period of 2 years, starting from DAY/MONTH/YEAR and ending on DAY/MONTH/YEAR.

The employer's attention is further drawn to the requirements of Section 2(1)(b) of the Mine Health and Safety Act, (Act No 29 of 1996, as amended), which states that, a mine must be operated in such a way that employees can perform their work without endangering the health and safety of themselves or of any other person.

In light of the above, the employer of every mine that is being worked must therefore prepare and implement a health and safety management system, which includes, but is not limited to, adequate management and supervision; fatigue management; alcohol and drug testing; as well as all other necessary operational requirements as per the risk assessment process.

MR. SG MANTASHE, MP
MINISTER OF MINERAL RESOURCES AND ENERGY
DATE:...../...../.....

Appendix B: Ministerial declarations issued annually at different commodity mines

MINE	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
MINE 1				MINE 1		MINE 1		MINE 1		3
MINE 2			MINE 2		MINE 2				MINE 2	3
MINE 3						MINE 3		MINE 3		2
MINE 4				MINE 4						1
MINE 5	MINE 5		MINE 5					MINE 5		3
MINE 6									MINE 6	1
MINE 7	MINE 7									1
MINE 8	MINE 8		MINE 8		MINE 8			MINE 8		4
MINE 9			MINE 9		MINE 9					2
MINE 10						MINE 10			MINE 10	2
MINE 11							MINE 11			1
MINE 12							MINE 12			1
MINE 13					MINE 13			MINE 13		2
MINE 14					MINE 14			MINE 14		2
MINE 15						MINE 15				1
MINE 16								MINE 16		1
MINE 17	MINE 17									1
MINE 18				MINE 18		MINE 18		MINE 18		3
MINE 19								MINE 19		1
MINE 20						MINE 20			MINE 20	2
MINE 21								MINE 21		1
MINE 22						MINE 22				1
MINE 23									MINE 23	1
MINE 24						MINE 24		MINE 24		2
MINE 25	MINE 25									1
MINE 26			MINE 26							1
MINE 27			MINE 27							1
MINE 28			MINE 28							1
MINE 29				MINE 29		MINE 29				2
MINE 30									MINE 30	1
MINE 31	MINE 31			MINE 31				MINE 31		3
MINE 32			MINE 32		MINE 32	MINE 32		MINE 32		4
MINE 33					MINE 33			MINE 33		2
MINE 34					MINE 34				MINE 34	3
MINE 35			MINE 35			MINE 35			MINE 35	3
MINE 36					MINE 36		MINE 36		MINE 36	3
MINE 37						MINE 37				1
MINE 38		MINE 38								1
MINE 39								MINE 39		1
MINE 40			MINE 40		MINE 40			MINE 40		3
MINE 41									MINE 41	1
MINE 42						MINE 42			MINE 42	2
MINE 43						MINE 43				1
MINE 44							MINE 44			1
MINE 45	MINE 45			MINE 45		MINE 45		MINE 45		4
MINE 46	MINE 46			MINE 46		MINE 46		MINE 46		4
MINE 47				MINE 47		MINE 47		MINE 47		3
MINE 48	MINE 48									1
MINE 49					MINE 49					1
MINE 50							MINE 50			1
MINE 51									MINE 51	1
MINE 52		MINE 52								1
MINE 53								MINE 53		1
MINE 54	MINE 54					MINE 54		MINE 54		3
MINE 55	MINE 55									1
MINE 56			MINE 56	MINE 56		MINE 56		MINE 56		4
MINE 57		MINE 57		MINE 57		MINE 57			MINE 57	4
MINE 58									MINE 58	1
MINE 59					MINE 59			MINE 59		2
MINE 60				MINE 60		MINE 60			MINE 60	3
MINE 61			MINE 61		MINE 61				MINE 61	3
MINE 62							MINE 62		MINE 62	2
MINE 63						MINE 63			MINE 63	2
MINE 64	MINE 64				MINE 64			MINE 64		3
MINE 65			MINE 65		MINE 65			MINE 65		3
MINE 66		MINE 66		MINE 66		MINE 66			MINE 66	4
MINE 67		MINE 67	MINE 67							2
MINE 68						MINE 68	MINE 68		MINE 68	3
MINE 69		MINE 69	MINE 69		MINE 69			MINE 69		4
MINE 70					MINE 70					1
MINE 71	MINE 71				MINE 71			MINE 71		3
MINE 72									MINE 72	1
MINE 73			MINE 73	MINE 73		MINE 73		MINE 73		4
MINE 74				MINE 74						1
MINE 75							MINE 75			1
MINE 76				MINE 76					MINE 76	2
MINE 77	MINE 77				MINE 77			MINE 77		3
MINE 78	MINE 78		MINE 78					MINE 78		3
MINE 79						MINE 79			MINE 79	2
MINE 80									MINE 80	1
MINE 81						MINE 81			MINE 81	2
MINE 82			MINE 82	MINE 82		MINE 82		MINE 82		4
MINE 83	MINE 83							MINE 83		2
MINE 84	MINE 84									1
MINE 85									MINE 85	1
MINE 86								MINE 86	MINE 86	2
MINE 87										1
MINE 88		MINE 88		MINE 88		MINE 88			MINE 88	4
MINE 89				MINE 89		MINE 89				2
MINE 90									MINE 90	1

Legend	Commodity	COAL	PGMs	GOLD	MANGANESE	DIAMOND	CHROME	IRON ORE	OTHER
	Total	164	53	23	23	23	24	12	40

MINE	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
MINE 91	MINE 91				MINE 91		MINE 91		MINE 91	4
MINE 92	MINE 92			MINE 92		MINE 92			MINE 92	4
MINE 93							MINE 93			1
MINE 94	MINE 94		MINE 94		MINE 94			MINE 94		4
MINE 95					MINE 95					1
MINE 96				MINE 96						1
MINE 97									MINE 97	1
MINE 98							MINE 98		MINE 98	2
MINE 99				MINE 99			MINE 99			2
MINE 100		MINE 100		MINE 100		MINE 100			MINE 100	4
MINE 101					MINE 101					1
MINE 102									MINE 102	1
MINE 103									MINE 103	1
MINE 104	MINE 104			MINE 104		MINE 104			MINE 104	4
MINE 105	MINE 105		MINE 105		MINE 105			MINE 105	MINE 105	5
MINE 106								MINE 106		1
MINE 107			MINE 107			MINE 107		MINE 107		3
MINE 108						MINE 108		MINE 108		2
MINE 109									MINE 109	1
MINE 110		MINE 110		MINE 110			MINE 110		MINE 110	4
MINE 111				MINE 111				MINE 111		2
MINE 112						MINE 112			MINE 112	2
MINE 113		MINE 113							MINE 113	2
MINE 114							MINE 114			1
MINE 115			MINE 115		MINE 115					2
MINE 116						MINE 116		MINE 116		2
MINE 117				MINE 117		MINE 117				2
MINE 118							MINE 118			1
MINE 119	MINE 119			MINE 119		MINE 119			MINE 119	4
MINE 120					MINE 120					1
MINE 121		MINE 121		MINE 121			MINE 121			3
MINE 122							MINE 122			1
MINE 123	MINE 123	MINE 123			MINE 123		MINE 123		MINE 123	5
MINE 124				MINE 124				MINE 124		2
MINE 125								MINE 125		1
MINE 126							MINE 126	MINE 126		2
MINE 127	MINE 127			MINE 127		MINE 127			MINE 127	4
MINE 128						MINE 128				1
MINE 129									MINE 129	1
MINE 130	MINE 130				MINE 130			MINE 130		3
MINE 131									MINE 131	1
MINE 132								MINE 132		1
MINE 133						MINE 133			MINE 133	2
MINE 134		MINE 134	MINE 134		MINE 134					3
MINE 135					MINE 135			MINE 135		2
MINE 136									MINE 136	1
MINE 137									MINE 137	1
MINE 138									MINE 138	1
MINE 139			MINE 139		MINE 139			MINE 139		3
MINE 140								MINE 140		1
MINE 141								MINE 141		1
MINE 142		MINE 142								1
MINE 143					MINE 143					1
MINE 144					MINE 144			MINE 144	MINE 144	3
MINE 145						MINE 145			MINE 145	2
MINE 146							MINE 146		MINE 146	2
MINE 147	MINE 147	MINE 147		MINE 147		MINE 147		MINE 147		5
MINE 148								MINE 148		1
MINE 149						MINE 149				1
MINE 150	MINE 150					MINE 150		MINE 150		3
MINE 151				MINE 151		MINE 151		MINE 151		3
MINE 152								MINE 152		1
MINE 153						MINE 153				1
MINE 154	MINE 154		MINE 154			MINE 154			MINE 154	4
MINE 155					MINE 155			MINE 155		2
MINE 156		MINE 156		MINE 156			MINE 156		MINE 156	4
MINE 157		MINE 157	MINE 157		MINE 157			MINE 157		4
MINE 158						MINE 158				1
MINE 159							MINE 159			1
MINE 160									MINE 160	1
MINE 161				MINE 161	MINE 161			MINE 161		3
MINE 162						MINE 162		MINE 162		2
MINE 163	MINE 163		MINE 163			MINE 163		MINE 163		4
MINE 164						MINE 164		MINE 164		2
MINE 165							MINE 165			1
MINE 166					MINE 166					1
MINE 167							MINE 167		MINE 167	2
MINE 168									MINE 168	1
MINE 169								MINE 169		1
MINE 170			MINE 170		MINE 170					2
MINE 171									MINE 171	1
MINE 172	MINE 172			MINE 172		MINE 172	MINE 172			4
MINE 173								MINE 173		1
MINE 174	MINE 174				MINE 174				MINE 174	3
MINE 175									MINE 175	1
MINE 176		MINE 176				MINE 176			MINE 176	3
MINE 177						MINE 177			MINE 177	2
	32	18	28	36	38	58	25	65	62	362

Legend	Commodity	COAL	PGMs	GOLD	MANGANESE	DIAMOND	CHROME	IRON ORE	OTHER
	Total	164	53	23	23	23	24	12	40

Appendix C: Types and details of mines with ministerial declarations to conduct work on Sunday

Year	MINE1-176	Commodity Mir	Commodity Cla	Province	Excavation	Mining Method
2017	MINE 1	Coal	Coal	Mpumalanga	Surface	Open Cast
2019	MINE 1	Coal	Coal	Mpumalanga	Surface	Open Cast
2021	MINE 1	Coal	Coal	Mpumalanga	Surface	Open Cast
2016	MINE 2	Diamond	Diamond	Northern Cape	Surface	Open Cast
2018	MINE 2	Diamond	Diamond	Northern Cape	Surface	Open Cast
2022	MINE 2	Diamond	Diamond	Northern Cape	Surface	Open Cast
2019	MINE 3	PGMs	PGMs	Limpopo	Surface	Open Cast
2021	MINE 3	PGMs	PGMs	Limpopo	Surface	Open Cast
2017	MINE 4	Coal	Coal	Mpumalanga	Surface	Open Cast
2014	MINE 5	PGMs	PGMs	North West	Underground	Bord-and-Pillar
2016	MINE 5	PGMs	PGMs	North West	Underground	Bord-and-Pillar
2021	MINE 5	PGMs	PGMs	North West	Underground	Bord-and-Pillar
2022	MINE 6	Gold	Gold	Mpumalanga	Underground	Cut-and-Fill
2014	MINE 7	Gold	Gold	Mpumalanga	Underground	Sublevel Open stoping
2014	MINE 8	PGMs	PGMs	North West	Underground	Bord-and-Pillar
2016	MINE 8	PGMs	PGMs	North West	Underground	Bord-and-Pillar
2018	MINE 8	PGMs	PGMs	North West	Underground	Bord-and-Pillar
2021	MINE 8	PGMs	PGMs	North West	Underground	Bord-and-Pillar
2016	MINE 9	Manganese	Manganese	Northern Cape	Underground	Bord-and-Pillar
2018	MINE 9	Manganese	Manganese	Northern Cape	Underground	Bord-and-Pillar
2019	MINE 10	Coal	Coal	Mpumalanga	Surface	Open Cast
2022	MINE 10	Coal	Coal	Mpumalanga	Surface	Open Cast
2020	MINE 11	Manganese	Manganese	Northern Cape	Surface	Open Cast
2020	MINE 12	Chrome	Chrome	Limpopo	Surface & Underground	Open Cast & Underground
2018	MINE 13	Copper & Zinc	Other	Northern Cape	Underground	Cut-and-Fill
2021	MINE 13	Copper & Zinc	Other	Northern Cape	Underground	Cut-and-Fill
2018	MINE 14	Manganese	Manganese	Northern Cape	Underground	Bord-and-Pillar
2021	MINE 14	Manganese	Manganese	Northern Cape	Underground	Bord-and-Pillar
2019	MINE 15	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2021	MINE 16	Coal	Coal	Mpumalanga	Surface	Open Cast
2014	MINE 17	PGMs	PGMs	Limpopo	Underground	Conventional
2017	MINE 18	PGMs	PGMs	Mpumalanga	Underground	Bord-and-Pillar
2019	MINE 18	PGMs	PGMs	Mpumalanga	Underground	Bord-and-Pillar
2021	MINE 18	PGMs	PGMs	Mpumalanga	Underground	Bord-and-Pillar
2021	MINE 19	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2019	MINE 20	Coal	Coal	Mpumalanga	Surface	Open Pit
2022	MINE 20	Coal	Coal	Mpumalanga	Surface	Open Pit
2021	MINE 21	Coal	Coal	Mpumalanga	Surface	Open Cast
2019	MINE 22	Vanadium	Other	North West	Surface	Open Cast
2022	MINE 23	Bentonite	Other	Western Cape	Surface	Open Cast
2019	MINE 24	Coal	Coal	Gauteng	Underground	Bord-and-Pillar
2021	MINE 24	Coal	Coal	Gauteng	Underground	Bord-and-Pillar
2014	MINE 25	Gold & Antimony	Gold	Limpopo	Underground	Sublevel Open stoping
2016	MINE 26	Gold	Gold	Gauteng	Underground	Conventional
2016	MINE 27	Gold	Gold	Gauteng	Underground	Conventional
2016	MINE 28	Diamond	Diamond	Gauteng	Underground	Block Caving
2017	MINE 29	Coal	Coal	Mpumalanga	Underground	Continuous Mining
2019	MINE 29	Coal	Coal	Mpumalanga	Underground	Continuous Mining
2022	MINE 30	Chrome	Chrome	Limpopo	Underground	Bord-and-Pillar
2014	MINE 31	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2017	MINE 31	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2021	MINE 31	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2016	MINE 32	Chrome	Chrome	Mpumalanga	Surface & Underground	Open Cast & Underground
2018	MINE 32	Chrome	Chrome	Mpumalanga	Underground	Underground
2019	MINE 32	Chrome	Chrome	Mpumalanga	Underground	Underground
2021	MINE 32	Chrome	Chrome	Mpumalanga	Underground	Underground
2018	MINE 33	Diamond	Diamond	Northern Cape	Surface & Underground	Open Cast & Underground
2021	MINE 33	Diamond	Diamond	Northern Cape	Surface & Underground	Open Cast & Underground

2018	MINE 34	Phosphate	Other	Western Cape	Surface	Open Pit
2019	MINE 34	Phosphate	Other	Western Cape	Surface	Open Pit
2022	MINE 34	Phosphate	Other	Western Cape	Surface	Open Pit
2016	MINE 35	Coal	Coal	Mpumalanga	Surface	Open Cast
2019	MINE 35	Coal	Coal	Mpumalanga	Surface	Open Cast
2022	MINE 35	Coal	Coal	Mpumalanga	Surface	Open Cast
2018	MINE 36	Manganese	Manganese	Northern Cape	Surface	Open Cast
2020	MINE 36	Manganese	Manganese	Northern Cape	Surface	Open Cast
2022	MINE 36	Manganese	Manganese	Northern Cape	Surface	Open Cast
2019	MINE 37	Gold	Gold	Gauteng	Surface	Tailings Retreatment
2015	MINE 38	Gold	Gold	Mpumalanga	Underground	Underground
2021	MINE 39	Ferrochrome	Other	Limpopo	Smelter	Smelter
2016	MINE 40	Diamond	Diamond	Northern Cape	Underground	Sublevel Open stoping
2018	MINE 40	Diamond	Diamond	Northern Cape	Underground	Sublevel Open stoping
2021	MINE 40	Diamond	Diamond	Northern Cape	Underground	Sublevel Open stoping
2022	MINE 41	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2019	MINE 41	Phosphate	Other	Limpopo	Surface	open cast
2021	MINE 41	Phosphate	Other	Limpopo	Surface	open cast
2019	MINE 42	Gold	Gold	Free State	underground	Underground
2022	MINE 42	Gold	Gold	Free State	underground	Underground
2019	MINE 43	Gold	Gold	Mpumalanga	Underground	Cut-and-Fill
2020	MINE 44	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2014	MINE 45	Coal	Coal	Mpumalanga	Surface	Open Cast
2017	MINE 45	Coal	Coal	Mpumalanga	Surface	Open Cast
2019	MINE 45	Coal	Coal	Mpumalanga	Surface	Open Cast
2021	MINE 45	Coal	Coal	Mpumalanga	Surface	Open Cast
2014	MINE 46	Coal	Coal	Limpopo	Surface	Open Pit
2017	MINE 46	Coal	Coal	Limpopo	Surface	Open Pit
2019	MINE 46	Coal	Coal	Limpopo	Surface	Open Pit
2021	MINE 46	Coal	Coal	Limpopo	Surface	Open Pit
2017	MINE 47	Chrome	Chrome	Limpopo	Underground	Bord-and-Pillar
2019	MINE 47	Chrome	Chrome	Limpopo	Underground	Bord-and-Pillar
2021	MINE 47	Chrome	Chrome	Limpopo	Underground	Bord-and-Pillar
2014	MINE 48	Diamond	Diamond	Northern Cape	Surface	Open Cast
2018	MINE 49	Chrome	Chrome	North West	Underground	Conventional
2020	MINE 50	Coal	Coal	Mpumalanga	Surface	Open Cast
2022	MINE 51	Coal	Coal	Mpumalanga	Surface	Open Cast
2015	MINE 52	PGMs	PGMs	North West	Underground	Sinking
2021	MINE 53	Coal	Coal	Mpumalanga	Underground	Bord-and-Pillar
2014	MINE 54	Coal	Coal	Mpumalanga	Surface	Open Pit
2019	MINE 54	Coal	Coal	Mpumalanga	Surface	Open Pit
2021	MINE 54	Coal	Coal	Mpumalanga	Surface	Open Pit
2014	MINE 55	Coal	Coal	Mpumalanga	Surface	Open Cast
2016	MINE 56	Coal	Coal	Mpumalanga	Surface	Open Cast
2017	MINE 56	Coal	Coal	Mpumalanga	Surface	Open Cast
2019	MINE 56	Coal	Coal	Mpumalanga	Surface	Open Cast
2021	MINE 56	Coal	Coal	Mpumalanga	Surface	Open Cast
2015	MINE 57	PGMs	PGMs	Limpopo	Underground	Long-Hole Stopping
2017	MINE 57	PGMs	PGMs	Limpopo	Underground	Long-Hole Stopping
2019	MINE 57	PGMs	PGMs	Limpopo	Underground	Long-Hole Stopping
2022	MINE 57	PGMs	PGMs	Limpopo	Underground	Long-Hole Stopping
2022	MINE 58	Chrome	Chrome	Limpopo	Surface	Open Cast
2018	MINE 59	Manganese	Manganese	Northern Cape	Underground	Underground
2021	MINE 59	Manganese	Manganese	Northern Cape	Underground	Underground
2017	MINE 60	Gold	Gold	North West	Surface	Open Cast
2019	MINE 60	Gold	Gold	North West	Surface	Open Cast
2022	MINE 60	Gold	Gold	North West	Surface	Open Cast
2016	MINE 61	Coal	Coal	Mpumalanga	Surface	Open Cast
2017	MINE 61	Coal	Coal	Mpumalanga	Surface	Open Cast
2019	MINE 61	Coal	Coal	Mpumalanga	Surface	Open Cast

2020	MINE 62	Diamond	Diamond	▣▣ Northern Cape	Surface	Open Cast
2022	MINE 62	Diamond	Diamond	▣▣ Northern Cape	Surface	Open Cast
2019	MINE 63	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2022	MINE 63	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2014	MINE 64	Iron Ore	Iron Ore	▣▣ Northern Cape	Surface	Open Pit
2018	MINE 64	Iron Ore	Iron Ore	▣▣ Northern Cape	Surface	Open Pit
2021	MINE 64	Iron Ore	Iron Ore	▣▣ Northern Cape	Surface	Open Pit
2016	MINE 65	Coal	Coal	▣▣ Mpumalanga	Surface & Underground	Open Cast & Underground
2018	MINE 65	Coal	Coal	▣▣ Mpumalanga	Surface & Underground	Open Cast & Underground
2021	MINE 65	Coal	Coal	▣▣ Mpumalanga	Surface & Underground	Open Cast & Underground
2017	MINE 66	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2019	MINE 66	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2022	MINE 66	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2015	MINE 66	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2015	MINE 67	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2016	MINE 67	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2019	MINE 68	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2020	MINE 68	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2022	MINE 68	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2015	MINE 69	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2016	MINE 69	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2018	MINE 69	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2021	MINE 69	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2018	MINE 70	Diamond	Diamond	▣▣ Limpopo	Surface & Underground	Open Cast & Underground
2014	MINE 71	Iron Ore	Iron Ore	▣▣ Northern Cape	Surface	Open Cast
2018	MINE 71	Iron Ore	Iron Ore	▣▣ Northern Cape	Surface	Open Cast
2021	MINE 71	Iron Ore	Iron Ore	▣▣ Northern Cape	Surface	Open Cast
2022	MINE 72	Coal	Coal	▣▣ Mpumalanga	Underground	Open Cast & Underground
2016	MINE 73	Coal	Coal	▣▣ Mpumalanga	Underground	Bord-and-Pillar
2017	MINE 73	Coal	Coal	▣▣ Mpumalanga	Underground	Bord-and-Pillar
2019	MINE 73	Coal	Coal	▣▣ Mpumalanga	Underground	Bord-and-Pillar
2021	MINE 73	Coal	Coal	▣▣ Mpumalanga	Underground	Bord-and-Pillar
2017	MINE 74	Diamond	Diamond	▣▣ Limpopo	Surface	Open Cast
2020	MINE 75	Chrome	Chrome	▣▣ North West	Underground	Bord-and-Pillar
2017	MINE 76	PGMs	PGMs	▣▣ North West	Underground	Bord-and-Pillar
2022	MINE 76	PGMs	PGMs	▣▣ North West	Underground	Bord-and-Pillar
2014	MINE 77	Manganese	Manganese	▣▣ Northern Cape	Surface	Open Cast
2018	MINE 77	Manganese	Manganese	▣▣ Northern Cape	Surface	Open Cast
2021	MINE 77	Manganese	Manganese	▣▣ Northern Cape	Surface	Open Cast
2014	MINE 78	Gold	Gold	▣▣ Gauteng	Underground	Sequential grid
2016	MINE 78	Gold	Gold	▣▣ Gauteng	Underground	Sequential grid
2021	MINE 78	Gold	Gold	▣▣ Gauteng	Underground	Sequential grid
2019	MINE 79	Coal	Coal	▣▣ Mpumalanga	Underground	Bord-and-Pillar
2022	MINE 79	Coal	Coal	▣▣ Mpumalanga	Underground	Bord-and-Pillar
2022	MINE 80	Chrome	Chrome	▣▣ Limpopo	Underground	Bord-and-Pillar
2019	MINE 81	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2022	MINE 81	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2016	MINE 82	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2017	MINE 82	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2019	MINE 82	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2021	MINE 82	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2014	MINE 83	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2021	MINE 83	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2014	MINE 84	Gold	Gold	▣▣ Mpumalanga	Surface	Underground
2022	MINE 85	Lime Stone	Other	▣▣ Limpopo	Surface	Open Cast
2021	MINE 86	Chrome	Chrome	▣▣ Limpopo	Surface	Open Cast
2022	MINE 86	Chrome	Chrome	▣▣ Limpopo	Surface	Open Cast
2021	MINE 87	Coal	Coal	▣▣ Mpumalanga	Surface	open Cast
2015	MINE 88	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2017	MINE 88	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2019	MINE 88	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast
2022	MINE 88	Coal	Coal	▣▣ Mpumalanga	Surface	Open Cast

2017	MINE 89	Chrome	Chrome	MP Mpumalanga	Surface & Underground	Open Cast & Underground
2019	MINE 89	Chrome	Chrome	MP Mpumalanga	Surface & Underground	Open Cast & Underground
2022	MINE 90	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2014	MINE 91	Manganese	Manganese	MP Northern Cape	Surface	Open Cast
2018	MINE 91	Manganese	Manganese	MP Northern Cape	Surface	Open-cut
2020	MINE 91	Manganese	Manganese	MP Northern Cape	Surface	Open-cut
2022	MINE 91	Manganese	Manganese	MP Northern Cape	Surface	Open-cut
2014	MINE 92	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2017	MINE 92	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2019	MINE 92	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2022	MINE 92	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2020	MINE 93	Granite	Other	MP North West	Surface	Quarry
2014	MINE 94	PGMs	PGMs	MP Limpopo	Surface	Open Cast
2016	MINE 94	PGMs	PGMs	MP Limpopo	Surface	Open Cast
2018	MINE 94	PGMs	PGMs	MP Limpopo	Surface	Open Cast
2021	MINE 94	Andalusite	Other	MP Limpopo	Surface	Open Cast
2018	MINE 95	PGMs	PGMs	MP Limpopo	Underground	Hybrid
2017	MINE 96	PGMs	PGMs	MP North West	Underground	Bord-and-Pillar
2022	MINE 97	Coal	Coal	MP Mpumalanga	Underground	Continuous Mining
2020	MINE 98	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2022	MINE 98	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2017	MINE 99	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2020	MINE 99	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2015	MINE 100	Coal	Coal	MP Mpumalanga	Surface	Open-cut
2017	MINE 100	Coal	Coal	MP Mpumalanga	Surface	Open-cut
2017	MINE 100	Coal	Coal	MP Mpumalanga	Surface	Open-cut
2019	MINE 100	Coal	Coal	MP Mpumalanga	Surface	Open-cut
2022	MINE 100	Coal	Coal	MP Mpumalanga	Surface	Open-cut
2018	MINE 101	Manganese	Manganese	MP Northern Cape	Surface	Open Cast
2022	MINE 102	Gold	Gold	MP North West	Underground	Conventional
2022	MINE 103	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2014	MINE 104	PGMs	PGMs	MP Limpopo	Underground	Hybrid
2017	MINE 104	PGMs	PGMs	MP Limpopo	Underground	Hybrid
2019	MINE 104	PGMs	PGMs	MP Limpopo	Underground	Hybrid
2022	MINE 104	PGMs	PGMs	MP Limpopo	Underground	Hybrid
2014	MINE 105	PGMs	PGMs	MP Limpopo	Surface	Open Pit
2016	MINE 105	PGMs	PGMs	MP Limpopo	Surface	Open Pit
2018	MINE 105	PGMs	PGMs	MP Limpopo	Surface	Open Pit
2021	MINE 105	PGMs	PGMs	MP Limpopo	Surface	open Cast
2022	MINE 105	PGMs	PGMs	MP Limpopo	Surface	Open Pit
2021	MINE 106	Manganese	Manganese	MP Northern Cape	Surface	Open Cast
2018	MINE 120	Chrome	Chrome	MP Limpopo	Surface	Open Cast
2016	MINE 107	PGMs	PGMs	MP Limpopo	Underground	Bord-and-Pillar
2019	MINE 107	PGMs	PGMs	MP Limpopo	Underground	Bord-and-Pillar
2021	MINE 107	PGMs	PGMs	MP Limpopo	Underground	Bord-and-Pillar
2019	MINE 108	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2021	MINE 108	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2022	MINE 109	Manganese	Manganese	MP Northern Cape	Surface	Open Cast
2015	MINE 110	Sand	Other	MP Western Cape	Surface	Open Pit
2017	MINE 110	Sand	Other	MP Western Cape	Surface	Open Pit
2020	MINE 110	Sand	Other	MP Western Cape	Surface	Open Pit
2022	MINE 110	Sand	Other	MP Western Cape	Surface	Open Pit
2014	MINE 111	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2021	MINE 111	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2019	MINE 112	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2022	MINE 112	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2015	MINE 113	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2022	MINE 113	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2020	MINE 114	Coal	Coal	MP Mpumalanga	Surface	Open Cast

2016	MINE 115	Nickel	Other	MP Mpumalanga	Surface	Open Pit
2018	MINE 115	Nickel	Other	MP Mpumalanga	Surface	Open Pit
2019	MINE 116	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2021	MINE 116	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2017	MINE 117	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2019	MINE 117	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2020	MINE 118	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2014	MINE 119	Coal	Coal	MP Mpumalanga	Surface	open cast
2017	MINE 119	Coal	Coal	MP Mpumalanga	Surface	open cast
2019	MINE 119	Coal	Coal	MP Mpumalanga	Surface	open cast
2022	MINE 119	Coal	Coal	MP Mpumalanga	Surface	open cast
2015	MINE 121	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2017	MINE 121	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2020	MINE 121	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2020	MINE 122	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2014	MINE 123	Copper	Other	MP Limpopo	Underground	Block Caving
2015	MINE 123	Copper	Other	MP Limpopo	Underground	Underground
2018	MINE 123	Copper	Other	MP Limpopo	Underground	Block Caving
2020	MINE 123	Copper	Other	MP Limpopo	Underground	Block Caving
2022	MINE 123	Copper	Other	MP Limpopo	Underground	Block Caving
2017	MINE 124	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2021	MINE 124	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2021	MINE 125	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2020	MINE 126	coal	Coal	MP Mpumalanga	Surface	Open Cast
2021	MINE 126	coal	Coal	MP Mpumalanga	Surface	Open Cast
2014	MINE 127	PGMs	PGMs	MP North West	Surface	Open Cast
2017	MINE 127	PGMs	PGMs	MP North West	Surface	Open Cast
2019	MINE 127	PGMs	PGMs	MP North West	Surface	Open Cast
2022	MINE 127	PGMs	PGMs	MP North West	Surface	Open Cast
2019	MINE 128	Aggregates	Other	MP Limpopo	Surface	Open Cast
2022	MINE 129	Cement	Other	MP Western Cape	Surface	Open Cast
2014	MINE 130	Lime Stone	Other	MP Northern Cape	Surface	Quarry
2018	MINE 130	Lime Stone	Other	MP Northern Cape	Surface	Quarry
2021	MINE 130	Lime Stone	Other	MP Northern Cape	Surface	Quarry
2022	MINE 131	Chrome	Chrome	MP Limpopo	Surface	Open Cast
2021	MINE 132	Andalusite	Other	MP Limpopo	Surface	Open Cast
2019	MINE 133	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2022	MINE 133	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2015	MINE 134	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2016	MINE 134	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2018	MINE 134	Coal	Coal	MP Mpumalanga	Surface	Open Cast
2018	MINE 135	Diamond	Diamond	MP Northern Cape	Surface	Open Cast
2021	MINE 135	Diamond	Diamond	MP Northern Cape	Surface	Open Cast
2022	MINE 136	Coal	Coal	MP Mpumalanga	Underground	Underground
2022	MINE 137	Coal	Coal	MP Mpumalanga	Underground	Bord-and-Pillar
2022	MINE 138	Chrome	Chrome	MP Limpopo	Surface	Open Cast
2016	MINE 139	Other	Other	MP Northern Cape	Surface	Open Cast
2018	MINE 139	Other	Other	MP Northern Cape	Surface	Open Cast
2021	MINE 139	Other	Other	MP Northern Cape	Surface	Open Cast
2021	MINE 140	Gold	Gold	MP Gauteng	Underground	Underground
2021	MINE 141	Coal	Coal	MP Mpumalanga	Underground	Bord-and-Pillar
2015	MINE 142	Silica	Other	MP Mpumalanga	Surface	Open Cast
2018	MINE 143	Coal	Coal	MP Mpumalanga	Underground	Bord-and-Pillar
2018	MINE 144	Iron Ore	Iron Ore	MP Northern Cape	Surface	Open Cast
2021	MINE 144	Iron Ore	Iron Ore	MP Northern Cape	Surface	Open Cast
2022	MINE 144	Iron Ore	Iron Ore	MP Northern Cape	Surface	Open Cast
2019	MINE 145	Gold	Gold	MP Gauteng	Underground	Hybrid
2019	MINE 145	Gold	Gold	MP Gauteng	Underground	Hybrid
2022	MINE 145	Gold	Gold	MP Gauteng	Underground	Hybrid
2020	MINE 146	Gold	Gold	MP Limpopo	Underground	Long-Hole Stoping
2022	MINE 146	Gold	Gold	MP Limpopo	Underground	Long-Hole Stoping

Appendix D: The calculation for fatality frequency rates and injury frequency rates (DMRE, 2023)

4.2.1 Fatality and injury frequency rates per million hours worked

The fatality and injury frequency rates per million hours worked is a number calculated using a rounded-off figure conversion factor of 2 200, as the mines do not report the actual hours worked.

The assumption is that each person works for an average of 48.9 weeks in a calendar year, discounting weekends, public holidays and annual leave days. The Basic Conditions of Employment Act, 1997 (Act 75 of 1997), requires a person to work not more than 45 hours a week. Therefore, the conversion factor is rounded off to 2 200 hours per person per year.

The rate is annualised. Therefore, for a full year, it is as follows:

$$\text{Fatality/injury rate} = \left\{ \frac{\text{Number of fatalities/injuries for a calendar year}}{\text{Number of persons at work} \times 2\,200} \right\} \times 10^6 \text{ hours}$$

Appendix E: Interviews guide

Based on the Findings from literature & data

Stakeholder: state	Answers
1. Why is Sunday work prohibited – why are the days Sunday, Christmas, and Good Friday?	-
2. What was the intended purpose of prohibiting work on Sundays in the South African mining industry in 1956?	
3. What is the significance of maintaining Sunday work prohibition in the South African mines? Why is this extra day needed, what other factors affect working time?	
4. Why is the Sunday work prohibition regulated under the MHSA? Should it not be regulated under the one of the labour legislations?	
5. Why was section 9 not reviewed in 1994, when at the time, the formulation of inclusive policies in South Africa was introduced by the new democratic government that came into being in 1994 or post-1994?	-
6. What is your view regarding the Sunday work prohibition and its alignment with the Constitution of South Africa regarding freedom of religion, particularly for the citizens who do not observe Sunday and celebrate Christmas Day and Good Friday? What is your view on the relevance of Sunday work restrictions set out in 1956, considering the diversity and different cultures and beliefs in South Africa? - With specific reference to freedom of religion	-
7. Is it an unfair practice considering other religions? Where are they accommodated? What about their religious affiliation? For example, the Muslim.	
8. To your knowledge, have there been any regulatory improvements/amendments relating to Sunday work prohibition introduced since 1956 or an assessment on section 9 of the 1956 policy since its enactment? - except the public holidays no longer observed, e.g., Day off Covenant.	-
9. Section 9 has no clause that says anyone should be consulted when applying for Sunday work. Other stakeholders are of the same view that there should not be any consultations. What is your comment?	-
10. Why should the labour organisations/unions be consulted when applying for Sunday work permission?	-
11. CIOM – what unions do you consider on the applications, is it the majority or all?).	-
12. What is your view that unions sometimes use Sunday work applications as a tool for bargaining?	
Is the bargaining on Sunday work-related matters or other issues which are not related to Sunday work or working time?	
13. Has there been any applications that were submitted but not approved, and what were the reasons? To your knowledge, have there ever been any rejections of applications or submissions of Sunday work by the DMRE, wherein the union and the employers agree?	-
14. Should mining companies who have communities in the surrounding areas be allowed to work on Sundays – particularly the opencast mines,	-

<i>when considering noise and dust hazards that community members may be exposed to?</i>	
15. Should mining communities be consulted when applying for Sunday work permission, and why? <i>This is based on the growing trend of community protests due to mining activities; for example, mining communities, as part of the affected parties that may be identified upon wanting to carry out the blasting operations, must consent to such mining processes.</i>	-
16. Does the permission have any socio-economic impact? Employment or job creation <i>How will deregulating the Sunday work prohibition impact employment/ job creation in South Africa? - What is the benefit to society (the mining host communities) for performing work on Sunday?</i> <i>Is there an economic impact on mines that work on Sunday compared to those that do not work on Sunday?</i>	-
17. What impact does performing work on Sunday have on the mine workers' social lives? Does not working on Sunday have benefits to society – community structures – i.e., family attending churches together and taking a shared rest? i.e., social participation.	-
18. From the accidents analysis, there are fatalities and serious injuries that have been recorded on Sundays, - particularly the disaster type accidents – give examples.	
<i>What measures does the inspectorate has to monitor work on Sundays?</i>	
19. Different mines have different challenges, others are always on reef, e.g., bord and pillar operations. Why is Sunday work prohibited in all mines, yet the mines are different? <i>From the analysis of the data collected, only 10% of the mines in the country have applied for Sunday work. However, in most of the mines in this 10%, coal mines accounted for most of the permissions granted.</i> <i>Should the coal mines be exempted – the nature of their mines as they are always on the reef horizon?</i>	-
20. Mechanised mines apply for Sunday work, and very few in conventional do apply. <i>Also, the mining method that was granted most permissions is the board and pillar because they are always on the reef, i.e., production and maintenance are always on the reef.</i> <i>This regulation prohibits work in the reef horizon; however, the board and pillar mining method and design require workers to always be in the reef horizon. Can't the exemption also be limited to the reef horizon?</i>	-
21. From the analysis, hard rock mines with permissions are in the gold sector and mostly in platinum. However, in Platinum, the eastern limb of the bushveld complex has more permission than those in the western limb. Why is that the case?	-
22. Motivation to the minister, in considering health and safety, the working places are far, in terms of fatigue, they are not able to reach production targets like before – as travelling times have increased. If we were to zoom into a single operation, can Sunday be used to curb the lost time due to long travelling times to reach production targets?	
23. How will deregulating the Sunday work prohibition influence foreign investor confidence in mining in South Africa in cases where the unions are not in agreement and the DMRE ends up rejecting the Sunday work? <i>Also, considering that there have been debates growing on Sunday restrictions globally, though not specific to mineral resources?</i> <i>Is this regulation a <u>regulatory hindrance</u> to Sunday work?</i>	

24. What happened to the route-form tracking system? To ensure that records are properly kept.	
25. What is Schedule A, B and Ministerial declaration?	
26. How does the department deal with late submission of applications? - Does a late application for Sunday qualify for an admin fine?	
27. In Sunday Africa, we often refer to working every day in the mining industry as CONTOPs or FULCO. Have you ever heard of the FIFO concept used by other countries? Can we relate and apply FIFO to our operations? What other countries have Sunday work prohibited?	
28. Do you have any proposals regarding how this prohibition should be regulated or not? Should it be repealed? What recommendations would you propose for Sunday work policy in the South African Mining Industry?	
COP - recommendation	

Stakeholder: state – Department of Employment and Labour (DEL)	Answers
1. In some sectors in South Africa work, some activities are restricted (retail trading, alcohol sales, etc...) and performing work (e.g. in the mines) is also prohibited on Sunday, Christmas Day, and Good Friday, and to some extent during other public holidays. In your opinion, what is the intended purpose of restricting Sunday activities/work?	-
2. In your opinion, what are the reasons that companies or a specific sector would opt to perform work on Sundays?	-
3. What aspects of the BCEA or the LRA refer to or affect working on Sundays?	-
4. Is it still relevant to treat Sunday differently to other days of the week in terms of policy applications in the current economic or social era?	-
5. What is your view regarding the Sunday work regulations, considering the diversity and different cultures and beliefs in South Africa, and their alignment with the Constitution of South Africa regarding freedom of religion, particularly for the citizens who do not observe Sunday and celebrate Christmas Day and Good Friday?	-
6. The DMRE administers the Mine Health and Safety Act 29 of 1996 (MHSA), and the Mines and Works Act 27 of 1956 (MWA), which limit working time in the South African mining industry as it prohibits the performance of mining activities on Sunday, Christmas Day, and Good Friday. Therefore, other stakeholders are of the opinion that Sunday work prohibition in the mines should be regulated under the jurisdiction of the DEL because it limits working time. Do you believe that Sunday work prohibition should be regulated under one of the labour legislations?	-
7. What would be the impact of the possible removal of Sunday work restrictions at the mines on the companies that do not fall under the jurisdiction of the DMRE but supply services or products to the mining industry?	-
8. Should the labour organisations/trade unions be consulted when companies intend to work on Sunday, and why?	-
9. What impact does performing work on Sunday have on the workers' social lives? Are there any missed benefits to society – community structures – i.e., family attending churches together	-

<i>and taking a shared rest? i.e., social participation (the work-life balance concept)</i>	
10. <i>Do the state Departments, DMRE and the DEL, work together on regulations and enforcement in the mining industry to address matters of working time that affect mine employees (For example, overtime work, remuneration, fatigue management, etc..)?</i>	-
11. <i>Do you have any proposals regarding how Sunday work should be regulated or not? or what recommendations would you propose for Sunday work policy in the South African Mining Industry?</i>	-

Organised Business	Answers
1. <i>Why is Sunday work prohibited – why are the days Sunday, Christmas, and Good Friday?</i>	-
2. <i>One. What was the intended purpose of prohibiting work on Sundays in the South African mining industry in 1956?</i>	
3. <i>What is the significance of maintaining Sunday work prohibition in the South African mines?</i>	-
4. <i>Is it true that unions sometimes use Sunday work applications as a tool for bargaining?</i>	-
5. <i>If true, is the bargaining on Sunday work-related matters or other issues unrelated to Sunday work or working time?</i>	-
6. <i>Two. Why is the Sunday work prohibition regulated under the MHSa? Should it not be regulated under the one of the labour legislations?</i>	-
7. <i>Three. In your opinion, why was section 9 not reviewed in 1994, when at the time, the formulation of inclusive policies in South Africa was introduced by the new democratic government that came into being in 1994 or post-1994?</i>	-
8. <i>Four - To your knowledge, have any regulatory improvements/amendments relating to Sunday work prohibition introduced since 1956 or an assessment on section 9 of the 1956 policy since its enactment?</i> <i>What regulatory interventions have been made by your organisation relating to Sunday work prohibition since 1956 or an assessment on section 9 of the 1956 policy since its enactment or post 1994?</i>	-
9. <i>Five - To your knowledge, have there ever been any rejections of applications or submissions of Sunday work by the DMRE, wherein the union and the employers agree?</i> <i>Have you been involved in a matter where applications were submitted but not approved, and what were the reasons?</i>	-
10. <i>Upon perusal of some of the written submissions made to the minister, the common reason provided as a motivation to the Minister to grant the permissions is with regards to the longer travelling distances to the workings; therefore, mines are not able to reach production targets like before – as travelling times have increased.</i> <i>Can Sunday be used to curb the lost time due to long travelling times to reach production targets?</i> <i>And what aspects of business are considered for a mine to apply for permission to work on Sunday?</i>	-
11. <i>What measures are implemented by mining companies operating in South Africa to prevent accidents/incidents that may endanger the health and safety of persons working on Sundays at the mines?</i>	-

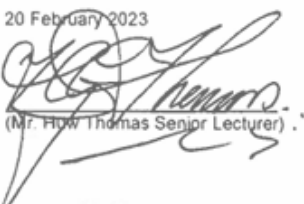
12. What findings are generally made regarding accidents that often occur on Sundays in the mines?	-
Different mines are designed differently and have different challenges; others are always on the reef for maintenance and production work, e.g., board and pillar operations. Therefore, most mechanised mines apply for Sunday work, and very few in conventional do apply. 13. <i>Why is Sunday work prohibited in all mines, yet the mines are different?</i> 14. <i>Should the coal mines be exempted – the nature of their mines as they are always on the reef horizon?</i>	-
15. From the analysis, hard rock mines with permissions are in the gold sector and mainly in platinum. However, in Platinum, the eastern limb of the bushveld complex has more permission than those in the western limb. <i>Why is that the case?</i>	-
16. <i>In South Africa, we often refer to working continuously every day in the mining industry as CONTOPs or FULCO.</i> Have you ever heard of the FIFO concept used by other countries? Can we relate and apply FIFO to our operations?	-
17. <i>Considering that there have been debates growing on Sunday restrictions globally, though not specific to mineral resources, can deregulating the Sunday work prohibition influence foreign investor confidence in mining in South Africa</i>	-
18. <i>Is there an economic impact on mines that work on Sunday compared to those that do not work on Sunday?</i> <i>i.e., does the permission have any socio-economic impact? For example, how will deregulating the Sunday work prohibition impact employment/ job creation in South Africa? -</i>	-
19. <i>What is the benefit to society (the mining host communities) for performing work on Sunday?</i>	-
20. <i>How does performing work on Sunday affect the mine workers' social lives? Does not working on Sunday benefit society – community structures – i.e., family attending churches together and taking a shared rest? i.e., social participation.</i>	-
Section 9 has no clause that says any person should be consulted when applying for Sunday work. Various stakeholders have differing views regarding the consultation. 21. <i>Why should the labour organisations/unions be consulted when applying for Sunday work permission?</i>	-
Also, there is a growing trend of community protests due to mining activities; for example, mining communities, as part of the affected parties that may be identified upon wanting to carry out the blasting operations, must consent to such mining processes. 22. <i>Should mining companies with communities in the surrounding areas be allowed to work on Sundays – particularly the opencast mines, when considering noise and dust hazards that community members may be exposed to?</i> 23. <i>Should mining communities be consulted when applying for Sunday work permission, and why?</i>	-
24. <i>Should the Sunday work prohibition be repealed, and why?</i>	-

25. Do you have any proposals regarding how this prohibition should be regulated or not? What recommendations would you propose for Sunday work policy in the South African Mining Industry?	
26. Are there any issues relating to working time, if it is needed? What other factors affect working time?	
	Thank you

Stakeholder: UNION	Answers
1. Why is Sunday work prohibited – why are the days Sunday, Christmas, and Good Friday? 2. What was the intended purpose of prohibiting work on Sundays in the South African mining industry in 1956? What is the significance of maintaining Sunday work prohibition in the South African mines?	-
3. Is it true that unions sometimes use Sunday work applications as a tool for bargaining? 4. Is the bargaining on Sunday work-related matters or other issues which are not related to Sunday work or working time?	-
5. Why is the Sunday work prohibition regulated under the MHSA? Should it not be regulated under the one of the labour legislations?	
6. Why was section 9 not reviewed in 1994, when at the time, the formulation of inclusive policies in South Africa was introduced by the new democratic government that came into being in 1994 or post-1994?	-
7. What is your view regarding the Sunday work prohibition and its alignment with the Constitution of South Africa regarding freedom of religion, particularly for the citizens who do not observe Sunday and celebrate Christmas Day and Good Friday? What is your view on the relevance of Sunday work restrictions set out in 1956, considering the diversity and different cultures and beliefs in South Africa? - With specific reference to freedom of religion 8. Is it an unfair practice considering other religions? Where are they accommodated? What about their religious affiliation? For example, the Muslim.	-
9. To your knowledge, have there been any regulatory improvements/amendments relating to Sunday work prohibition introduced since 1956 or an assessment on section 9 of the 1956 policy since its enactment? - except the public holidays no longer observed, e.g., Day off Covenant.	-
10. To your knowledge, have there ever been any rejections of applications or submissions of Sunday work by the DMRE, wherein the union and the employers agree? Have you been involved in a matter where applications were submitted but not approved, and what were the reasons?	-
11. Is there an economic impact on mines that work on Sunday compared to those that do not work on Sunday? Does the permission have any socio-economic impact? Employment or job creation How will deregulating the Sunday work prohibition impact employment/ job creation in South Africa? - What is the benefit to society (the mining host communities) for performing work on Sunday?	-
12. How will deregulating the Sunday work prohibition influence foreign investor confidence in mining in South Africa in cases where the unions are not in agreement and the DMRE ends up rejecting the Sunday work?	

Also, considering that there have been debates growing on Sunday restrictions globally, though not specific to mineral resources? Is this regulation a <u>regulatory hindrance</u> to Sunday work?	
13. Different mines have different challenges, others are always on reef, e.g., bord and pillar operations. Why is Sunday work prohibited in all mines, yet the mines are different? From the analysis of the data collected, only 10% of the mines in the country have applied for Sunday work. However, in most of the mines in this 10%, coal mines accounted for most of the permissions granted. Should the coal mines be exempted – the nature of their mines as they are always on the reef horizon?	-
14. Motivation to the minister, in considering health and safety, the working places are far, in terms of fatigue, they are not able to reach production targets like before – as travelling times have increased. If we were to zoom into a single operation, can Sunday be used to curb the lost time due to long travelling times to reach production targets?	-
15. Mechanised mines apply for Sunday work, and very few in conventional do apply. Also, the mining method that was granted most permissions is the board and pillar because they are always on the reef, i.e., production and maintenance are always on the reef. This regulation prohibits work in the reef horizon; however, the board and pillar mining method and design require workers to always be in the reef horizon. Can't the exemption also be limited to the reef horizon?	-
16. From the analysis, hard rock mines with permissions are in the gold sector and mostly in platinum. However, in Platinum, the eastern limb of the bushveld complex has more permission than those in the western limb. Why is that the case?	-
17. In Sunday Africa, we often refer to working every day in the mining industry as CONTOPs or FULCO. Have you ever heard of the FIFO concept used by other countries? Can we relate and apply FIFO to our operations?	-
18. What impact does performing work on Sunday have on the mine workers' social lives? Does not working on Sunday have benefits to society – community structures – i.e., family attending churches together and taking a shared rest? i.e., social participation.	-
19. Should mining companies who have communities in the surrounding areas be allowed to work on Sundays – particularly the opencast mines, when considering noise and dust hazards that community members may be exposed to?	-
20. Should mining communities be consulted when applying for Sunday work permission, and why? This is based on the growing trend of community protests due to mining activities; for example, mining communities, as part of the affected parties that may be identified upon wanting to carry out the blasting operations, must consent to such mining processes.	-
21. Why should the labour organisations/unions be consulted when applying for Sunday work permission?	-
22. Section 9 has no clause that says anyone should be consulted when applying for Sunday work. Other stakeholders are of the same view that there should not be any consultations. What is your comment?	-
23. Should it be repealed?	
24. Do you have any proposals regarding how this prohibition should be regulated or not? What recommendations would you propose for Sunday work policy in the South African Mining Industry?	
25. Are there any issues relating to working time? Why is this extra day needed, what other factors affect working time	

Appendix F: Ethics clearance certificate

 UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG	
<u>SCHOOL OF MINING ENGINEERING ETHICS COMMITTEE</u> <u>CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)</u>	
<u>CLEARANCE CERTIFICATE</u>	<u>PROTOCOL NUMBER: EMINN/2022/63</u>
<u>PROJECT TITLE</u>	An Investigation into the Deregulation of Sunday Work prohibition in the South African Mining Industry
<u>INVESTIGATOR</u>	Omphemetse Phefo (0706894K)
<u>SCHOOL/DEPARTMENT OF INVESTIGATOR</u>	
<u>DATE CONSIDERED</u>	20 February 2023
<u>DECISION OF THE COMMITTEE</u>	Approved
<u>RISK LEVEL</u>	Minimal RISK
<u>EXPIRY DATE</u>	20 February 2025
<u>ISSUE DATE OF CERTIFICATE</u>	20 February 2023
<u>CHAIRPERSON</u>	 (Mr. How Thomas Senior Lecturer)
cc. Supervisor: Prof. Thibedi Ramontja	
<u>DECLARATION OF INVESTIGATOR</u>	
To be completed in duplicate and ONE COPY returned to the Chairperson of the School/Department ethics committee.	
I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee	
 Signature	Date <u>22 / 02 / 2023</u>
PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES	



SCHOOL OF MINING ENGINEERING ETHICS COMMITTEE

Ethics clearance / waiver number: **EMINN/2022/67**

20 February 2023

Re: Omphemetse Phefo (0706894K)

To whom it may concern,

Omphemetse Phefo (0706894K) is currently registered as a student at the School of Mining Engineering, University of the Witwatersrand, Johannesburg.

This letter is to confirm that, at the time of writing, does not need ethical clearance for his study entitled '*An Investigation into the Deregulation of Sunday Work prohibition in the*

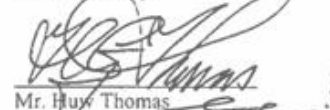
South African Mining Industry'

This decision has been reached based upon a description of the project supplied by *Omphemetse Phefo* to the School of Mining Engineering Ethics Committee, constituted as a subcommittee of the University Human Research Ethics Committee (Non-Medical), which has been evaluated by the subcommittee chair. This decision has then been ratified by the University Human Research Ethics Committee (Non-Medical). If, however, *Omphemetse Phefo* changes the methods of data collection and analysis for this project, this decision may no longer be valid. If such changes take place, this should be communicated to the School of Mining Engineering Ethics Committee.

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

Thank you.

Yours sincerely,



Mr. Huw Thomas
School Ethics Chair Person

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Appendix G: Views provided by the Mine Health and Safety Council and the Mandela Mining Precinct

