DURBAN UNIVERSITY OF TECHNOLOGY

THE IMPACT OF JOB SECURITY ON EMPLOYEE MOTIVATION DURING THE COVID-19: A CASE STUDY AT TRONOX KZN SANDS

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AUGUST 2025

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Submitted in fulfilment of the requirements for the degree of
Master of Management Sciences

Specialising in

Human Resources Management

in the
Faculty of Management Sciences
at the Durban University of Technology

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AUGUST 2025

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Date: _15 August 2025_____

ABSTRACT
THE IMPACT OF JOB SECURITY ON EMPLOYEE MOTIVATION DURING THE COVID-19: A CASE STUDY AT TRONOX KZN SANDS

This study focuses job security on employee motivation during the COVID-19 pandemic at Tronox, a company operating within South Africa's mining industry. The COVID-19 pandemic posed several challenges to the mining industry, including increased employee turnover, health concerns, workforce restructuring, salary adjustments, reduced working hours, and operational disruptions. Limited recognition of these issues within Tronox during this period contributed to employee job insecurity, which in turn impacted overall productivity and employee motivation.

This study aims to examine the influence of job security on employee motivation during the COVID-19 pandemic. To address the primary research question, the study is structured into three sections, which also serve as the study's objectives. The first objective is to assess the current practices related to job security at Tronox KZN Sands amid the COVID-19 pandemic. The second objective is to analyse the relationship between job security and employee motivation. The final objective is to identify the key factors that contribute to employee motivation at Tronox.

This study utilized a quantitative research approach, as this design focuses on objective data analysis through statistical and numerical methods, excluding subjective opinions and feelings. Data collection was conducted using a closed-ended questionnaire. The collected data were coded and analysed using the Statistical Package for Social Sciences (SPSS) (Version 30.0) for Windows. The researcher employed a census sampling method, including the entire population as the sample. This approach is appropriate when the population size is relatively small.

The study revealed notable job security concerns among employees at Tronox KZN Sands, particularly during the COVID-19 pandemic. The practices observed included employee restructuring, which involved large-scale reorganisations that adversely affected job security. Furthermore, practices such as salary adjustments and reduced

working hours further contributed to the challenges related to job security. The practices implemented during this period had a demotivating effect on employees, as indicated in Chapter five. The study identified several key factors that impact employee motivation, as evidenced by survey responses and structural equation modelling (SEM) analysis. Recognition and reward on employee motivation showed a positive correlation with recognition and reward systems.

In summary the findings of the study highlight the importance of providing internal training opportunities for all staff members, regardless of their employment status. Effective development programs may include classroom instruction, online courses, college degree initiatives, and mentorship programs, all aimed at supporting employees in performing their current responsibilities and fostering engagement. The study also recommends that management regularly administer employee surveys to gather valuable feedback on workplace satisfaction, engagement levels, and areas for potential improvement.

DECLARATION

I hereby declare that this dissertation submitted for the degree in Management Sciences: Human Resources Management in the Department of Human Resources Management is my own original work and has not previously been submitted to any other institution of higher education. I further declare that all cited or quoted information sources are indicated and acknowledged in the comprehensive bibliography.

SIPHELELE PHUMLANI BIYELA

DEDICATION

This study is dedicated to my family for their unwavering support, comfort, and motivation. I would also like to extend my gratitude to my supervisor, Dr. A. Rajlal, for your encouragement and commitment throughout this journey. Additionally, I wish to acknowledge my parents, Mr. Thulani Lawrence Biyela and Mrs. Duduzile Agrieneth Biyela, for instilling and nurturing the principles of education in me from an early age. I truly appreciate your continued confidence in my abilities and the support and motivation you have provided since the beginning.

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ACKNOWLEDGEMENTS

I would like to begin by expressing my gratitude to the Almighty God for the strength and wisdom that enabled me to complete this study. My sincere appreciation goes to my supervisor, Dr. A. Rajlal, for her invaluable guidance, expertise, and thorough review of this work. I would also like to thank Mr. V. Singh (Statistician) for his dedication and support during the completion of this study. Additionally, I extend my heartfelt thanks to the employees of Tronox KZN Sands who participated in this study.

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LIST OF ABBREVIATIONS

BMI – Body Mass Index

CCTV - Closed Circuit Television

COVID-19 – Corona Virus

CPC - Central Processing Complex

DMRE – Department of Minerals, Resources, and Energy

DUT – Durban University of Technology

EM – Employee Motivation

GDP - Gross Domestic Product

MSP – Mineral Separation Plant

HMC – Heavy Minerals Concentrate

HR - Human Resources

HRBP - Human Resources Business Partner

IOT – Internet of Things

JS – Job Security

KZN – KWA - Zulu Natal

PHEIC - Public Health Emergency of International Concern

PPE – Personal Protective Equipment

PWP - Primary Wet Plant

S.A – South Africa

SARS-CoV - Severe Acute Respiratory Syndrome Coronavirus

SEM- Structural Equation Modelling

SHEQ - Safety, Health, Environmental and Quality

SPSS - Statistical Package for Social Sciences

TiO2 - Titanium Dioxide

WHO – World Health Organisation

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

The ongoing effects of the pandemic on the mining sector continue to present uncertainties; however, we are continuing to gain valuable insights each day regarding its impact on commodity demand and operational models. According to Swart, Dalasile, Armitage, Ndou and Clark (2022:1), Tronox's operations experienced disruptions due to isolated outbreaks and government-mandated shutdowns in the South African markets. Demand for several commodities, including iron ore and zinc, continued to be subdued, as market projections indicated a weaker near-term demand outlook for these materials. This research aims to investigate the impact of job security and its influence on employee motivation during the pandemic at Tronox KZN Sands. In the mining environment, it is of importance to ensure a motivated workforce because employees are the only asset that appreciate in value over time, thereby directly contributing to organisational outcomes and productivity.

Employee motivation and job security have been significant concerns at Tronox KZN Sands, particularly among contingent workers, who represent 11% of the workforce, permanent employees at 70%, and fixed-term employees at 19%, mainly due to the COVID-19 pandemic and decisions taken by management to monitor access to site leading to labour broker employees not being paid and staying away threatening their job security. Because the majority of workers were employed on a contractual basis, they were not allowed to access the workplace during the first shutdown. In order to maintain social distancing, the organisation was trying to minimise the number of employees on site. The study intends to provide senior management with recommendations for decision-making that ensure equitable treatment of all employees in the event of a similar pandemic occurring on the continent in the near future. This chapter presents the problem statement, and the research aims. It comprises a discussion of the research methodology with details regarding the empirical study, research design, respondents, measuring

instruments and statistical analyses. The chapter concludes with an overview of the chapters in this study.

1.2 BACKGROUND TO THE STUDY

The Tronox KZN Sands mineral operation is located in Empangeni, KwaZulu-Natal. This operation includes the Fairbreeze Mine, which is near Richards Bay, as well as the Central Processing Complex situated in Empangeni. Fairbreeze Mine, which opened in 2016, uses hydraulic mining to mine slurry for the primary wet plant at the mine site. The product of the primary wet plant is a heavy mineral concentrate that is transported to a Mineral Separation Plant (MSP) at the Empangeni Smelter Complex (Fang, Froes, Zhang, and eds., 2019). Tronox KZN Sands remains committed to developing and sustaining a culture that supports the highest performance in occupational health and safety by encouraging behaviour and implementing processes, creating a sustainable, healthy, and safe environment for all stakeholders. According to Jowit (2020: 35), the suspension of mining operations had a detrimental impact extending beyond the global economic slowdown in nations such as South Africa, where economies are significantly dependent on the mining sector. Smelters and refiners processing ores and concentrates from mining activities had encountered challenges related to COVID-19 mitigation measures, as well as declines in product demand. The decrease in product demand and the suspension of mining operations jeopardized job security for all employee categories at Tronox KZN Sands. The "no work, no pay" policy was applicable, particularly affecting contingent workers. Additionally, declared vulnerable employees were not permitted onsite, which impacted the motivation and ability of the remaining essential services team members to effectively perform their daily responsibilities.

1.3 THE PROBLEM STATEMENT

This study aims to investigate the impact of job security on employee motivation during the period of COVID-19. The heart of the challenge since the onset of the pandemic was to continue with critical productive work in an era when COVID-19 had complicated nearly every decision. According to Lebni, Irandoost, Mehedi, Sedighi and Ziapour (2022: 2),

during this period, COVID-19 emerged as the most significant global health challenge, resulting in uncertainty, complexity, and ambiguity for many organisations. The pandemic created many challenges for the mining industry globally, including business continuity, low employee motivation and unemployment (Ayaaba, Adusei-Asante, Nunfam, Rumchev, and Amponsah 2024:1-2). Lockdowns, supply shortages, short time, monetary value, and a fear of job security due to COVID-19 all served to challenge Tronox KZN Sands. According to Atif, Cawood and Mahboob (2020: 3), production figures for the South African mining industry experienced a significant decline during the challenging circumstances of the COVID-19 pandemic. Mandatory shutdowns, lower demand for extractive products and slowdowns when managing risk have caused losses of production, income and growth which led to the closure of one site at Tronox KZN Sands (Tronox Minerals 2020: 15). Reddy (2020: 8), reports that Tronox KZN Sands, the Human Resources (HR) and Safety, Health, Environmental and Quality (SHEQ) departments monitored site access during shut down to minimise the numbers of staff entering the organisation. Casual workers who were not permitted onsite had to therefore, remain at home while a no work no pay rule applied. Mahmoud, Grigoriou, Fuxman and Reisel (2021: 13) stated that the level of job insecurity was expected to increase throughout the duration of the pandemic. According to Fang *et al.* (2019: 5), at the time of compilation, 265 mine sites had been identified with disruptions in 34 countries. Ahmed and Ishtiaq (2021: 3) affirmed that global restrictions aimed at promoting social distancing resulted in a slowdown or temporary suspension of mining projects until further notice. Reddy (2020: 9), reports that Tronox miners found it difficult to practice social distancing, since the mining environment requires them to work in groups. Almost half of the workforce became less motivated since Tronox KZN Sands reported a decrease in production which resulted in the shutting down of Hillandale mine and the termination of contracts for contingent workers in order to save costs. The COVID-19 pandemic brought new dynamics and challenges to the mining industry work environment globally. Tronox KZN Sands implemented layoffs in order to stay abreast and survive the losses that resulted from the pandemic. Wherever it was practical to do so, they introduced working-from-home arrangements and policies. However, technical employees were not capable of working from home. Hence, the challenges brought about by the pandemic affected both

employee motivation and job security indicating that there was a need for the study to be undertaken (Tronox Minerals 2020: 15-20).

1.4 AIM OF THE STUDY

This research aims to investigate the impact of job security and its influence on employee motivation during the COVID-19 pandemic at Tronox KZN Sands operating in the mining industry in South Africa.

1.5 OBJECTIVES OF THE STUDY

To answer the main aim of the study, the key objectives of this study are:

a) To determine the prevailing practices of job security at Tronox KZN Sands during the Covid-19 pandemic.
b) To establish the relationship between job security and employee motivation at Tronox KZN Sands during Covid-19 pandemic.
c) To distinguish the factors that contribute to employee motivation at Tronox KZN Sands.
d) To propose possible solutions that can be implemented at Tronox KZN Sands to ensure employee job security and employee motivation.

1.6 RESEARCH QUESTIONS

The following research questions were addressed in support of the stated research objectives:

a) What are the current practices of job security at Tronox KZN Sands during the Covid-19 pandemic?

b) Is there a relationship between job security and employee motivation?

c) What are the factors that contribute towards contribute employee motivation?

d) What are the possible solutions that can be applied at Tronox KZN Sands to ensure job security and employee motivation?

1.7 STUDY SIGNIFICANCE

Employee motivation and job security are important concepts in every organisation. Mining organisations need to ensure that employee motivation and job security are always high among employees. This in turn, can serve to assist the organisation to increase levels of productivity, good customer service and high-quality products. It is the responsibility of everyone in an organisation to guarantee that workers are satisfied and devoted to making the mining industry effective. The researcher asserts that the findings of this investigation will provide relevant recommendations to Tronox KZN Sands Limited regarding the influence of job security on employee motivation during the COVID-19 pandemic. The study will also highlight motivational theories regarding the motivation of employees in the mining industry. Furthermore, the study could assist in providing suggestions to top management and staff on how to motivate the workforce and achieve organisational objectives effectively and efficiently. The study may also be beneficial to future researchers willing to examine the impact of job security on employee motivation during natural disasters similar to COVID-19.

1.8 SCOPE OF THE STUDY

The research study specifically examines Tronox KZN Sands within the mining sector and does not encompass other companies operating in the South African mining industry.

1.9 LITERATURE REVIEW

Literature was reviewed with an aim to investigating the impact of job security on employee motivation during the COVID-19 pandemic. Snyder (2019: 339) states that a literature review entails a systematic evaluation of scholarly and research-oriented information related to a specific topic. In other words, it's a review of what is known, and not what is suspected or assumed, about a specific subject. This study examines the

literature on three key variables namely, the COVID-19 pandemic, job security, and employee motivation in the mining sector.

1.9.1 THE BACKGROUND OF THE COVID-19 PANDEMIC

According to the World Health Organisation (2020:1), the coronavirus disease of 2019 (COVID-19) pandemic was a global outbreak of an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Cases of novel coronavirus (nCoV) were first detected in China in December 2019, with the virus spreading rapidly to other countries across the world. This led the World Health Organisation (WHO) to declare a public health emergency of international concern (PHEIC) on 30 January 2020 and to characterise the outbreak as a pandemic on 11 March 2020. Tarka (2020: 3812) states that COVID-19 represented a significant public health crisis that influenced the country's economic growth and caused disruptions to regular daily activities. Jowit (2020: 34) affirms that the COVID-19 crisis affected all facets of the economy, including metal and mineral production, as well as industries that rely on the mining sector. The efforts to reduce the spread of COVID-19 resulted in a slowdown in the global economy. However, the effect of the crisis on the mining industry remained unclear, partly because of the different approaches to mitigation adopted by various governments. According to Lone and Ahmad (2020: 1300), COVID-19 affected many countries globally, with Africa the last continent to be hit by the pandemic. However, Africa was expected to be the most vulnerable continent, with the impact of COVID-19 expected to be major due to its warm climate conditions. Nemteanu, Dinu, and Dabija (2021: 65) indicate that the COVID-19 pandemic introduced new challenges related to employee adaptation and job security, significantly impacting overall well-being and motivation as individuals adjusted to new workplace interventions, such as remote work and technological advancements. According to Xu et al. (2020:1), in December 2019, the initial cases of a novel coronavirus were reported in Wuhan, Hubei province, China, and the virus has since disseminated globally. Epidemiological studies indicated human-to-human transmission in China and elsewhere. Laing (2020: 580) states that the COVID-19 global pandemic did not only cause infections and deaths but also had a serious impact

on the global economy and in South Africa major industries such as the mining sector were heavily affected (Xu et al. 2020:1-2).

1.9.2 JOB SECURITY

Pacheco, Coulombe, Khalil, Neunier, Doucerain, Auger and Cox (2020: 59) affirm that job security refers to an employee's expectations about the stability and longevity of their job in an organisation. Miles, Ramalli and Wallace (2022: 1) alludes that job security refers to the assurance that one's employment is stable and not at risk of termination. It's an assurance that you will be able to work in your current employment for the foreseeable future. Job security is characterised by Obrenovic, Du, Godinic, Baslom and Tsoy (2021: 1) as a state wherein the organisation offers a stable environment and a guarantee of employment, including all the corresponding benefits, such as seniority rights, retirement security, a steady income, and an opportunity for self-development and self-actualisation. According to Jung, Jung, and Yoon (2021: 1), it was obvious that even before COVID-19, modern working environments faced uncertainly due to technological changes, economic fluctuations, and political insecurity, thus unable to guarantee employment stability to all employees. However, COVID-19 aggravated this situation. Jung, Jung, and Yoon (2021: 2) affirms that job insecurity spread among employees for two specific reasons first, changes in an organisation caused by quantitative job insecurity, such as layoffs, downsizing, and mergers, affect certain groups within the organisation, inducing their perceptions of job insecurity, and second, certain threats or stressors can be interpreted similarly or collectively by employees of different work units. All of these factors were present as a result of the COVID-19 pandemic. According to Rice, Wetstone, Liu and Yu (2024: 1), the COVID-19 pandemic resulted in significant disruptions to the workforce and raised concerns regarding job security within the mining industry worldwide.

1.9.3 EMPLOYEE MOTIVATION

According to Riak and Bill (2022: 40) employee motivation refers to the degree of energy, commitment, and creativity that employees contribute to their roles within the organisation. Regardless of whether the economy is experiencing growth or contraction,

motivating employees remains a key concern for management. Motivation is considered to be a significant factor in organisational growth. For that reason, every employer is obliged to implement the most effective motivational approaches to achieve sustainable development (Kalogiannidis 2021: 985). Nguyen, Le and Tran (2020: 4-40) affirm that encouraging employee motivation is essential for enhancing organisational performance and overall results. Wolor, Susita and Martono (2020: 79), state that the anxiety about the outbreak negatively affected employees' motivation which affected their performance. Anisah (2021: 373) attests that motivation can serve as a valuable strength in an individual's behaviour, driving them to achieve their goals and enhance overall productivity.

1.10 THEORETICAL BACKGROUND

According to Hur (2018: 331), the Herzberg's Two-Factor Theory of Motivation posits that satisfaction and dissatisfaction are not part of the same continuum. Instead, this theory suggests that the absence of satisfaction is distinct from dissatisfaction. In other words, satisfaction and no satisfaction are located at the opposite ends of the same continuum. According to Thant and Chang (2021: 157) the lack of motivators does not automatically result in job dissatisfaction, and the desired level of hygiene factors does not guarantee job satisfaction. Consequently, job satisfaction and dissatisfaction should be viewed as distinct entities rather than as points on a single continuum. This theory highlights the importance of factors such as opportunities for promotion, personal growth, recognition, and the attainment of a sense of achievement and responsibility, all of which significantly affect the motivation and job security of employees at Tronox KZN Sands. Certain performance management systems attempt to eliminate factors in the work environment that might lead to poor employee motivation among Tronox employees.

1.10.1 THE EFFECTS OF COVID-19 ON THE MINING SECTOR AND SOUTH AFRICAN ECONOMY

According to Laing (2020: 581), the South African mining industry was required to temporarily suspend non-essential operations in compliance with government regulations. A number of operations in South Africa have had to shut down production, creating additional future capital costs for the re-opening of mine sites in the future. The dramatic drops in prices, share prices and activity across mining companies and all commodities, highlights the potentially catastrophic impacts on the industry. Those employed in the large-scale mining sector were also impacted on a worldwide scale for both the short and medium term. Chitiga, Henseler, Mabungu and Maisonnave (2021: 1633) postulate that South Africa had already recorded a very high unemployment rate over the three years prior to COVID-19. Moreover, Chitiga *et al.* (2021:1635) affirmed that the COVID-19 pandemic affected the South African economy exacerbated by international and domestic channels of transmission.

(a) South Africa faced a decline in demand for its exports as most of South Africa's major trading partners experienced some form of lockdown.
(b) The world experienced a drop in mineral prices, while 20% of South African total exports is made up of minerals.

1.10.2 CONTROL MEASURES FOR COVID-19

According to Khan, Khan, Khan, Khatoon, and Arshad (2021: 6) several medications have been recommended by experts in the field as potential treatments for COVID-19. These included vaccines and drugs and antivirals that were available for the treatment of other infectious diseases. The World Health Organisation (WHO) (2020:2) affirmed that strict measures should be followed to control person-to-person transmission of the COVID-19. Isolation was also taken into consideration to reduce the transmission. Decontamination of public areas occurred routinely, while cleaning of hands, avoiding social gathering and contact with those who were ill were all prescribed methods to control the virus (Laing 2020: 581).

1.10.3 THE SIGNIFICANCE OF EMPLOYEE MOTIVATION

Bandhu, Mohan, Nittala, Jadhav, Bhadauria, and Saxena (2024: 29) states that the motivation process is purpose-driven and comprises three key components: direction, intensity, and persistence. Employees who are highly motivated towards a higher position in the organisation are more likely to be able to increase work productivity in order to achieve organisational goals. Kalogiannidis (2021: 985) affirms that motivation plays an important role in developing and intensifying every stakeholder's desire to perform efficiently in their respective positions. Even though money plays the largest part in the mix of motivators, it cannot ensure maximum employee motivation towards improved organisational performance.

1.10.4 THEORIES OF EMPLOYEE MOTIVATION

Motivational theories play a critical role in addressing employee challenges and in evaluating the observable indicators of employee motivation. (Bandhu 2024:2). Motivational theories are divided into content and process theories. Rybnicek, Bergner and Gutschelhofer (2019: 446) affirm that content theories seek to identify the factors that are positively correlated with employee motivation. Major content theories include Maslow’s theory of hierarchical needs, Herzberg motivator-hygiene theory, and Alderfer’s ERG theory. Furthermore, Rybnicek, Bergner and Gutschelhofer (2019: 446) attest that process theories examine the underlying mechanisms of work motivation, viewing it through a dynamic lens. Notably, some of the most significant process theories include goal-setting theory, social-cognition theory, and expectancy theory.

1.10.5 JOB SECURITY AND ITS INFLUENCE ON EMPLOYEE MOTIVATION

According to Ali and Anwar (2021:21), one of the key aspects of Human Resource Management is the assessment of employee motivation. Organisations must ensure that employee motivation levels are elevated, as this is essential for enhancing productivity, responsiveness, quality, and service recognition. Moreover, Ali and Anwar (2021: 21-22) state that job security for employees nowadays is a concern for every company. Every company has to find a well-qualified Human Resources practitioner who is able to strategies towards achieving organisational goals, allowing the company to rise to new levels. Shin, Hur, Moon, and Lee (2019: 1812) affirm that since the advent of the COVID-19 pandemic, employees have been subjected to constant threats of job insecurity in the mining industry. Shin *et al.* (2019: 1812-1813) state that challenges in the mining sector resulted in organisational and structural changes, such as mergers, acquisitions, and downsizing. These changes, coupled with the recent COVID-19 pandemic crisis, led to increased unemployment, causing employees to feel insecure about their jobs. Even if the global economy recovers, job insecurity is expected to remain an ongoing threat to employees whose jobs are also being replaced by automation, robots, and artificial intelligence. Ali and Anwar (2021: 90-91) attest that enhanced job security can contribute to increased productivity among employees. When job security is lacking, employees may experience heightened distractions or anxiety, which can hinder their focus and determination. Conversely, a sense of security fosters motivation, encouraging individuals to pursue growth and development within their roles and the organisation.

1.11 RESEARCH METHODOLOGY

Research methodologies may incorporate either quantitative or qualitative techniques. According to Patel and Patel (2019: 48), research methodology is a structured approach used to systematically address and resolve research problems. In this research, a quantitative research approach was employed since this design evaluates objective data and relies on statistical and numerical data, without opinions and feelings.

1.11.1 RESEARCH PARADIGM

Khatri (2020: 1435) states that the term "research paradigm" refers to the theoretical or philosophical foundation underlying the research work and it is viewed as a research philosophy. This research paradigm utilises a quantitative design since a historical literature review and descriptive research are used to analyse the attitudes of employees towards work and management. A quantitative research design is employed in this study because the design is logical, and data can be gathered from respondents by eliminating bias through self-administered questionnaires and electronically distributed questionnaires (Asenahabi 2019: 79).

1.11.2 TARGET POPULATION

Capili (2021: 64) defines a target population as the entire population, or group, that a researcher is interested in researching and analysing. Furthermore, the target population defines the traits associated with the study elements or subjects. This study considered a total employee population of 110 at Tronox Sands, with the target population data sourced from the Human Resources department.

1.11.3 METHOD OF SAMPLING

According to Nanjundeswaraswamy, and Divakar (2021: 25), Sampling techniques are frequently utilised in research to achieve more accurate estimates while optimising both cost and time. If the sample size is too small, even a well conducted study may lead to biased inferences about the population, and at the same time if the sample size is too

large the study may become more complex and may yield an inaccurate result. A census method was employed in this study. Wu and Thompson (2020: 5) postulate that a census is an attempt to gather information about every member of a group, called the population. Nanjundeswaraswamy and Divakar (2021: 328) state that in a census method the researcher considers the entire population as the sample. However, this method is only suitable when the population size is very small otherwise the costs associated with this method would be prohibitive.

1.11.4 DATA COLLECTION METHOD

According to Buthelezi, Ntuli, Mugivhisa and Gololo (2023: 12), the data collection methods utilised in both qualitative and quantitative research encompass observations, verbal, and visual assessments, as well as individual and group interviews. The most frequently used methods are interviews and surveys. In this study, the researcher will collect data utilising a questionnaire method accompanied by a covering letter (Annexure B) addressed to the respondents.

1.11.5 PRIMARY DATA

According to Rodgers, Pepperell, Keestra, and Pilkington (2021: 5), primary data refers to information gathered directly from the source by researchers or organisations. Abbondanza and Souza (2019: 376) affirm that this data is gathered through methods such as surveys, interviews, observations, or experiments, and it is specific to the research question or objectives at hand. Mazhar, Anjum, Anwar and Khan (2021: 6) attest that primary data includes the data that are collected for the first time and are original, with the primary medium involving the administration of the questionnaire. For the purposes of this study, a closed-ended structured questionnaire will be used as a data gathering instrument.

1.11.6 SECONDARY DATA

According to Sileyew (2020: 29), secondary data analysis involves the examination of data collected by other researchers, utilising information from sources that have been previously published in existing studies. This method primarily employs literature as a secondary medium. In this study, secondary data was gathered from journals, government publications, internet sources, theses, and dissertations.

1.11.7 DATA ANALYSIS

According to Taherdoost (2020: 2), data analysis is the process of transforming collected data into meaningful insights. Eldridge (2024: 1) attests that data analysis techniques are used to gain useful insights from datasets, which can then be used to make operational decisions or guide future research. The data will be coded, and the Statistical Package for Social Sciences (SPSS) (Version 30.0) for Windows will be used to analyse the data obtained from the respondents. In addition to that, Microsoft Excel will also be used for the production of pie charts and bar graphs.

1.11.8 PILOT STUDY

Lowe (2019:117) attests that a pilot study is a preliminary feasibility assessment aimed at evaluating different components of the methodologies intended for a larger, more comprehensive, or confirmatory research investigation. The primary purpose of a pilot study is to prevent researchers from launching a large-scale study without adequate knowledge of the methods proposed. Teresi, Yu, Stewart, and Hays (2020: 95) state that pilot studies test the feasibility of methods and procedures to be used in larger-scale studies. For the purpose of this study, ten (10) randomly selected, homogenous respondents will participate in pilot testing, whereafter the necessary revisions will be made before the questionnaire is finally administered. These respondents will not form part of the sample selected.

1.11.9 VALIDITY AND RELIABILITY

Saunders, Lewis, and Thornhill (2019: 213) affirm that validity and reliability are essential components in determining the quality of quantitative research. A more detailed examination of both validity and reliability will be presented in the subsequent discussion.

1.11.9.1 VALIDITY

According to FitzPatrick (2019: 212), validity is contingent upon the purpose and context of the research and pertains to conclusions derived from specific methods employed to address validity threats relevant to the research in question. Saunders *et al.* (2019: 214) also affirm that validity occurs when finding out that the questionnaire actually represents the reality of what is being measured. There are various types of validity, but for this study content validity will be used whereby, all relevant reliable sources will be utilised. Validity was also addressed during the data analysis of the questionnaire through the use of a factor analysis.

1.11.9.2 RELIABILITY

Reliability refers to the consistency of measurements made, ensuring that repeating the same experiment, under the same conditions, will generate the same measurements (Zulu 2024: 9). Creswell and Creswell (2018: 154) state that reliability is the consistency and error-free repeatability of measure that is obtained when using a measuring instrument. For this study, Cronbach's Alpha was calculated to measure reliability. The questionnaire will ensure error limitation and consistency through pilot testing. Maree (2020: 261) attests that the Cronbach's Alpha value ranges from 0 to 1 and is based on inter-item correlations of the responses in the questionnaire, with 0.7 or any score near or above it being the acceptable benchmark.

1.11.10. ETHICAL CONSIDERATIONS

Moodley (2022) contends that research respondents feel more at ease when participating in studies that guarantee anonymity and confidentiality. The covering letter (Annexure A) highlights that respondents are protected from any harm, either physical or mental, that may result from participation in the study. Furthermore, confidentiality and anonymity are maintained by excluding names from the questionnaire. Voluntary participation is ensured by clearly highlighting in the covering letter (Annexure A) that respondents can refuse to participate or withdraw at any time from participating in the study. For this study, due process will be adhered to in obtaining ethical clearance from the university's research committee. A gatekeeper's letter (Annexure E) was collected from Tronox KZN Sands.

1.11.10.1 THE CONCEPT OF ANONYMITY

According to Kang and Hwang (2023: 1), anonymity refers to a process that provides a certain level of privacy protection for identifying the selected sample respondents. This study ensures anonymity through clear instructions, guidelines, and an undertaking in the covering letter (Annexure A) of the questionnaire. The covering letter assures respondents that their information will not be divulged and also that no names will be included in the questionnaire.

1.11.10.2 THE CONCEPT OF CONFIDENTIALITY

Mthethwa (2024: 36) emphasises the importance of confidentiality, highlighting the need to protect the identities of individuals providing data and ensuring that the information cannot be traced back to any specific respondent. This study ensures confidentiality by not indicating any identification details of respondents on the questionnaire and by presenting data for statistical analysis only. The ethical standard set by Durban University of Technology (DUT) will be adhered to in the study as it relies on the mutual trust and co-operation between the researcher and the respondent. A letter of consent (ANNEXURE D) will be attached with the questionnaire (ANNEXURE C) which will be electronically distributed to respondents.

1.11.11 STUDY SITE

According to Wasti *et al.* (2024: 16) study areas refer to the specific locations where a researcher intends to conduct an in-depth investigation on a topic or an existing issue. The site of study delineates the physical boundaries within which the research will be carried out. The study was conducted at Tronox KZN Sands, located in Empangeni Kwa-Zulu Natal province. The researcher will use two sites which are the Central processing complex (CPC) and Fairbreeze located at Mtunzini, Kwa-Zulu Natal.

1.11.12. SAMPLE SIZE

According to Jenkins and Quintana-Ascencio (2019: 2), sample size refers to the number of subjects included in a study's sample within the context of market research. This sample is selected from the general population and is considered to be representative of the population for that specific study. For this study, the total population consisted of 110 individuals, from which ten were utilised in the pilot study. Consequently, a total of 100 participants were used to collect data. To gather this data, the census method was employed.

1.12 INCLUSION OF THE STUDY

(a) There is a limited amount of prior research on the impact of the COVID-19 pandemic on employee motivation and job security within the mining sector.

(b) The time and resources required for respondents to complete all questionnaire questions were often limited to their time off, lunch breaks, and shifts, particularly for night shift employees. This situation posed challenges for the researcher in terms of engagement and follow-up with respondents.

(c) The researcher, based in Gauteng, conducted the study with respondents located in Kwa-Zulu Natal province, resulting in challenges related to distance and varying geographical locations.

1.13 EXCLUSION OF THE STUDY

The scope of the study is confined to the Tronox KZN Sands, Empangeni Central Processing Complex, and the Fairbreeze site. This limitation is due to:

a) The second facility of Tronox South Africa is located in the Western Cape, which posed challenges for the researcher in data collection.

b) Empangeni, CPC acts as the central hub for the operations of Tronox in KZN and across South Africa; and

c) The intended respondents of this study include permanently employed individuals, fixed-term employees, and contingent workers, which facilitated the completion of the questionnaire with minimal difficulty.

1.14 QUESTIONNAIRE ADMINISTRATION

According to Audet, Desmarais and Gosselin (2022: 1) self-administered questionnaires are efficient and low-cost ways of collecting data with wide cohorts. This study employed the use of designed self-developed questionnaire will be electronically administered. The questionnaire comprised of two sections. Section A covered the demographic questions while section B comprised the variables of the study. A 5-point Likert scale was employed in the study with (1) strongly disagree (2) disagree (3) neutral (4) agree to (5) strongly agree.

1.15. STRUCTURE OF THE CHAPTERS

Chapter 1 Overview of the study

The first chapter will provide an overview of the study's background, objectives, research questions, problem statement, scope, and significance.

Chapter 2: Literature review

The second chapter provides a review of relevant literature related to the study.

Chapter 3: Research methodology and design

This chapter discusses the research methodology and design. This chapter focuses on the target population, sampling, data collection and how data will be analysed.

Chapter 4: Analysis of data and discussion of findings

This chapter presents an analysis of the data and discussion of the findings in this study.

Chapter 5: Conclusion and recommendations

The last chapter presents the conclusion and makes recommendations arising from analysis of results.

1.16 CONCLUSION

Chapter 1 has provided the overview for the study. As job security is the major challenge at Tronox KZN Sands and the mining industry as a whole in South Africa, this study investigated the impact of job security on employee motivation during the COVID-19 period. In this chapter the research problem was presented and formulated. This was followed by a discussion of both the general aim of the study and the specific aims. The research design and methodology were presented, and the divisions of the chapters indicated. Chapter 2 presents the literature review on factors influencing employee morale**.**

CHAPTER 2 LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter presented a brief overview of the study, the problem statement, aims, and research objectives of the current study. The purpose of this chapter is to review literature relevant to the study, focusing on studies conducted on the impact of job security and employee motivation during COVID-19. The problem statement addresses three main variables, namely, job security, employee motivation and the COVID-19 pandemic. This chapter explains the phenomena of job security in the mining sector during COVID-19 pandemic, the factors contributing to job security and antecedents of job security. The chapter also outlines a number of employee motivational theories and discusses the COVID-19 pandemic influence in the mining sector. Basyouni and El Keshky (2021: 1) attest that during the COVID-19 pandemic resulted in a significant economic downturn across all sectors, accompanied by heightened stress throughout the economy. According to Singh, Kumar, Panchal, and Tiwari (2021: 125), employees in both governmental and private sectors encounter distinct psychological challenges.

Singh *et al.* (2021: 124-125) added that anxiety, stress, and depression were the most prevalent mental health concerns reported by employees in both the private and public sectors. According to Atif, Cawood and Mahboob (2020: 1) the COVID-19 pandemic has had significant global repercussions, affecting nearly every aspect of the global economy, including the mining industry, which has also been impacted by the effects of the pandemic. Susanto, Khaliwa, Iqbal, Putro, and Abdilah (2022: 1) affirm that the pandemic had significantly affected the mining industry from a business standpoint, causing a decline in the prices of raw metal commodities, including gold, silver, and copper between 2020 and 2021. Mining was declared essential by the South African (S.A) government. However, Pretorius (2023: 2) confirms that Tronox fixed-term employees and contingent workers who could not work remotely were not allowed on site and furthermore, were not paid during this period. The context of the study was based at Tronox KZN Sands, a mining company in KwaZulu-Natal.

2.2 BACKGROUND OF TRONOX KZN SANDS

According to Tronox KZN Sands (2024: 1), KZN mineral sands operation is situated at Empangeni in KwaZulu-Natal. The operation, which employs a huge number of diversified workforces globally, consists of Fairbreeze Mine near Richards Bay, and the Central Processing Complex (CPC) in Empangeni. Fairbreeze Mine, which opened in 2016, uses hydraulic mining to mine slurry for the primary wet plant at the mine site. Cocks (2019: 479) affirms that Tronox mineral sands remains committed to developing and sustaining a culture that supports the highest performance in Occupational Health and Safety by encouraging behavior and implementing processes, to create a sustainable, healthy, and safe environment for all stakeholders. Tronox is the world's largest vertically integrated titanium dioxide (TiO2) producer. With nine TiO2 pigment plants, six mineral sands mines, and five upgrading facilities on six continents, and with a truly global footprint, they are positioned like no other producer to supply the global TiO2 industry. Mr. John Romano currently serves as Chief Executive Officer and is a member of the Tronox Board. Mr. Russ Austin was appointed as senior vice president, Global operations in March 2021 (Tronox KZN Sands 2024: 1). Pretorius (2023: 3) affirms that the product of the primary wet plant (PWP) is a Heavy Mineral Concentrate (HMC) that is transported to a Mineral Separation Plant (MSP) at the Empangeni Smelter Complex. Other products that are produced by Tronox KZN Sands include titanium dioxide pigment (TiO2) which is an inorganic white pigment found in an array of end uses. The most common use-coating and plastics accounts for more than 80 percent of global consumption. Tronox Limited is an American worldwide chemical company involved in the titanium products industry, following its acquisition of the mineral sands business formerly belonging to South Africa's Exxaro Resources. The company was spun off in part to offload its parent company Kerr-McGee's legacy of generations of environmental dumping of toxic waste across 22 states.

2.3 THE COVID-19 OUTBREAK

According to Khlem, Kannappan and Choudhury (2021: 1), COVID-19 rapidly escalated into a global pandemic due to the swift transmission of the virus between individuals. The outbreak began in Wuhan, Hubei province in China at the end of December 2019. Khan, *et al.* (2021: 1) confirmed that approximately 21 million humans were infected, with 759,400 losing their lives by end of 2020 globally. According to Chan (2020: 383) The insufficient workforce, particularly in the area of caregivers with intensive care experience, in conjunction with a scarcity of personal protective equipment (PPE), masks, and ventilators, resulted in delays in the delivery of definitive care and timely responses. Additionally, the sudden outbreak of COVID-19 instigated widespread fear and confusion regarding the types and appropriate usage of various PPE, which consequently led to the improper use of limited protective resources. Battista, Ferraro, and Piccioni (2021: 3) affirmed that the increasing numbers of COVID-19 cases outweighed the medical capacity of many countries. Due to the uncontrollable growing numbers of cases and spread, on the 11 of March 2020, the WHO declared the severe acute respiratory syndrome coronavirus a pandemic (Chan 2020: 383). COVID-19 was exposing the weak points of global labour markets. Mining companies of all sizes were radically slowing down or halting their operations while workers were forced to stay at home. However, the advancement of new technologies and Internet connectivity enabled many employees to work remotely; however, this option has not been uniformly accessible across all economic sectors and does not pertain to all job types. (Ramdoo 2020: 2). The COVID-19 pandemic had affected many economies worldwide. It also had diverse impacts on the African mining sector (Ahadjie, Gajigo, Gomwalk, and Kabanda (2021:2).

2.3.1 TRANSMISSION OF COVID-19 PANDEMIC

Ahadjie *et al.* (2021: 2) stated that human-to-human transmission was possible even during isolation. If one family member was infected, there was an increased likelihood of infection among other family members. The virus was transmitted through sneezing, coughing, and respiratory droplets from an infected person. According to National Institute for Communicable Diseases (NICD) (2023: 1), people were also infected by breathing in

droplets if standing within one meter of an infected person. However, you could not become infected through your skin. Garba, Lubuma and Tsanou (2020: 2) affirmed that COVID-19 was transmissible through direct contact with infectious individuals and indirect contact with contaminated objects. Rodríguez-Morales, Balbin-Ramon, and Rabaan (2020:1) stated that it is a fact that corona viruses can transmit from animals to humans. Guner, Hasanoglu, and Aktas (2020:571) further stressed that other routes that have been implicated in the transmission of the virus, was through contaminated fomites. Garba, Lubuma and Tsanou (2020: 2) affirms that the best way to manage and control the spread of the virus in mining companies was the implementation of policies and procedures to guide their human resources.

2.3.2 IMPLEMENTATION OF LOCKDOWN MEASURES

The COVID-19 pandemic led to the widespread adoption of lockdown measures, aimed at minimising movement and mitigating the spread of the virus (Ray and Subramanian 2020: 27). In April 2020, lockdown had expanded globally, impacting approximately 3.9 billion people. All borders of the Republic of South Africa were closed during this period (Atif, Cawood and Mahboob 2020: 667). Carrion, Peake, and Ivaturi (2021: 5) state that lockdown restrictions affecting other parts of the economy also had a knock-on effect on ports terminal closures. Grater and Chasomeris (2022: 2) stated that ports terminal closure and restricted operations led to delays in shipping, affecting the timely delivery of minerals to international markets. Furthermore, Carrion Peake and Ivaturi (2021: 5) contend that almost all South African businesses were closed by law, with goods they had imported unable to be legally delivered, ending up being piled into warehouses. Chakraborty and Kabir (2024: 4) affirmed that South Africa experienced three nationwide lockdowns. The number of infected persons were concerning, and so the government forced people to maintain the lockdowns. On the 26 of March 2020, South Africa went on a full shutdown on services that were not classified as essential services to prevent the spread of the COVID-19. According to Basquil (2020:1) government statistics showed that in April 2020, during the first full month of lockdown, total mining production fell by more than 47% year-on-year. The shutdown affected all industries in the country and paralysed the South African economy. Businesses experienced more pressure from the

shutdown because there were no economic activities during the lockdown (Mbandlwa 2020: 1677). Figure 1 depicts alert levels of national lockdown in South Africa.

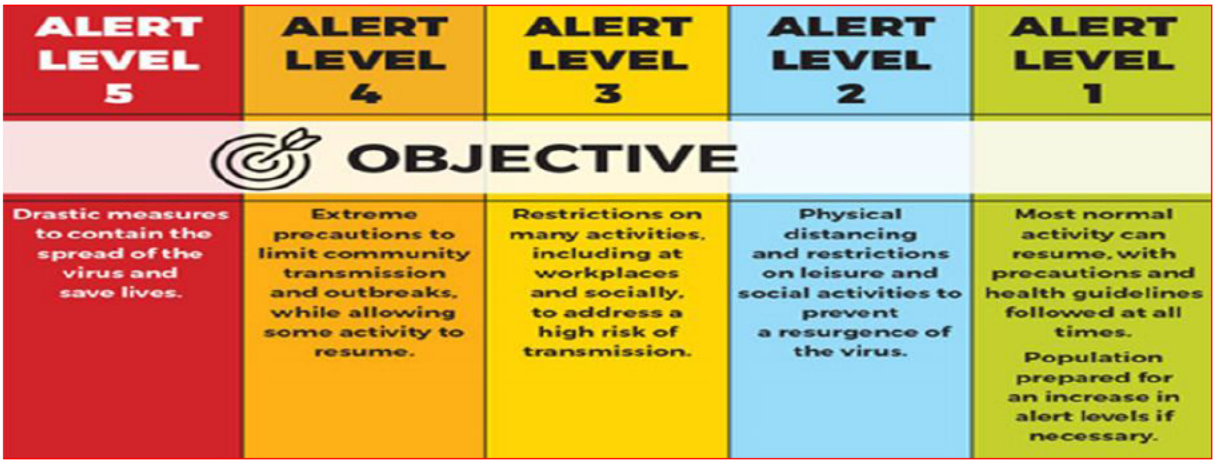


Figure 2.1: Summary of alert levels

Source: The Disaster Management Act,2002 2020:4

The national lockdown implemented a five-level risk-adjusted strategy to address the country's health and economic response to the COVID-19 pandemic, with level five representing the most stringent restrictions. (Singh, Chandna, Kumar, Upadhyay and Utkarsh 2020: 18). The Disaster Management Act, 2002 (2020:4) defined alert level one signifies a low spread of COVID-19 coupled with high readiness of the health system. Under this level, most regular activities are permitted to resume, provided that precautions and health guidelines are strictly adhered to. Alert level two reflects a moderate spread of COVID-19, while still maintaining high health system readiness. This level necessitates physical distancing and imposes restrictions on leisure and social activities to mitigate the risk of virus resurgence. Alert level three denotes a moderate spread of COVID-19 with health system readiness; it entails restrictions on various activities, including workplace functions and social engagements, to address the elevated risk of transmission. Alert level four indicates a moderate to high spread of COVID-19 and a low state of health system readiness, requiring stringent precautions to limit transmission, although some activities may still continue. Lastly, alert level five represents a high spread of COVID-19 combined with low readiness of the health system.

Sector-specific restrictions were implemented for each level of lockdown. The mining industry encountered considerable operational challenges due to lockdown measures, travel restrictions, and workforce safety issues. As a result, many mining operations had to temporarily suspend their activities or reduce their capacity. De Coning (2020: 74) affirmed that President Ramaphosa declared South Africa to be in a national state of disaster on the 15 March 2020, and subsequently announced a three-week national lockdown (stay at home order) on 23 March 2020, effectively commencing on 27 March 2020.

2.4 POLICY AND RISK CONTROL MEASURES IN MANAGING THE PANDEMIC

Mkhize and Reddy (2020: 136-137) affirmed that following the initial case of COVID-19 in South Africa and subsequent monitoring of the disease's progression, a national state of disaster was declared on March 25 under the provisions of the 2002 Disaster Management Act. The COVID-19 pandemic triggered unprecedented nationwide regulations aimed primarily at slowing the spread of the virus (Morris, Rodgers, Kissmer, Du Preez and Dufourq 2020: 193). According to Morris *et al.* (2020: 193), on the 27th of March 2020 the South African government implemented a series of measures aimed at limiting the spread of the COVID-19 pandemic. These measures included restricting non-essential travel, closure of workplaces for non-essential services, restricting social gatherings and commanding essential services such as mining industry to implement policies and procedures to manage the spread of the pandemic. The COVID-19 restrictions and control policies presented a challenge for the mining industry (Susanto *et al.* 2022: 23). According to Morris et al. (2020: 194), in Mexico, mining industries had to shut down operations for three months in 2020, owing to the high COVID-19 prevalence and the shutdown of operations was also experienced in the South African mining industry, where most workers were laid off because mining operations had to be paused due to the pandemic. Tronox KZN Sands (2024: 2) highlighted that Tronox formulated the necessary policies and procedures as required by the Department of Mineral Resources and Energy (DMRE) (see Annexture F). The Tronox policy for management of the pandemic mentions that in 78 to 85 percent of cases the spread of the virus was caused by an infection within the family, transmitted by droplets and other carriers. Tronox South

Africa was committed to ensuring, awareness, and communicating with employees about COVID-19. Screening of individuals before entering operational areas and issuing of personal protective equipment was also included in the policy. To comply with the DMRE and the Department of Health, Tronox assured compliance with the regulations with regards to the transportation of employees to and from the workplace and temporary suspension of alcohol breathalyser testing to reduce any risk of transmission using testing equipment. Tronox KZN Sands urged employees to practice social distance in accordance with the guidelines and to get themselves tested if they had been in contact with a confirmed COVID-19 person. Disciplinary actions were taken against certain individuals within the company and contingent workers who were not complying with regulations.

2.4.1 RISK CONTROL MEASURES

The South African Department of Labour (2024: 8) mention that risk control measures required action by the employee and employer. Typically, administrative controls required changes in work policy or procedures to reduce or minimise exposure to any hazard. Examples of administrative controls for SARS-CoV-2 included:

- Encouraging sick workers to stay at home.
- Minimising contact among workers, clients, and customers by replacing face-to-face meetings with virtual communications.
- Minimising the number of workers on site at any given time e.g. rotation or shift work.
- Developing emergency communications plans, including a task team for answering workers' concerns and internet-based communications, if feasible.
- Providing workers with up-to-date education and training on COVID-19 risk factors and protective behaviors (e.g. cough etiquette and care of PPE).
- Training workers who need to use protective clothing and equipment on how to put it on, use/wear it and take it off correctly, including, in the context of their current and potential duties. Training material should be easy to understand and available in the appropriate language and literacy level for all workers.

2.5 PREVENTIVE MEASURES OF INFECTION TO EMPLOYEES AND MINE VISITORS

According to the South African DMRE (2020: 33) the employer is required to conduct a risk assessment concerning potential cross-infection associated with various activities, such as spirometry, eye examinations, audiometry, temperature assessments, and heat tolerance screenings. According to Guner, Hasanoglu and Aktas (2020: 572), in the mining sector, employees were advised to wash their hands diligently and practice respiratory hygiene. Kowal, Ranosz, Herezy, Cichy, Swinniarska and Domaracka (2022: 5) affirmed that during the pandemic, mining companies took several measures to prevent and minimise the risks of workers becoming infected. Table 2.1 depicts how the pandemic was contained in mining industry.

2.5.1 Keep Physical Distancing: Rothan and Byrareddy (2020: 102433) It has been demonstrated that the virus can survive on surfaces such as equipment, countertops, and door handles for several hours. These critical findings underscore the significant importance of maintaining physical distancing among employees to mitigate the spread of the virus. According to Iqbal, Ahmad, Waqas, and Abrar (2021: 6-7), mining industries must enforce physical distancing protocols at mining sites.

2.5.2 One-worker, one-task policy: All mining companies were required to ascertain whether each task was conducted by an individual employee. In cases where multiple employees were involved, additional personal protective measures were implemented to ensure the safety of all personnel. Mine operators and miners needed to maintain physical distancing of approximately one meter to minimize close contact with others (Iqbal *et al.* 2021: 7).

2.5.3 Monitoring through advanced technology: Trained professionals were engaged to oversee social distancing measures on-site using closed-circuit television (CCTV) cameras and drones (Himeur, Al-Maadeed, Almaadeed, Abualsaud, Mohamed, Khattab, and Elharrouss 2022: 85).

2.5.4 Scheduling: Work activities were organised into various shifts to help manage the workload effectively and minimise the number of employees present on-site. In addition, to lessen interactions among staff, break times were adjusted, and non-essential employees were permitted to work remotely (Susanto *et al.* 2022: 25).

2.5.5 Site logistics and control: Ding and Zhao (2021: 11956) emphasised that access control is a critical element in maintaining a sustainable environment for virus prevention. It is essential to impose restrictions on the number of visitors and employees present on-site. To ensure the safety of workers and visitors, there should be thermal imagery cameras to analyse the body temperature. Gan, Lim, and Koh (2020: 243) attested that to mitigate this risk, all visitors were required to complete a survey regarding their travel and contact history, as well as undergo thermal scanning for fever prior to being permitted access to the mining site.

2.5.6 On-site Worker education and tutorials: The South African DMRE (2020: 23) recommended that senior leadership produce and disseminate a video message pertaining to COVID-19 prevention, which could be shared via social media and distributed to all employees. Daily updates regarding the status of COVID-19 cases were communicated through social media platforms and employee chat groups. Additionally, to ensure accessibility for all employees, on-site tutorials and informational materials were provided in multiple languages.

2.5.7 Engineering controls: To promote social distancing and minimize employee exposure in alignment with the characteristics of the worksite, various engineering controls were implemented. Specifically, ventilation equipment was utilised for those employees working in close quarters (Ceryes, Robinson, Biehl, Wirtz, Barnett and Roni 2021:557).

2.5.8 Sanitation and hygiene: The South African DMRE (2020: 21) emphasised the significance of sanitation and hygiene in mitigating the transmission of COVID-19. It is crucial for mining companies to provide hand sanitizers and handwashing soap at their locations. Furthermore, regular cleaning and industrial sanitization of surfaces that employees frequently contact are highly recommended.

2.5.9 Personal protective equipment (PPEs): Throughout the COVID-19 pandemic, the implementation of personal protective measures was essential for ensuring the safety of employees from potential infections transmitted by coworkers. The use of gloves, masks, gaiters, safety glasses, and face shields was consistently mandatory on-site (The South African Department of Mineral Resources and Energy 2020: 21).

2.5.10 Tools and equipment: Before operating any equipment, it is essential to disinfect the items thoroughly. Employees who have utilized this equipment must wash and sanitize their hands to minimize the risk of virus transmission. To ensure the safety of all staff, used tools should be set aside for three days following cleaning with a diluted bleach solution (Shahbaz, Bilal, Moiz, Zubair and Iqbal 2020: 751).

Figure 2.2: COVID-19 prevention and control measures in the mining industry
Source: Iqbal *et al.* 2021:11

2.6 COVID 19 IN THE MINING SECTOR

Mbandlwa (2020: 6580) noted that the pandemic resulted in the highest levels of unemployment and job losses recorded in the past decade. Specifically, the mining industry reported an annual reduction of 12,000 jobs in June 2020 compared to June 2019.The COVID-19 pandemic and the subsequent national lockdown significantly adversely affected the South African mining industry. Since the onset of the lockdown in South Africa, all mining activities were affected, and border closures have complicated the trade of minerals (Sucheran 2021: 118). According to Atif, Cawood and Mahboob (2020: 663), mandatory shutdowns, decreased demand for extractive products, and difficulties in risk management resulted in reductions in production, revenue, and overall growth. Ramdoo (2020: 1) agreed that COVID-19 pandemic resulted in several economic disruptions. On the supply side, lockdown measures affected mining operations and global supply chains due to the abrupt closure of factories and temporary halts in mining, maritime, and land transportation. On the demand side, limitations on the movement of individuals and the shutdown of non-essential economic activities have led to a significant decline in consumption, causing considerable capital outflows from emerging mining markets. Makgetla (2021: 3) affirming that the COVID-19 pandemic resulted in significant economic challenges in Southern Africa, causing an unprecedented decline in both production and employment levels.

2.7 WORKFORCE DISRUPTION BETWEEN OPERATIONS AND SERVICES

According to van der Lippe and Lippenyi (2020: 60), the number of firms in the mining industry embracing remote work significantly increased, driven by advancements in communication technology and accelerated by the COVID-19 pandemic, which transformed employee collaboration. Historically, downturns in the mining sector have been linked to reduced demand, typically occurring during periods of slower economic growth that lead to diminished industrial activity and a consequent decline in the demand

for mined products, ultimately resulting in lower prices. During the pandemic, the demand for mined products further decreased as economic activity contracted.

Figure 2.3 illustrates the impact of the pandemic on the mining workforce.

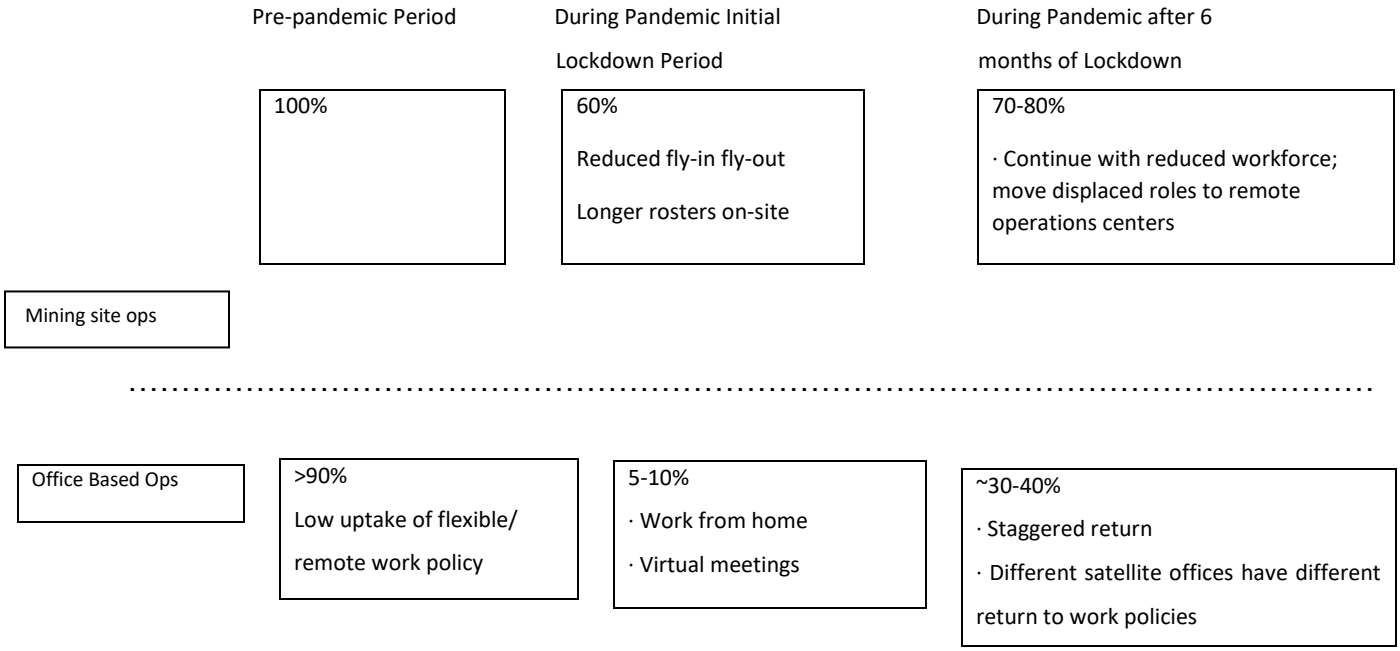


Figure 2.3: Work disruption during lockdown

Source: Carrion, Peake, and Ivaturi 2021:5.

According to Figure 2.3, mining companies transitioned from full mining site operations. Before the pandemic, over 90 percent of their office workforce operated under a flexible model. However, some companies needed to retain approximately 60 percent of their operational workforce on-site to ensure business continuity during lockdown periods. This adjustment was achieved by implementing longer shift cycles instead of the traditional fly-in, fly-out roster. As a result, the workforce engaged in on-site operations increased by 70 to 80 percent, while the office-based workforce operated at approximately 30 to 40 percent of on-site capacity (Carrion, Peake, and Ivaturi 2021: 5-7). Hall (2023: 4) notes that the pandemic caused significant disruptions to global supply chains, affecting the availability of equipment, spare parts, and raw materials. Tronox addressed potential challenges by diversifying its supplier base, improving inventory management practices, and strengthening collaboration with suppliers to mitigate risks and sustain production levels. Moreover, the disruptions in transportation systems utilised by South African

miners posed a significant supply chain risk for mining companies (Tronox KZN Sands, 2024: 1-2).

2.8 MINING INDUSTRY RISK CLASSIFICATION

Mine workers are particularly at risk for virus transmission due to the nature of their work, which often takes place in crowded, enclosed spaces under deep-level, labour-intensive conditions. The rising cases of COVID-19 infections necessitated immediate action (Chilwane 2020: 1). Employees faced several challenges that increased their risk of contracting the virus. The nature of mining operations often necessitates close physical proximity among personnel, making it difficult to adhere to social distancing guidelines (Benhura and Magejo 2021: 5). Furthermore, the restriction on remote work options heightened their vulnerability to exposure to COVID-19 (Alves, Parajana, and Silva 2023: 2).

Table 2.1 presents an analysis of mining employees categorised by high, medium, and low risk levels.

Table 2.1: Risk classification

CLASSIFICATION	MINE EMPLOYEES AT RISK
Very high risk	➢ Occupational health practitioners conducting cough inducing procedures. ➢ Occupational nurses that do intubation into trachea.
High risk	➢ Underground employees who are in confined environments. ➢ Security staff at high volume access points or conducting temperature checks and/or alcohol testing. ➢ Health and Safety reps during investigation of working sites.
Medium risk	➢ Mine employees in work areas where social/physical distancing is possible and being practiced. ➢ Human resource practitioners that interact very closely with people. ➢ Security staff at entrances to facilities and mines.
Low risk	➢ Office employees. ➢ Control room operators.

Source: The South African DMRE 2020: 28-29.

According to Table 2.1, the mining sector faced significant challenges due to its remote locations and the specific health risks encountered by mine workers. Purkayastha *et al.* (2021: 17) highlighted that the working conditions for occupational health practitioners in the mining sector were considered to be at a very high-risk level, particularly for those conducting cough-inducing procedures, as they serve as the primary point of contact for both visitors and employees at Tronox KZN Sands. Furthermore, occupational nurses involved in intubation for COVID-19 testing on-site were also classified as very high risk. Miners were identified as being at an increased risk of contracting COVID-19 due to limited ventilation and the difficulty of maintaining physical distance in confined spaces. Security personnel stationed at high-traffic access points conducting temperature checks faced considerable exposure. Health and Safety representatives, during site inspections, were similarly classified as high risk. On the other hand, mine employees working in areas where social or physical distancing was both possible and consistently practiced were categorised as medium risk. Additionally, human resource practitioners who closely interacted with individuals and managed their documentation, along with security staff at facility entrances, were also classified as medium risk. Lastly, control room operators were deemed to be at low risk, as their interactions with other employees were primarily conducted through radios and signals.

2.9 THE TRANSFORMATION OF THE MINING SECTOR DURING COVID-19

The COVID-19 pandemic brought about several transformations in the mining sector impacting various aspects from operation to sustainability efforts According to Carrion, Peake, and Ivaturi (2021:2-3), the process of transformation was already in progress before the onset of the pandemic, with efforts focused on leveraging digitalization and automation to cultivate a safer and more efficient workplace. Nevertheless, the COVID-19 pandemic profoundly influenced both the speed and character of these digitalization and automation initiatives. McLuhan (2021: 55) asserts that digital technologies have become increasingly integrated into our professional lives, particularly during the pandemic, when stakeholders made a significant shift towards online channels. This transition prompted corresponding adaptations from companies and industries. Ramdoo, Cosbey, Geipel, and Toledano (2021:671) emphasised that mining companies were

encouraged to adopt digital technologies to develop innovative solutions that assist governments and businesses in collecting, transferring, storing, analyzing, monitoring, predicting, and visualizing data related to COVID-19, thereby facilitating enhanced decision-making. The pandemic accelerated the digital transformation journey for many organisations, necessitating the development of new strategies to enhance efficiency in a context where on-site personnel were limited. Furthermore, as we navigate the fourth industrial revolution (4IR), the mining sector has experienced a greater integration of digital technologies for the early detection and prescreening of emerging infectious and viral diseases, with the goal of protecting mining areas and local communities (Bennett and McWhorter 2021: 5).

According to Agbehadji, Awuzie, and Ngowi (2021: 1), the mining sector has integrated automation into various work processes by leveraging advanced technology, such as smart boots designed to prevent infections, smart health bands, and sanitization solutions like disinfection tunnels and walkthrough gates within the mining environment. Furthermore, Agbehadji *et al*. (2021: 6) highlighted that the COVID-19 pandemic had a considerable impact on training, induction processes, and professional development. To mitigate these effects, components of 4IR technology were incorporated. For example, digital platforms such as Zoom, Microsoft Teams, and Google Meet were employed for communication, meetings, induction sessions, and learning activities. These innovations played a crucial role in the recovery from COVID-19 due to their accessibility.

Tronox KZN Sands (2024: 1) the human resources department at Tronox implemented online interviews and developed digital documentation for labor requests, payroll processing, and onboarding packages. Non-operational staff, including engineers, geologists, and management personnel, transitioned to remote work arrangements. Virtual collaboration tools became vital for conducting meetings, sharing data, and coordinating projects, which enhanced efficiency and reduced travel-related expenses. The need for self-isolation and remote work as a result of COVID-19 has led to substantial changes in the workplace (Carrion, Peake, and Ivaturi 2021: 2).

2.10 JOB SECURITY

Dhanpat, Manakana and Mbacaza (2019: 60) emphasised that job security reduced the anxiety and fear related to the potential loss of employment, allowing employees to retain their positions and avoid unemployment. Anand et al. (2023: 3) similarly emphasised that job security offers employees reassurance about the stability of their employment, alleviating concerns about potential unemployment. Yilmaz (2023: 267) further highlighted that job security reinforces the individual's right to employment within the context of service contract agreements between employees and employers, protecting against unfair dismissal. As noted by Badran and Khaled (2021: 1611), the absence of job security poses considerable risks for employees regarding potential job loss. Additionally, job security acts as a crucial motivator, enhancing employees' sense of satisfaction and fulfillment when they perceive their employment as stable and secure.

2.11 FACTORS CONTRIBUTING TO JOB SECURITY

Joubert, Jacobs, and De Beer (2023: 313) emphasised that employees who feel secure in their positions are more likely to envision a long-term future with their organisation. However, in the mining sector, the level of job security experienced by employees may vary based on their employment status, such as whether they are permanent, casual, or temporary workers (Johnston, Shields and Suziedelyte 2021: 9). Khumalo (2021: 1) notes that intensified competition has prompted numerous mining organisations to implement contract employment arrangements, thereby contributing to greater job insecurity. According to Abolade (2019: 7), job insecurity may be regarded as a significant challenge for employees who perceive a risk of potential job loss. According to Wooll (2023: 2), the pandemic has underscored the issue of job insecurity, a concern that existed prior to the crisis and is expected to continue in the future. Bartik, Bertrand, Cullen, Glaeser, Luca and Stanton (2020: 17656) stated that the COVID-19 pandemic significantly altered organisational dynamics, necessitating reductions in operations and workforce hours. Sverke, Hellgren and Naswall (2023: 6) identified various factors influencing job security, including societal, organisational, and individual elements. Figure 2.4 illustrates the factors that contribute to job security.

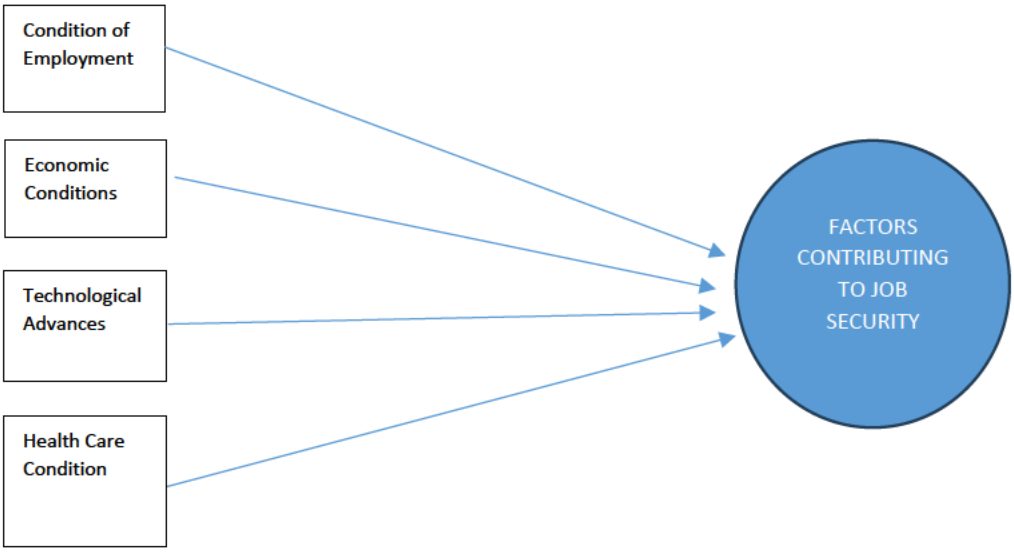


Figure 2.4: Factors contributing to Job security.

Source from: Wilson, Fitzgerald, Oosterhoff, Sevi, and Shook 2020:4

2.11.1 Condition of Employment in the Company

Budiharso (2020: 102) affirmed that Working conditions are influenced by the organisational culture and the relationships between employees and the organisation. In an email communication on July 11, 2023, the HR advisor of Tronox, Mdletshe, indicated that employees employed on a permanent basis at Tronox KZN Sands experienced less job insecurity compared to fixed-term employees. This was because, when the organisation reduced its workforce, those employees who were not regarded as core to the organisation were the first to leave. Marimuthu, Sankaranarayanan, Ali, and Karuppiah (2021: 428) stated that the contractual workers constituted a significant portion of the workforce that experienced the greatest hardships. Aishwarya (2021: 26) stated that jobs in the mining sector were widely perceived to offer a low level of job security because during the COVID-19 pandemic, small-scale mining companies shut down and downsized, which affected many employee positions. In an email communication on July 12, 2023, the HR business partner of Tronox, Reddy, indicated that natural disasters, such as the COVID-19 pandemic, forced Tronox KZN Sands to adjust their working conditions to comply with the directives from the DMRE and the Department of Health,

minimising the number of employees on site. This resulted in the working hours of employees being reduced. One of the most critical factors that affected the conditions of employment in mining during the COVID-19 pandemic was that of salary. Xulu, Phungula, Mbatha and Moyo (2021: 3) asserted that Tronox KZN Sands applied a no-work, no-pay principle to both fixed-term employees and contingent workers during the government-mandated lockdown period and implemented cost-cutting measures for permanent staff, including salary reductions, which affected workers across various roles within the industry.

2.11.2 Economic Conditions

Mancini and Sala (2018: 103) attested that economic conditions can have both positive and negative effects at the local and national levels. The mining industry often stimulates the local economy and enhances income levels and business opportunities within the community. Li and Fang (2023: 2) alluded that the COVID-19 pandemic has led to considerable changes in the production of mineral resources.

According to Basyouni and Keshky (2021: 1), during the COVID-19 pandemic, every industry experienced a significant economic downturn, resulting in widespread stress across the economy. Banegas, Perez, Escamilla, and Soto (2022: 22) attested that organisation implemented recessive actions such as reducing wages or personnel, affecting employees' job security and organisation's performance. According to Li and Fang (2024: 2) the global economic downturn resulting from the pandemic was greater than six percent in 2020, causing fluctuations in mineral demand and affecting industries dependent on these resources. Swart *et al.* (2022: 1-3) indicated that Tronox KZN Sands, as a producer of heavy minerals and iron ore, was heavily affected by decreased demand for their minerals during the COVID-19 lockdown. Corrective measures forced the company to lay off a few employees and close one of their mining sites. One of the major repercussions of the COVID-19 economic crisis was due to the closing of mining industries and the closing down of importation of intermediate products, with significant supply side consequences (Van Barneveld, Quinlan and Rainnie 2020: 133). The mining sector has made a substantial contribution to the economy and has positively impacted

numerous communities (Cramer, Kengni and Mostert 2023: 7). Tronox also failed to keep up with some of their community projects due to sharp economic downturn (Tronox KZN Sands 2024: 3).

2.11.3 Technological Advances

According to Lee, Probst, and Bazzoli (2022: 1), technological advancements, including automation, artificial intelligence, and robotics, have significantly improved efficiency and productivity in the mining sector, while also presenting challenges related to job security for employees. These advancements have led to increased profitability for mining companies, but they have also resulted in workforce reductions as fewer human workers are required and companies adopt new technologies to streamline processes and reduce costs. The COVID-19 pandemic forced the mining industry to minimize the number of workers on-site. Lee, Huang, and Ashford (2019: 336) stated that organisations globally faced increasing threats, changes, and challenges, resulting in the decline of corporations that had previously been the primary sources of jobs and careers.

Bishop (2024:1) stated that virtual reality (VR) is one of the most effective applications in the mining industry for employee training. Furthermore, Bishop (2024: 1) affirms that mining companies can now leverage virtual reality (VR) technology to offer immersive and realistic training simulations. This allows employees to practice and navigate complex tasks in a safe and controlled environment. Furthermore, virtual reality enables miners to explore mining sites virtually, eliminating the necessity for their physical presence. Opperman (2024: 1) states that Tronox KZN Sands introduced smart surveillance solutions to ensure the safety of employees. These systems are equipped with cameras and deep learning-based analytics, which are used to detect when personnel are not wearing protective equipment or to ensure that areas of a mine do not become dangerously overcrowded. These systems are also employed to monitor dust clouds, which pose significant health risks to the work environment and surrounding communities (Lee *et al.* 2022: 1-2).

2.11.4 Health Care Condition

According to Solanki *et al.* (2019: 175), employees at an increased risk of complications typically included individuals with comorbidities and those aged 60 years and older. Swart *et al.* (2022: 3) affirmed that Tronox KZN Sands employees above the age of 60, employees with Body Mass Index (BMI) of 30kg/m^2 or more and employees with chronic disease were declared vulnerable by the company doctor which negatively affected their job security. According to Chapman, James, and Rich (2018: 15) BMI was calculated by dividing weight in kilograms by height in square metres (kg/m^2). The classification of BMI for adults is underweight (<18.5 kg/m^2); healthy weight (18.5-24.9 kg/m^2); overweight (25-29.9 kg/m^2); or obese (>30 kg/m^2). According to Purkayastha, Vanroelen, and Bircan (2021: 23) mining communities faced difficult working conditions, as reflected by the higher incidence of respiratory problems reported among them. Naidoo and Jeebhay (2021: 85) state that South African goldminers experienced the burden of respiratory disease because of their current work-related exposures and health risk profile, which were likely to render them vulnerable to severe COVID-19 outcomes.

2.12 THE EFFECTS OF JOB INSECURITY ON EMPLOYEES

According to Anand *et al.* (2023: 1), the COVID-19 pandemic initiated a significant disruption, leading to economic decline and raising concerns about potential future challenges. As a result, the mining industry had to undergo significant restructuring, and downsizing, which had created stress among employees. By adjusting to new working conditions, employees were concerned about their job security. It has been observed by Elvianita and Muchtar (2020: 786), that job insecurity has led to a consensus that uncertain feelings about the future of one's work are associated with various negative consequences, both in the short and long term. The findings of the study by Obrenovic *et al.* (2021: 1) suggested that job insecurity had a significant impact on depression and anxiety, whereas the threat of COVID-19 had a significant impact on depression. During the COVID-19 crisis, employees were striving to keep their job for as long as possible. They were continually anxious about their jobs and lacked confidence in their capacity to secure work in the future.

2.12.1 Deficiency of motivation:

Soliman, Al-Tabtabai, Almusalam, and Hussein (2022: 2) identified several factors contributing to employee demotivation in the mining industry, such as job insecurity, inequitable compensation, and ineffective management practices. Moreover, Soliman *et al.* (2022: 2) affirmed that demotivation can result in dissatisfaction and a decline in labor productivity. Anand *et al.* (2023: 2) contended that organisations depended on the commitment of their employees to implement measures, manage, and recover from crises such as the COVID-19 pandemic. According to Lee, Sim, and Tuckey (2024: 119), when employees receive adequate support in the workplace, their perception of job security substantially improves. The study by Soliman *et al*. (2022:2) confirmed that the primary factors contributing to employee demotivation in the mining industries are insufficient recognition, inadequate compensation, and unsatisfactory working conditions. A study conducted by Malik *et al.* (2022: 3) found that a lack of motivation and hesitancy to work during the COVID-19 pandemic was strongly linked to the fear of infection with this deadly virus. Azmi (2022: 3) asserted that employee dissatisfaction and a lack of motivation result to a decreased performance. Haque (2022:119) stated that the COVID-19 pandemic had impacted employees, causing frustration and job demotivation in the mining industry. Tronox employees, particularly those deemed vulnerable due to COVID-19, faced unique challenges that affected their motivation and overall well-being.

2.12.2 Career Development Concerns:

According to Lebert and Antal (2020:6), miners with high job security in the mining sector were concerned about their long-term career prospects. Hasan and Chowdhury (2023: 73) affirmed that limited opportunities for advancement and training contributed to these concerns. Moreover, participation in training is not a strategy adopted by employees who perceive high employment insecurity, as they are less likely to engage in training than their more secure counterparts. Maholo (2021: 1) argues that offering employees comprehensive training and development opportunities that facilitate their career advancement within the organisation contributes to improved retention and job security. Additionally, Hadebe, Tebele, and Nel (2023: 94) state that development opportunities

boost employee motivation. Poku and Yusif (2022: 4) affirm that training and development may be linked to improved performance. Ceesay (2021: 2) noted that the mining sector experienced challenges concerning staff development and training, as these activities were disrupted by the COVID-19 pandemic. Mining companies halted their training programs due to travel restrictions, lockdown measures, social distancing protocols, limitations on classroom learning, and travel bans. Khuzwayo (2023: 35) indicated that during the nationwide lockdown, Tronox KZN Sands halted all training for their employees, including refresher courses and new employee inductions, for the safety of their workforce.

2.12.3 Performance and Job Satisfaction:

According to Al-Harazneh, Abu Shosha, Al-Oweidat (2024:1), job security is a fundamental need for employees and significantly affects their commitment to work. Concerns about potential job loss can adversely impact employee performance. Workers become distracted, or hesitant to take risks, all of which can affect overall productivity and innovation. Begum, Shafaghi and Adeel (2022: 3-4) attested that employees' fear of losing their jobs affects their morale and motivation and thus their performance. De Angelis, Mazzetti and Gugliemli (2021: 1) stated that job insecurity has a detrimental impact on job satisfaction, organisational commitment, and employee well-being. Furthermore, Devyani and Meria (2023:232) postulated that when employees experience satisfaction in their roles, it nurtures a deeper willingness to engage actively and remain loyal to the organisation. According to Kumar, Aggarwal, and Yeap (2021: 6308), during the COVID-19 pandemic, the mining sector experienced a decline in job satisfaction attributed to a notable rise in distress levels and a decrease in job performance. Maoela, Chapungu and Nhamo (2024:2) attested that COVID-19 disrupted mining activities in the provinces of South Africa, causing production cuts, supply problems, labor shortages, economic losses, employee performances, and job satisfaction. According to Khuzwayo (2023: 34) Tronox, employees felt insecure in their jobs after closure of one of the mining sites. Employees became less motivated and less productive, and lacked the focus and energy needed to perform their tasks effectively which led to lower overall performance.

2.12.4 Employee Turnover:

Tshwane, Maleka and Tladi (2023: 2177) stated that turnover intention in the mining industry is influenced by a variety of factors. Job dissatisfaction, job insecurity and lack of rewards are the main drivers of turnover intention. Challenging working conditions, health and safety risks, and job instability in the mining industry frequently contribute to employee dissatisfaction (Flatau-Harrison, Wilson, and Vleugels 2023: 106289). Querbach, Waldkirch, Kammerlander (2022: 100351) affirm that reward factors, both in the form of monetary (such as salary and bonuses) and non-monetary (such as recognition and promotion), also influence employee turnover. According to (Dhanpat, Manakana, and Mbacaza (2019 :57-71) the mining industry in South Africa experiences significant employee turnover rates. Many organisations face challenges in retaining the skilled employees necessary to achieve their mining objectives (Hadebe *et al.* 2023:92). Nuamah (2022: 11) affirms that employee turnover impacts organisations because of its relationship with recruiting and training costs, low productivity, and loss of company knowledge and valued skills. Tronox KZN Sands experienced a significant increase in employee turnover during the COVID-19 lockdown. This was largely due to the high number of fixed-term employees with specialized skills and technicians whose contracts were not renewed as the company sought to reduce on-site personnel movements. Additionally, management and specialist positions were being vacated as individuals pursued more competitive salaries and benefits offered by other mining companies in the Richards Bay area and throughout South Africa (Tronox Holdings plc 2019: 2).

2.12.5 Health Impacts:

According to Wilson, Jenna, and Lee (2020: 1) prolonged job insecurity can negatively impact both physical and mental well-being. Green (2020:1) affirms that the fear of unemployment has risen globally in the aftermath of Covid-19. Purkayastha, Vanroelen and Bircan (2021: 6) stated that the COVID-19 pandemic had brought three critical dimensions of Occupational Health and Safety (OHS) in mining industry into focus : (1) whether the work environment and conditions are safe for workers, (2) whether employment conditions incorporate the protection of workers' health, (3) and whether workers are empowered to safeguard their own health and that of their co-workers. According to Begum *et al.* (2022: 3-4), job insecurity has impacted the health of mining employees worldwide, as they experience stress related to financial loss and challenges in fulfilling family responsibilities. Zhang, Gu and Khakimova (2023: 3) attested that the threat posed by COVID-19 caused miners' health to suffer. Tronox halted recruitment due to issues with a site clinic's ability to perform medical surveillance, which had several impacts on the organisation and its employees, resulting in increased workload and reduced productivity (Tronox KZN Sands 2024: 6).

2.12.6 Compensation:

Competitive compensation is an essential factor in employee retention and motivation (Hadebe *et al.* 2023: 94). Performance-based compensation is the primary human resources practice utilised in the mining sector to assess and reward employees. Mining companies that implement incentive plans for their employees tend to experience lower turnover rates among non-managerial staff (Poku *et al.* 2022: 7). According to Mazikana (2023: 19), inadequate compensation for roles may lead to increased absenteeism and other forms of employee disengagement.

In a study by Perks and Schneck (2021: 39), in instances where employees reported changes at mining sites, the primary reason identified by both male and female respondents was a reduction in the number of hours worked, which had impacted their salaries. When interviewed on 12 May 2021, Ntuli (National Union of Mine Workers shop steward at Tronox) indicated that Tronox employees who were not operational during the

lockdown were significantly impacted, and those whose working hours were reduced have expressed concerns regarding the decrease in their salaries.

2.12.7 Stress and Anxiety:

According to Statistics South Africa (2020: 1) in the second quarter of 2020, all industries experienced job losses compared to the first quarter of 2020. These losses were largely attributed to a decline in employment within the mining and trade sectors. The cyclical nature of the mining industry, with fluctuations in demand and commodity prices, often contributed to stress, anxiety and fear, which negatively affected the mining sector productivity, motivation, and engagement (Obrenovic, Godinic, Baslom and Tso 2021: 1). According to Kumar, Mukherjee, and Choi (2022: 3-4) mental health conditions have been observed in the mining sector as a result of the COVID-19 pandemic. Furthermore, Kumar *et al*. (2022: 3) affirm that financial problems due to job losses and unemployment were crucial factors leading to anxiety and stress. In an email communication on July 11, 2023, the HR advisor of Tronox, Mdletshe indicated that Tronox had announced the suspension of all recruitment processes during the lockdown period from 2020 to 2021. This decision had created considerable stress and anxiety for many employees who were anticipating promotions, as well as for fixed-term employees seeking permanent positions. The uncertainty surrounding job security has significantly impacted the well-being of employees, particularly those identified as vulnerable and unable to fulfill their daily responsibilities.

2.13 JOB SECURITY IN THE MINING SECTOR POST COVID-19 PANDEMIC

South Africa was experiencing a decline in its employment rate prior to the pandemic, a situation that was further intensified by the effects of the pandemic (Erten, Leight and Tregenna 2019: 449). Antin (2024:5) states that South Africa’s (S.A) mining industry had been central to the development of the economy, due to the country's advantageous position as one of the most resource-rich nations globally. This sector had been instrumental in attracting foreign investment and establishing prominent global enterprises, and it continues to be one of the most closely monitored economic sectors in South Africa. According to Bekiswa (2022: 5), the mining industry in South Africa had

been a significant source of employment since the early 1900s.Africa Mining IQ (2024:1) concurs, stating that mining has remained the cornerstone of the South African economy, making a significant contribution to economic activity, job creation and foreign exchange earnings. Seccombe (2019: 1) states that in 2018, the mining sector contributed R351 billion to South Africa's gross domestic product (GDP), providing job security for a total of 456,438 individuals employed in this sector. Additionally, the mining industry has consistently attracted significant foreign direct investment to South Africa over the years. Statistics S.A (2019:1) added that the South African mining industry employed 514 859 individuals in 2019. However, Campher (2020: 1) attested that before the global COVID-19 pandemic, the local mining sector was already grappling with various challenges. The economic impact created by the pandemic economic magnified these challenges as it affected exports due to port closures and government mandated restrictions on mining operations. Moreover, Campher (2020: 1-3) alluded that it was indicated that the domestic demand for resources declined due to Eskom decreasing the amount of coal it sourced from the mining industry. These factors significantly impacted the cash flows of mining companies and their subcontractors.

2.14 JOB SECURITY IN THE MINING SECTOR DURING THE PANDEMIC

Ahadjie *et al.* (2021: 2) highlighted that the COVID-19 pandemic had a considerable impact on global economies, particularly affecting the African mining sector. This situation led to a significant rise in unemployment and job losses (Erten *et al*., 2019: 449). According to Marimuthu *et al*. (2021: 436), underground mining positions were facing increased risks due to the swift proliferation of the virus, given that these operations generally involve significant numbers of workers descending into the mines. Additionally, the lockdown measures which have led to the suspension of all non-essential manufacturing activities have jeopardized job security for those employed in the mining sector (KPMG 2020: 21). Lu, Peng, Wu, and Lu (2020: 7) attested that a great number of employees were vulnerable to income cuts if there were no agreements and safeguards in place. Furthermore, the WHO (2022:4) recommended that employees whose roles permit remote work be allowed to do so. Conversely, for those whose tasks cannot be performed remotely, employers were encouraged to consider implementing rotational

shifts, shorter working hours, and reduced workdays to minimize the number of individuals present in the workplace simultaneously (Bekiswa 2022: 3). Ahadjie *et al.* (2021: 1-2) alluded that the impact of the pandemic led to both supply and demand disruptions, resulting in a general decline in the prices of most minerals, except for precious metals such as gold. According to Marimuthu *et al.* (2022: 439), most mining works were halted, and supply chain networks were disrupted due to COVID-19. Hence, without the demand for product, the mining industry had to face problems in inventory maintenance. Furthermore, with restrictions in international trade movement, the supply chain network was affected threatening positions of employees.

2.15 CHALLENGES AFFECTING JOB SECURITY AT TRONOX KZN SANDS

According to Zhang, Gu, and Xie (2023: 1), COVID-19 created challenging working conditions in mining production activities. In addition, the massive loss of resources for miners had a devastating impact on mental health. Border closures, halting investments, the economic downturn, decline in the demand for the raw material produced and re-organisation of work were some of the difficulties faced by the mining industry during the pandemic (Kowal *et al.* 2022: 2). In summary, there were a number of challenges which negatively affected job security at Tronox KZN Sands during the COVID-19 pandemic namely, employee restructuring, employee salaries, working hours, production disruption, retention, health, and safety protocols (Xulu *et al.* 2021: 4).

2.15.1 SIGNIFICANT EMPLOYEE RESTRUCTURING:

According to Mathisen, Tjora, Bergh, Jain and Leka (2023: 1), organisational change conditions had been demonstrated to lead to alterations in contractual relationships, heightened employee uncertainty, increased work intensity, and irregular working conditions. These changes elevated psychosocial risks impacting employee health, safety, well-being, and overall organisational performance. According to Dharma (2022: 12), the significant employee restructuring experienced by Tronox was a pivotal and sensitive process. The restructuring process changed job roles, responsibilities, reporting structures, and reduced the workforce. The low demand for mineral resources due to

COVID-19, shifts in business strategy, technological advancements, and responding to mining market fluctuations, triggered employee job insecurity as positions were laid off.

2.15.2 SALARY CUTS:

The early phases of the COVID-19 pandemic resulted in an unprecedented financial impact on companies due to the extensive measures implemented globally by governments to mitigate the spread of the virus. In response to these financial challenges, mining companies adopted cost-reduction strategies, including workforce reductions and budgetary cuts. Furthermore, these firms publicly communicated that their Chief Executive Officers (CEOs) would be implementing a temporary reduction in their compensation (Bedford, Bugeja, Ghannam, Jeganathan and Ma 2023: 16). Tronox KZN Sands implemented a no-work, no-pay policy for both fixed term employees and contingent workers during the government-mandated lockdown period. Tronox KZN Sands had implemented cost-reduction strategies that included salary adjustments for permanent staff. These adjustments impacted employees across various levels within the organisation, from mining staff to management. The scope and duration of these salary changes differ among companies, and such measures have been a notable component of the mining sector's response to the economic challenges brought on by the pandemic (Tronox KZN Sands 2024: 1). According to Ramdoo (2020: 3) certain mine workers classified as "essential staff," due to their critical role in maintaining operational functions, were able to retain their positions and salaries. Additionally, employees who worked remotely also maintained their roles and compensation. Workers who did not fall under these two categories were temporarily discharged. They were vulnerable to income cuts if there were no agreements and safeguards in place between the union and the employer.

2.15.3 SHORT WORKING HOURS:

Giupponi and Landais (2021:1963) affirmed that short time arrangement refers to a temporary reduction in the number of hours or days that employees are required to work, typically resulting from operational needs such as decreased workload, financial constraints, or other economic factors. This was the main policy tool used to support labour shortage during downturns and were aggressively used during the COVID-19 pandemic. Ramdoo (2020: 4) stated that most countries permitted mining companies to adjust working hours and implement the "no work, no pay" principle, indicating that demobilised or temporarily laid-off employees would not receive compensation for periods during which no work was conducted. The HR advisor of Tronox, Mdletshe, indicated that Tronox KZN Sands Implemented short-time work or reduced hours to mitigate the economic impact, while ensuring employee safety and adherence to health and safety regulations, which involved decreasing the number of on-site workers.

2.15.4 PRODUCTION DISRUPTIONS:

Jowitt (2020: 17) attested that the mine operations encountered logistical challenges, particularly related to the transportation of concentrates to smelters. Additionally, metal prices, with the exception of gold and palladium, experienced a decline during the crisis. According to Xulu *et al.* (2021: 6), job insecurity led to decreased productivity among employees at Tronox KZN Sands. When workers were uncertain about the stability of their jobs, they became disengaged, leading to lower productivity levels. Giese (2022: 5) affirmed that during COVID-19, most mining companies were permitted to continue operating. However, supply chains and production were severely disrupted. According to Jowitt (2020: 34), the production of metal sourced from mining had declined, which subsequently reduced global demand for metals as a result of the COVID-19 crisis. Galas, Kot-Niewiadomska, and Czerw (2021:2) added that the outbreak of the Covid-19 pandemic had disrupted the economy. Moreover, it lowered the demand and sales of mineral products in the mining sector. Maoela, Chapungu and Nhamo (2024: 2) added that the overall decline in mineral demand and prices impacted the sector's contribution to Gross Domestic Product (GDP) and export earnings. Giese (2021: 2) stated that,

during April 2020, at the peak of the global crisis, production was suspended at over 1,600 mines across the globe.

2.15.5 RETENTION ISSUES:

Iipumbu (2022:223) defines employee retention as the policies and strategies implemented by organisations to retain their valuable employees. Sishuwa and Phiri (2020: 145) concurred that the employee retention is a process aimed at encouraging employees to remain with an organisation for an extended period or until the successful completion of a project. It is essential for successful organisations to not only recruit the right individuals but also to retain those best suited for their roles. Inadequate employee retention can lead to the loss of valuable knowledge, experience, customer relationships, and technical skills, which may then benefit competing organisations. Tronox limited (2023: 8-9) affirmed that it has observed that elevated levels of job insecurity have led to higher turnover rates at Tronox, as employees pursued more stable employment opportunities. This turnover incurs significant costs for mining companies, particularly in the areas of recruitment, training, and the loss of skilled personnel. According to Hadebe *et al.* (2022: 5), the mining industry in South Africa faced significant employee turnover during the COVID-19 pandemic.

2.15.6 HEALTH AND SAFETY PROTOCOLS:

Colyn (2022: 2) attested that employers in the South African mining industry were required to establish health and safety management systems in accordance with legislative obligations. In a telephone conversation on 25 August 2023, the Tronox KZN Sands Safety officer, Khumalo, highlighted that Tronox had designated extra time for the cleaning and disinfection of equipment and facilities between shifts. The extended hours for the cleaning staff had resulted in higher absenteeism rates, as many employees were opting to work longer hours in order to maintain job security. Paz-Barzola, Elizalde-Pardo, and Romero-Crespo (2023: 499) affirmed that the implementation of safety protocols and physical distancing measures resulted in considerable disruptions to the operations of the mines, impacting their productivity and profitability. Furthermore, Christianson (2020: 1)

added that, within the first week of lockdown in response to the COVID-19 crisis, health care professionals were warning the nation that locally available supplies of Personal Protective Equipment (PPE) were inadequate.

2.15.7 REDUCED WORKFORCE:

Johnstone (2021: 138) defines employment downsizing as a permanent reduction in the workforce aimed at improving organisational efficiency. Witsersi, Lourens, and Cavaliere (2021: 5575) elucidated that workforce downsizing initiative consisted of a proposed set of policies and strategies designed to reduce the size of the staff. McLaren and Wang (2020: 2) stated that various government policies sought to prevent workers from entering the workplace, based on the belief that this would help mitigate the transmission of COVID-19. Ramdoo (2020:3) highlighted that mining companies adopted social distancing measures and decreased the on-site workforce, leading to shorter shifts and reduced operating hours, a situation that also impacted Tronox. Additionally, workers were temporarily laid off at mines and throughout supply chains due to the scaling back of mining operations in response to national lockdown restrictions. Giese (2021: 2) indicated that South African policymakers have implemented designated periods for the total suspension of mining activities and have mandated a 75% reduction in the mining workforce.

2.16 MANAGING JOB SECURITY AT TRONOX KZN SANDS

The management of companies and mining plants had to meet the above-mentioned challenges. According to Maryatmi and Limakrisna (2020: 271), the effective management of job security necessitates the establishment of rules and procedures designed to promote economic stability and ensure the continuity of planned investments. This approach will help to maintain operations and provide a sense of reassurance and security for all employees as they carry out their responsibilities during the pandemic. Kowal *et al.* (2022: 3) affirm that effectively managing job security in the mining industry requires a multifaceted approach that addresses the inherent risks of the sector while promoting the overall well-being of employees.

2.16.1 DIVERSIFICATION OF SKILLS:

Avci (2023: 2) emphasises the importance of employees expanding their skill sets beyond their current responsibilities. This approach enhances adaptability to industry changes and mitigates the effects of job reductions in specific sectors. Additionally, Avci (2023: 2) affirm that possessing a diverse skillset enhances an employee's value and broadens the range of job opportunities available. This versatility enables employees to remain competitive in their current positions and to adapt more effectively to changes within the industry. According to Panos, Pouliakas and Zangelidis (2019: 8), the benefits of having a diverse skill as an employee include:

- Greater job opportunity, collaboration, and flexibility
- Personal goals are achieved efficiently.
- Increased job security
- A deeper understanding of the business; and
- Better growth prospects and employee development on existing skills.

Panos, Pouliakas and Zangelidis (2019: 8) state that multi-skilling is beneficial to any organisation by:

- Optimal utilisation of the workforce based on the organisational needs
- Easy development of employees across projects and departments
- Increased productivity and better quality of deliverables; and
- Flexible and adaptable workforce.

Abbas and Andren (2020:10) attested that Tronox encouraged and offered study assistance programmes to permanent employees to study further and diversify their skills. Due to the pandemic, additional training for soft skills related to COVID-19 safety were conducted remotely. However, artisan qualifications such as fitter and turner, millwright, boilermaker, and draughtsman were suspended due to COVID-19 protocols.

2.16.2 CONTINUOUS TRAINING AND DEVELOPMENT

Chikove (2023: 42) defined training as the organisational initiative designed to assist employees in developing the essential skills needed for the effective performance of their assigned roles. According to Anwar and Abdullah (2021: 3338), it is essential for organisations to implement regular training programs aimed at enhancing employees' skills and ensuring they remain informed about the latest technologies and safety protocols. Such initiatives not only contribute to improved job performance but also enhance overall employability. Conversely, insufficient continuous training may result in elevated turnover rates, a diminished competitive edge, and lost opportunities to leverage the latest processes, technologies, and trends. Bag, Wood, Xu, Dhamija and Kayikci (2020: 4) attest that employee development is positively associated with innovation and learning performance. Continuous learning is essential for maximising performance in the mining sector and for securing one's position within the industry. Karim, Choudhury, and Latif (2019: 25) affirm that training and development leads the better performance of employees, and the success of an organisation depends on employee performance. Ceesay (2021:5) stated that the COVID-19 pandemic interrupted staff training programmes in the African mining industry. Zona (2023: 1) confirmed that Tronox had temporarily suspended all induction, training classes, and employee development programs in response to government-imposed restrictions.

2.17 SAFETY MEASURES AND POLICY IN MANAGING THE COVID-19 PANDEMIC

The mining sector posed several risks that facilitated the spread of COVID-19, including limited workspace and significant worker mobility (Putri, Jaladara and Supriyati 2023: 1). The South African government had made efforts to prevent the spread of COVID-19, including the implementation of health protocols as mitigation measures in workplaces. Employee compliance was a crucial factor in the successful implementation of health protocols in the workplace. Ramdoo (2020: 4) attested that certain sites suspended operations to mitigate the spread of the virus among employees and local communities. Mining is recognized as one of the most hazardous industries globally. According to Yang, Birhane, Zhu and Geng (2021: 2-3), the occupational hazards identified in mining include

failure to assess the work environment, failure to develop and implement safe operating procedures, workers' failure to follow safety procedures, inadequate planning for safety in the design and operation of new equipment, and inadequate facilities. Annexure F outlines the policy implemented by Tronox Sands in managing the pandemic.

2.17.1 INVESTMENT IN TECHNOLOGY:

Technological advancements typically influence productivity, enabling increased production rates while preserving a comparable workforce size (Sanchez and Hartlieb 2020: 1386). Masilela (2024: 2) states that technological innovations in mining are instrumental in reducing costs, minimizing environmental impact, increasing production, and improving mineral recovery. Consequently, understanding the barriers and enablers to these advancements is vital for effective implementation and the sustainability of the sector. However, Gruenhagen and Parker (2020: 2) state that while the technological transformation of the mining sector is making progress, obstacles to the diffusion and adoption of innovation persist. Some of those are related to industry-specific difficulties in implementing innovations, such as remote locations or the nature of the competitive environment of global mining operations. Nevertheless, Abba and Andren (2020: 8) affirm that Tronox enhanced its network system to facilitate remote work for non-mining employees during the pandemic lockdown.

2.17.2 EMPLOYEE ENGAGEMENT AND COMMUNICATION:

According to Lemon (2019: 178) employee engagement refers to the extent of an employee's commitment and involvement with their organisation and its values. Engaged employees are more likely to contribute ideas towards improving operations and adapting to changes. However, organisations in the mining sector are known to possess a unique challenge of a low rate of employee engagement (Wardana, Sugiharto and Syamil 2023: 999). For this reason, Zondo (2020: 2) emphasised the importance for mining companies to cultivate a culture of transparency and open communication. This approach is essential for keeping employees informed about company developments, updates related to COVID-19, market trends, and potential challenges. Tronox KZN Sands (2024: 6-8)

reported that permanently employed workforce was kept informed about company developments, market trends, and potential challenges through emails and posters. However, this communication approach raised concerns and dissatisfaction among fixed-term employees and contingent workers who did not have access to computers, resulting in them being unable to receive critical information and updates related to COVID-19, which contributed to feelings of job insecurity.

2.17.3 COMMUNITY SUSTAINABILITY:

Van Schalkwyk and Cilliers (2021: 155) stated that companies that exhibit a strong commitment to sustainability are often regarded more favourably by investors and regulators, thereby mitigating the risk of potential closure or downsizing. Monteiro, da Silva, and Neto (2019: 511) affirmed that to support community sustainability, the mining sector can provide resources aimed at alleviating poverty, fostering direct and indirect employment opportunities, and ensuring fair wages. In an e-mail communication on 22 August 2023, the HR advisor of Tronox, Mdletshe highlighted that Tronox KZN Sands plays a significant role in fostering sustainable growth within the communities it serves. The company has made contributions through the construction of classrooms and sanitary facilities, the provision of subsidised housing, the funding of cooperative projects, the offering of bursaries, and the recruitment of graduates for work-integrated learning and vacation employment. However, following the announcement of the global pandemic and subsequent lockdown in South Africa in December 2019, the company made the difficult decision to cancel all vacation work and related projects.

2.18 THE INSIGHT OF EMPLOYEE MOTIVATION

Employee motivation can be viewed as a psychological process that initiates and sustains engagement in work-related activities, tasks, or broader projects (Hitka *et al.* 2021:19). Sitopu, Sitinjak and Marpaung (2021: 72) state that motivation plays a crucial role in inspiring employees to perform their tasks effectively. Rakic, Radosavljevic and Milic (2022: 78) affirm that employee motivation is an important factor of achieving appropriate employee performance.

2.19 THEORIES OF MOTIVATION

Badubi (2019: 44) affirms that motivation is a critical factor in all organisations, both private and state-owned, as it drives employees to achieve their objectives. Numerous theories of motivation exist, which are primarily linked to or influence the outcomes of employee motivation and job satisfaction. In addition, Badubi (2019: 44) states that these motivational theories include Maslow's hierarchy of needs, Alderfer's Existence, McClelland's needs theory, and Herzberg's motivator-hygiene (or two-factor) theory. In this study Herzberg's motivation hygiene theory is proposed by the researcher. The reason for using Herzberg's motivation hygiene theory is based on the implications that it influences the way in which employees are motivated, since it has factors that are highlighted as motivators and satisfiers. The research problem is linked to the Herzberg motivator-hygiene theory which will be highlighted. Pandya (2023: 47) state that motivation theories seek to clarify the factors that affect why employees perceive certain types of work as more motivating and satisfying than others.

2.19.1 MASLOW'S HIERARCHY OF NEEDS

Acevedo (2018:741) describes Maslow's hierarchy of needs as a valuable framework for understanding individual human behavior. Its application in business and organisational contexts offers insight into employee motivation and can significantly influence it. In workplace environments, Maslow's model retains the same five levels. Peng, Luo, Tan, Jiang, Yin, and Yan (2024: 5) explain that Maslow developed a hierarchical framework for these needs, positioning the most fundamental requirements at the base of the model and placing the higher-level needs at the top. It is important to note that the needs depicted in Figure 2.5 represent the most fundamental requirements that must be satisfied before an individual can address higher-level needs.

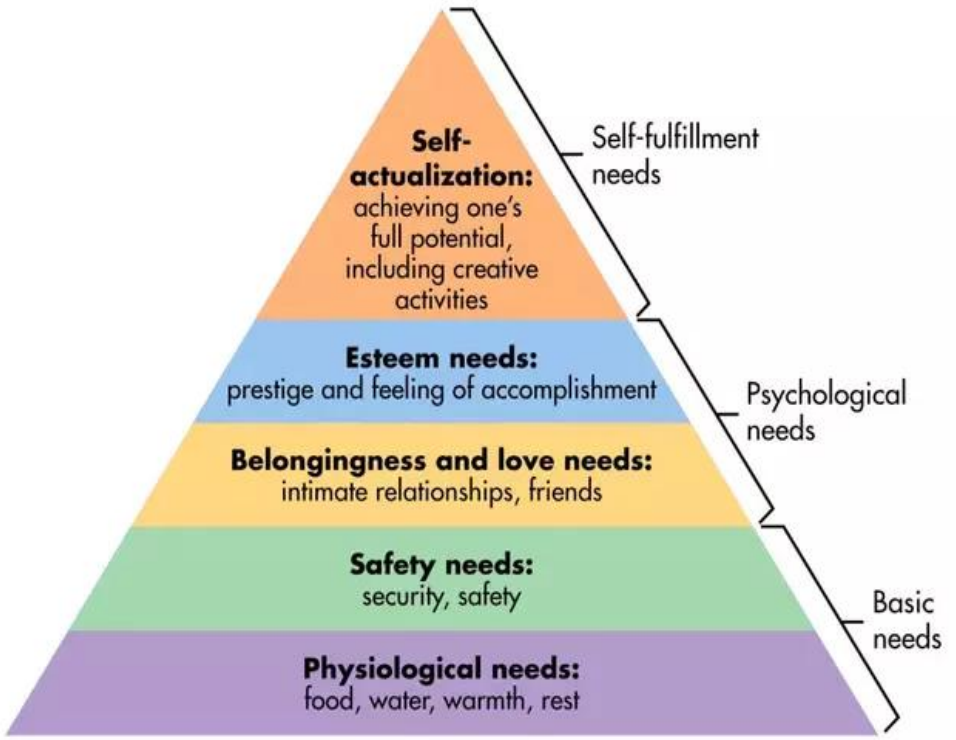


Figure 2.5: Maslow's Hierarchy of Needs

Source from: Trivedi and Mehta 2019: 39

Physiological Needs: Physiological needs represent the fundamental requirements essential for the preservation of human life. These needs encompass adequate nutrition, shelter, clothing, rest, sleep, and reproductive health (Trivedi and Mehta 2019: 39). According to Gecer (2021: 13), to sustain human life requires meeting specific biological needs, which include the necessity for oxygen, water, and the maintenance of a relatively constant body temperature.

Security/Safety Needs: These needs are associated with the psychological concerns regarding job security, property protection, and natural hazards. It is essential for all employees to receive support to address these fears (Mortell 2021: 107).

Social Needs: An individual will seek to satisfy their social needs once their safety and physiological needs have been met. If these social needs are not fulfilled, it may have an impact on their behavior, potentially resulting in both positive and negative outcomes (Lubis and Sastria 2021: 55).

Esteem Needs: This category of needs encompasses the desire for respect and appreciation from others, the pursuit of power, and the aspiration for a prestigious position. Once foundational needs are met, an individual seeks to attain esteem from both them and their peers (Carducci 2020: 269).

Self-actualisation Needs: This represents the pinnacle of the hierarchy of needs proposed by Maslow. Self-actualisation is the aspiration for individuals to realize their full potential. It emphasises the importance of personal growth (White 2020: 2).

2.19.2 ALDERFER'S ERG THEORY

Alderfer (1969) identified three categories of core needs: (a) existence (E), (b) relatedness (R), and (c) growth (G), which collectively form the acronym ERG. Chukwuaguzie, Ogoma and Demvihin (2021: 23) explained that the ERG theory suggests that individuals do not need to satisfy lower-level needs before higher-level needs can impact their behavior. This differs from Maslow's hierarchy of needs, which posits that lower-level needs must be met prior to addressing higher-level needs. The ERG theory emphasises that, although human needs can be categorized, individuals may not necessarily seek to fulfill these needs in a predetermined sequence (Arongudade 2023: 235). Figure 2.6 illustrates Alderfer's theory.

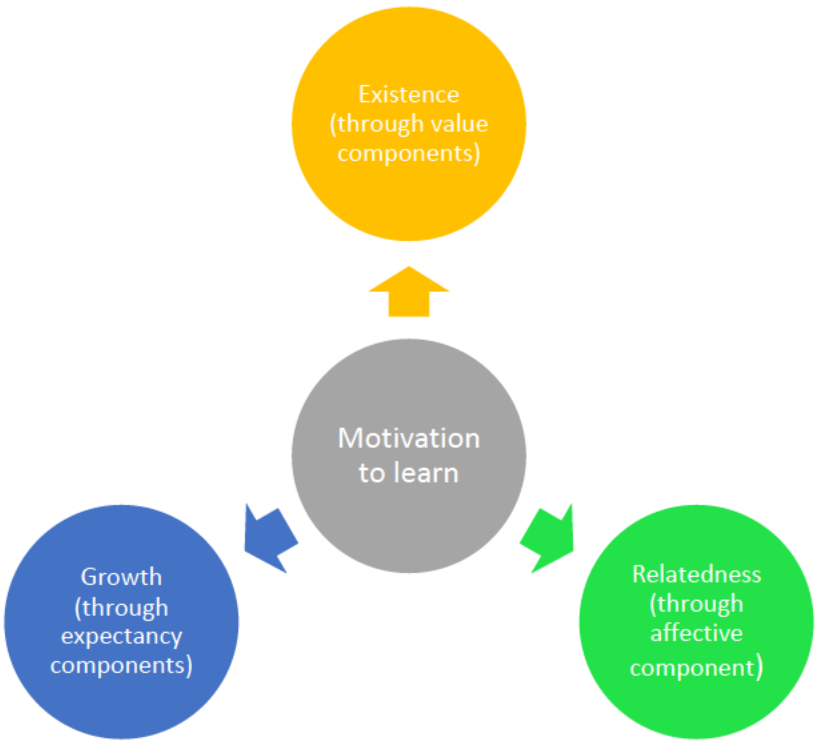


Figure 6: Alderfer's ERG Theory

Source: Harith, Zain, Yusof and Lokman 2022:1371.

Existence

Existential demands pertaining to value components include various physiological and material needs. Safety requirements mainly focus on the necessity of maintaining an environment free from fear, stress, threats, and danger (Harith *et al*. 2022). According to Acquah, Nsiah, Antie and Otoo (2021), these needs encompass fundamental material requirements, particularly an individual's physiological and physical safety needs. Chukwuaguzie *et al.* (2021) further indicated that the existence needs align with the first two levels of Maslow's hierarchy.

Relatedness

Relatedness is another key component of Alderfer's theory. It pertains to the second category of needs, emphasising the importance individuals place on fostering meaningful interpersonal relationships (Harith *et al.* 2022: 1371).

Growth

The ERG theory, developed by Clayton Alderfer, serves as both a simplification and an extension of Abraham Maslow's hierarchy of needs. This theory identifies growth as a fundamental need that motivates individuals to exert a creative and productive influence on themselves and their surroundings (Snow 2020: 119).

2.19.3 McCLELLAND'S ACQUIRED NEEDS THEORY

Mansaray (2019: 186-187) suggested that the dominant motivator depends on our culture and life experiences. The three motivators of McClelland's are achievement, power, and affiliation. Baptista, Formigoni and da Silva (2021:55) added that McClelland's theory falls within the domain of the psychology of differences, also referred to as the psychology of individualities. This field examines human behavior based on the principle that each individual's behavior, while influenced by environmental factors, is unique. Figure 2.7 illustrates McClelland's Needs Theory.

Figure 7: McClelland's needs theory

Source: Miller 2022: 1.

Need for Power (N-Power)

Arongudade (2023: 235) emphasises that the need for power (N-Power) significantly impacts an individual's focus and interest in attaining status and recognition. Moore, Grabsch and Rotter (2019: 25) noted that individuals with a strong need for power seek to be influential and aim to make a meaningful impact. Bhatt and Mittal (2020: 70) identified two distinct types of power: personal power and social power. Individuals with high personal power frequently possess a strong desire to lead others, which may be viewed as unsuitable in specific contexts. In contrast, employees driven by social power, also known as institutional power, focus on supporting others in aligning their efforts with organisational objectives.

Need for Affiliation (NAff)

Individuals who proactively engage with their colleagues in group settings demonstrate a desire for affiliation (Arongudade 2023: 235). According to Bhatt *et al.* (2020: 70), It is observed that individuals often strive to establish and maintain enduring, positive, and meaningful interpersonal relationships. Employees with high affiliation scores typically focus on nurturing social connections, engaging with diverse groups, and seeking to be well-regarded by their peers.

Need for Achievement (NAch)

The need for achievement is defined by a specific type of motivation. Individuals who possess this need strive to enhance their performance and actively seek constructive feedback from knowledgeable sources who can provide detailed critiques of their work (Arongudade 2023: 235). Bhatt *et al.* (2020: 70) identify several key factors that contribute to the need for achievement, including work principles, a desire for excellence, competitive ability, ambition, and a pursuit of wealth and status. Employees with a strong need for achievement tend to prefer completing their tasks independently rather than collaborating in a group setting.

2.20 THEORETICAL FRAMEWORK UNDERPINNING THE STUDY "HERZBERG MOTIVATION TWO-FACTOR THEORY"

One of the supporting theories of this study is Herzberg's two-factor theory, which is also referred to as the motivation-hygiene theory. The two-factor theory was first initiated by Herzberg, Mausner, and Snyderman (1959: 36). Bhatt *et al. (*2022: 232) affirm that Herzberg's motivation-hygiene theory emphasises the factors that contribute to motivation in the context of work performance. According to Acquah *et al. (*2021: 26) Certain elements, referred to as motivating factors, contribute to job satisfaction, while other elements, known as hygiene factors, can lead to dissatisfaction. Herzberg classified motivating factors (satisfiers) as achievement, recognition, the nature of the work itself, opportunities for advancement, and personal growth. In contrast, hygiene factors (dissatisfiers) encompass company policies, supervision, working conditions, status, and

salary. Chiat and Panatik (2019: 11) add that Herzberg's two-factor theory identifies and analyzes the factors that contribute to employee satisfaction, known as motivating factors, as well as those that lead to dissatisfaction, referred to as demotivating factors, within the workplace. Herzberg revealed that the intrinsic factors (motivators) include achievement, responsibility, the work, recognition, and personal growth opportunity, while extrinsic factors (hygiene) include pay, status, job security, physical working conditions, company policy, interpersonal relations, and quality of supervision. Figure 2.8 depicts Herzberg two factor theory.

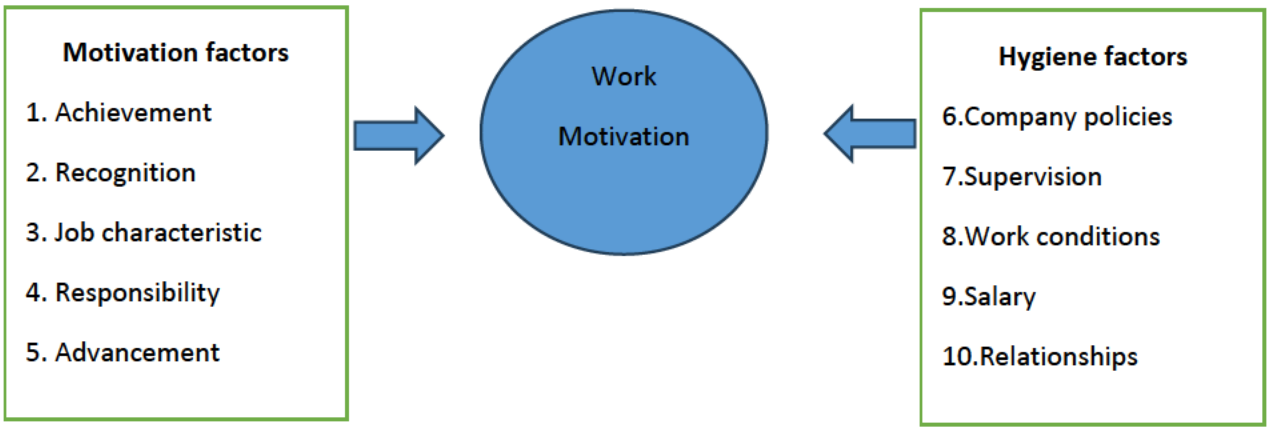


Figure 8: Herzberg Two Factor Theory

Source: Pham and Nguyen 2020: 2830.

2.20.1 MOTIVATION FACTORS

Alam (2021: 2) defines job satisfaction as an attitude that reflects the extent to which an individual experiences contentment or fulfillment in their role. This concept encompasses emotional responses to various aspects of one's job. Bhatt *et al. (*2022:56) identify several key factors whose absence can contribute to employee dissatisfaction in the workplace. When these important elements are lacking, there is a tendency for employee

dissatisfaction to rise. Conversely, improving these factors can lead to a significant decrease in dissatisfaction levels.

Achievement: A positive achievement encompasses reaching a particular level of success, such as completing a challenging task within the designated timeframe, resolving a job-related issue, or witnessing favorable outcomes from one's efforts (Gawel 2019: 11).

Recognition: Consistently and genuinely recognising and rewarding employees' achievements and contributions is essential for enhancing their motivation and job satisfaction. This can be accomplished through various methods, including verbal praise, awards, or incentive programs, among others (Yadav 2023: 1713).

Job characteristic: Peramatzis and Galanakis (2022: 973) indicate that the characteristics of job tasks and assignments can have a substantial effect on employee outcomes, resulting in either favorable or unfavorable consequences. The equilibrium of task difficulty, which may be viewed as either too simplistic or excessively demanding, can influence employee job satisfaction or dissatisfaction (Alshmemri *et al.* 2019: 13).

Responsibility: Responsibility encompasses the correlation between duties and authority within the role. Typically, individuals derive fulfillment from being entrusted with both responsibilities and the corresponding authority (Kautto 2023: 11).

Advancement: Herzberg (1966) defined advancement as an employee's opportunity for professional development within an organisation, facilitating continuous career growth (Yousaf 2020: 11).

2.20.2 HYGIENE FACTORS (DISSATISFACTION)

Shaik and Shaik (2019: 10) pointed out that the factors contributing to job dissatisfaction include ineffective policies, job insecurity, and inadequate training. Hygiene factors refer to the environmental or working conditions that can lead to employees experiencing a lack of satisfaction in their roles. Moreover, Shaik *et al*. (2019: 10-11) concured that hygiene factors are essential in preventing job dissatisfaction, while their absence can lead to dissatisfaction among employees. Additionally, Herzberg noted that the presence of hygiene factors alone does not ensure overall job satisfaction for employees. Ramdhani and Bakri (2020: 1) attested that anything which causes dissatisfaction at work is a hygiene factor. Pillay (2023: 45) asserted that hygiene factors may not necessarily promote job satisfaction; however, they play a crucial role in preventing job dissatisfaction. Additionally, factors that lead to negative emotions in employees are classified as hygiene factors.

Company policies and administration: According to Alshmemri *et al*. (2019: 13) this factor encompasses the impact of organisational policies on employees, which can be either positive or negative. Examples of detrimental policies may include insufficient delegation of authority, inadequate procedures, and ineffective communication. Pham *et al.* (2020: 2839) attested that company policy serves as a framework to assist employers in fulfilling their responsibilities related to health, safety, and employee interactions.

Supervision: Skiadas (2020:21) stated that supervision refers to the extent to which a supervisor is present and involved in the work, monitoring, and guidance of employees within a company or organisation. Access to effective supervision is essential for enhancing employee job satisfaction. Conversely, inadequate leadership or management can negatively impact job satisfaction in the workplace (Alshmemri *et al.* 2019: 13).

Working conditions: Skiadas (2020:21) defined working conditions as the nature and characteristics of the work environment, including working hours, physical surroundings, and logistical support. These elements encompass the physical aspects of the workplace. A positive work environment, in contrast to a negative one, contributes to employee satisfaction and pride (Alshmemri *et al*. 2019: 13).

Salary: Alshmemri *et al*. (2019: 13) stated that salary encompasses all forms of compensation within the workplace, including wage or salary increases, as well as unfulfilled expectations regarding these adjustments. The consistency of the provided salary or wages, along with various additional financial incentives, is also considered (Skiadas 2020: 21).

Interpersonal relations: According to Skiadas (2020:21), the term "interpersonal relationships" refers to the development of relationships among employees. These relationships encompass both personal and professional interactions between an employee and their superiors, subordinates, and colleagues (Alshmemri *et al*. 2019: 13).

2.21 ADOPTING THE HERZBERG'S MOTIVATION THEORY IN THE STUDY

The Herzberg's motivation-hygiene theory (also known as the two-factor theory), is related to this study because of the significance of presenting hygiene factors to employees as a means of motivation, thereby leading to job security. Because of these observations, this study employed the Herzberg Two-Factor theory. This theory will help the company to understand what factors contribute to employee motivation in the workplace in order to avoid job insecurity during a period such as the pandemic caused by COVID-19. Herzberg's Two-Factor Theory of motivation can be generally applied by managers in order to help figure out how to practically motivate the workforce. The level of job insecurity at Tronox was high as a result of the COVID-19 pandemic decisions aligned with policies implemented during the pandemic. This triggered dissatisfaction amongst employees due to the difficulties they experienced in terms of salaries, working conditions, and management relationships. At Tronox KZN Sands, it has become clear that employee satisfaction is being impacted by insufficient attention to hygiene factors, particularly job security. It is essential for managers to prioritise motivator considerations, such as improving work processes, recognising employees when appropriate, providing competitive salaries for all permanent and fixed-term staff, and ensuring excellent working conditions, especially during challenging periods like the COVID-19 pandemic. Additionally, Tronox management should actively engage all employees, including contingent and fixed-term staff, to mitigate feelings of job insecurity and foster a cohesive

team environment focused on achieving common objectives. Collaboration and openness to innovative ideas are vital components for maintaining a balanced team and enhancing talent retention.

2.22 BENEFITS OF A MOTIVATED WORKFORCE

Cote (2019: 19) notes that motivating employees presents a significant challenge for the mining sector, especially given the complexities of managing multigenerational workforces. This underscores the need for continuous exploration of strategies to effectively address this issue. Dlamini, Suknunan and Bhana (2022: 29) affirm that employees who are highly motivated tend to demonstrate greater productivity and performance compared to their unmotivated counterparts. According to Rahaman, Ali, Wafik, Mamoon and Islam (2020: 515) motivated personnel play a vital role in helping an organisation achieve its goals and objectives. Therefore, it is crucial for business managers and management committees to identify the motivating factors that significantly impact their employees. Cote (2019: 17) attests that motivated employees tend to experience higher satisfaction and productivity at work, which positively impacts various outcomes such as engagement and collaboration within teams. Schooley (2024: 1) adds that enhanced employee engagement is a key benefit of a motivated workforce. Hewagama, Boxall and Cheung (2019: 76) suggest that granting employees responsibility and decision-making authority improves their control over the tasks for which they are accountable. This empowerment signifies a confidence among employees in their capacity to fulfill their roles and effectively manage the related responsibilities. Similarly, Saleem, Bhutta, Nauma and Zahra (2019: 305) emphasise that in organisations with a motivated workforce, leaders actively encourage employee input, facilitate participation in decision-making, and attentively consider their perspectives, thereby enhancing overall organisational commitment.

2.23 FACTORS THAT INFLUENCE EMPLOYEE MOTIVATION

Rahman, Abidin, and Hasan (2018: 2289) confirm that motivation is a critical factor influencing employees across all organisations. A primary concern for all organisations is ensuring that both skilled and unskilled employees remain motivated. According to Ali and Anwar (2021: 22), enhancing motivation, commitment, and engagement levels is essential for any organisation.

2.23.1 REWARDS SYSTEM

Aguenza and Som (2018: 16) identify two categories of rewards: financial rewards and non-financial rewards. Mustafa and Ali (2019: 3) state that monetary rewards encompass financial compensation, including base salary, performance-based pay, and additional financial incentives, such as commissions. In contrast, key categories of non-monetary rewards consist of employee empowerment, competency development, and recognition. Masilela (2018: 14) attests that when an employee is recognised for their hard work, it serves as an encouragement for other staff members to enhance their own performance. Ngwa, Adeleke, Agbaeze and Ghasi (2019: 3) state that effective reward systems can attract the right employees, enhance retention, and consistently motivate them to achieve optimal performance. In contrast, a poorly structured reward system may lead to high employee turnover and decreased productivity levels. According to Asaari, Desa and Subramaniam (2019: 52) reward and work motivation play a crucial role in an organisation, as they help align staff efforts with the organisation's goals. Additionally, recognising and incentivising high-performing employees can significantly enhance overall productivity.

2.23.2 RECOGNITION OF EMPLOYEE

Recognition is a vital component that should be integrated into an organisation to enhance motivation and serve as a catalyst for improving workforce performance (Asaari *et al.* 2019: 52). Yang, Jiang, and Cheng (2022: 13) state that employee recognition can be defined as the constructive feedback provided by a leader, grounded in a value assessment of individual employees' work performance, level of engagement, and commitment. Ali *et al.* (2021: 25) add that recognition plays a crucial role in enhancing motivation within the organisation and serves as a catalyst for improved workforce performance. It is evident that employees are likely to be more motivated when their contributions are acknowledged by their supervisors.

2.23.3 SALARY AND BENEFITS

According to Darmawan (2020: 46), salary is a form of monetary compensation received by employees in recognition of their roles and contributions toward achieving the objectives of the company. Naidoo (2019: 70) posits that individuals engage in employment primarily to generate income, enabling them to fulfill their own and their families' basic necessities and desires. However, Asaari *et al.* (2019: 49) further emphasise that additional incentives, such as competitive salaries and recognition, significantly contribute to enhancing employee motivation. While salary has always been a major factor in motivation and engagement at work (Brodowicz 2024: 3), Cenar and Nemec (2019: 271) suggest that employee benefits can serve as a key differentiator in the job market and an effective retention tool for internal talent. Employee benefits encompass various forms of compensation, both tangible and intangible, that are provided to employees in addition to their base wages or salaries (Digvijaysinh, Riya and Shah 2021: 1386). Prihantoko (2021: 189) affirms that the alignment of employee benefits with the needs of the workforce significantly increases the likelihood of achieving optimal employee performance outcomes for the company. According to Yang *et al.* (2022: 22), supervisors have the ability to formally or informally recognise and reward individuals and teams.

2.23.4 WORK AND RELATIONSHIPS

Work discipline refers to an individual's awareness and commitment to adhering to company regulations and relevant social norms (Sitopu *et al*. 2021: 74). Another factor affecting employee's motivation is that of good relationships. Khawaja (2020: 3) affirms that employees tend to be more motivated when they perceive that the organisation and management offer their support. Conversely, a lack of support from the organisation may result in employees not being fully engaged in their relationship with the company. According to Abun and Basilio (2023: 228-229), the employer-employee relationship plays a crucial role in the success of an organisation, as employee involvement is essential. Fostering healthy relationships among employees significantly contributes to their motivation, confidence, and overall morale.

2.23.5 WORK ENVIRONMENT

Ausat *et al.* (2023: 5) states that establishing a positive workplace environment has been demonstrated to enhance productivity. Basalamah *et al.* (2021: 96) emphasise the importance of the work environment in a company and highlight the need for management to prioritise it. While the work environment may not be directly involved in the production process, it significantly impacts the employees who execute that process. Badrianto and Ekhsan (2019: 64) assert that a company's growth is impeded by a dysfunctional work environment, emphasising that a positive work environment significantly influences employee performance levels. Rusdi and Alam (2017: 37) emphasise the importance of creating a workplace that is conducive to a flexible workplace model. This approach involves adapting the work environment to align with the diverse needs of individual employees and the specific requirements of their tasks. Sugiart (2022:3) asserts that a safe and healthy work environment positively impacts employees. The advantages of such an environment contribute to enhanced performance, as evidenced by a reduction in lost workdays, increased efficiency, and a higher quality of engagement from committed employees. Akinwale and George (2020:73) concur that a supportive work environment is essential for enhancing employee job satisfaction.

2.23.6 PROMOTION

Promotion is defined as the elevation of an employee's rank or position within an organisational hierarchy (Ford 2021:1). Asaari *et al*. (2019: 51) observe that promotion involves increased responsibilities, higher expectations for performance, improved resources, elevated status, greater proficiency requirements, and modifications to wages or salaries, in addition to supplementary allowances. Setyawati, Woelandari and Richo (2022: 1958) further support the notion that promotion acts as a critical motivator for employees, encouraging a positive sense of competition among them.

2.24 THE IMPORTANCE OF JOB SECURITY ON MOTIVATION

Senol (2019: 35) describes job security as a significant factor in motivating employees, especially during periods of economic downturn. Zarnadi and Martin (2020: 91) affirm that motivation is an encouragement or stimulus that inspires an individual to engage in work willingly, without the sense of obligation. Vo, Tuliao, and Chen (2022: 49) add that work motivation is recognised as a crucial driver of organisational success, as it enhances employee performance. According to Uka and Prendi (2021: 273), motivation plays a significant role in profits and the accomplishment of an organisation. Basalamah and As'ad (2021: 94) agree that motivation has an impact on work behaviour and performance. Varma (2019: 10) recommends that motivated and satisfied employees are likely to demonstrate a greater commitment to organisational objectives. Conversely, organisations must also exhibit a comparable level of commitment to the objectives of their employees. Moreover, Varma (2019:14), concurs that organisations really need motivated employees in order to help them to achieve the following organisational objectives:

- Unified direction of the group/Teams.
- Higher level of effectiveness and efficiency.
- Elevated organisational commitment.
- Building a performance-oriented environment (creative and innovative).
- Increases the organisations' ability to face uncertain business challenges.

- Employee retention and attraction for stable and continuous manpower supply.

2.25 JOB SECURITY AND EMPLOYEE MOTIVATION IN THE MINING INDUSTRY

According to Smit, de Beer and Pienaar (2019: 6), South Africa is recognised as a global leader in the mining industry, notable for its abundant mineral resources, which play a significant role in both worldwide production and reserves. The mining sector in South Africa is a key player on the international stage and makes a substantial contribution to the country's gross domestic product (GDP). Basalamah and As'ad (2021: 96) confirm the importance of a supportive work environment within a company. They highlight that management should prioritise fostering such an environment, as it contributes to a sense of job security, enabling employees to perform at their best. According to Janovac, Jovanovic, Tadic, Tomic and Cufalic (2021: 225), employment in the mining industry can be challenging, as the working environment may present health and safety concerns, and employees encounter risks that are particular to this field. Bayram (2020: 14) add that in addition to the inadequate working conditions in the mining sector, an inequitable reward system frequently contributes to employee demotivation. Moreover, the industry's concerning safety record and the incidence of fatalities within the South African mining sector are significant areas of concern. Butt, Mpinga and Tichapondwa (2021: 3) affirm that not only Tronox KZN Sands, but also other mining companies globally, attested to an escalation in the number of fatalities during the COVID-19 pandemic. The subcontracting of labour and the significant impact thereof on job security have received growing recognition in the mining industry over the last few years. The mining industry's productivity, pressure, and strict deadlines are emphasised creating a tendency among many workers to engage in unsafe behaviours, thereby threatening their job security (Smit, de Beer and Pienaar 2019: 15). Mining companies that offer job security to their employees demonstrate a long-term commitment to their workforce. When employees feel motivated, they are likely to experience greater job satisfaction and engage more enthusiastically in their work, ultimately leading to improved performance (Pancasila, Haryono and Sulistyo 2020: 388). According to Smit *et al*. (2019: 15-16), the mining industry is often regarded as a high-risk sector for occupational stress, primarily due to its high turnover rate, the nature of the work, and the associated working conditions. When

employees' needs are not adequately addressed whether through job rewards or support from colleagues and supervisors the lack of resources can lead to diminished work-related well-being and motivation among employees.

2.26 MOTIVATION AND JOB SECURITY AT TRONOX KZN SANDS

Factors motivating employees can occur in various forms. In fact, job security is one of the most influential means of motivating employees particularly in times of economic downturn. Employees' confidence in the security of their employment and their ability to remain with the organisation as long as desired is a key factor in enhancing motivation. According to Basalamah *et al.* (2021: 94), motivation plays a crucial role in influencing work behaviour and performance, as well as driving individuals to attain job satisfaction. Furthermore, job security is recognised as a key factor examined in developed countries. In light of the COVID-19 pandemic, Tronox KZN Sands observed a rise in job losses, which underscores the growing significance of job security (Tronox Holdings 2023: 10). Pancasila, Haryono and Sulistyo (2020: 388) attested that when an employee demonstrates exceptional performance, it is probable that the overall performance of the company will also be positively impacted. Karatepe, Rezapouraghdam and Hassannia (2020: 1) affirmed that in a workplace where employees are concerned about potential job insecurity, management encounters challenges in retaining individuals who demonstrate high levels of work engagement. The workforce at Tronox KZN Sands faced a decrease in motivation due to various factors. These factors include concerns related to financial compensation, job security, limited access to the site during the national lockdown, an increased workload due to the absence of vulnerable employees, and the overall uncertainty associated with the COVID-19 pandemic (Tronox 2023: 12).

2.27 CONCLUSION

In this chapter, the research problem has been articulated and defined. Following this, the researcher examined the impact of the COVID-19 pandemic on the mining industry, focusing on its response to the challenges posed by the pandemic and the effects on mineworkers, which resulted in job insecurity. This situation prompted management to consider motivational strategies to sustain organisational operations. The findings presented herein underscore the significance of employee motivation in fostering strong relationships, retaining institutional knowledge, ensuring job security, enhancing productivity, and sustaining a high-performing workforce within the organisation. This chapter also confirms that the COVID-19 pandemic significantly disrupted mining activities in South Africa, leading to production reductions, supply chain issues, labour shortages, and economic setbacks. Maoela *et al.* (2024: 2) support the conclusion that the pandemic has had a profound impact on the South African economy. The subsequent chapter will outline the research methodology employed in this study.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 INTRODUCTION

The literature review provided various secondary sources and outlined the theoretical framework that underlies this study. This chapter addresses the research methodology that was used in this study. Research methodology is a systematic way to solve a problem. According to Bloomfield and Fisher (2019: 27), research methodology pertains to the systematic approach and procedures employed in investigating. Snyder (2019: 334) affirms that research methodology encompasses the framework utilised to conduct the research study. The chapter outlines the research objectives, research approaches; population; sampling techniques; sample; measuring instrument; pilot; reliability; data collection methods; data analyses and ethical consideration for the study.

3.2 THE STUDY OBJECTIVES

The objectives outline the purpose of the study, which includes examining the phenomena to be explored and assessing the impact of job security on employee motivation during the COVID-19 pandemic. They were further elaborated by Suresh (2022: 17), as clear, feasible, measurable, relevant, and concise statements that give direction to investigate experiences. The research objectives for this study are:

- To determine the practices of job security at Tronox KZN Sands during the Covid-19 pandemic.
- To establish the relationship between job security and employee motivation at Tronox KZN Sands during Covid-19 pandemic.
- To distinguish factors that contribute to employee motivation at Tronox KZN Sands.
- To propose possible solutions that can be implemented at Tronox KZN Sands to ensure employee job security and employee motivation.

3.3 THE RESEARCH DESIGN

This study assumed a quantitative research style and emphasised data across populations. Mohajan (2020: 2) identified quantitative research as a formal, objective, and rigorous deductive approach that employs a systematic strategy for generating and refining knowledge aimed at problem-solving. The designs utilised in this research can be classified as experimental, with the objective of obtaining accurate and reliable measurements. Sileyew (2020: 2) states that the research design is intended to establish a suitable framework for a study. A critical decision within the research design process is selecting the research approach, as this choice directly influences the methods by which relevant information is gathered for the study. Furthermore, the research design process encompasses various interrelated decisions.

3.4 TYPES OF RESEARCH METHODOLOGY

Creswell and Creswell (2018: 3) identified three primary types of research methodologies: qualitative, quantitative, and mixed methods. According to Asenahabi (2019: 76), the successful execution of research necessitates an appropriate research design. A research methodology and design serve as a blueprint established by the researcher prior to commencing data collection, aimed at achieving the research objectives in a valid manner. The fundamental purpose of a research design is to convert a research problem into analysable data, thereby offering relevant answers to the research questions while optimising cost efficiency. For the purposes of this study, a quantitative research design method was utilised to investigate the impact of job security on employee motivation during the COVID-19. The choice of a research plan is determined by the nature of the research and type of the data to be collected. The research design employed for this study was a quantitative method using the positivist research paradigm.

3.4.1 QUANTITATIVE RESEARCH

Quantitative research entails the utilisation of numerical data for measurement and the statistical analysis of the collected information (McNabb 2018: 11). It is distinguished by the deductive approaches to the research process aimed at lending reliability and

credibility to the existing theories. According to Flick (2018: 122), the quantitative research approach is a methodology that evaluates data with a focus on objectivity, without taking individual opinions into account. This research philosophy is regarded as both objective and consistent, enabling findings to be generalised through the application of statistical methods. Ghauri, Gronhaug and Strange (2020: 97) add that a quantitative research design plays a crucial role in its functionality. According to Mishra and Alok (2022:3), this type of research entails a systematic experimental analysis of observable phenomena, utilising statistical, mathematical, or computational techniques, and is presented in numerical formats such as statistics and percentages. The measurement instrument (Annexure C) used to gather data for this research was structured and had a quantitative scale. The questionnaire used the following pre-coded quantitative anchors in the form of a Likert scale:

1. Strongly agree.
2. Agree.
3. Neutral.
4. Disagree; and
5. Strongly disagree.

3.4.2 QUALITATIVE RESEARCH

Qualitative research focuses on exploring phenomena that pertain to quality and variety (Mishra *et al*. 2022: 3). According to McNabb (2018: 12), qualitative research entails a comprehensive examination of non-numerical data through a naturalistic or anthropological lens. Creswell and Creswell (2018:4) that qualitative research design focuses on exploring meaning through interviews, observations, or document analysis, ultimately yielding non-numerical data. According to Ghauri *et al.* (2020: 96), the objective of qualitative research is to deliver a comprehensive and clear representation of the research topic, with a focus on in-depth exploration.

3.4.3 MIXED METHODS RESEARCH

According to Dawadi, Shrestha and Giri (2021: 25) mixed-methods research incorporates its own philosophical assumptions and methodologies for inquiry. This method allows researchers to address research questions with a comprehensive and in-depth approach, facilitating the generalisation of findings and implications to the entire population. Harrison, Reilly, and Creswell (2020: 2) affirm that mixed methods research entails the collaboration of a researcher or a team of researchers who integrate components of both qualitative and quantitative research approaches. This may include the utilisation of diverse qualitative and quantitative perspectives, as well as various data collection, analysis, and inference techniques, with the overarching aim of enhancing the breadth and depth of understanding and validation of findings. Leavy (2022: 9) adds that a mixed methods design encompasses the collection, analysis, and integration of both quantitative and qualitative data within a single project.

3.5 TARGET POPULATION

A target population specifies the estimated number of potential respondents included in the research study (Stratton 2021: 373). Willie (2022:1) states that a target population is defined as a specific subset or segment within the larger population that serves as the primary focus of a study, intervention, or marketing strategy. This research was conducted at Tronox KZN Sands and focused on employees working from both sites central processing complex (CPC) and Fairbreeze mine. The total population of employees at Tronox was 110 (permanent, contingent and fixed term contract) employees and the list of the target population was obtained from the human resources department. Tronox KZN Sands is a medium-sized company in the mining industry based in Kwa-Zulu Natal. The employees of Tronox provided the researcher with the required data using a closed ended structured questionnaire (Annexure C), which contained questions on the impact of job security on employee motivation during COVID-19.

3.6 SAMPLING TECHNIQUE

Sampling refers to the process of selecting a subset or smaller group for study, as it is often impractical to examine the entire population (Moser and Korstjens 2018: 3). According to Sharma (2017: 749), sampling is a method used by researchers to systematically select a smaller, representative subset of items or individuals from a defined population. This subset serves as subjects for observation or experimentation in alignment with the objectives of the study. Sampling can be separated into two major categories, namely probability and non-probability sampling techniques. For this study, a census method was employed, which is appropriate for very small population sizes; otherwise, the associated costs may be higher (Harrison *et al.* 2020: 3).

3.6.1 PROBABILITY SAMPLING METHODS

Probability sampling is founded on the principle of random selection, which is a method that guarantees each member of the research population has a known opportunity of being included in the sampling process (Gournelos, Hammonds and Wilson 2019: 128). According to Rahman (2023: 47), probability sampling comprises four techniques.

- **Simple random sampling:**
  This method guarantees that all members of the population have an equal opportunity to be selected for the sample, thereby reducing bias, and enhancing the generalisability of the results to the entire population. According to Basti and Madadizadeh (2021: 3), the recommended approach for selecting a simple random sample is to utilise a random number table or to generate random numbers using statistical software.
- **Systematic sampling:**
  Hennink and Kaiser (2022: 7) stated that this method is employed in research and survey contexts to select a subset of individuals or items from a broader population. It incorporates aspects of both simple random sampling and convenience sampling, thereby striking a balance between randomness and practicality. According to Mahmutovic (2023: 1), systematic sampling is a sampling

method that involves selecting a smaller group of participants (the sample) from a larger group (the population).

- **Stratified random sampling:**

  Stratified random sampling is a technique employed in research and data collection to ensure that the selected sample accurately represents the overall population. This method involves segmenting the population into specific subgroups or strata based on identifiable characteristics, and subsequently selecting a random sample from each stratum (Hossan, Mansor and Jaharuddin 2023:215). According to Nanjundeswaraswamy and Divakar (2021:326), This method is particularly effective when the population comprises diverse heterogeneous sub-groups.

- **Cluster sampling:**

  This technique is utilised in statistics and research to select a subset or cluster from a larger population, enabling the inference of insights about the entire population (Etikan and Babatope 2019: 52). It is particularly useful when the population is large and widely dispersed, making it difficult or impractical to study the entire population directly. Basti *et al.* (2021:3) concurs that cluster random sampling involves dividing a population into similar clusters while ensuring diversity within each cluster, followed by the random selection of entire clusters or groups.

- **Purposive sampling:**

  Purposive sampling entails the selection of particular individuals, groups, or cases for a study based on established criteria or specific objectives. This approach is founded on the principle that identifying optimal cases for the study yields the most valuable data (Mweshi and Sakyi 2020: 190). Rahman (2023: 49) this refers to a type of sampling utilised by researchers when they aim to identify individuals with specific characteristics.

- **Quota sampling:**

  Nikolopoulou (2023:1) explains that quota sampling enables the selection of individuals who accurately represent the target group and possess specific characteristics relevant to the audience. Rahman (2023: 50) asserts that quota

sampling is most effective when the researcher possesses a clear understanding of the research objectives and has extensive knowledge of the target population.

- **Snowball sampling:**

  Snowball sampling is a method used to collect information from populations that are difficult to access (Chan 2020: 61). It is often employed when there is limited information on how to source the population of interest, making traditional sampling methods impractical. According to Mweshi *et al.* (2020: 191), snowball sampling can be utilized for recruiting participants by leveraging referrals from existing respondents. Rahman (2023: 50) adds that snowball sampling primarily relies on networking.

3.7 SELECTION OF THE SAMPLE

Sampling is the process of selecting appropriate respondents or a representative segment of a population to ascertain the characteristics of the entire population (Berejena 2022: 91). According to Rahman (2023: 42), researchers may find it difficult to achieve the primary objectives of their study if they are unable to gather data from a sufficiently large number of respondents using an appropriate sampling technique. It is essential for researchers to ensure that they collect data from a sufficiently broad population and select an effective sampling method. Given the nature of research questions, it is unlikely that a researcher will be able to access data from all cases. Thus, there is a need to select a sample. Zulu (2023:65), defines "sample selection" as a systematic approach to choosing a sample from a specific population. The complete collection of cases from which this sample is extracted is referred to as the population. For this study the total population was 110 minus the 10 used in the pilot study, therefore, a total of 100 was utilised to collect data. This known as a census method which used to gather the data. Nanjundeswaraswamy *et al.* (2021: 328) states that the census method considers the entire population as the sample, adding that this method is only suitable when the population size is very small.

3.8 INCLUSION AND EXCLUSION

Inclusion and exclusion criteria define the eligibility of members within the target population for participation in a research study (Nikolopoulou 2023: 2). Collectively, they're also known as eligibility criteria, and establishing them is critical when seeking study participants.

3.8.1 STUDY INCLUSION

Inclusion is understood as a process of recognising and addressing diverse needs. The criteria outlined serve to define the characteristics that potential participants must meet to be eligible for the study. These criteria are typically established to identify a population that is well-aligned with the research question (Stadler-Heer 2019: 219). For this study inclusion criteria may include:

- **Age and Gender:** Individuals under the age of 15 are prohibited from employment as child workers and are not permitted to assist others in conducting business (Hoover 2024: 4). This study will solely involve participants aged 18 to 63 years, corresponding to the retirement age at Tronox. Both male and female respondents are encouraged to participate.
- **Geographic Location:** This study concentrated exclusively on the province of KwaZulu-Natal in South Africa.
- **Ethnicity/Race**: Tronox is committed to fostering a diverse workforce that values and respects each individual (Tronox Holding 2024: 1). The researcher included participants from all racial groups in this study, including individuals of African, Coloured, White, and Indian descent.

3.8.2 STUDY EXCLUSION

Selcuk (2019: 57) states that exclusion criteria specify characteristics that disqualify potential participants, primarily to address factors that may affect the outcomes or raise ethical considerations:

- **Pregnancy:** To ensure the health and safety of both the mother and the fetus, pregnant employees are not permitted on-site due to the presence of hazardous

chemicals managed by the company. Therefore, they were excluded from participation in the study.

- **Termination of Employment Contracts:** This study does not include contingent workers or fixed-term employees whose contracts have been terminated, have come to an end, or have not been renewed.
- Individuals under the age of 15 are prohibited from employment as child workers and are not permitted to assist others in conducting business (Hoover 2024: 4), therefore are excluded from the study.

3.9 DATA COLLECTION METHODS

Data collection is a critical phase in the research process, and the quality of the collected data significantly influences the success or failure of the research outcome (Fhuzeng and Jin 2021: 178). Taherdoost (2022: 12) states that data collection methods can be categorized into two primary types: primary and secondary. According to Fhuzeng *et al.* (2021: 178) there are various data collection techniques that can be used:

- **Personal method of data collection:** Where the questionnaire is distributed in person, and completed responses are subsequently collected.
- **Telephone survey:** Experienced interviewers make phone calls to respondents, posing questions and documenting their responses (Hustedt, Franklin and Tate 2019: 13). Saarijarvi and Bratt (2021: 393) explain that telephone interviews provide the advantage of reaching respondents across a broader geographical area, thereby facilitating interviews with participants in locations that may be challenging to access.
- **Face-to-face survey:** According to Jain (2021: 547) trained interviewers conduct visits with participants to pose questions and document their responses. Saarijarvi and Bratt (2021: 393) affirms that the interaction between the interviewer and the interviewee is consistently direct and free from delays caused by technical disruptions. Alarm (2021: 11) states that when an interview is approached with personal engagement, it can enhance the depth of responses from participants. This approach aids respondents in gaining a clearer understanding of the questions presented.

- **Administration of questionnaires:** The data collection method commonly employed involves the group administration of survey instruments, where all respondents complete the questionnaire collectively (Fhuzeng *et al.* 2021: 178).
- **Electronic Mail Surveys:** As email has become a common communication tool, electronic mail surveys have gained popularity. These surveys are distributed to individuals via their email addresses. Respondents have the option to complete the questionnaire and return their responses to the researcher electronically, or they can print the questionnaire and fax their responses. This method has streamlined the processes of distribution and response, making them more efficient and cost-effective (Nayak and Narayan 2019: 33).

For this study, the questionnaires were distributed and administered by the researcher electronically via email to employees at Tronox KZN Sands.

3.9.1 PRIMARY DATA COLLECTION

According to Costa (2022: 2), primary data refers to the process of collecting original data directly from the source for a specific purpose, rather than utilising data that has already been gathered and published by others. Hall (2023: 1) states that, it is the data that has been generated from surveys, interviews, and experiments, and is intended to understand and address the research problem. According to Ghauri *et al. (*2020: 160), one of the advantages of primary data is that it can be specifically collected directly from the sample to meet the objectives of the study. However, Ghauri *et al.* (2020: 160) points out that a potential drawback of primary data is the lengthy nature of the data collection process. For this study, questionnaires (Annexure C) were used to collect the primary data in the form of closed-ended structured questionnaires. A letter of information and consent that briefly described the study, accompanied the questionnaire, stating the details of the institution that supported the study, the study aims and objectives, and explain that participation was voluntary with no associated costs or penalties.

3.9.2 SECONDARY DATA COLLECTION

According to Zulu (2023: 68) secondary data consists of information that has already been collected and analysed using statistical methods. Wahyuni (2012: 73) states that the secondary data is primarily documented in internal publications that are accessible to the public. Ghauri *et al.* (2020: 153) states that one of the key benefits of utilising secondary data is its immediate availability. For this study was obtained from academic journals, electronic journals, books, media articles, government publications, dissertations, and corporate reports.

3.10 MEASURING INSTRUMENT

According to Christley (2019: 138), a questionnaire is an effective tool for gathering information from respondents. Furthermore, Albers (2020: 1) is of the opinion that closed-ended questionnaires are deemed suitable as they can be represented graphically and effectively illustrate changes in percentages. Trochim, Donnelly, and Arora (2019: 172) cite that a survey is a systematic approach to soliciting voluntary information from individuals regarding their behaviors and opinions. The design of a questionnaire can be categorised into three methods: open-ended questions, closed-ended questions, and a mixed method that combines both open- and closed-ended questions. This study used a self-developed closed-ended, structured questionnaire (Annexure C) to gather data. Story and Tait (2019: 195) states that the questionnaire is the foundation for statistical analysis. The measuring instrument was used to ensure well presented data, reflecting the respondent's views on the influence of job security on employee motivation during the COVID-19 at Tronox KZN Sands.

3.10.1 THE ADVANTAGES OF USING QUESTIONNAIRE

Pozzo, Borgobello and Pierella (2019: 4) affirm that utilising a questionnaire allows for the efficient collection of information from a large population within a relatively short timeframe. The data collected can be readily obtained, quantified, analysed, and interpreted. Additionally, this method respects individual response rates, requires minimal human resources, ensures the maintenance of anonymity, and mitigates specific

interviewer biases. According to Dalati and Gomez (2018:178), the questionnaire approach is a commonly utilized research method across various fields, providing several advantages that enhance its value as a tool for data collection and research execution:

- Efficiency and Cost-effectiveness: Kuphanga (2023: 6) affirms that questionnaires enable researchers to gather data from multiple respondents at the same time. This approach is more efficient in terms of time and cost when compared to methods that involve face-to-face interviews or direct observations.
- Standardisation: Lindemann (2023: 5) added that questionnaires provide researchers with a consistent set of standardised questions and response options for all participants. This standardisation promotes uniformity in the design of the questionnaire, response options, and measurement scales, thereby enhancing the reliability and validity of the research findings.
- Anonymity and confidentiality: Confidentiality emphasises the importance of safeguarding respondents' personal information. Utilising a questionnaire may encourage respondents to share sensitive or personal information with greater ease and confidence (Lindemann 2023: 3).
- Minimisation of Social Desirability Bias: Dalati *et al*. (2018:178) stressed that individuals may be more inclined to offer truthful answers to sensitive or socially undesirable questions when using a self-administered questionnaire, rather than during a face-to-face interview.

3.10.2 THE DISADVANTAGES OF USING QUESTIONNAIRES

According to Patten (2018: 2) the following disadvantages should be noted, when considering whether or not to use a questionnaire for research studies:

- It is necessary to implement follow-up procedures for late responses to maintain a high response rate.
- Lack of Clarification: Respondents may misunderstand questions or provide inaccurate responses due to the absence of opportunities for clarification. Unlike interviews or focus groups, questionnaires do not facilitate real-time interaction with the researcher to ensure accurate comprehension.

- Time-Consuming: The processes of designing, distributing, and analysing questionnaires can require considerable time and resources, particularly in the context of large-scale studies. Furthermore, data entry and cleaning are also labor-intensive tasks.
- Questionnaires elicit socially desirable responses: Another drawback of questionnaires is that some respondents may be influenced by social desirability bias. This means they may provide answers they believe are more acceptable or favorable in a social context, even if those responses do not accurately reflect their true perspectives.
- Dalati *et al.* (2018: 179) affirm that there is a significant likelihood that respondents may not fully comprehend the questions posed, particularly when open-ended questions are utilized and there is no opportunity for clarification or elaboration.
- Taherdoost (2022: 17) mentioned that it is insufficient to interpret collected data related to emotions, feelings, and behavioral changes. The potential for misinterpretation of the questions can compromise the quality of the responses, particularly when inaccurate answers are common.

3.11 QUESTIONNAIRE CONSTRUCTION

Developing a questionnaire requires careful consideration of several factors, including the phrasing and sequence of questions, the selection and formulation of response options, formatting, the method of administration, and the introduction and explanation of the survey (Martin 2023: 3). This study used a questionnaire as a data collection tool, which is quantitative in nature. The questionnaire made use of a 5-point Likert scale which required respondents to agree or disagree with a series of statements, ranging from strongly disagree to strongly agree (Annexure C).

3.12 ADMINISTRATION OF THE QUESTIONNAIRE

Mohanty, Radhakrishnan, and Jain (2020: 414) state that questionnaires are the most commonly utilized method for data collection in research. All respondents can be individually emailed at the same time, ensuring standardised completion conditions

(Ngibe and Lekhanya 2020:118). In this study, a letter of permission (see Annexure E) to conduct research at Tronox KZN Sands was secured prior to the administration of the questionnaires. The researcher distributed the questionnaires via electronic mail, ensuring that participants were informed of the confidentiality, anonymity, privacy, and voluntary nature of their participation through the informed consent letter (Annexure D). A total of one hundred (100) questionnaires were circulated via email, and all were returned, resulting in a 100 percent response rate. The complete questionnaires received electronically from the respondents were subsequently printed. According to Ngibe *et al*. (2020:118) The questionnaire may be administered and completed either in the presence of the researcher or independently without the researcher present. In this research the questionnaire was administered and filled in when the researcher was not in attendance. The researcher requested all the respondents to return the complete questionnaires after two weeks.

3.13 VALIDITY AND RELIABILITY OF THE MEASURING INSTRUMENT

For a research study to be accurate, its findings must be reliable and valid. Validity and reliability are two important concepts in the field of measurement and research. Surucu and Maslakci (2020: 2694) affirm that ensuring validity and reliability in research is crucial for producing valuable outcomes. For this reason, it is useful to understand how the reliability and validity of the scales are correctly measured.

3.13.1 VALIDITY

In this study, the questions in the questionnaire (Annexure C) were extracted and tailored to the objectives of the study. Thomas, Oenning and Goulart (2018 :660) state that validity refers to the extent to which an instrument accurately measures what it is intended to measure. A valid tool should align with the researcher's objectives, and the questions posed must be clearly formulated to ensure that the interviewee comprehends the intent behind each query. Trochim, Donnelly, and Arora (2019: 127) assert that validity is essential for any meaningful measurement in research. In addition, Neuman (2019: 211) cites four types of measurement validity, namely:

- **Face validity** - entails the conclusion by the scientific community that the indicator measures a construct. According to Allen, Robson, and Iliescu (2023:153), the concept of 'face validity' suggests that a test intended for practical application should not only possess pragmatic or statistical validity but also appear practical, relevant, and aligned with the test's intended purpose.
- **Content validity** – a measure is deemed to possess content validity when it encompasses all relevant dimensions of the research study. Content validity refers to the extent to which individual items accurately reflect the theoretical content domain of a construct. In other words, a measure is considered content valid if it thoroughly represents the complete range of the construct being investigated (Allen *et al.* 2023: 155).
- **Construct validity** - a measure can establish construct validity if its theoretical framework is sound and if it accurately assesses the constructs it was designed to evaluate. Construct validation refers to the process through which researchers gather evidence to substantiate the claim that a score obtained from an instrument conveys a specific meaning (Flake, Davidson, Wong and Pek 2022: 576).
- **Criterion validity** - This type of validity utilizes a standardised principle to accurately define a construct. The validity of an indicator is determined by comparing it to another measure of the same construct that the researcher trusts.

Content validity was employed in this study due to its effectiveness in encompassing the domain of the concept being measured. It evaluates whether the test adequately represents all facets of the construct, thereby ensuring the production of valid results (Middleton 2023: 1). Confirmatory factor analysis was used for the study. This analysis was conducted using the Kaiser–Meyer–Olkin (KMO) test in the SPSS version 30.0.

3.13.2 RELIABILITY

According to Sekaran and Bougie (2019: 27), a research tool is considered reliable when it demonstrates consistency, stability, predictability, and accuracy. The greater the level of consistency and stability exhibited by the instrument, the higher its reliability. According to Kumar (2018: 38), there are four types of reliability: test-retest reliability, internal

consistency, and inter-rater reliability. Ahmed and Ishtiaq (2021: 2404) outlined the types of reliability:

- **Test-retest reliability**: Ahmed and Ishtiaq (2021: 2404) affirm that test-retest reliability refers to the consistency of a measurement over time, indicating that the results remain the same upon repeated testing. According to Babu and Kohli (2023: 400) "test-retest" reliability assesses the consistency of a test when administered to the same sample at different time intervals.
- **Inter-rater reliability:** Babu *et al.* (2023: 400) attest that inter-rater reliability evaluates the level of agreement among various researchers assessing the same study. This measure is relevant in scenarios where raters are not involved or where the influence of raters is minimal.
- **Internal consistency reliability**: This pertains to the reliability of the measurement, indicating its ability to yield consistent results across various questions within a group that are intended to assess the same concept (Ahmed and Ishtiaq 2021: 2404).
- **Parallel form's reliability**: The parallel is also known as alternative or equivalence form. Ajayi (2019: 160) defines parallel form reliability as the administration of two equivalent versions of a test to the same group of participants, separated by a specified time interval.

To ensure the reliability of this study, a pilot study was conducted with the measuring instrument prior to implementing the final version for the research.

3.14. PILOT STUDY

Lowe (2019: 117) describes a pilot study as a preliminary feasibility assessment aimed at evaluating different elements of the methodologies intended for a larger, more comprehensive, or confirmatory research investigation. Nayak and Singh (2021: 47) add that pilot testing is conducted as a trial or preliminary assessment of the developed questionnaire. According to Pearson *et al.* (2020: 1), a pilot study is conducted to identify potential unforeseen circumstances and challenges related to the measuring instrument before the actual interview takes place. This allows the researcher an opportunity to revise and realign the questionnaire as needed. For this particular study, ten (10)

respondents participated in a pilot study, where they were randomly selected to test the questionnaire. The respondents chosen for the pilot study will not be included in the main study. Following the administration of the pilot study, the reliability of the questionnaire was assessed using the Cronbach's Alpha Score. Table 3.1 depicts the results of the Cronbach's Alpha test.

Table 3.1 Cronbach's Alpha Value

	Section	Number of Items	Cronbach's Alpha
B1.1	Personal Motivation and Reward System	5	0.929
B1.2	Supportive Work Environment	5	0.741
B1.3	Motivation through Stability and Theoretical Application	3	0.792
B1.4	Impact of Uncertainty and Organisational Changes	4	0.684
Section B: All items included		17	0.853
C1.1	Job Security and Career Implications of Covid-19	5	0.837
C1.2	Pandemic's Influence on Job Risk and Working Conditions	6	0.807
C1.3	Securing Employment through Qualifications and Performance	3	0.771
C1.4	Perceptions of Insecurity and Risk Among Workforce Segments	3	0.480
Section C: All items included		17	0.804

The reliability scores, (besides C1.4 (0.480) which qualifies as moderate reliability), all exceed the recommended measure of 0.65 to 0.8. This indicates the degree of acceptability and consistent scoring for the sections. Furthermore, when considering all the items in Section B, the composite Cronbach's alpha score is 0.853, reflecting high internal consistency for the section. Overall, despite the presence of the C1.4 measurement, the overall Cronbach's alpha for Section C, is 0.804, which indicates high internal consistency.

3.15 DATA ANALYSIS

According to Taherdoost, Sahibuddin and Jalaliyoon (2020: 1), data analysis can be defined as the process of transforming collected data into insightful and meaningful information. Dawit (2020: 2), states that data analysis is the systematic application of statistical and/or logical techniques to describe, illustrate, summarise, review, and assess

data. For this study, the questionnaires were collected, and the data sets were analysed using the Statistical Package for Social Sciences (SPSS version 30.0 for Windows). The data was analysed using descriptive and inferential statistics.

3.15.1 DESCRIPTIVE STATISTICS

Mishra *et al.* (2020: 67) states that descriptive statistics are utilised to present information that outlines the fundamental characteristics of the data in a study, including metrics such as the mean and standard deviation. According to Amrhein, Trafimow and Greenland (2019: 262) there are four primary categories of descriptive statistics: measures of frequency, measures of central tendency, measures of dispersion or variation, and measures of position. Kaliyadan and Kulkarni (2019: 87) state that descriptive statistics provide a summary of the sample under investigation without making inferences based on probability theory. Even when the main objective of a study involves inferential statistics, descriptive statistics are still employed to offer a general overview. According to Siedlecki (2020: 8) descriptive studies examine the characteristics of a given population and identify issues that may exist within a unit, organisation, or demographic group. In this study, descriptive statistics were presented through various methods, including frequency tables, charts, graphs, means, standard deviations, and cross tabulations.

3.15.2 INFERENTIAL STATISTICS

Guetterman (2019: 12) states that inferential statistics represent a comprehensive category of techniques that extend beyond merely describing a dataset, enabling researchers to draw conclusions from a sample to a broader population. According to Salvatore and Reagle (2021: 3), inferential statistics, which encompass estimation and hypothesis testing, involve generalising about the characteristics of an entire population based on observations from a specific sample. The study used SPSS version 30.0 to analyse the data, Chi-square test, correlation analysis and factor analysis are some of the inferential statistics that were used to interpret the data in this the study.

3.15.3 CHI-SQUARE TEST

According to Luna-Romera *et al.* (2019: 4), a chi-squared statistical test is a technique used to evaluate whether there is a significant difference between the expected values and the observed values in the distribution of two variables. In this study the chi-square test was conducted to identify the significance of variance between research variables. In addition, a chi-square analysis highlights relationships that have significant levels of 0.05 or less. Lee (2022: 3) states that the case of $P<0.05$ should be interpreted as 'not satisfying normality' and if the normality test satisfies the normality with $P\geq0.05$, the equality of variance should be tested. Turhan (2020: 576) confirms that a Chi-square test is used to find if there is any correlation among non-numeric variables that are frequently used in statistical studies, helping researchers to determine if any observed differences between categorical variables are due to chance or if they have a meaningful relationship.

3.15.4 FACTOR ANALYSIS

Factor analysis is particularly effective for reducing a large set of related variables to a more manageable number of underlying factors (Shrestha 2021 :4). According to Taherdoost *et al*. (2020: 375), factor analysis is a valuable tool employed in the development, refinement, and evaluation of tests, scales, and measures. In this study, factor analysis was achieved by correlating the two variables including job security and employee motivation. This was achieved through the use of the KMO measure of sampling adequacy and Bartlett's test on the two sub-variables.

3.15.5 CORRELATION ANALYSIS

In order to inspect the relationship between all the variables in this research, the correlation analysis was used. Correlations are useful in that they can indicate a predictive relationship. This was used to determine relationships amongst the variables under study. Kochetkov (2018: 2), described correlation analysis as a method that clarifies the relationships between data sets in terms of magnitude. Specifically, it determines whether higher values in one dataset correspond to higher values in another (positive correlation), whether lower values in one dataset correspond to higher values in the other (negative

correlation), or if the two datasets are unrelated altogether (zero correlation). According to Senthilnathan (2019: 2), numerous studies employ correlation analysis to examine the degree of association between various variables. The linear correlation coefficient (r or R) serves as a quantitative measure, indicating the extent of the relationship between two variables. In order to inspect the relationship between all the variables in this research, the correlation analysis was used. Bivariate correlation was also performed on the data. Bivariate analyses were used to explore relationships between personal motivation and reward systems, work environment and job security and career implications of Covid-19. Cross-tabulation was used in this research to inspect the connection amongst ordinal and nominal variables.

3.16 ETHICAL CONSIDERATIONS

There are several principles that should be considered to ensure that research is conducted professionally and in accordance with the rights of respondents (Gray 2017: 161). During this research, all aspects of ethical considerations were adhered to and followed. Both the study and the researcher were bound by the rules and the code of conduct as stipulated by the Durban University of Technology. In this study, confidentiality, anonymity, privacy, and voluntary participation were clearly outlined to the participants in the informed consent letter (Annexure D). Additionally, a brief introduction and the purpose of the study were communicated to all participants through an information letter (Annexure B), both of which were emailed to them. At the beginning of the data collection process, participants were assured of their anonymity and provided with contact details should they have any questions or concerns. We also expressed our gratitude for their participation. The following ethical measures were observed in this study:

3.16.1 INFORMED CONSENT

Informed consent refers to the agreement established between the researcher and the participants prior to the commencement of the study (Bourne *et al.* 2021: 18). The researcher obtained a gatekeeper's letter from the Senior HR Officer at Tronox KZN Sands (Annexure E) prior to initiating the research. Ethical clearance was also secured from the Durban University of Technology (Annexure F). These two documents were provided to the respondents along with the consent letter (Annexure D), which required their signature to indicate agreement, to their participation in the study.

3.16.2 RIGHT TO VOLUNTARY PARTICIPATION

The researcher abides by ethical policies to safeguard the rights of the research respondents. The purpose of the study was explained to all respondents in a covering letter (Annexture A). According to Bhandari (2021: 1), the right to voluntary participation is an ethical principle and legal framework that assures individuals the freedom to choose whether to engage in specific research activities without experiencing any coercion or undue pressure. All participants have the ability to withdraw from the study at any time, without any obligation to continue. Annexture A of this study states that participation is voluntary, and respondents may, at any stage without coercion withdraw the consent and participation in the study. Iseselo and Tarimo (2024: 2) assert that obtaining informed consent is essential in research involving human participants. The written consent (Annexure D) was electronically transmitted to the respondents via email, and they were informed that their participation in completing the questionnaires (Annexure C) was entirely voluntary. Additionally, we ensured that the data collected through the questionnaire was designed to uphold the dignity and self-respect of the respondents, avoiding any potential impact on their self-esteem or feelings of shame. We also took care to prevent any intentional harm to the respondents, and those who may have felt any form of distress, including victimization or emotional discomfort, were advised in advance of their right to withdraw from the study at any time.

3.16.3 ANONYMITY AND CONFIDENTIALITY

Anonymity and confidentiality are two important concepts often used in various contexts to protect privacy and sensitive information. According to Kwang and Hwang (2023: 4) the primary purpose of maintaining confidentiality and anonymity is to safeguard study respondents from any potential discomfort or harm. Bhandari (2021: 1) affirms that it is assured that anonymity can be maintained by refraining from collecting any personally identifiable information, such as names, phone numbers, email addresses, IP addresses, physical characteristics, photographs, and videos. The questionnaire utilized for data collection did not include a section for respondents to provide their names or identifying information. Participants were assured that their responses would be handled with the highest level of confidentiality and not shared with any external parties. Additionally, a covering letter (Annexure A) emphasised the importance of confidentiality and anonymity.

3.16.4 DISPOSAL OF DATA COLLECTED

Davidson, Gershtein, and Milo (2022: 10) emphasise the importance of systematically developing and enforcing data disposal policies to protect and benefit both organisations and individuals. For this study, completed questionnaires as well as findings of the research will be stored in the file cabinet and password encrypted hard drive. The external drive data will permanently be destroyed after five years. Any printed documents stored in a locked cabinet will be permanently destroyed by a shredder after five years.

3.17 CONCLUSION

This chapter discussed the research methodology and research design used for the study. The quantitative research design was chosen by the researcher as the relevant research approach for this study. The pilot study was conducted with ten respondents (Tronox employees) to test the reliability and validity of the questionnaires. The chapter elaborated on the research design, target population, sampling procedure, measuring instrument, reliability and validity, data collection and data analysis. The chapter concluded with an overview of how the ethical considerations pertaining to the study were addressed. The following chapter focuses on the analysis and discussion of result.

CHAPTER FOUR:

STATEMENT OF FINDINGS, INTERPRETATION, AND DISCUSSION OF THE DATA

4.1 INTRODUCTION

This chapter presents the results and discusses the findings obtained from the questionnaires in this study. The questionnaire was the primary tool that was used to collect data and was distributed to a sample of 100 employees. The data collected from the responses was analysed with SPSS version 30.0. The results will present the descriptive statistics in the form of graphs, cross tabulations and other figures for the quantitative data that was collected. Inferential techniques include the use of correlations, chi-square and Kruskal Wallis test values, which are interpreted using the p-values. The traditional approach to reporting a result requires a statement of statistical significance. A p-value is generated from a test statistic. A significant result is indicated with "$p < 0.05$".

4.2 THE SAMPLE

In total, 100 questionnaires were despatched electronically and 100 were returned which gave a 100% response rate. Demuyakor (2020: 4), confirmed that any study with a response rate of 50% and above is appropriate for analysis.

4.3 THE RESEARCH INSTRUMENT

The research instrument consisted of 43 items, with a level of measurement at nominal or ordinal levels.

4.4 FACTOR ANALYSIS

Factor analysis is particularly suitable to extract few factors from the large number of related variables to a more manageable number (Shrestha 2021: 4). The researcher conducted an exploratory factor analysis for this study. According to Taherdoost *et al*. (2020: 375), factor analysis is a statistical technique utilized to explain the variability among observed, correlated variables through a smaller set of unobserved variables,

referred to as factors. This method represents the observed variables as linear combinations of these potential factors and error terms, with the objective of uncovering the underlying relationships within the data. This technique is widely applied in various fields such as psychology, finance, and social sciences, to reduce data dimensionality and to identify latent constructs that cannot be measured directly. By extracting the minimum number of factors that account for the maximum variance in the data, factor analysis simplifies data interpretation without significantly compromising the information contained within the data. Moreover, it aids in the development of hypotheses regarding constructs or variables, facilitating a deeper understanding of data structures and underlying phenomena. The matrix table/s is preceded by a summarised table that reflects the results of KMO and Bartlett's Test. The KMO and Bartlett's Test (see Table 4.1) shows two tests that indicate the suitability of data for structure detection. The KMO Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. High values (close to 1.0) generally indicate that a factor analysis may be useful with the data. If the value is below 0.50, the results of the factor analysis may have limited applicability (Ibikunle, Rhoda and Smith 2020: 977). Bartlett's test of sphericity evaluates the hypothesis that the correlation matrix is an identity matrix. A result indicating this suggests that the variables are independent and may not be appropriate for structural analysis (Eze, Asogwa and Eze 2021:172). Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data. Factor analysis is only done on the Likert scale items. Certain components divided into finer components. This is explained in the rotated component matrix (see table 4.2).

Table 4.1: KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
		Approx. Chi-Square	df	Sig.
Employee Motivation	0.845	992.407	136	< 0.001
Job Security	0.804	790.879	136	< 0.001

As shown in Table 4.1, employee motivation scored a KMO outcome of 0.845 and a Bartlett's Test of Sphericity of <0.001, while job security scored a KMO outcome of 0.804 and a Bartlett's Test of Sphericity of <0.001. The KMO Measure of Sampling Adequacy value should be greater than 0.500 and the Bartlett's Test of Sphericity sig. value should be less than 0.05. Therefore, all of the conditions are satisfied for factor analysis.

Table 4.2: Rotated Component Matrix

B	Component				
	1	2	3	4	
I feel motivated in my organisation	0.795	0.299	0.189	-0.031	B1.1
I feel appreciated in my organisation	0.843	0.155	0.230	-0.026	B1.2
I am rewarded when I reach my required targets	0.884	0.161	0.111	-0.111	B1.3
I feel motivated by the financial rewards I receive	0.849	0.278	0.065	-0.065	B1.4
Having the necessary skills required for the job improves motivation	0.691	0.171	0.573	0.021	B1.5
I received support from my superiors at work	0.373	0.581	0.088	0.068	B2.1
I felt a sense of belonging during Covid- and my organisation allows me autonomy in my job	0.147	0.788	-0.043	-0.004	B2.2
I feel free to express my opinions without worrying about negative actions/responses	0.459	0.526	0.206	-0.028	B2.3
The process of work schedules during Covid was clearly communicated	0.135	0.744	0.203	-0.017	B2.4
My workload is manageable and motivating	0.010	0.611	-0.119	-0.377	B2.5
Proposed motivational theories should be adopted by the organisation to improve motivation of their employees	0.478	-0.023	0.684	0.164	B3.1
Employment stability will motivate me to improve on my performance	0.626	-0.060	0.635	-0.189	B3.2
Having a sense of job security motivates me in my job	0.308	0.492	0.623	-0.031	B3.3
Uncertainty of my job security is demotivating	-0.387	0.024	0.093	0.675	B4.1
Being denied access to my workplace during Covid- pandemic demotivated me	0.014	-0.320	0.115	0.656	B4.2
My organisation's work culture adopted during Covid demotivated employees	0.100	0.043	-0.211	0.826	B4.3
Covid - has had an impact on employee motivation	-0.090	0.079	0.552	0.596	B4.4

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 7 iterations.

4.4.1 FACTORS FOR SECTIONS B AND C

The following factors were identified for sections B and C.

4.4.1.1 EMPLOYEE MOTIVATION (EM)

Factors 1 (Component 1):

- Impact of the Pandemic on Job Security and Career Stability: This factor encompasses the personal sense of motivation experienced by employees within their organisation, including feelings of appreciation and being rewarded, both intrinsically and extrinsically, for achieving targets.

Factors 2 (Component 2):

- Supportive Work Environment: This factor highlights the support received from superiors, the sense of belonging and autonomy afforded by the organisation, the freedom to express opinions, and the clarity and manageability of work schedules and workload during the Covid period.

Factors 3 (Component 3):

- Motivation through Stability and Theoretical Application: This factor reflects the motivational impact of employment stability and job security, as well as the potential benefits of implementing motivational theories within the organisation.

Factors 4 (Component 4):

- Impact of Uncertainty and Organisational Changes: This factor captures the demotivating effect of job security uncertainty, workplace access restrictions, organisational culture changes during Covid, and the overall impact of the pandemic on employee motivation.

4.4.1.2 JOB SECURITY (JS)

Factors 1 (Component 1):

- Job Security and Career Implications of Covid-19: This factor addresses the direct effects of job security levels on daily routines, the impact of the pandemic on job stability in specific sectors, changes in career plans, and the resultant anxiety.

Factors 2 (Component 2):

- Pandemic's Influence on Job Risk and Working Conditions: This factor considers the wider implications of the pandemic, including production threats, financial anxiety, the enforcement of safety measures, altered working hours, and the changes to work environments and conditions.

Factors 3 (Component 3):

- Securing Employment through Qualifications and Performance: This factor considers the positive impacts of job security on the working environment and the role of educational qualifications and work performance in enhancing job security prospects.

Factors 4 (Component 4):

- Perceptions of Insecurity and Risk Among Workforce Segments: This factor is concerned with the perceived lack of appreciation from management, the differential job security risks faced by various types of employment contracts, and feelings of threat in the workplace.

These factors names are crafted to encapsulate the collective concerns and experiences of employees as they navigate motivation, security, and the impacts of the COVID-19 pandemic on their professional lives.

As indicated in Table 4.3, the principal component analysis and the rotation method through Varimax with Kaiser Normalisation were used as the methods of extraction. The number of variables each factor loads is shown by the orthogonal rotation method. The statements that constituted sections in Table 4.2 and Table 4.3 loaded suitably along a

single component. This means that the statements comprised of these sections suitably measured what they were supposed to measure. It is also noted that statements that had a negative loading and low factor scores were omitted.

Table 4.3: Rotation Converged in 6 Iterations

C	Component				
	1	2	3	4	
Low level of job security negatively affect day to day routine with high possibility of causing employee to make mistakes?	0.711	0.301	-0.004	0.034	C1.1
Closure of mining sites effected my job security	0.847	0.112	0.144	0.137	C1.2
My normal job has effectively halted during lockdown period	0.732	0.206	-0.315	0.002	C1.3
The pandemic has directly changed my career plan	0.509	0.294	0.149	0.422	C1.4
I am anxious that my job might be affected	0.772	0.187	-0.170	0.228	C1.5
The pandemic has shuttered and threatened the company's production which led to job loss	0.443	0.531	0.138	0.382	C2.1
Pandemic resulted in financial anxiety and financial risk to all employees in my organisation	0.185	0.884	-0.020	0.021	C2.2
My organisation enforced all safety precautionary majors to prevent employees from direct contact with COVID-	-0.215	0.418	0.334	0.163	C2.3
Lockdown has negatively affected my working hours	0.329	0.739	-0.003	0.178	C2.4
Covid- changed my work environment and employment conditions	0.369	0.808	0.047	0.067	C2.5
I worked long unapproved overtime hours during lockdown	0.326	0.471	-0.161	0.384	C2.6
Job security has a positive effect on my working environment	0.118	0.110	0.775	-0.066	C3.1
My educational qualifications improved my chances of attaining job security	-0.170	0.091	0.803	-0.183	C3.2
If I meet deadline and work additional hours, I have a better chance of having job security	-0.020	-0.126	0.802	0.210	C3.3
Management does not appreciate or acknowledge my efforts which affects my job security	0.099	0.147	-0.073	0.768	C4.1
The job security of fixed term, contractors and contingent workers are at a higher risk than permanents	0.020	0.052	0.476	0.681	C4.2
I feel threatened at my job	0.254	0.121	-0.362	0.518	C4.3

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 6 iterations.

The principal component analysis was used as the extraction method, and the rotation method was Varimax with Kaiser Normalisation. This is an orthogonal rotation method that minimises the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors. Factor analysis/loading show inter-correlations between variables. Items of questions that loaded similarly imply measurement along a similar factor. An examination of the content of items loading at or above 0.5 (and using the higher or highest loading in instances where items cross-loaded at greater than this value) effectively measured along the various components.

4.5 RELIABILITY STATISTICS

Ahmed and Ishtiaq (2021: 2402) defined reliability as the consistency of a measurement method. The two primary aspects of precision are reliability and validity. Reliability is computed by taking several measurements on the same subjects. Hair *et al.* (2021: 77) noted that a reliability coefficient of 0.60 or above is regarded as "acceptable" for a newly developed construct. The Cronbach's Alpha coefficient was used for testing the internal consistencies and instability of the constructs, that is Section "B" and Section "C". Table 4.4 shows the Cronbach Alpha coefficient's rule of thumb of labelling as per Saidi and Siew (2019: 655).

Table 4.4: Cronbach Alpha coefficient's rule of thumb

Alpha coefficient	**Reliability levels**
Below 0.50	Unacceptable
Below 0.60	Poor
From 0.60 to 0.69	Fair
From 0.70 to 0.79	Good
From 0.80 to 0.99	Very good

Source: Saidi *et al.* 2019: 655.

Table 4.4 demonstrates that a Cronbach Alpha Coefficient below 0.50 is unacceptable, while below 0.60 indicates 'poor reliability.' A coefficient ranging from 0.60 to 0.69 signifies 'fair reliability,' while a range of 0.70 to 0.79 reflects 'good reliability.' A Cronbach Alpha coefficient between 0.80 and 0.99 indicates 'very good reliability.' Table 4.5 reflects the Cronbach's alpha score for all the items that constituted the questionnaire.

Table 4.5: The Cronbach's alpha score

	Section	Number of Items	Cronbach's Alpha
B1.1	Personal Motivation and Reward System	5	0.929
B1.2	Supportive Work Environment	5	0.741
B1.3	Motivation through Stability and Theoretical Application	3	0.792
B1.4	Impact of Uncertainty and Organisational Changes	4	0.684
Section B: All items included		17	0.853
C1.1	Job Security and Career Implications of Covid-19	5	0.837
C1.2	Pandemic's Influence on Job Risk and Working Conditions	6	0.807
C1.3	Securing Employment through Qualifications and Performance	3	0.771
C1.4	Perceptions of Insecurity and Risk Among Workforce Segments	3	0.480
Section C: All items included		17	0.804

The reliability scores for all sections exceeded the recommended Cronbach's alpha value. This indicated a degree of acceptable, consistent scoring for these sections of the research. When considering all items included in Section B, the composite Cronbach's alpha score is 0.853, reflecting high internal consistency for the section as a whole. The overall Cronbach's alpha for Section C, considering all items included, is 0.804, which indicates high internal consistency for the composite measure. However, Perceptions of Insecurity and Risk Among Workforce Segments, with three items has a Cronbach's alpha of 0.480, which is below the acceptable threshold, suggesting that the items in this subsection may not be adequately related to measure the underlying construct consistently. Nevertheless, the section was retained in the study. The data suggested that, with the exception of subsection C1.4, the questionnaire exhibited high reliability in measuring the constructs of interest.

4.6 SECTION A: BIOGRAPHICAL DATA

This section provides an overview of the biographical characteristics of the respondents participating in the study. It summarises key demographic variables, such as age, gender, educational qualifications, and employment status, to offer insights into the composition of the sample population. This background information is essential to contextualise the findings and interpret the relationship between biographical factors and other variables under investigation.

4.6.1 Age

Table 4.6 describes the overall gender distribution by age.

Table 4.6: Age of Respondents

		Gender		Total
Age group (years)		Male	Female	
18 - 25	Count	7	3	10
	% within Age group (years)	70.0%	30.0%	100.0%
	% within Gender	8.6%	15.8%	10.0%
	% of Total	7.0%	3.0%	10.0%
26 - 30	Count	21	2	23
	% within Age group (years)	91.3%	8.7%	100.0%
	% within Gender	25.9%	10.5%	23.0%
	% of Total	21.0%	2.0%	23.0%
31 - 35	Count	10	3	13
	% within Age group (years)	76.9%	23.1%	100.0%
	% within Gender	12.3%	15.8%	13.0%
	% of Total	10.0%	3.0%	13.0%
36 - 40	Count	10	3	13
	% within Age group (years)	76.9%	23.1%	100.0%
	% within Gender	12.3%	15.8%	13.0%
	% of Total	10.0%	3.0%	13.0%
45 - 50	Count	22	4	26
	% within Age group (years)	84.6%	15.4%	100.0%
	% within Gender	27.2%	21.1%	26.0%
	% of Total	22.0%	4.0%	26.0%
51 - 65	Count	11	4	15
	% within Age group (years)	73.3%	26.7%	100.0%
	% within Gender	13.6%	21.1%	15.0%
	% of Total	11.0%	4.0%	15.0%
Total	Count	81	19	100
	% within Age group (years)	81.0%	19.0%	100.0%
	% within Gender	100.0%	100.0%	100.0%
	% of Total	81.0%	19.0%	100.0%

Table 4.6 shows that the overall ratio of males to females is approximately 4:1 (81.0%: 19.0%) ($p < 0.001$).

Within the age category of 36 to 40 years, 76.9% were male. Within the category of males (only), 12.3% were between the ages of 36 to 40 years. This category of males between the ages of 36 to 40 years formed 10.0% of the total sample.

Respondents between the age group of 45 to 50 years, 84.6% were male. Within the category of males (only), 27.2%. were between the ages of 45-50 years. Males only category recorded 22.0% of the total sample between the ages of 45-50 years. Moreover, within the same age group of 45-50, 15.4% were females, within the category of females (only), 21.1% were between the ages 45-50 years. This category of females between the ages of 45-50 years formed 4.0% of the sample. The analysis reveals that among respondents aged 51 to 65 years, 26.7% were female, and the female respondents (only), 21.1% were identified as part of this age group. This demographic constitutes 4.0% of the overall sample. According to Abrahamsson and Johansson (2020: 263, large-scale industrial mining has historically been a male-dominated field due to the physically demanding nature of the work. Hence, the gender distribution for males were high. The age distributions are not similar as there are more respondents younger than 40 years ($p = 0.034$).

4.6.2 Race of the Sample

Figure 4.1 The figure below indicates the racial composition of the sample.

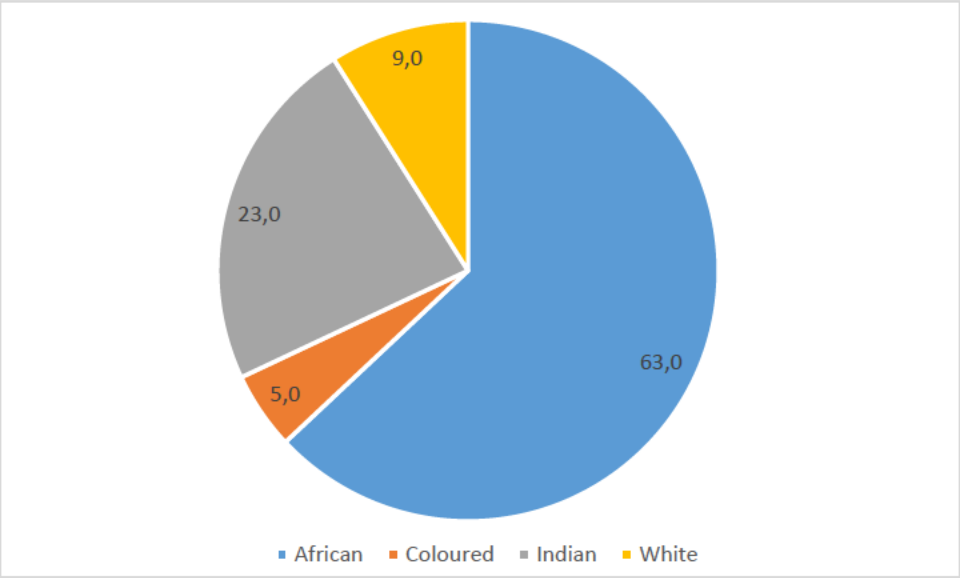


Figure 4.1: Race Group of Respondents

As illustrated in Figure 4.1, the predominant ethnic group identified was the African category, constituting a significant majority at 63% of the total population under consideration. The second-largest group, the Coloured category, comprised nearly a quarter of the population, at 23%. This was followed by the Indian ethnic group, which represented a smaller segment of 9%. The White ethnic group constituted the smallest proportion within this demographic landscape, accounting for 5% of the population ($p < 0.001$).

4.6.3 Nature of Employment of the Sample

Table 4.7 delineates employment type, with a majority (70%) of the respondents engaged in permanent roles, indicating a stable employment environment. Fixed-term contracts account for 19% of the employment types, while contingent contracts, which are typically less secure, constitute 11% of the workforce ($p < 0.001$). The distribution highlights a

predominantly stable workforce but also a notable reliance on non-permanent staff, which may have implications for job security and organisational commitment. These findings suggest that the majority of respondents were permanently employed at Tronox Sands.

Table 4.7: Nature of Employment

	Frequency	Percent
Permanent	70	70.0
Fixed Term	19	19.0
Contingent	11	11.0
Total	100	100.0

4.6.4 Rank/ Position of Respondents

Table 4.8 provides an overview of the hierarchical distribution of the current positions held by the respondents. The majority are positioned as junior staff (84%), which may indicate a vertical organisational structure with a broad base and a narrow apex. This is corroborated by smaller proportions occupying supervisory (11%) and managerial roles (5%), suggesting fewer opportunities for advancement to higher levels of responsibility within the organisation ($p < 0.001$).

Table 4.8: Rank/ Position

	Frequency	Percent
Junior Staff	84	84.0
Supervisory	11	11.0
Managerial	5	5.0
Total	100	100.0

4.6.5 Length of Service of Respondents

As illustrated in Figure 4.2, the bar graph indicates the distribution of respondents' tenure at Tronox KZN Sands, categorised by length of service. The data suggests a varied tenure landscape among employees, with the most substantial segment of 30% falling within the 1-5 year service bracket. This may indicate a trend of either recent recruitment activity or moderate employee turnover within this period. The following category, 6-10 years, comprises 25% of the workforce, suggesting a solid core of mid-term employees (p = 0.006). The category for 11-15 years of service accounts for 22% of respondents, which reflects a consistent retention rate for employees beyond a decade. Notably, the proportion of employees with a service length of less than one year is 9%, which might suggest either recent hiring surges or possibly a higher turnover rate at the commencement of employment. In contrast, employees with over 15 years of service constitute 14% of the population, indicative of a loyal subset of the workforce that provides long-term stability and organisational memory.

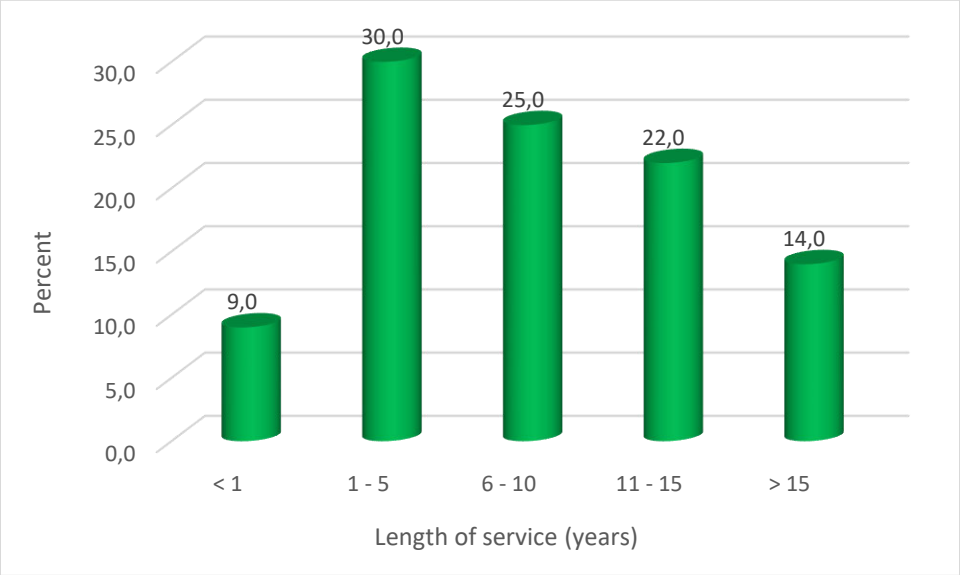


Figure 4.2: Length of Service of Respondents

4.6.6 Qualifications of the Respondents

As illustrated in Figure 4.3, a significant majority, 88.0%, possess qualifications obtained after completing their school education, underscoring a high level of educational attainment within the respondent pool. The distribution of qualifications is as follows: A small percentage, 3.0%, have an educational level below matriculation. Those with a matric certificate represent 9.0% of the respondents. A combined total of 60.0% have either a certificate or diploma, with the former accounting for 23.0% and the latter showing a substantial 37.0%, making it the most common qualification among the respondents. Bachelor's degrees are held by 23.0% of the participants, indicating a significant representation of undergraduate-level education ($p < 0.001$). Postgraduate qualifications, while less common, are still present: 4.0% of respondents have completed a postgraduate diploma, and 1.0% have attained a master's degree. This suggests a smaller proportion of the respondents have pursued education to an advanced level. The data implies a workforce with diverse educational backgrounds, providing a range of skills and knowledge bases. This is a useful statistic as it indicates that a fair proportion of the respondents have a higher qualification. This indicates that the responses gathered would have been from an informed (learned) source.

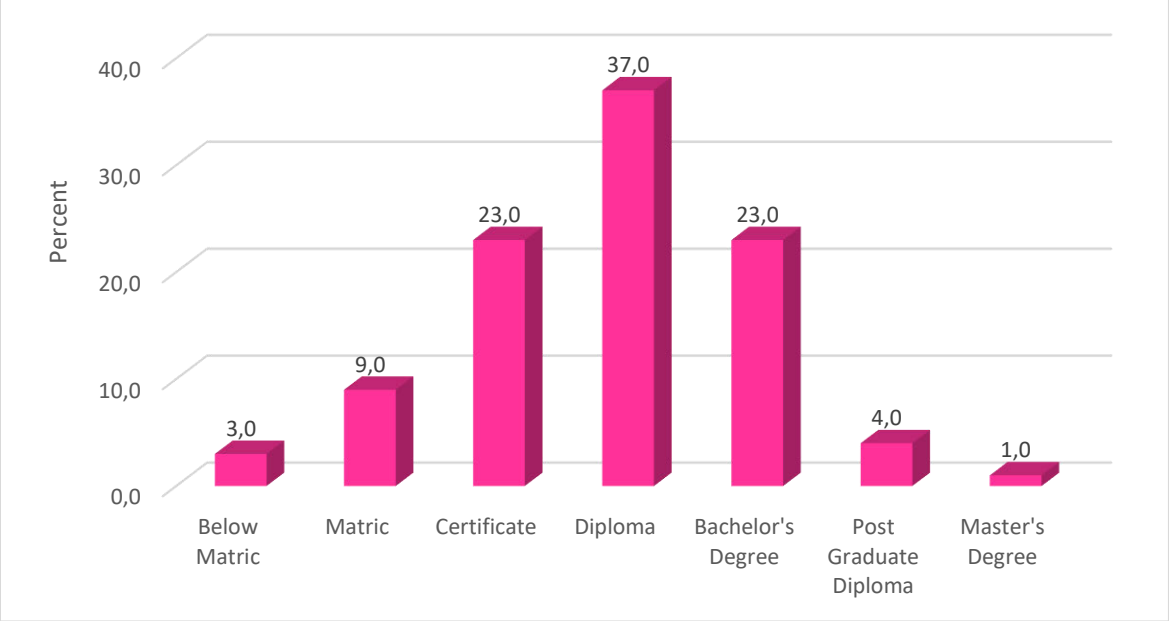


Figure 4.3: Qualifications of the Respondents

4.6.6.1 Qualifications of Respondents: Lower than Bachelors and Higher than Bachelor's Degree

Table 4.9 depicts that those respondents with educational attainment below a bachelor's degree accounted for 72.0% of the total, reflecting the predominant employment of artisans within the mining industry at Tronox KZN Sands. According to Higher Education and Training S.A (2024: 1), candidates need to have a minimum qualification of Grade 9 or N2 Certificate in the specific trade they want to pursue. Once a candidate has gathered practical training combined with theoretical knowledge, they then gain access to do a trade test. Respondents holding a bachelor's degree or higher, comprised 28% of the workforce. This group included personnel in services departments, technicians, and management positions. The study observed that during the COVID-19 pandemic, employees with advanced qualifications were leaving the organisation due to concerns about job security. According to Abenov, Grabbert, Franklin-Hensler and Larrat (2023: 2), it has been confirmed that mining companies are experiencing a talent shortage, which is impeding their capacity to meet production targets and accomplish strategic objectives. Industry leaders indicate that the recruitment and retention of essential talent has become progressively more challenging.

Table 4.9: Qualifications of Respondents

	Frequency	Percent
Lower than bachelor's degree	72	72.0
Bachelor's degree or higher	28	28.0
Total	100	100.0

4.7 SECTION ANALYSIS

The section that follows analyses the scoring patterns of the respondents per variable per section. The results are first presented using mean scores for the variables that constitute each section. Results are then further analysed according to the importance of the statements. Each section had four sub-themes as identified under factor analysis. To determine whether the scoring patterns per statement were significantly different per statement, a binomial test was done, with a cut-off value being the middle value (3.0). The null hypothesis claims that similar numbers of respondents scored above 3.0 (agreement) as there were respondents who scored less than 3.0 (disagreement). The alternate states that there is a significant difference between the levels of agreement and disagreement. The results are shown in the table. The highlighted sig. values (p-values) are less than 0.05 (the level of significance), implying that the distributions were not similar. That is, the differences between the way respondents scored were significant.

4.7.1 SECTION B (EMPLOYEE MOTIVATION)

This section focuses on exploring employees' perceptions of their motivation levels and the effectiveness of the reward system in the organisation. It aims to identify the extent to which personal motivation, recognition, and financial or non-financial rewards contribute to overall employee satisfaction and engagement. By examining these factors, the study seeks to uncover potential areas for organisational improvement to enhance employee morale and productivity.

B1.1 Personal Motivation and Reward System

The "Personal Motivation and Reward System" sub-theme delves into employees' intrinsic and extrinsic motivational factors. It evaluates their sense of being appreciated, the effectiveness of rewards for performance, and the role of financial incentives and skill acquisition in driving motivation. This sub-theme aims to provide a comprehensive understanding of how individual and organisational practices influence employees' work-related attitudes and behaviours.

Table 4.10: Personal Motivation and Reward System

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
B1.1	I feel motivated in my organisation	100	2.40	1.15	2.00	1.00	3.00	5.00	1.00	< 0.001
B1.2	I feel appreciated in my organisation	100	2.42	1.07	2.50	1.00	3.00	5.00	1.00	< 0.001
B1.3	I am rewarded when I reach my required targets	100	2.46	1.18	2.00	1.00	4.00	5.00	1.00	< 0.001
B1.4	I feel motivated by the financial rewards I receive	100	2.33	1.10	2.00	1.00	3.00	4.00	1.00	< 0.001
B1.5	Having the necessary skills required for the job improves motivation	100	2.94	1.26	3.00	2.00	4.00	5.00	1.00	0.484

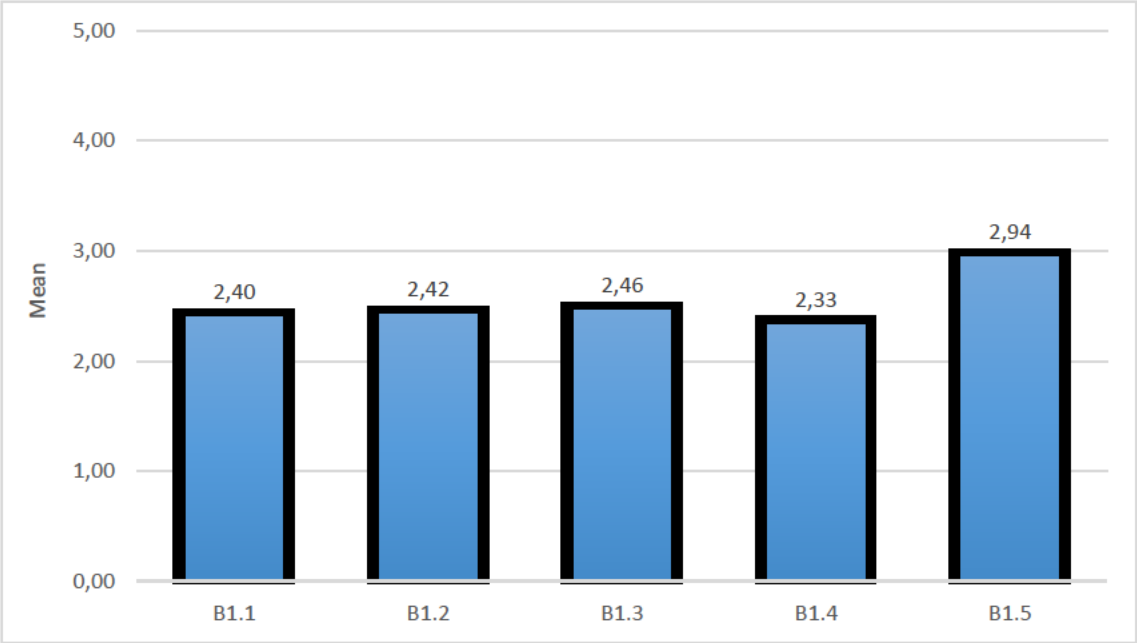


Figure 4.4: Personal Motivation and Reward System

- **B1.1** ***I feel motivated in my organisation*** scored a mean of 2.40, with a standard deviation of 1.15, suggesting moderate levels of motivation among the participants. The median score of 2.00 and the 25th percentile at 1.00, alongside the 75th percentile at 3.00, indicate a skew towards lower motivation levels. The binomial p-value of less than 0.001 signifies a statistically significant difference from the cut-off value of 3.0, suggesting that the majority of respondents feel less motivated.

- **B1.2** ***I feel appreciated in my organisation*** revealed a mean score of 2.42 and a standard deviation of 1.07. The distribution is slightly more positive than B1.1, with a median of 2.50. The 25th and 75th percentiles are 1.00 and 3.00, respectively, which also points towards lower levels of feeling appreciated. The binomial p-value of less than 0.001 indicates a significant deviation from neutral appreciation levels.

- **B1.3** ***I am rewarded when I reach my required targets*** resulted in a mean of 2.46 and a standard deviation of 1.18. The median score of 2.00 and percentiles (25th at 1.00 and 75th at 4.00) suggest variability in the perception of being rewarded for achieving targets. The maximum score of 5.00 indicates that some respondents feel adequately rewarded, yet the significant binomial p-value of less than 0.001 suggests a general trend towards dissatisfaction.

- **B1.4** ***I feel motivated by the financial rewards I receive*** displayed a mean of 2.33 and a standard deviation of 1.10. This item has the lowest mean score, with a median of 2.00, which indicates a general trend of respondents feeling unmotivated by financial rewards. The binomial p-value of less than 0.001 further corroborates the significant dissatisfaction with financial incentives.

- **B1.5** ***Having the necessary skills required for the job improves*** **motivation** showed a notably higher mean score of 2.94 and a standard deviation of 1.26, suggesting a more positive perception towards the impact of possessing job-related skills on motivation. The median score is 3.00, with the 25th and 75th

percentiles at 2.00 and 4.00, respectively. Unlike the previous items, this statement has a binomial p-value of 0.484, indicating no significant deviation from the neutral point regarding the perception that skills improve motivation.

In summary, the survey results indicate a general trend of moderate to low levels of motivation, appreciation, and satisfaction with the reward system within the organisation, except for the perception that having the necessary skills improves motivation, which is viewed more positively. The statistically significant binomial p-values for the first four statements (less than 0.001) suggests a notable difference from a neutral standpoint, highlighting areas for potential improvement in organisational practices related to motivation and rewards, The findings associated with the B1.1 statement, "*I feel motivated in my organisation"* suggested that most respondents felt less motivated during COVID-19 at Tronox KZN Sands. This study identified employees who were classified as vulnerable, thus limiting their access to the site. According to Ingo and Pieters (2024: 1-2) a deficiency in job resources can impede decision-making processes and adversely impact performance. However, with the emergence of COVID-19, organisations have been compelled to prioritise employee well-being, recognising that the work environment is a potential risk factor for outbreaks. The results from the B1.4 statement, "*I feel motivated by the financial rewards I receive"*, indicated low satisfaction levels, suggesting that a significant portion of the workforce is not motivated by the financial rewards provided by Tronox. According to Department of Labour S.A (2024: 1) the production bonus is determined based on the level of production achieved in relation to established targets, rather than performance evaluated against company standards. Additionally, quality of production is a significant factor in this assessment. In contrast, a performance bonus is typically awarded for strong performance and is generally calculated as a percentage of the employee's salary or wages. Erasmus (2020: 6) affirms that there is no provision in the Basic Conditions of Employment Act which compels an employer to pay bonuses of any sort. However, failing to distribute bonuses to all employees while allocating them only to permanent staff may create divisions within the organisation and lead to dissatisfaction among team members (Maryanti and Munandar 2023: 153).

B2 Supportive Work Environment

The "Supportive Work Environment" sub-theme focuses on employees' perceptions of the organisational culture and the support structures in place, particularly during challenging periods like the COVID-19 pandemic. It examines the extent to which employees feel supported by their superiors, experience a sense of belonging and autonomy, and have the freedom to express opinions without fear of repercussions. Furthermore, it explores how clearly work schedules were communicated and whether workloads were perceived as manageable and motivating. This sub-theme aims to provide a nuanced understanding of the organisational environment's role in fostering a positive and supportive workplace culture, especially in the context of a global crisis.

Table 4.11: Supportive Work Environment

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
B2.1	I received support from my superiors at work	100	2.86	1.02	3.00	2.00	4.00	5.00	1.00	< 0.001
B2.2	I felt a sense of belonging during Covid- and my organisation allows me autonomy in my job	100	2.39	0.83	2.00	2.00	3.00	4.00	1.00	< 0.001
B2.3	I feel free to express my opinions without worrying about negative actions/responses	100	2.41	0.95	2.00	2.00	3.00	5.00	1.00	< 0.001
B2.4	The process of work schedules during Covid was clearly communicated	100	2.79	0.84	3.00	2.00	3.00	5.00	1.00	< 0.001
B2.5	My workload is manageable and motivating	100	2.67	0.95	3.00	2.00	3.00	4.00	1.00	< 0.001

The mean scores - B2.1 through B2.5 - vary, indicating differing levels of perceived support and autonomy within the organisation. The mean score for *receiving support from superiors* (B2.1) is 2.86 with a standard deviation of 1.02, suggesting a relatively positive perception among respondents, with a moderate level of agreement that they

received support at work. The significance of this finding is underscored by a binomial p-value of less than 0.001, indicating a statistically significant deviation from neutrality, hence affirming the importance of superior support in the perception of a supportive work environment. Conversely, "*the sense of belonging during Covid and autonomy in the job"* (B2.2) yielded a mean score of 2.39 with a standard deviation of 0.83, highlighting a more critical view among respondents. This lower mean, coupled with a p-value of less than 0.001, signifies a substantial discrepancy from the neutral benchmark, suggesting that improvements could be made in fostering a sense of belonging and autonomy within the organisation. "*Freedom to express opinions without fear of negative repercussions"* (B2.3) also showed a relatively low mean score of 2.41 with a standard deviation of 0.95. The significance of this result is reinforced by a p-value of less than 0.001, indicating that respondents perceive a notable restriction in expressing opinions freely, which could potentially impact the overall sense of a supportive work environment.

"*The clarity in the communication of work schedules during Covid"* (B2.4) received a mean score of 2.79 with a standard deviation of 0.84. Despite being under the neutral threshold, the relatively higher mean score compared to B2.2 and B2.3, alongside a p-value of less than 0.001, suggests that while there is room for improvement, the effort to communicate work schedules during the pandemic was somewhat effective.

Lastly, perceptions regarding "*manageable and motivating workloads''* (B2.5) yielded a mean score of 2.67 with a standard deviation of 0.95. This outcome, significantly deviating from the neutral point with a p-value of less than 0.001, suggests a moderate level of agreement that workloads are manageable and motivating, yet indicating potential areas for enhancement to further support employee motivation and well-being. Overall, the analysis highlights critical areas within the supportive work environment construct, particularly underlining the need for enhanced autonomy, freedom of expression, and a sense of belonging, despite the relatively more positive perceptions of superior support and communication of work schedules during Covid. These trends underscore the complexity of creating supportive work environments, especially in the

context of the Covid pandemic, and point to the significance of addressing these facets to foster a more supportive and inclusive organisational culture.

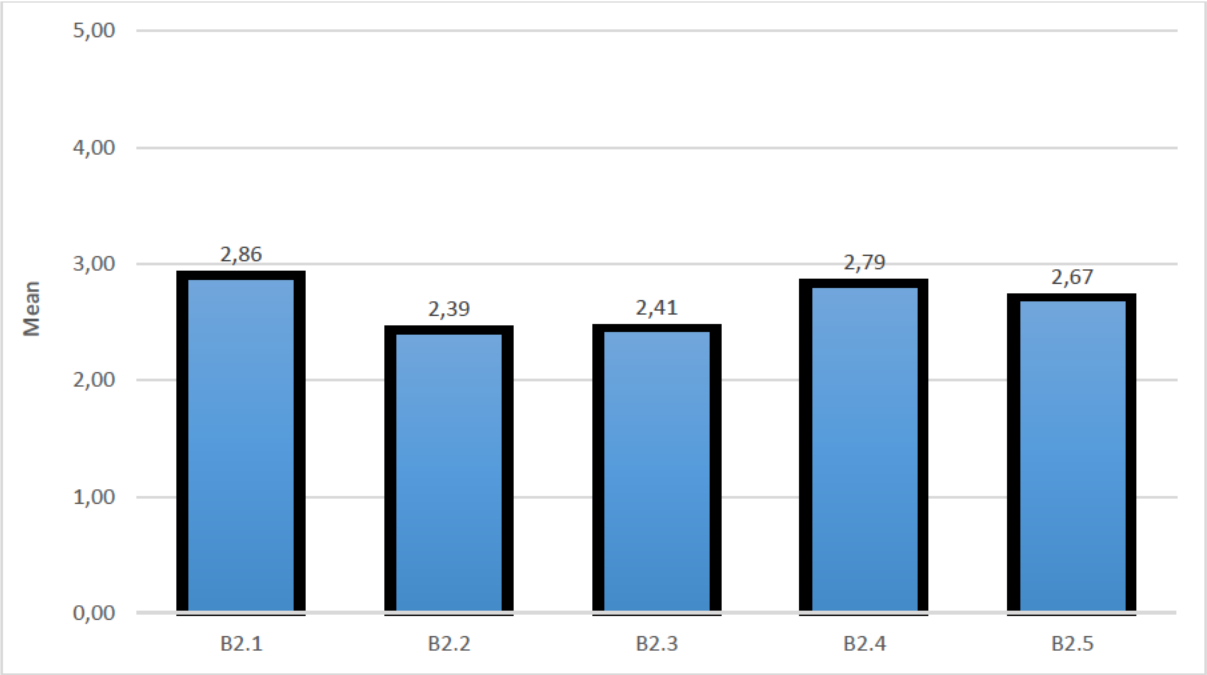


Figure 4.5: Supportive Work Environment

B3 Motivation through Stability and Theoretical Application

The "Motivation through Stability and Theoretical Application" sub-theme explores how employees perceive the role of employment stability, job security, and the implementation of motivational theories in enhancing their performance and engagement. This sub-theme aims to identify the extent to which a stable working environment and structured theoretical approaches to motivation contribute to employees' overall sense of purpose and drive in their roles. By examining these factors, the organisation can assess the importance of job stability and theoretical frameworks in fostering a motivated workforce and ensuring sustained performance and satisfaction.

Table 4.12: Motivation through Stability and Theoretical Application

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
B3.1	Proposed motivational theories should be adopted by the organisation to improve motivation of their employees	100	3.54	1.11	4.00	3.00	4.00	5.00	1.00	0.007
B3.2	Employment stability will motivate me to improve on my performance	100	3.20	1.33	4.00	2.00	4.00	5.00	1.00	0.089
B3.3	Having a sense of job security motivates me in my job	100	3.15	1.13	3.00	2.00	4.00	5.00	1.00	0.484

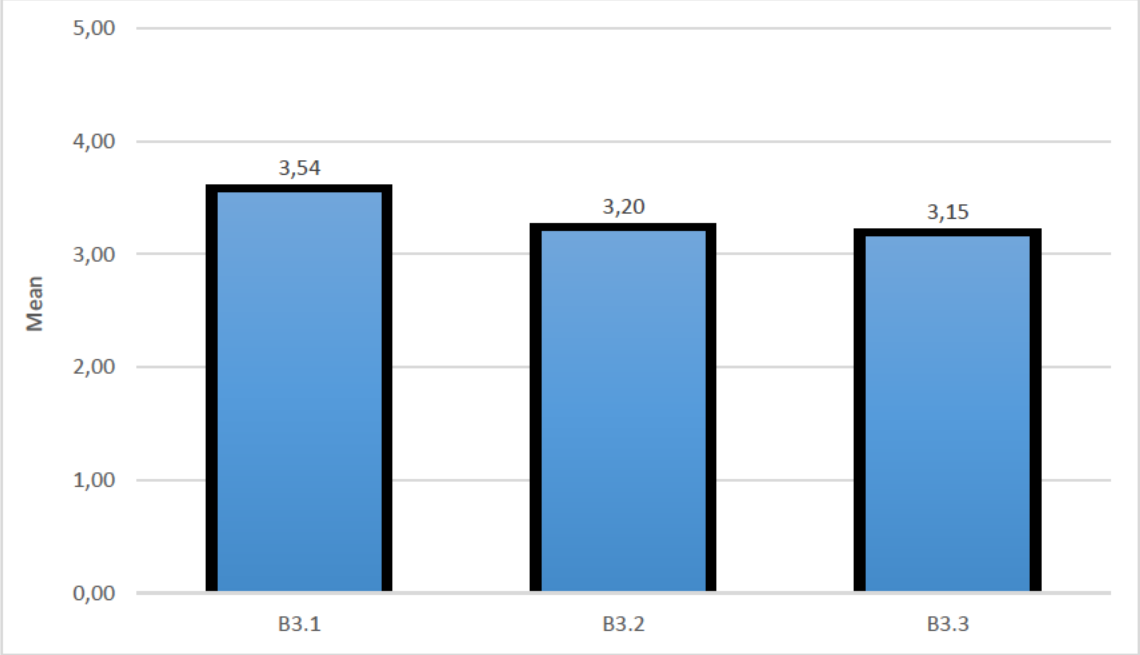


Figure 4.6: Motivation through Stability and Theoretical Application

The results (see Table 4.12 and Figure 4.6), provide an insight into perceptions regarding the impact of theoretical motivation models and employment stability on employee motivation.

- **Adoption of Motivational Theories (B3.1):** The data reveals a mean score of 3.54 with a standard deviation of 1.11, suggesting a positive inclination towards the adoption of proposed motivational theories within organisations. This is further supported by a median score of 4.00 and the interquartile range extending from 3.00 to 4.00, indicating a consensus among a significant portion of the respondents. The binomial p-value of 0.007 is statistically significant, suggesting a deviation from neutrality and underscoring the belief among participants that the application of these theories could effectively enhance employee motivation.

- **Employment Stability as a Motivator (B3.2):** With a mean score of 3.20 and a standard deviation of 1.33, this aspect reflects a moderate level of agreement that employment stability can motivate individuals to improve their performance. The distribution of responses, indicated by a median of 4.00 and a 25th percentile at 2.00, points to a divided perception among respondents, though the trend leans towards the positive. The p-value of 0.089, while not as strongly significant as B3.1, suggests there is still some evidence to support the hypothesis that employment stability is a motivational factor, albeit with less consensus.

- **Job Security as a Motivational Factor (B3.3):** This item presents a mean score of 3.15 with a standard deviation of 1.13, suggesting a slightly positive perception of job security as a motivating factor. The median score of 3.00 aligns with the mean, indicating a balanced view among participants. However, the binomial p-value of 0.484 indicates no significant deviation from neutrality, suggesting that while job security is considered important, its direct impact on motivation may not be as pronounced or universally agreed upon as the impact of adopting motivational theories.

These findings provided an understanding of motivation within the workplace, with a clear preference for the theoretical underpinnings of motivation to be more widely adopted and recognised within organisational strategies.

B4 Impact of Uncertainty and Organisational Changes

The "Impact of Uncertainty and Organisational Changes" sub-theme investigates how job security concerns and organisational adaptations, particularly during the COVID-19 pandemic, have affected employee motivation. It examines the demotivating effects of restricted workplace access, changes in organisational culture, and broader uncertainties brought about by the pandemic. This sub-theme highlights the psychological and professional challenges employees faced during periods of instability and transformation, offering valuable insights into how organisations can better support their workforce during times of crisis and change.

Table 4.13: Impact of Uncertainty and Organisational Changes

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
B4.1	Uncertainty of my job security is demotivating	100	4.17	0.91	4.00	4.00	5.00	5.00	1.00	< 0.001
B4.2	Being denied access to my workplace during Covid- pandemic demotivated me	100	4.00	0.91	4.00	4.00	5.00	5.00	1.00	< 0.001
B4.3	My organisation's work culture adopted during Covid demotivated employees	100	3.63	1.07	4.00	3.00	4.00	5.00	1.00	< 0.001
B4.4	Covid - has had an impact on employee motivation	100	4.13	0.85	4.00	4.00	5.00	5.00	1.00	< 0.001

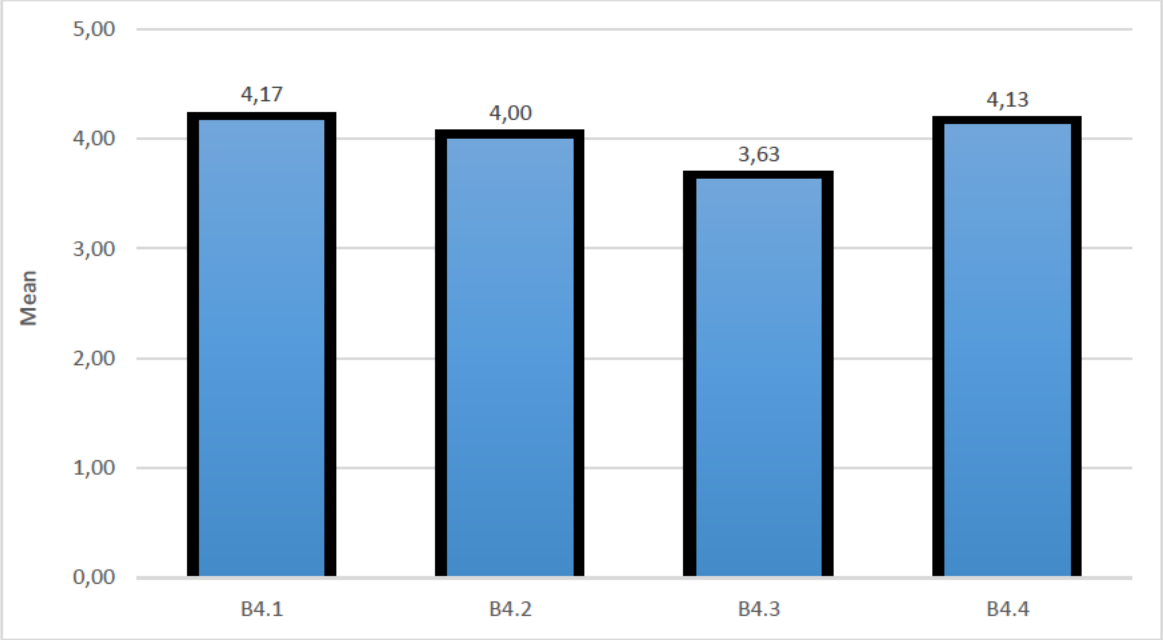


Figure 4.7: Impact of Uncertainty and Organisational Changes

The results in Table 4.13 And Figure 4.7, relate to the impact of uncertainty and organisational changes, particularly in the context of the COVID-19 pandemic, offers a compelling insight into how these factors affect employee motivation.

- **Uncertainty of Job Security (B4.1):** A mean score of 4.17 with a standard deviation of 0.91 illustrates a significant concern among employees regarding the uncertainty of their job security and its demotivating impact. The median and 25th percentile scores of 4.00, alongside a 75th percentile score of 5.00, indicate a strong consensus towards this concern. The binomial p-value of less than 0.001 strongly suggests that the uncertainty of job security is a significant demotivating factor for employees.
- **Access to Workplace during COVID-19 (B4.2):** This aspect garnered a mean score of 4.00 and a standard deviation of 0.91, reflecting a common sentiment that being denied access to the workplace during the pandemic was demotivating. The alignment of the median and 25th percentile scores at 4.00, with a 75th percentile score at 5.00, underscores the uniformity in respondents' perceptions. The binomial p-value of less than 0.001 further confirms the statistically significant demotivating effect of this denial.

- **Work Culture Changes during COVID-19 (B4.3):** The data shows a mean score of 3.63 with a standard deviation of 1.07, indicating a moderate to high perception that the organisation's work culture, as Source during COVID-19, demotivated employees. The scores, with a median of 4.00 and a 25th percentile at 3.00, reflect a range of experiences but generally suggest dissatisfaction. The binomial p-value of less than 0.001 highlights the significant impact of these changes on motivation.

- **Overall Impact of COVID-19 on Motivation (B4.4):** With a mean score of 4.13 and a standard deviation of 0.85, this item suggests a strong agreement among participants that COVID-19 had a demotivating impact on employees. The clustering of responses with a median and 25th percentile at 4.00, and a 75th percentile at 5.00, illustrates a widespread acknowledgment of the pandemic's negative effects. The binomial p-value of less than 0.001 validates the substantial influence of COVID-19 on employee motivation.

These findings explain the considerable impact of uncertainty and organisational changes, exacerbated by the COVID-19 pandemic, on employee motivation. The significant levels of agreement on the demotivating effects of job security uncertainty, denied workplace access, altered work culture, and the overarching impact of the pandemic, as evidenced by the low p-values, underscored the need for organisations to address these concerns. Mitigating the negative effects of such factors could involve enhancing communication, offering psychological support, and adapting work cultures to be more inclusive and flexible, thereby fostering a more resilient and motivated workforce in the face of uncertainty. The findings associated with the B4.1 statement related to *Uncertainty of Job Security,* highlights a noteworthy concern among employees. This study indicates that during the COVID-19 pandemic, employees within the mining industry faced uncertainties regarding their job security, irrespective of their job title, educational background, or type of employment. The results of this study revealed that Tronox had to reduce the number of employees on site, resulting in those not classified as essentially being placed on unpaid leave. LeNoble, Naranjo, Shoss and Horan (2022: 711) stated that the COVID-19 pandemic had been identified as a

transboundary challenge that had resulted in significant uncertainty for organisations and their employees. This pandemic had adversely affected the economy and production in the mining sector, leading to job security concerns. In response, many mining companies undertaken restructuring initiatives as a cost-saving measure.

4.7.2 SECTION C (JOB SECURITY)

This section examines employees' perceptions of job security and its impact on their professional and personal well-being. It explores how various factors, including employment stability, career prospects, organisational policies, and external challenges such as the Covid-19 pandemic, influence feelings of security and their subsequent effects on motivation, performance, and overall satisfaction. By analysing these dimensions, the section aims to provide a comprehensive understanding of the role job security plays in shaping workplace experiences and identifying areas for improvement to foster a more stable and supportive organisational environment.

C1 Job Security and Career Implications of COVID-19

The "Job Security and Career Implications of Covid-19" sub-theme examines how the pandemic has influenced employees' perceptions of job stability and their professional trajectories. This sub-theme highlights the negative effects of low job security on daily routines and performance, the impact of industry-specific challenges such as the closure of mining sites, and the disruptions to normal work processes during lockdown periods. It also explores how the pandemic has prompted changes in career plans and heightened job-related anxieties. By analysing these factors, this sub-theme aims to uncover the broader implications of job insecurity on employees' careers and organisational outcomes during a global crisis.

Table 4.14: Job Security and Career Implications of Covid-19

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
C1.1	Low level of job security negatively affect day to day routine with high possibility of causing employee to make mistakes?	100	4.11	0.83	4.00	4.00	5.00	5.00	1.00	< 0.001
C1.2	Closure of mining sites affected my job security	100	3.97	0.94	4.00	4.00	5.00	5.00	1.00	< 0.001
C1.3	My normal job has effectively halted during lockdown period	100	3.97	1.01	4.00	4.00	5.00	5.00	1.00	< 0.001
C1.4	The pandemic has directly changed my career plan	100	3.71	0.80	4.00	3.00	4.00	5.00	1.00	< 0.001
C1.5	I am anxious that my job might be affected	100	4.15	0.83	4.00	4.00	5.00	5.00	1.00	< 0.001

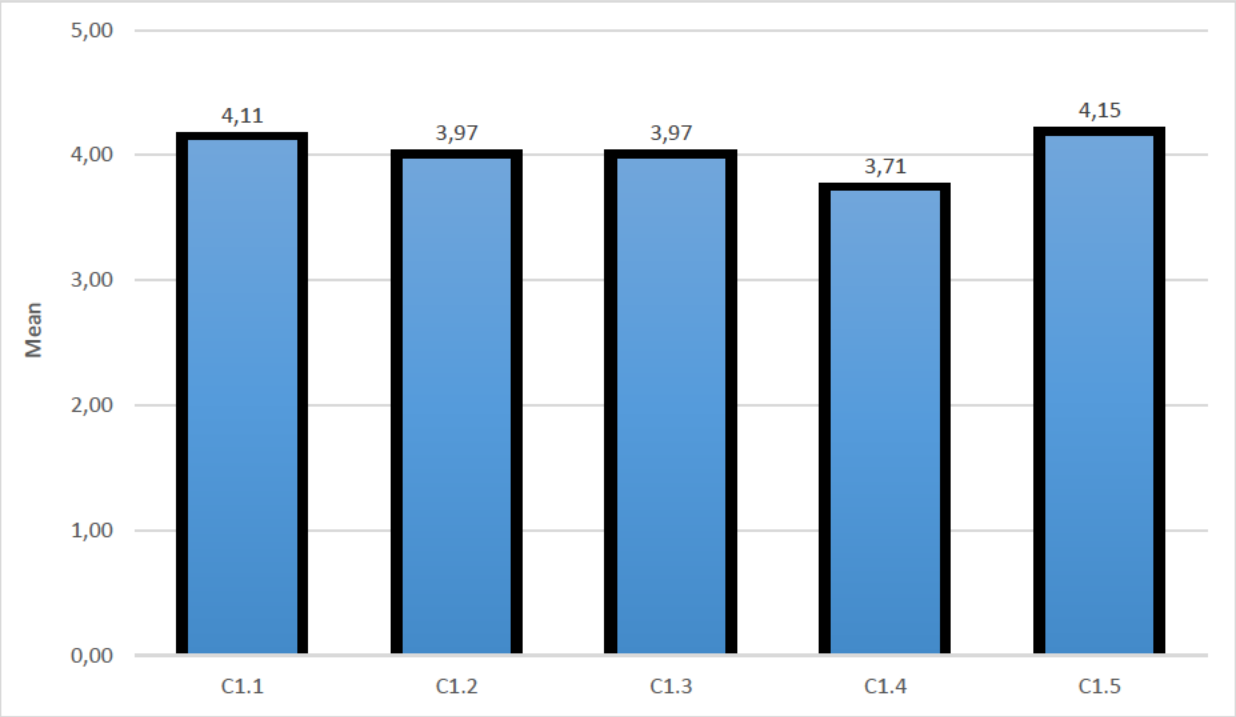


Figure: 4.8: Job Security and Career Implications of Covid-19

- **Impact on Daily Routines and Mistake Propensity (C1.1):** With a mean score of 4.11 and a standard deviation of 0.83, the data suggests a strong consensus that a low level of job security, exacerbated by the pandemic, negatively affects employees' day-to-day routines, potentially leading to an increased likelihood of

mistakes. The median and 25th percentile scores at 4.00, ascending to a 75th percentile score of 5.00, underscore the widespread concern among respondents. The binomial p-value of less than 0.001 indicates a statistically significant concern over job security affecting performance.

- **Closure of Mining Sites and Job Security (C1.2):** The mean score of 3.97, with a standard deviation of 0.94, reflects concerns specific to the closure of mining sites and its effects on job security. The data, centred around a median of 4.00 and quartiles indicating a lean towards higher concern, with a p-value of less than 0.001, highlights the significant impact of such closures on perceived job security among affected employees.
- **Halting of Normal Jobs During Lockdown (C1.3):** Similarly, a mean score of 3.97 and a standard deviation of 1.01 for the effect of lockdowns on job continuity suggests a notable disruption in normal job functions. The consistency of the median and 25th percentile at 4.00, together with a significant p-value, underscores the widespread recognition of the lockdown's disruptive impact on employment.
- **Changes to Career Plans (C1.4):** The mean score of 3.71, with a relatively lower standard deviation of 0.80, indicates that the pandemic has led many to reassess or alter their career trajectories. The median score of 4.00 points towards a general agreement, with the p-value of less than 0.001 signifying that these changes are not merely anecdotal but represent a significant shift in career planning among the respondents.
- **Anxiety Over Job Security (C1.5):** The data reveals a mean score of 4.15 and a standard deviation of 0.83, reflecting high levels of anxiety regarding job security amidst the pandemic. The alignment of median and 25th percentile scores at 4.00, with a 75th percentile at 5.00, emphasises the acute concern over potential job loss. The p-value of less than 0.001 further validates the significant anxiety experienced by employees concerning their job security.

The findings indicate the effects of the COVID-19 pandemic on job security and career prospects, highlighting a significant shift in employee sentiments and behaviours. The universally low p-values across all items indicate these are not isolated concerns but pervasive issues, suggesting the need for targeted interventions to mitigate the adverse effects of the pandemic on employment and career progression. Strategies may include enhanced communication about job security, support for career development, and mental health resources to address anxiety and adapt to the changing work environment.

The study findings on the "*Closure of Mining Sites and Job Security"* item highlighted specific concerns regarding the closure of the mining site and its implications for job security. Several employees were impacted during this transition. According to Galas *et al*. (2021: 18), globally a number of mines that were approaching the final stage of production, a significant drop in prices and a downturn in the commodities markets, particularly when there were no indications of a swift recovery, prompted a more expedited decision to cease operations.

C2 Pandemic's Influence on Job Risk and Working Conditions

The *"Pandemic's Influence on Job Risk and Working Conditions"* sub-theme explores the wide-ranging effects of the Covid-19 pandemic on workplace dynamics and employee well-being. It examines how the pandemic has heightened job risks, altered working conditions, and introduced financial and operational uncertainties for employees. This sub-theme delves into issues such as the enforcement of safety precautions, changes to working hours, and shifts in employment conditions, providing insights into how these factors have reshaped the work environment and affected employees' perceptions of stability and job security. Through this analysis, the sub-theme aims to highlight critical areas for organisational adaptation and support during crises.

Table 4.15: Pandemic's Influence on Job Risk and Working Conditions

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
C2.1	The pandemic has shuttered and threatened the company's production which led to job loss	100	4.13	0.76	4.00	4.00	5.00	5.00	1.00	< 0.001
C2.2	Pandemic resulted in financial anxiety and financial risk to all employees in my organisation	100	4.24	0.74	4.00	4.00	5.00	5.00	1.00	< 0.001
C2.3	My organisation enforced all safety precautionary majors to prevent employees from direct contact with COVID-	100	3.01	0.87	3.00	2.00	3.00	5.00	1.00	0.909
C2.4	Lockdown has negatively affected my working hours	100	4.14	0.78	4.00	4.00	5.00	5.00	1.00	< 0.001
C2.5	Covid- changed my work environment and employment conditions	100	4.11	0.76	4.00	4.00	5.00	5.00	1.00	< 0.001
C2.6	I worked long unapproved overtime hours during lockdown	100	4.03	0.78	4.00	4.00	4.00	5.00	1.00	< 0.001

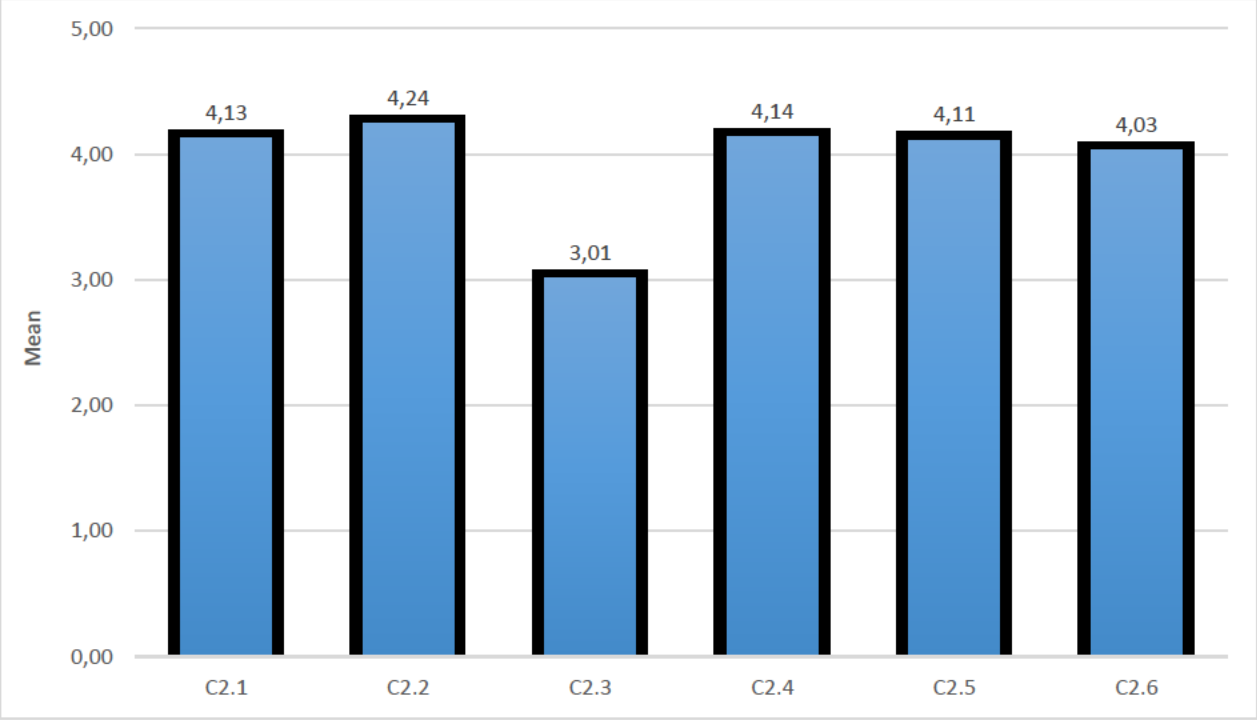


Figure: 4.9: Pandemic's Influence on Job Risk and Working Conditions

The survey data provides an overview of the pandemic's significant impact on job risk and working conditions.

- **Impact on Company Production and Job Security (C2.1):** With a mean score of 4.13 and a standard deviation of 0.76, the data indicates a strong perception among employees that the pandemic has severely threatened the company's production, leading to job losses. The median score of 4.00, coupled with a p-value of less than 0.001, underscores the significant impact of the pandemic on organisational stability and employee job security.

- **Financial Anxiety and Risk (C2.2):** The mean score of 4.24, alongside a standard deviation of 0.74, reflects widespread financial anxiety and perceived financial risk among employees due to the pandemic. This sentiment is reinforced by a median score of 4.00 and a p-value of less than 0.001, highlighting the profound financial uncertainties faced by employees during this period.

- **Safety Precautionary Measures (C2.3):** A mean score of 3.01 with a standard deviation of 0.87 indicates a moderate perception of the organisation's enforcement of safety measures to prevent direct contact with COVID-19. The median score of 3.00 and a p-value of 0.909 suggest that while some safety measures were implemented, the effectiveness and consistency of these measures may not have been uniformly recognized or deemed sufficient by all employees.

- **Changes in Working Hours Due to Lockdown (C2.4):** Respondents reported a mean score of 4.14 and a standard deviation of 0.78, indicating a strong consensus that lockdown measures have negatively affected their working hours. The significant p-value of less than 0.001 further emphasises the disruptive impact of lockdowns on regular working patterns.

- **Alteration in Work Environment and Employment Conditions (C2.5):** With a mean score of 4.11 and a standard deviation of 0.76, the data highlights a notable change in work environments and employment conditions as a result of the pandemic. The p-value of less than 0.001 substantiates the widespread recognition of these alterations among employees.

- **Unapproved Overtime Hours During Lockdown (C2.6):** The mean score of 4.03 and a standard deviation of 0.78 reflect the issue of long, unapproved overtime hours during the lockdown, indicating a significant shift in work demands. The uniformity of responses, with a median score of 4.00 and a p-value of less than 0.001, points to the extensive nature of this concern among the workforces.

Collectively, these findings show the multifaceted impact of the pandemic on job risk and working conditions, from heightened job insecurity and financial anxiety to significant changes in work environments and the imposition of unapproved overtime. The overwhelmingly low p-values across all dimensions confirm the statistical significance of these impacts, highlighting the necessity for organisations to address these challenges through enhanced support measures, transparent communication, and flexible working arrangements to mitigate the adverse effects of the pandemic on employees. The study findings related to the statement, "*Impact on Company Production and Job Security"* indicated that respondents acknowledged that the pandemic has significantly impacted the company's production, resulting in job losses due to the closure of the Hillendale mining site. According to Marimuthu *et al.* (2021: 428), the COVID-19 pandemic resulted in a deceleration of global economic activities. The enforcement of partial or full lockdowns and mandatory quarantine measures restricted individual movements, which contributed to economic stagnation. Consequently, mining companies experienced limitations on personnel movement within their facilities.

C3 Securing Employment through Qualifications and Performance

The "Securing Employment through Qualifications and Performance" sub-theme investigates the role of employees' skills, educational achievements, and work efforts in enhancing job security. It examines how the alignment of qualifications with organisational needs and meeting performance expectations, such as adhering to deadlines or taking on additional responsibilities, contribute to perceptions of job stability. This sub-theme also explores the broader impact of job security on the working environment, providing insights into how organisations can leverage employee development and performance management to foster a sense of stability and long-term career growth.

Table 4.16: Securing Employment through Qualifications and Performance

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
C3.1	Job security has a positive effect on my working environment	100	3.41	1.12	4.00	2.00	4.00	5.00	1.00	0.012
C3.2	My educational qualifications improved my chances of attaining job security	100	2.72	1.19	2.00	2.00	4.00	5.00	1.00	< 0.001
C3.3	If I meet deadline and work additional hours, I have a better chance of having job security	100	2.48	0.99	2.00	2.00	3.00	4.00	1.00	< 0.001

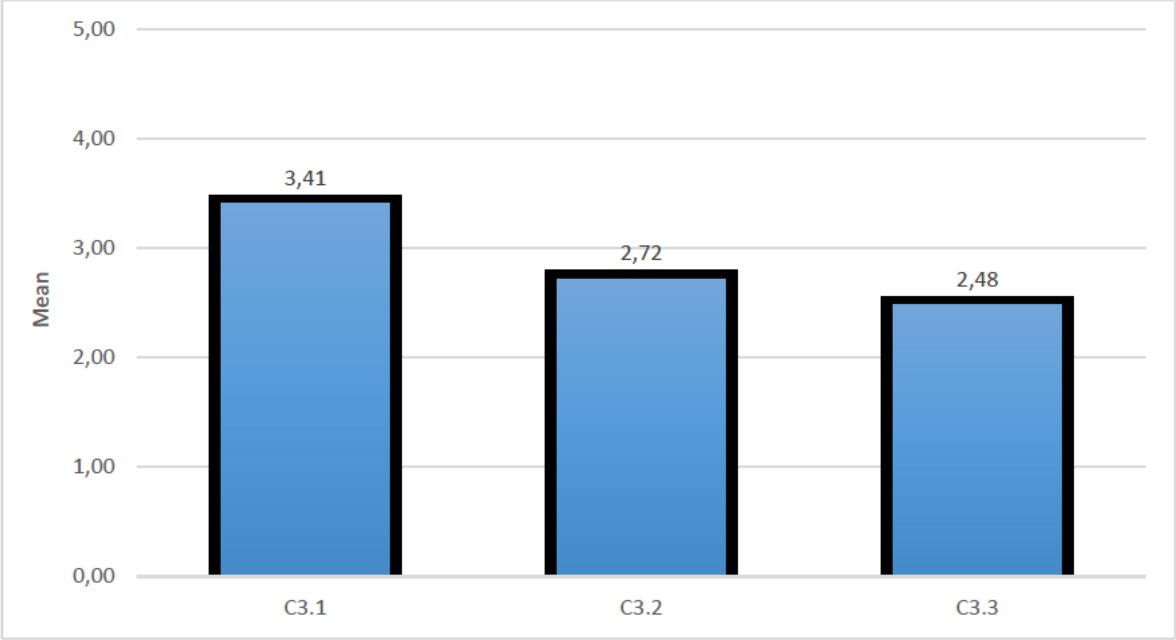


Figure 4.10: Securing Employment through Qualifications and Performance

The results in Tables 4.16 and Figure 4.10 provide insights into the perceptions of the respondents regarding the role of job security, educational qualifications, and work performance in securing employment.

- **Job Security and Working Environment (C3.1):** The mean score of 3.41 with a standard deviation of 1.12 indicates a positive perception of job security's effect on the working environment. The distribution of responses, with a median of 4.00 and a 25th to 75th percentile range from 2.00 to 4.00, suggests that respondents generally believe that job security contributes to a more positive working environment. The binomial p-value of 0.012 signifies a statistically significant deviation from neutrality, reinforcing the importance of job security in enhancing the workplace atmosphere.

- **Educational Qualifications and Job Security (C3.2):** With a mean score of 2.72 and a standard deviation of 1.19, there appears to be a more mixed perception regarding the impact of educational qualifications on attaining job security. The median score of 2.00, coupled with a range from the 25th percentile at 2.00 to the

75th percentile at 4.00, indicates variability in how respondents view the role of their educational background in securing employment. The binomial p-value of less than 0.001 suggests a significant discrepancy from neutrality, indicating that not all respondents view educational qualifications as a strong determinant of job security.

- **Performance, Deadlines, and Job Security (C3.3):** The data shows a mean score of 2.48 with a standard deviation of 0.99, reflecting a scepticism towards the notion that meeting deadlines and working additional hours directly translates to job security. The median score of 2.00 and a narrow interquartile range from 2.00 to 3.00 highlight a prevalent uncertainty or disbelief in performance-based job security. The binomial p-value of less than 0.001 underscores the significant divergence from the neutral stance, suggesting that additional factors beyond mere performance metrics are at play in securing employment stability.

In summary, the findings indicated a complex relationship between job security, educational qualifications, and work performance. While there is a positive perception of job security's impact on the working environment, the role of educational qualifications and the effectiveness of meeting performance metrics (such as deadlines and additional hours) in ensuring job security are viewed with more scepticism. These insights underscore the multifaceted nature of employment security, suggesting that a combination of factors, beyond qualifications and performance alone, contribute to perceived job stability. The statistical significance of the responses, particularly in the varied perceptions of educational qualifications and performance metrics, highlights the need for.

C4 Perceptions of Insecurity and Risk Among Workforce Segments

The "Perceptions of Insecurity and Risk Among Workforce Segments" sub-theme explores employees' feelings of vulnerability and the factors contributing to their perceptions of job insecurity. It examines how management practices, such as a lack of appreciation or acknowledgment, affect employees' sense of stability. Additionally, it

investigates the heightened risks faced by fixed-term, contract, and contingent workers compared to permanent staff. This sub-theme also delves into employees' general feelings of job-related threats, offering insights into the disparities in job security across workforce segments and highlighting the need for equitable and supportive organisational practices.

Table: 4.17: Perceptions of Insecurity and Risk Among Workforce Segments

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum	Binomial p-value (cut off = 3.0)
C4.1	Management does not appreciate or acknowledge my efforts which affects my job security	100	3.23	0.91	3.00	3.00	4.00	5.00	1.00	0.133
C4.2	The job security of fixed term, contractors and contingent workers are at a higher risk than permanents	100	3.53	1.43	4.00	2.00	5.00	5.00	1.00	0.035
C4.3	I feel threatened at my job	100	3.83	1.24	4.00	3.00	5.00	5.00	1.00	< 0.001

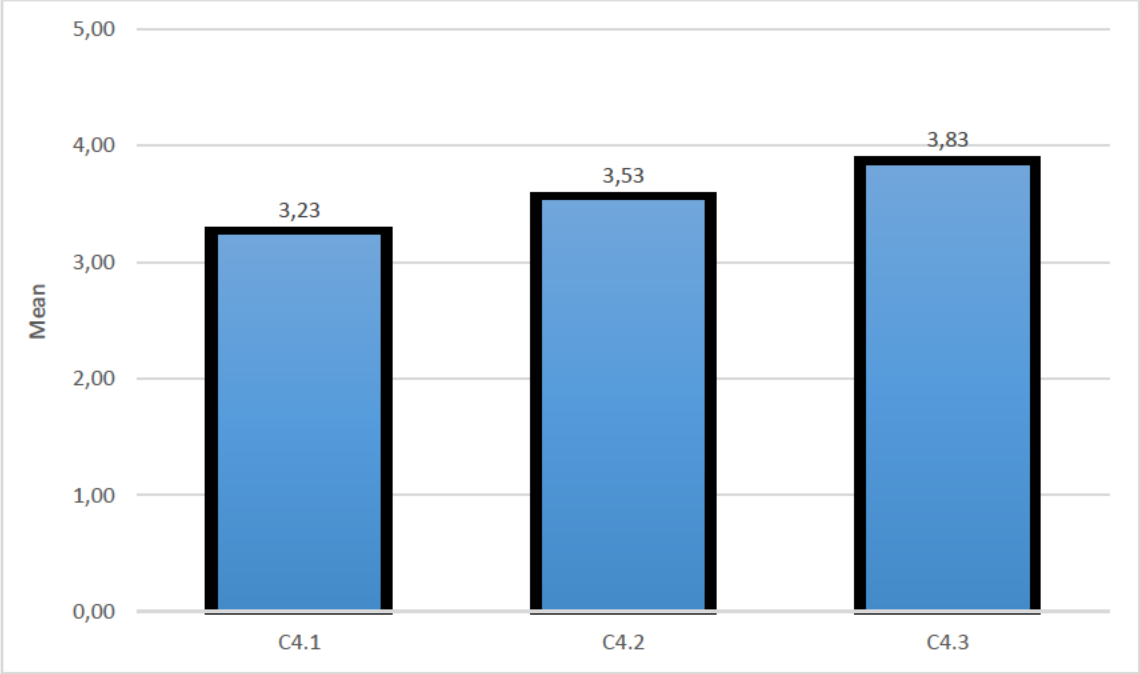


Figure 4.11: Perceptions of Insecurity and Risk Among Workforce Segments

The results, which can be viewed in Table 4.17 and Figure 4.11, show the perceptions of insecurity and risk among various workforce segments, focusing on factors such as management appreciation, job security differences between permanent and non-permanent staff, and general feelings of being threatened at work.

- **Management Appreciation and Job Security (C4.1):** The mean score of 3.23, with a standard deviation of 0.91, indicates a moderate level of concern among employees regarding the extent to which management's lack of appreciation or acknowledgment impacts their job security. The median value of 3.00, alongside the 25th and 75th percentiles, suggests that perceptions are somewhat mixed but lean towards agreement. However, the binomial p-value of 0.133 suggests that this perception is not significantly different from neutrality at the conventional levels of statistical significance, indicating a varied experience among the workforces.

- **Job Security of Non-Permanent Workers (C4.2):** A mean score of 3.53 and a relatively high standard deviation of 1.43 reflect a significant concern that job security for fixed-term, contractors, and contingent workers is perceived to be at a higher risk compared to permanent employees. The median score of 4.00 reinforces the concern that non-permanent positions are seen as less secure. The binomial p-value of 0.035 indicates that this view is statistically significant, suggesting a widespread belief in the heightened vulnerability of these workforce segments to job insecurity.

- **Feeling Threatened at Work (C4.3):** With a mean score of 3.83 and a standard deviation of 1.24, this metric strongly indicates that a considerable portion of the workforce feels threatened in their job position. The median score of 4.00, along with the 25th and 75th percentiles, points towards a significant number of employees experiencing feelings of insecurity. The binomial p-value of less than 0.001 is statistically significant, highlighting a pervasive sense of threat among employees concerning their job security.

These findings explain a complex picture of workforce perceptions regarding job security and the impact of workplace dynamics on these perceptions. Notably, the significant concern among non-permanent workers about their job stability underscores the need for organisations to address the disparities in perceived job security between different employment statuses. Additionally, the general feeling of being threatened at work suggests an underlying issue with workplace culture and employee relations that could have long-term implications for organisational health and employee well-being. Organisations may need to consider strategies for enhancing communication, recognition, and support for all employees, with particular attention to the unique challenges faced by non-permanent staff, to mitigate these perceptions of insecurity and risk. The overall average score for each dimension (EM and JS) was also determined. The results are presented in Table 4.18.

Table 4.18: The overall average score

		Count	Mean	Standard Deviation	Median	Percentile 25	Percentile 75	Maximum	Minimum
B	Employee Motivation	100	3.03	0.57	3.03	2.62	3.47	4.29	1.76
C	Job Security	100	3.69	0.47	3.76	3.59	3.94	4.71	1.76

As illustrated in Table 4.18, in overall there is no significant difference between the number of respondents who agreed and disagreed ($p = 0.998$; binomial cut-off = 3.0) for EM. However, for JS, there is a significant difference in the scoring ($p < 0.001$). The higher mean implies an overall level of higher agreement.

A summary of the significant results follows in Table 4.19. All other tests were not significant.

Table 4.19: Impact of biographical factors on overall EM and JS

The distribution of **Employee Motivation** is the same across categories of **Gender**.	Independent-Samples Kruskal-Wallis Test	0.002	Reject the null hypothesis.
The distribution of **Employee Motivation** is the same across categories of **Racial group**.	Independent-Samples Kruskal-Wallis Test	0.002	Reject the null hypothesis.
The distribution of **Employee Motivation** is the same across categories of **Present position**.	Independent-Samples Kruskal-Wallis Test	0.025	Reject the null hypothesis.
The distribution of **Employee Motivation** is the same across categories of **Marital status**.	Independent-Samples Kruskal-Wallis Test	0.033	Reject the null hypothesis.
The distribution of **Employee Motivation** is the same across categories of **Highest academic achievement**.	Independent-Samples Kruskal-Wallis Test	0.044	Reject the null hypothesis.
The distribution of **Job Security** is the same across categories of **Highest academic achievement**.	Independent-Samples Kruskal-Wallis Test	0.010	Reject the null hypothesis.
The distribution of **Employee Motivation** is the same across categories of **Academic qualifications**.	Independent-Samples Kruskal-Wallis Test	0.009	Reject the null hypothesis.

As illustrated in Table 4.19, the distribution of Employee Motivation is the same across categories of Racial group ($p = 0.002$). This implies that EM was different across the different race groups.

To identify the exact racial differences, the pairwise comparison table (see Table 4.20), is inspected.

Table 4.20 shows the significant differences between the race groups for EM.

The significance levels presented for employee motivation among different racial groups offer valuable insights into the disparities in motivating factors experienced by Indian and African employees in comparison to their White counterparts. For instance, the Indian-White comparison yielded a p-value of 0.003, indicating a strong statistical significance in the differences observed in motivation levels. This suggests that Indian employees might experience distinct motivational challenges or factors that set them apart from White employees, prompting organisations to consider tailored strategies that address these specific needs to enhance engagement and productivity.

Table 4.20: Pairwise Comparison Table

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
Indian- African	12.826	7.062	1.816	0.069	0.416
Indian-White	-34.048	11.398	-2.987	0.003	0.017
Indian-Coloured	43.626	14.304	3.050	0.002	0.014
African-White	-21.222	10.330	-2.054	0.040	0.240
African-Coloured	-30.800	13.469	-2.287	0.022	0.133
White-Coloured	9.578	16.169	0.592	0.554	1.000

Sample 1-Sample 2	Sig.
Indian-White	0.003
Indian-Coloured	0.002
African-White	0.040
African-Coloured	0.022

Similarly, the comparison between African and White employees revealed a significance level of 0.04. While this also indicates a statistically significant difference, it is slightly less pronounced than the Indian-White comparison. The results imply that African employees, like their Indian counterparts, face unique motivational dynamics in comparison to White employees, potentially rooted in cultural, social, or organisational factors. To determine the actual direction of the differences, the means tables are investigated.

Table 4.21: The Mean Value for Race

		African	Coloured	Indian	White
B	Employee Motivation	3.01	3.61	2.78	3.47
C	Job Security	3.64	3.88	3.73	3.86

Table 4.21 provides, a comparison of the means between race groups. Indications are that Whites (3.47) are (significantly) more motivated than Indians (2.78) are with regard to employee motivation. In relation to job security, the findings showed that the Coloured employees (3.88) indicated a slightly higher sense of job security in comparison to the other race groups, namely Whites (3.86); Indians (3.73) and African (3.64).

Table 4.22: The Mean Values for Gender

		Female	Male
B	Employee Motivation	3.37	2.95
C	Job Security	3.79	3.67

Table 4.22 depicts the mean values which indicate notable differences in employee motivation and job security perceptions between female and male employees. For employee motivation, females report a mean value of 3.37, which is significantly higher than the male mean of 2.95. This disparity suggests that female employees may feel more motivated in their work environment compared to their male counterparts. In terms of job security, both genders reflect positive perceptions, with females scoring a mean of 3.79 and males at 3.67. While the female mean remains higher, the gap is smaller compared to that in employee motivation. This indicates that females generally felt more secure in their job roles compared to males. However, both groups expressed relatively high levels of job security, suggesting that the organisation has established a stable working environment.

Table 4.23: The Mean Values for Age Group

		18-25	26-30	31-35	36-40	45-50	36-40
B	Employee Motivation	2.94	3.07	2.87	2.88	3.25	2.92
C	Job Security	3.86	3.70	3.52	3.43	3.79	3.78

Table 4.23 provides the mean values for employee motivation across different age groups indicating variability in how motivated employees feel based on their age. The 18-25 age group exhibits the lowest motivation score with a mean of 2.94, while the 45-50 age group had the highest at 3.25. This suggests that younger employees may be facing greater motivational challenges, potentially due to a lack of experience or engagement opportunities at the early stages of their careers. In contrast, older employees may derive more satisfaction and assurance from their roles, reflecting greater motivation levels that could stem from career progression, goal achievement, or alignment with their professional aspirations.

In terms of job security, the mean scores are relatively consistent across the age groups, with the 18-25 group again showing a noteworthy score of 3.86. The highest among all age categories, while the 36-40 age group has the lowest at 3.43. This indicates that younger employees feel relatively secure in their positions, while older employees report slightly lower perceptions of job security, which may be influenced by factors such as economic fluctuations or job market competition. Overall, the results emphasise the need for organisations to understand the nuanced experiences of different age groups, focusing on enhancing engagement and security measures tailored to diverse age demographics to foster a more cohesive and motivated workforce.

4.8 CROSSTABULATION

This section provides a summary of the crosstabulations.

The influence of biographical factors on the dimensions of Employee Motivation (EM) and Job Security (JS) was analysed using the Independent Samples Kruskal-Wallis (KW) Test. Significant results indicate that certain biographical factors, such as gender, race,

position, marital status, academic achievement, and qualifications, affect how respondents perceive motivation and job security. A summary of the key findings follows.

4.8.1 Employee Motivation (EM)

1. Gender:
    - The distribution of EM is significantly different across gender categories (p = 0.002).
    - This indicates that male and female respondents differ in their perception of motivation.
2. Racial Group:
    - Employee Motivation varies significantly across racial groups (p = 0.002). Pairwise comparisons reveal the following significant differences:
        - Indian-White (p = 0.003): Whites are significantly more motivated (Mean = 3.47) than Indians (Mean = 2.78).
        - Indian-Coloured (p = 0.002): Coloureds (Mean = 3.61) report higher motivation than Indians.
        - African-White (p = 0.040): Whites (Mean = 3.47) are more motivated than Africans (Mean = 3.01).
        - African-Coloured (p = 0.022): Coloureds exhibit higher motivation than Africans.
3. Present Position:
    - Employee Motivation differs significantly across job positions (p = 0.025). For example:
        - Junior staff are significantly less motivated compared to supervisory and managerial staff.

4. Marital Status:
    - Marital status influences EM significantly (p = 0.033). Pairwise comparisons show notable differences:
        - Divorced respondents report significantly higher motivation than single and married respondents.

5. Highest Academic Achievement:
    - EM differs significantly across levels of academic achievement ($p = 0.044$). Respondents with higher qualifications report varied levels of motivation.
6. Academic Qualifications:
    - EM also varies significantly with academic qualifications ($p = 0.009$), further reinforcing the influence of educational attainment on motivation.

4.8.2 Job Security (JS)

1. Highest Academic Achievement:
    - Job Security significantly differs across academic achievement levels ($p = 0.010$). Pairwise comparisons show:
        - Respondents with higher academic achievements report higher perceptions of job security.

4.8.3 Trends and Observations

- The significant differences in EM and JS across biographical categories highlight the role of personal and professional background in shaping workplace experiences.
- Racial and positional disparities are particularly noteworthy, with Whites and managerial staff reporting higher motivation levels.
- Academic qualifications and achievements play a dual role, influencing both motivation and perceived job security, suggesting that higher education levels may enhance workplace perceptions.

4.8.4 IMPLICATIONS

These findings underscore the need for tailored organisational strategies to address disparities in motivation and job security. Efforts should focus on fostering inclusivity, providing equal opportunities for recognition and growth, and addressing gaps in support across different demographic groups.

4.9 CORRELATIONS

Schober, Boer and Schwarte (2018: 1763) define correlation as a statistical measure that describes the extent to which two variables are related or move together in a predictable manner. It indicates the strength and direction of the relationship between two or more variables. Bivariate correlation was also performed on the data. The results are shown below. The results indicate the following patterns. Positive values indicate a directly proportional relationship between the variables, and a negative value indicates an inverse relationship. All significant relationships are indicated by a * or **. Table 4.23 provides a comprehensive view of the correlations between various factors affecting employee motivation, job security, and the impact of external events such as the COVID-19 pandemic. One of the most striking aspects is the strength of the correlation between Personal Motivation and Reward System and Motivation through Stability and Theoretical Application (0.740**), indicating that when employees feel their personal motivations align with a structured reward system, their overall motivation is significantly enhanced. This suggests that organisations focusing on creating robust personal motivation strategies and connecting them to reward systems could lead to higher levels of employee engagement and productivity. Additionally, the correlation between Supportive Work Environment and Personal Motivation (0.539**) emphasises the importance of fostering a workplace that encourages support and collaboration. Given that the significance level (0.000) for both correlations is below the conventional threshold (typically 0.05), we can confidently assert that these relationships are statistically significant, reinforcing the idea that an environment where employees feel encouraged and valued can greatly enhance their motivation.

Table 4.23: Correlations

		Personal Motivation and Reward System	Supportive Work Environment	Motivation through Stability and Theoretical Application	Impact of Uncertainty and Organisational Changes	Job Security and Career Implications of Covid-19	Pandemic's Influence on Job Risk and Working Conditions	Securing Employment through Qualifications and Performance	Perceptions of Insecurity and Risk Among Workforce Segments
Personal Motivation and Reward System	Pearson Correlation	--							
	N	100							
Supportive Work Environment	Pearson Correlation	0,539**	--						
	Sig. (2-tailed)	0.000							
	N	100	100						
Motivation through Stability and Theoretical Application	Pearson Correlation	0,740**	0,396**	--					
	Sig. (2-tailed)	0.000	0.000						
	N	100	100	100					
Impact of Uncertainty and Organisational Changes	Pearson Correlation	-0.108	-0.173	0.009	--				
	Sig. (2-tailed)	0.284	0.084	0.929					
	N	100	100	100	100				
Job Security and Career Implications of Covid-19	Pearson Correlation	-0.181	-0,250*	-0.025	0,566**	--			
	Sig. (2-tailed)	0.071	0.012	0.803	0.000				
	N	100	100	100	100	100			
Pandemic's Influence on Job Risk and Working Conditions	Pearson Correlation	0.111	0.006	0.173	0,606**	0,591**	--		
	Sig. (2-tailed)	0.271	0.955	0.086	0.000	0.000			
	N	100	100	100	100	100	100		
Securing Employment through Qualifications and Performance	Pearson Correlation	0,776**	0,561**	0,737**	-0.008	-0.111	0.089	--	
	Sig. (2-tailed)	0.000	0.000	0.000	0.938	0.272	0.381		
	N	100	100	100	100	100	100	100	
Perceptions of Insecurity and Risk Among Workforce Segments	Pearson Correlation	0.150	-0,222*	0,308**	0,198*	0,355**	0,413**	0.056	--
	Sig. (2-tailed)	0.137	0.026	0.002	0.049	0.000	0.000	0.577	
	N	100	100	100	100	100	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

On the flip side, the negative correlations associated with *Job Security and Career Implications of COVID-19* revealed complex dynamics at play during times of organisational change. The negative correlation with *Supportive Work Environment*

(-0.250*) suggests that a perceived lack of support can exacerbate feelings of insecurity regarding job stability, highlighting the urgent need for organisations to cultivate a more robust supportive environment, especially in uncertain times. The strong positive correlation (0.566**) with *Impact of Uncertainty and Organisational Changes* implies that as uncertainty increases, so too does the perceived instability of employment, which can adversely impact employee morale. Furthermore, the relationships around the pandemic's *Influence on Job Risk and Working Conditions* further illustrated how external factors influence employee perceptions of security. The correlations with perceptions of insecurity (0.355** and 0.413**) indicate that as risks associated with pandemic conditions rise, so too do concerns among employees regarding job security and safety. This underscores the critical need for organisations to address these concerns proactively through transparent communication and safety protocols.

1. Personal Motivation and Reward System

- Strong Positive Correlations:
    - Correlates significantly with Supportive Work Environment ($r = 0.539$, $p < 0.01$) and Motivation through Stability and Theoretical Application ($r = 0.740$, $p < 0.01$), suggesting that motivation is strongly linked to perceptions of support and stability.
    - A significant correlation with Securing Employment through Qualifications and Performance ($r = 0.776$, $p < 0.01$) highlights the importance of aligning qualifications and rewards to enhance motivation.
- Non-significant or Negative Correlations:
    - Shows no significant relationship with Impact of Uncertainty and Organisational Changes ($r = -0.108$, $p = 0.284$) or Job Security and Career Implications of Covid-19 ($r = -0.181$, $p = 0.071$), indicating that these factors may not directly affect personal motivation.

2. Supportive Work Environment

- Moderate Positive Correlations:
    - Correlates significantly with Motivation through Stability and Theoretical Application ($r = 0.396$, $p < 0.01$) and Securing Employment through Qualifications and Performance ($r = 0.561$, $p < 0.01$), suggesting that a supportive environment enhances motivation and career security.
    - A weak but significant inverse correlation with Perceptions of Insecurity and Risk Among Workforce Segments ($r = -0.222$, $p < 0.05$), indicating that higher perceptions of support are associated with reduced insecurity.
- Non-significant Relationships:
    - Does not significantly correlate with Pandemic's Influence on Job Risk and Working Conditions ($r = 0.006$, $p = 0.955$).

3. Motivation through Stability and Theoretical Application

- Strong Positive Correlations:
    - Highly correlated with Personal Motivation and Reward System ($r = 0.740$, $p < 0.01$) and Securing Employment through Qualifications and Performance ($r = 0.737$, $p < 0.01$), indicating that stability and theoretical frameworks strongly influence motivation.
- Non-significant Relationships:
    - Shows no significant correlation with Impact of Uncertainty and Organisational Changes ($r = 0.009$, $p = 0.929$) or Job Security and Career Implications of Covid-19 ($r = -0.025$, $p = 0.803$).

4. Impact of Uncertainty and Organisational Changes

- Strong Positive Correlations:
    - Highly correlated with Job Security and Career Implications of Covid-19 ($r = 0.566$, $p < 0.01$) and Pandemic's Influence on Job Risk and Working Conditions ($r = 0.606$, $p < 0.01$), indicating that organisational uncertainty during the pandemic impact’s perceptions of job security and risks.

- Non-significant or Negative Correlations:
    - No significant relationship with Personal Motivation and Reward System ($r = -0.108$, $p = 0.284$) or Securing Employment through Qualifications and Performance ($r = -0.008$, $p = 0.938$).

5. Job Security and Career Implications of Covid-19

- Strong Positive Correlations:
    - Strongly correlated with Pandemic's Influence on Job Risk and Working Conditions ($r = 0.591$, $p < 0.01$) and Impact of Uncertainty and Organisational Changes ($r = 0.566$, $p < 0.01$), highlighting the interconnectedness of job security with pandemic-related risks.
- Negative Correlations:
    - Weakly negatively correlated with Supportive Work Environment ($r = -0.250$, $p < 0.05$), suggesting that greater job insecurity diminishes perceptions of support.

6. Pandemic's Influence on Job Risk and Working Conditions

- Strong Positive Correlations:
    - Highly correlated with Impact of Uncertainty and Organisational Changes ($r = 0.606$, $p < 0.01$) and Job Security and Career Implications of Covid-19 ($r = 0.591$, $p < 0.01$), reinforcing the influence of pandemic-induced risks on job conditions.
- Non-significant Relationships:
    - Weak, non-significant correlation with Securing Employment through Qualifications and Performance ($r = 0.089$, $p = 0.381$).

7. Securing Employment through Qualifications and Performance

- Strong Positive Correlations:
    - Shows significant correlations with Personal Motivation and Reward System ($r = 0.776$, $p < 0.01$) and Supportive Work Environment ($r = 0.561$, $p < 0.01$), indicating that qualifications and job performance align with better motivation and perceived support.
- Non-significant Relationships:

- Weak or non-significant correlations with pandemic-related factors, such as Impact of Uncertainty and Organisational Changes (r = -0.008, p = 0.938).

8. Perceptions of Insecurity and Risk Among Workforce Segments

- Significant Positive Correlations:
  - Correlates with Impact of Uncertainty and Organisational Changes (r = 0.198, $p < 0.05$), Job Security and Career Implications of Covid-19 (r = 0.355, p < 0.01), and Pandemic's Influence on Job Risk and Working Conditions (r = 0.413, p < 0.01), suggesting that heightened risks and uncertainty contribute to perceptions of insecurity.
- Negative Correlations:
  - Inversely correlated with Supportive Work Environment (r = -0.222, $p < 0.05$), reflecting that insecurity is mitigated by better organisational support.

The correlation analysis underscores the intricate relationships among motivation, organisational support, stability, and pandemic-induced uncertainties. While supportive work environments and stability consistently enhance motivation and perceptions of security, pandemic-related factors like uncertainty and job risks exacerbate insecurities, influencing job satisfaction and performance. The findings suggest a need for organisations to prioritise support structures and address insecurity to improve employee outcomes.

4.10 RESEARCH OBJECTIVES

The research objectives focus on understanding the practices and dynamics of job security and employee motivation at Tronox KZN Sands, particularly during the challenges posed by the COVID-19 pandemic. These objectives aim to identify the key factors affecting employee experiences, examine the relationship between job security and motivation, and propose actionable solutions for improving organisational outcomes. The study leverages statistical and structural equation modelling (SEM) analyses to

provide evidence-based insights into the hypotheses, ensuring a comprehensive understanding of the research questions.

By addressing these objectives, the study seeks to contribute valuable knowledge to organisational strategies, particularly in the context of navigating crises and fostering a supportive and motivating work environment. Each objective is accompanied by hypotheses, with results substantiating the findings and offering practical recommendations for the organisation. Combined Hypotheses Testing and SEM Insights Based on Study Objectives

4.10.1 Objective 1: To determine the prevailing practices of job security at Tronox KZN Sands during the COVID-19 pandemic.

Hypothesis (H1): Job security practices at Tronox KZN Sands during COVID-19 significantly impacted employee experiences.

Null Hypothesis (H0): Job security practices at Tronox KZN Sands during COVID-19 did not significantly impact employee experiences.

Evidence: The chi-square and binomial test results indicated a significant relationship between job security and employee perceptions, with restructuring and salary cuts serving as notable demotivating factors. A binomial p-value of less than 0.001 for items related to job security perceptions (C1.1, C1.2, C4.2) supports rejecting the null hypothesis.

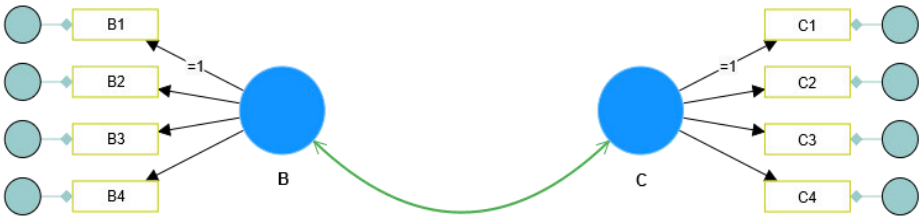


Figure 4.12: Structural Equation Modelling

SEM Insights: The SEM analysis presented above Figure 4.12 identifies key job security factors that significantly influence perceptions of job stability and perceived job

threats, particularly among non-permanent employees. High factor loadings for variables such as job threat perception (mean score 3.83, $p < 0.001$) and the disparity between permanent and non-permanent employees indicate strong concerns around job security for non-permanent staff.

Conclusion: There is sufficient evidence to conclude that job security practices significantly impacted employee experiences at Tronox KZN Sands during the pandemic.

4.10.2 Objective 2: To establish the relationship between job security and employee motivation at Tronox KZN Sands during COVID-19.

Hypothesis (H2): There is a positive correlation between job security and employee motivation at Tronox KZN Sands during COVID-19.

Null Hypothesis (H0): There is no correlation between job security and employee motivation at Tronox KZN Sands during COVID-19.

Evidence: The Pearson correlation analysis indicated a significant positive relationship between job security and employee motivation, with $r = 0.6308$, $p < 0.001$. This result supports the hypothesis that increased job security positively impacts motivation.

SEM Insights:

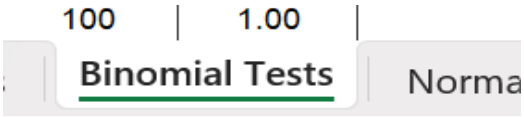
A positive, significant correlation ($r = 0.6308$, $p < 0.001$) between job security and employee motivation suggests a strong link between these constructions. Additionally, SEM shows that job security elements like perceived stability (factor loading of 0.775) correlate with motivation factors related to stability.

Conclusion: Evidence supports the hypothesis of a positive correlation between job security and employee motivation, allowing the rejection of the null hypothesis.

4.10.3 Objective 3: To distinguish factors that contribute to employee motivation at Tronox KZN Sands.

Hypothesis (H3): Recognition, feedback, job security, and other intrinsic factors contribute significantly to employee motivation.
Null Hypothesis (H0): Recognition, feedback, job security, and intrinsic factors do not significantly contribute to employee motivation.

Table: 4.25: Binominal Test



Evidence: As depicted in Table 4.25 above, the analysis of motivational factors indicates binomial p-values below 0.001 for items pertaining to recognition, reward systems, and job stability. (e.g., B1.1-B1.4, B3.1). However, perceptions on management's appreciation (C4.1) showed a p-value of 0.133, indicating a neutral response.
SEM Insights: Motivational factors loaded into themes such as recognition, reward, and stability. The component related to reward systems showed high loading for items such as *'I am rewarded when I reach my targets'* (mean score of 2.46, $p < 0.001$), indicating that perceived reward adequacy is linked to overall motivation. This is further corroborated by the factor loading analysis indicating that factors related to theoretical motivational models positively impacted perceived motivation.
Conclusion: The results confirm that factors like recognition and stability contribute significantly to motivation, with mixed perceptions regarding management appreciation.

4.10.4 Objective 4: To propose potential solutions for enhancing job security and employee motivation at Tronox KZN Sands.

Hypothesis (H4): Implementation of structured support measures, communication improvements, and equitable treatment can enhance job security and motivation.
Null Hypothesis (H0): Structured support measures, improved communication, and equitable treatment do not enhance job security or motivation.
Evidence: The significance of items concerning perceived job threat (C4.3, $p < 0.001$) and support for structured motivational theories (B3.1, $p = 0.007$) indicates support for improvements in motivation and job security. Additionally, qualitative suggestions, such as fostering an inclusive environment, align with these statistical insights.
SEM Insights: The SEM analysis highlights the need for structured support and theoretical application of motivational models, especially as components related to stability and support showed positive correlations with employee motivation ($p < 0.001$). Factors such as management appreciation (mean score of 3.23, $p = 0.133$) and structured reward systems emerge as key factors that could enhance motivation.
Conclusion: There is sufficient evidence to suggest that financial support measures and improved communication could enhance job security and motivation, leading to the rejection of the null hypothesis.

4.11 CONCLUSIONS

Inferential statistics were employed to analyse the data, incorporating methods such as correlations, chi-square tests, and Kruskal-Wallis test values, which were evaluated using p-values. Factor analysis was presented in a summarised table reflecting the results of the KMO and Bartlett's Test. This chapter also included an analysis of the scoring patterns of respondents by variable. The results were initially summarised by mean scores for the variables within each section, followed by a more detailed analysis prioritizing the importance of the statements. The findings indicated a favourable inclination towards the adoption of the proposed motivational theories within organisations. Additionally, the study examined perceptions of job security and its impact on both professional and personal well-being. The results highlighted a correlation between a supportive work

environment and personal motivation, underscoring the significance of fostering a workplace that promotes support and collaboration.

CHAPTER 5: SUMMARY OF RESULTS, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE STUDY

5.1 INTRODUCTION

The previous chapter focused on the presentation of results and the analysis of data. Chapter 5 outlines the findings of the study and offers recommendations for Tronox KZN Sands on enhancing employee motivation, thereby promoting job security for its workforce during a tumultuous event such as a pandemic. A pre-coded, closed-ended structured questionnaire utilising a 5-point Likert scale was distributed to a sample of 100 employees at Tronox Sands. The data collected were analysed using the Statistical Package for Social Sciences (SPSS) version 30 for Windows. Several significant findings emerged from empirical analysis. Chapter 5 provides an overview of the study, presents conclusions based on the findings, and offers recommendations for Tronox Sands. Additionally, the chapter addresses the limitations of the study and suggests potential areas for future research.

5.2 SUMMARY OF KEY FINDINGS IN RESPECT OF THE STUDY OBJECTIVES

The objectives of this study were as follows:

- To determine the practices of job security at Tronox KZN Sands during the Covid-19 pandemic.
- To establish the relationship between job security and employee motivation at Tronox KZN Sands during Covid-19 pandemic.
- To distinguish factors that contribute to employee motivation at Tronox KZN Sands.
- To identify possible solutions that can be implemented at Tronox KZN Sands to ensure employee job security and employee motivation.

5.2.1 OBJECTIVE 1: To determine the practices of job security at Tronox KZN Sands during the Covid-19 pandemic.

Binomial test results indicated a significant relationship between job security and employee perceptions, with restructuring and salary cuts serving as notable demotivating factors. Research conducted by Rybak and Rybak (2020: 1-3) on analysis of the main coal mining restructuring policy objectives, found that in recent years, mining companies worldwide have encountered considerable challenges as a result of increasing production costs and a decline in demand, largely due to the effects of COVID-19. This has created an unprecedented environment in which major mining groups have been experiencing increased vulnerabilities. As a result, the adoption of restructuring policies has become essential. The SEM analysis revealed job security factors that loaded significantly on perceived job stability and job threat, particularly for non-permanent employees. High factor loadings for variables such as job threat perception (mean score 3.83, $p < 0.001$) and the disparity between permanent and non-permanent employees indicated strong concerns around job security for non-permanent staff. There is substantial evidence to conclude that job security practices had a significant effect on employee experiences at Tronox KZN Sands during the pandemic. The study revealed notable job security concerns among employees at Tronox KZN Sands, particularly during the COVID-19 pandemic. The practices observed included Employee Restructuring, which involved large-scale reorganisations that adversely affected job security. Research conducted by Jarosch (2021: 42) on searching for job security and the consequences of job loss, found that a loss in job security reduces workers' future employment rates and keeps their wages depressed. Job loss comes with much larger earnings losses when it occurs during an aggregate downturn. The average score of 4.17 (with a standard deviation of 0.91) reflected a high level of concern regarding job stability among employees. Additionally, the binomial test corroborated these findings with a significant p-value ($p < 0.001$). Furthermore, practices such as salary adjustments and reduced working hours further contributed to the challenges related to job security. The practices implemented during this period had a demotivating effect on employees, as indicated by a reported mean score of 4.00 and a p-value of less than 0.001, which suggested a high level of

dissatisfaction. Access limitations during the lockdown further contributed to this issue, with some employees experiencing restricted access to work facilities, adversely affecting their sense of job security (mean 4.00, $p < 0.001$). Findings from literature, specifically section 2.15, *challenges affecting job security at Tronox KZN Sands,* found that the measures taken at Tronox KZN Sands during the pandemic included organisational restructuring, salary adjustments, and restricted access, all of which significantly diminished employee motivation and negatively influenced their perception of job security.

5.2.2 OBJECTIVE 2: To establish the relationship between job security and employee motivation at Tronox KZN Sands during COVID-19.

The Pearson correlation analysis indicated a significant positive relationship between job security and employee motivation, with $r = 0.6308$, $p < 0.001$. This result supports that increased job security positively impacts motivation. A positive, significant correlation ($r = 0.6308$, $p < 0.001$) between job security and employee motivation suggests a strong link between these constructs. Additionally, SEM shows that job security elements like perceived stability (factor loading of 0.775) correlated with motivation factors related to stability. The relationship between job security and employee motivation was found to be statistically significant, supported by various analyses. The Pearson correlation analysis revealed a strong positive correlation between job security and employee motivation ($r = 0.6308$, $p < 0.001$), indicating that enhancements in job security are likely to improve motivation. Additionally, SEM analysis further validated this relationship, demonstrating that perceptions of job security significantly influenced motivation. Specifically, perceptions of job security (factor loading 0.775) showed a positive correlation with motivational constructs associated with stability and the work environment. This research study indicated a confirmed positive relationship between job security and employee motivation at Tronox KZN Sands. Enhanced job security correlated with increased employee motivation.

5.2.3 OBJECTIVE 3: To distinguish factors that contribute to employee motivation at Tronox KZN Sands.

Analysis of motivational factors yielded binomial p-values below 0.001 for items relating to recognition, reward systems, and job stability (e.g., B1.1-B1.4, B3.1). However, perceptions on management's appreciation (C4.1) showed a p-value of 0.133, indicating a neutral response. Motivational factors loaded into themes such as recognition, reward, and stability. The component related to reward systems showed high loading for items such as, *I am rewarded when I reach my targets* (mean score of 2.46, $p < 0.001$), indicating that perceived reward adequacy is linked to overall motivation. This is further corroborated by the factor loading analysis indicating that factors related to theoretical motivational models positively impacted perceived motivation. The results confirmed that factors like recognition and stability contributed significantly to motivation, with mixed perceptions regarding management appreciation. The research conducted by Ali *et al*. (2021:22), an empirical study of employees' motivation and its influence on job satisfaction, found that the process of motivation usually starts with someone recognising an unsatisfied need and the development of compensation policies has an important role in motivating workforce to deliver high levels of performance. The study identified several key factors that impact employee motivation, as evidenced by survey responses and SEM analysis. Recognition and reward on employee motivation showed a positive correlation with recognition and reward systems. Survey feedback revealed notable concerns regarding inadequate recognition and rewards, with low mean scores (e.g., 2.46 for *rewarded when targets are met*) and statistically significant p-values ($p < 0.001$) indicating levels of dissatisfaction. With respect to *job stability and supportive environment*, employees who viewed their jobs as stable and felt supported by management reported higher motivation levels. SEM analysis validated that these factors such as *having a sense of job security* with a mean score of 3.15 ($p = 0.484$) contributed to overall motivation, despite some variability in responses. Theoretical motivational models on the implementation of motivational theories received positive feedback, with a mean score of 3.54 ($p = 0.007$), suggesting that employees believe structured motivational frameworks could enhance their motivation. In summary, essential strategies for enhancing motivation

at Tronox KZN Sands include improving recognition systems, ensuring stable employment, fostering a supportive work environment, and adopting structured motivational models. These elements are crucial for increasing employee engagement and motivation. Another confirmation of the results was shown by research conducted by Ozkeser (2019: 803) on the impact of employee motivation in human resources management, found that implementing continuous employee training, ensuring stable job security, and fostering a safe and supportive work environment significantly enhance employee motivation and productivity.

5.2.4 OBJECTIVE 4: To identify potential solutions for enhancing job security and employee motivation at Tronox KZN Sands.

The significance of items concerning perceived job threat (C4.3, $p < 0.001$) and support for structured motivational theories (B3.1, $p = 0.007$) indicates support for improvements in motivation and job security. Additionally, qualitative suggestions, such as fostering an inclusive environment, align with these statistical insights. Another confirmation of the results was shown by research conducted by Mansaray (2019: 183) on the role of human resource management in employee motivation and performance, found that motivation theories assist managers in comprehending the various needs and motivations of their employees. By recognising that individuals are motivated by different factors, such as recognition, growth opportunities or social connections, employers can better meet these needs. The SEM analysis highlights the need for structured support and theoretical application of motivational models, especially as components related to stability and support showed positive correlations with employee motivation ($p < 0.001$). Factors such as management appreciation (mean score of 3.23, $p = 0.133$) and structured reward systems emerge as key factors that could enhance motivation. There is sufficient evidence to suggest that support measures and improved communication could enhance job security and motivation. The study identified data-driven solutions aimed at enhancing job security and employee motivation. The analysis of *enhanced communication and support* using SEM and survey responses highlighted the importance of clear communication regarding job security and the implementation of structured support for

employees, particularly during challenging times. *Employee perceptions of management appreciation* revealed moderate levels of concern, with a mean score of 3.23 ($p = 0.133$), indicating opportunities for improvement. Additionally, the findings suggested that structured reward and recognition systems could be effective in addressing demotivation by acknowledging achievements and ensuring fair reward practices. The high level of dissatisfaction regarding rewards, as indicated by significant p-values ($p < 0.001$) across reward-related items, suggested that enhancing our reward structures could have a substantial impact. Additionally, the disparity in job security perceptions between permanent and non-permanent employees underscored the need for equitable practices in this area. Structural equation modeling has revealed a heightened perception of job risk among non-permanent employees, indicating that addressing these inequalities may enhance both job security and employee motivation. According to Sowunmi (2024: 1), motivation could be said to be among the important aspects to study in the workplace. Therefore, implementing strategies such as improved communication, structured rewards, and equitable treatment for all employee types represents a constructive approach to fostering job security and motivation.

5.3 RECOMMENDATIONS OF THE STUDY

Based on the analysis of the findings, the following preliminary recommendations are proposed.

5.3.1 ENSURE EMPLOYEE ENGAGEMENT

According to Dachner, Ellingson, Noe, and Saxton (2019: 1), human capital is a crucial factor in both individual career development and the competitive advantage of an organisation. B2.3 showed a relatively low mean score of 2.41 with a standard deviation of 0.95, indicating that respondents perceived a notable restriction in expressing opinions freely, which could potentially impact the overall sense of a supportive work environment. Tronox should foster an environment that promotes open communication and encourages two-way feedback. Some suggestions include implementing a news feed, establishing team channels, and creating group chats to facilitate effective communication among

employees regardless of the nature of employment. According to Eka and Anik (2020: 479), many organisations acknowledge the significance of employee engagement, as highly engaged employees are more inclined to exceed performance expectations and exhibit a strong commitment to their continued tenure with the organisation.

5.3.2 REGULARLY CONDUCT EMPLOYEE SURVEYS

Regularly conducting employee surveys is an effective method for obtaining valuable insights regarding workplace satisfaction, engagement, and potential areas for improvement. Conducting employee surveys can assist in promoting a culture of open communication. Conducting employee surveys on a regular basis can create a positive impact within the organisation. According to Johnson (2024: 10), employees appreciate the opportunity to share their opinions through anonymous surveys, which contribute to their sense of value within the organisation. Additionally, these surveys offer organisations valuable insights into employee sentiments, job satisfaction, and organisational commitment, thereby guiding strategies to cultivate a positive work environment. The surveys enable managers, supervisors, and leaders to identify areas for improvement and implement changes that may help reduce turnover.

5.3.3 ADDRESS EMPLOYEE CONCERNS PROMPTLY

In an organisation such as Tronox KZN Sands, which manages hazardous chemicals, it is vital to foster a motivated workforce to ensure employee health and safety and to promote the overall well-being of the company. Consequently, it is imperative for management and supervisors to respond to employee enquiries in a timely manner. According to Rane (2023:1), it is crucial for organisations to establish effective channels that enable employees to voice their concerns, ensuring they have confidence that their issues will be addressed in a fair and constructive manner. Neglecting to address employee concerns can have significant negative consequences for the organisation.

5.3.4 FORMATION OF DISASTER MANAGEMENT COMMITTEE

The establishment of a Disaster Management Committee is crucial for the effective management and mitigation of disaster impacts within the organisation. This committee should comprise members from various sectors and departments to ensure a range of perspectives and resources are available. This proactive approach should help Tronox KZN Sands to navigate emergencies, such as the COVID-19 pandemic, which took many South African companies by surprise. Nielsen and Raju (2020: 4) stated that the disaster management committee will be responsible for establishing protocols for communication, evacuation, and medical response in the event of a disaster. The committee should also ensure that all employees are informed of the plan and conduct regular drills to practice its implementation.

5.3.5 FOSTER PROFESSIONAL DEVELOPMENT, CREATE A SUPPORTIVE WORK ENVIRONMENT, AND PRIORITISE JOB SECURITY

The company should implement graduate development programs that serve as a recruitment pool for the organisation. Retaining graduates on a permanent basis may enhance motivation among them and their peers, thereby boosting overall company productivity. Additionally, Mikolajczyk (2020: 545) affirmed that to support internal employees, the organisation should implement learning and development initiatives that focus on enhancing individuals' skills and knowledge in their respective fields. In line with commitment to job security, the organisation should prioritise advertising job openings internally prior to considering external candidates. Acikgoz (2018: 1) affirms that an organisation’s success is significantly influenced by its human capital, making employee recruitment a critical function for organisational sustainability. Consequently, it is essential to maintain a recruitment pool to access the necessary skills and talent.

5.4 THE LIMITATIONS OF THE STUDY

According to Ross and Zaidi (2019: 261), the term "limitation" denotes the factors that may have impacted the results and conclusions of a research study, which were either outside the researchers' control or not sufficiently addressed in the study design. One limitation involves the sample size, as the research was conducted on a limited group of employees from the Tronox KZN Sands mine. This may restrict the generalisability of the findings to other regions, such as Namakwa in the Western Cape, or to different types of organisations.

5.5 THE DIRECTION FOR FUTURE RESEARCH

This investigation offers preliminary recommendations aimed at enhancing employee motivation and ensuring job security. While the study acknowledges certain limitations, it also identifies potential opportunities for future research. Future studies could broaden their scope to include various events in the mining sector that transpired after the COVID-19 pandemic. This would involve a comparative analysis of findings from central processing plants (CPC) located in KwaZulu-Natal and the Western Cape (Namakwa), building on the insights gained from the current in-house investigation. Another promising direction for future research could involve a more holistic examination of selected mining sites, considering all relevant departments, including human resources, financial management, supply chain management, and production. This comprehensive approach would enable the allocation of sufficient time and resources, leading to deeper insights and a larger volume of findings. Overall, the dissertation produced in this study will serve as an important reference for any future research focused on employee motivation and job security during the COVID-19 pandemic.

5.6 MAJOR CONTRIBUTION

This research contributes to a deeper understanding of job security and employee motivation, particularly in the context of the COVID-19 pandemic. The study's findings may aid Tronox management and supervisors in appreciating the crucial role that employee motivation plays in enhancing job security. By implementing the suggested strategies, management can effectively address employee satisfaction and alleviate potential concerns regarding job insecurity. Furthermore, this research helps Tronox identify and tackle the challenges faced by fixed-term, contingent, and permanent employees, with the goal of bolstering employee motivation and ensuring job security within the organisation. The study provides a unique perspective on the relationship between the work environment, employee motivation, and job security in the mining industry during the COVID-19 pandemic, thereby enriching the current body of knowledge and practices in this field.

5.7 CONCLUSION

Chapter 1 provided an overview of the research background, the significance of the study, the research objectives and questions, the problem statement, the research methodology and design, as well as the ethical considerations associated with this study. Chapter 2 presented a literature review that emphasised theoretical frameworks concerning the influence of job security on employee motivation during the pandemic at Tronox KZN Sands. This chapter reviewed the present literature and the theoretical framework of the research. Chapter 3 covered the discussion of the research methodology and design. The chapter outlined the population of this study, selection of the sample, research sample, questionnaire construction, validity, and reliability of the study, among others. Chapter 4 covered the analysis, discussion, and presentation of the data. The data was presented using descriptive statistics in the form of graphical presentations and pie charts. Inferential analyses were also utilised in analysing the data. The chapter also presented a detailed discussion of the findings. Chapter 5 provides a thorough overview of the study's findings, addresses its limitations, presents the conclusions derived from the research, outlines potential avenues for future investigation, and offers recommendations based on the results to guide subsequent research in this area. Employee motivation is a critical aspect

that should be prioritised, as it significantly contributes to establishing a competitive advantage for Tronox KZN Sands. In conclusion, organisations that exhibit authentic respect and empathy towards their employees will cultivate a distinct and sustainable differentiation in the marketplace. The relationship between employee motivation and job security has been clearly demonstrated, thus the main objective of this study has been successfully met. The study findings indicate that implementing structured reward and recognition systems may effectively alleviate demotivation by acknowledging employee achievements and ensuring equitable reward practices. Furthermore, addressing the disparities in job security perceptions between permanent and non-permanent employees could enhance job security and improve overall employee motivation.

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ANNEXURES

ANNEXURE A: PERMISSION TO CONDUCT RESEARCH AT TRONOX KZN SANDS

Cell: 063 107 4994

Dokodweni Reserve
P.O. Box877
Gingindlovu
3800

Tronox KZN Sands
R34, Melmoth Road
Empangeni
3880

Dear Participant

ASSISTANCE: QUESTIONNAIRE COMPLETION

I am a registered student at the Durban University of Technology in the Department of Human Resources Management. I hereby request your assistance in completing the attached questionnaire for the master's degree in human resources management. My topic is titled: **The impact of job security and its influence on employee motivation during the pandemic in the mining sector: A case study at Tronox KZN Sands**.

I am under the supervision of Dr. Ashnee Rajlal who is based in the Department of Human Resource Management at Durban University of Technology.

I have submitted a letter requesting written permission to conduct this research. A structured closed-ended questionnaire will be used to gather information. You have been selected as one of the respondents comprising the sampling frame of this organisation. Kindly click on the link which will redirect you to the electronic letter of information (Annexure B) as well as the questionnaire (Annexure C).

The questionnaire will take approximately 25 minutes to complete and requires you to cross the relevant pre-coded response in an objective manner. Please answer all questions.
Please be assured that your responses will be treated with utmost confidentiality and will not be disclosed to any other party.

You are advised that your name should not be mentioned on the questionnaire and will remain anonymous. The responses to the questionnaire will be utilized for statistical purpose only. Your participation is voluntary, and you may, at any stage, without coercion, withdraw your consent and participation in the study. All respondents who participate will get post of the summary of the main findings in the completion of the project.
Please do not hesitate to contact me at the above telephone number. I thank you in advance for assisting me with my studies.

Yours Sincerely

ANNEXURE B: LETTER OF INFORMATION

LETTER OF INFORMATION

Title of the Research Study: The impact of job security on employee motivation during the COVID-19: A case study at Tronox KZN Sands.
Principal Investigator/s/researcher: Siphelele Phumlani Biyela, B. Tech degree: HRM

Co-Investigator/s/supervisor/s: Dr. Ashnee Rajlal, D. Tech: Human Resources Management

Brief Introduction and Purpose of the Study:

Good Day

I am a master's student at DUT doing research for my bachelor's degree in human resource management. I would like to invite you to participate in the research. Research is a systematic search or enquiry for generalized new knowledge.

Research is a systematic search or study of materials, aimed at establishing facts and reaching new conclusions.
Your participation in this research is completely voluntary should you wish to extract from the study you can do so at any time. In order to protect you and your identity, you will always remain anonymous and need not disclose any personal information including your name. It is essential to me that you as a participant fully understand the study and your purpose, therefore you are at liberty to ask as many questions as you wish regarding the study and your participation. You are welcome to discuss the study with your family and friends and under no obligation to commit at this stage.

The aim of this study is to investigate the impact of job security and its influence on employee motivation during the pandemic at Tronox KZN Sands operating in the mining industry. As a participant of this research, you will be required to complete a structured close-ended questionnaire. The questionnaire will consist of **41** statements to which you will indicate the extent to which you agree or disagree on a scale of 1 (strongly disagree) to 5 (strongly agree). Please be assured that the responses you provide will be treated with the utmost confidentiality.

The response once obtained will be used only for statistical purpose. All information will be shared via an easily accessible link and communication will be done electronically. As a participant in the research, a short synopsis of the findings of the study will be made available to you upon your request.

On completion of the study, a copy of the thesis will be in the library and the DUT Repository. It is not for commercial gain and other students may peruse through it. Once the questionnaires are completed, the data will be stored on an external drive where the researcher will be able to export the results. Any printed documents will be stored in a locked cabinet and permanently destroyed through a shredder after 5 years.

Persons to contact in the Event of Any Problems or Queries:(Dr. Ashnee Rajlal, Senior Lecturer). Please contact the researcher (063 107 4994.), my supervisor (084 711 3608.) or the Institutional Research Ethics Administrator on 031 373 2375. Complaints can be reported to the Acting Director: Research and Postgraduate Support on researchdirector@dut.ac.za.

ANNEXURE C: QUESTIONNAIRE

Instructions:

- This questionnaire comprises of two sections.
- You are kindly requested to answer all Likert scale statements.
- Please mark (X) to the relevant pre-coded response.
- Please mark (X) for one response only.
- Do not leave any statement blank.

Section A: Biographical information

1. Indicate gender.

1.1	Male	1
1.2	Female	2

2. Indicate age group.

2.1	18 – 25 years	1
2.2	26 – 30 years	2
2.3	31 – 35 years	3
2.4	36 – 40 years	4
2.5	45 – 50 years	5
2.6	51 – 65 years	6

3. Indicate racial group.

3.1	African	1
3.2	White	2
3.3	Indian	3
3.4	Coloured	4

4. Indicate nature of employment

4.1	Permanent	1
4.2	Fixed Term Employee (FTE)	2
4.3	Contingent	3
4.4	Consultant	4

5. Length of service at Tronox KZN Sands.

5.1	1 – 11 months	1
5.2	1 – 5 years	2
5.3	5 – 10 years	3
5.4	10-15 years	4
5.5	> 15 years	5

6. Indicate marital status.

6.1	Single	1
6.2	Married	2
6.3	Divorced	3
6.4	Widow /Widower	4

7. Highest level of qualification

7.1	National Senior Certificate	1
7.2	National Diploma	2
7.3	Degree	3
7.4	Advance Diploma	4
7.5	Postgraduate	5

SECTION B

INSTRUCTIONS TO RESPOMNDENTS:

1. Please select ONLY ONE response with a cross (x) for each likert scale below.
2. Answer ALL pre-coded statements in this section.
3. Please DO NOT Leave any statement blank

KEY: SD= Strongly disagree; D= Disagree; N= Neutral; A= Agree; SA = Strongly Agree

8. Employee Motivation

Motivation consists of a set of forces that cause employees to engage in consistent behaviour and a force that energises, directs, and sustains the behaviour of an employee. Armstrong (2010:136) defines motivation as a force that energises, directs, and sustains the behaviour of an employee. In relation to employee motivation, which of the following statements best describes your response?

		SD	D	N	A	SA
8.	I feel motivated in my organisation.	1	2	3	4	5
9.	Employment stability will motivate me to improve on my performance.	1	2	3	4	5
10.	I feel appreciated in my organisation.	1	2	3	4	5
11.	I am rewarded when I reach my required targets.	1	2	3	4	5
12.	I feel motivated by the financial rewards I receive.	1	2	3	4	5
13.	Having the necessary skills required for the job improves motivation.	1	2	3	4	5
14.	Proposed motivational theories should be adopted by the organisation to improve motivation of their employees.	1	2	3	4	5
15.	Being denied access to my workplace during Covid-19 pandemic demotivated me.	1	2	3	4	5
16.	My workload is manageable and motivating	1	2	3	4	5
17.	My organisation's work culture adopted during Covid demotivated employees	1	2	3		5
18.	I received support from my superiors at work.	1	2	3	4	5
19.	I felt a sense of belonging during Covid-19 and my organisation allows me autonomy in my job.	1	2	3	4	5

20.	Covid -19 has had an impact on employee motivation	1	2	3	4	5
21.	The process of work schedules during Covid was clearly communicated.	1	2	3	4	5
22.	I feel free to express my opinions without worrying about negative actions/responses.	1	2	3	4	5
23.	Having a sense of job security motivates me in my job.	1	2	3	4	5
24.	Uncertainty of my job security is demotivating.					

9. JOB SECURITY

Job security is the probability that an individual will keep their job (Miles, Ramalli and Wallace 2022:1). An employee's job security can be impacted by the terms of work that are described in the employment contract, by legislation governing labour termination in the jurisdiction he or she works in.

		SD	D	N	A	SA
25.	Job security has a positive effect on my working environment.	1	2	3	4	5
26.	My educational qualifications improved my chances of attaining job security.	1	2	3	4	5
27.	I feel threatened at my job.	1	2	3	4	5
28.	If I meet deadline and work additional hours, I have a better chance of having job security.	1	2	3	4	5
29.	The job security of fixed term, contractors and contingent workers are at a higher risk than permanents.	1	2	3	4	5
30.	Closure of mining sites effected my job security	1	2	3	4	5
31.	Management does not appreciate or acknowledge my efforts which affects my job security.	1	2	3	4	5
32.	Are you anxious that your job might be affected?	1	2	3	4	5
33.	Low level of job security negatively affect day to day routine with high possibility of causing employee to make mistakes?	1	2	3	4	5

10. COVID-19 PANDEMIC

An outbreak of Coronavirus (COVID-19) was declared by the People's Republic of China on 31st December 2019. This outbreak has now spread globally, and it is important that the people remain on high alert and diligently exercise preventive measures to avoid contracting Coronavirus (COVID-19). This is a highly infectious disease caused by the new Coronavirus (COVID-19) and can spread from person-to person through sneezing and coughing droplets. This virus has signs and symptoms like the common cold but is dangerous and if not reported early and managed by health workers it can cause severe illness in humans and can lead to death. Mining industry is also affected by this pandemic.

		SD	D	N	A	SA
34.	My normal job has effectively halted during lockdown period.	1	2	3	4	5
35.	The pandemic has directly changed my career plan.	1	2	3	4	5
36.	The pandemic has shuttered and threatened the company's production which led to job loss.	1	2	3	4	5
37.	My organisation enforced all safety precautionary majors to prevent employees from direct contact with covid-19.	1	2	3	4	5
38.	Pandemic resulted in financial anxiety and financial risk to all employees in my organisation.	1	2	3	4	5
39.	Lockdown has negatively affected my working hours.	1	2	3	4	5
40.	Covid-19 changed my work environment and employment conditions.	1	2	3	4	5
41.	I worked long unapproved overtime hours during lockdown.	1	2	3	4	5

ANNEXURE D: LETTER OF CONSENT

CONSENT

Full Title of the Study: The impact of job security and its influence on employee motivation during the pandemic in the mining sector: A case study at Tronox KZN Sands.

Names of Researcher/s: Siphelele Phumlani Biyela

Statement of Agreement to Participate in the Research Study:

• I hereby confirm that I have been informed by the researcher, **Siphelele Phumlani Biyela** about the nature, conduct, benefits, and risks of this study - Research Ethics Clearance
Number: **2**,
• I have also received, read, and understood the above written information (Participant Letter of
Information) regarding the study.
• I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.

• In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.

• I may, at any stage, without prejudice, withdraw my consent and participation in the study.

• I have had enough opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

• I understand that significant new findings developed during this research which may relate to my participation will be made available to me.

_____	_____	_____	_____	
Full Name of Participant	Date	Time	Signature	/ Right Thumbprint

I, **Siphelele Biyela** Herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Siphelele Biyela	27/10/2022	
Full Name of Researcher	**Date**	**Signature**
_____	_____	_____
Full Name of Witness (If applicable)	**Date**	**Signature**
_____	_____	_____
Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

Please note the following:

Research details must be provided in a clear, simple, and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level- use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counselling (Department of Health, 2004).

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document must be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

References:

Department of Health: 2004. *Ethics in Health Research: Principles, Structures and Processes* http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/

Department of Health. 2006. *South African Good Clinical Practice Guidelines*. 2nd Ed. Available at: http://www.nhrec.org.za/?page_id=14

ANNEXURE E: GATEKEEPER'S LETTER

TRONOX

ANNEXTURE: E

Mr S.P Biyela
01 January 2023

DURBAN UNIVERSITY OF TECHNOLOGY

SUBJECT: LETTER OF REFERENCE FOR MR. SIPHELELE P. BIYELA (STUDENT NUMBER: 21231324, ID NUMBER: (9212115668081) FOR RESEARCH PROJECT UTILIZING TRONOX KZN SANDS AND PERSONNEL

This letter serves to confirm that Mr. S.P. Biyela has been granted permission by Tronox to utilize the Central Processing Plant (CPC) and Fairbreeze Mine, along with its employees, to conduct research related to the topic mentioned below for his studies.

The impact of job security and its influence on employee motivation during the pandemic in the mining sector: A case study at Tronox KZN Sands.

The topic chosen by Mr Biyela is very relevant to Tronox KZN Sands and mining industry since we were also victims of the pandemic therefore, we support the study. As the Senior HR Advisor at Tronox KZN Sands I am personally excited and committed to assist on this project.

Should you have any queries you are welcome to contact me on 035 902 7346 or 078 628 7764 or e-mail me at Slindile.mdletshe@tronox.com

TRONOX KZN SANDS
R34 MELMOTH ROAD,EMPANGENI
01 JAN 2023
P/BAG X20
EMPANGENI,3880
STAMP NO:46[illegible]12X9J

Slindile Mdletshe
Senior HR Advisor

ANNEXURE F: TRONOX KZN SANDS POLICY IN MANAGING THE PANDEMIC

COVID-19 is a new strain of coronavirus which cause symptoms like the influenza virus (common flu).

- Spread of the virus is most often (78-85%) caused by an infection within the family by droplets and other carriers of infection in close contact with an infected person.

Tronox South Africa was committed to ensuring the following actions.

- Creating awareness and communication relating to COVID-19.
- Alignment of medical surveillance system and hygiene programmes to COVID- 19.
- Screening of individuals before entering operational areas.
- Temperature checks on personnel accessing our operations using non-contact thermometers.
- Issuing of personal protective equipment (masks or other applicable devices in addition to the standard personal protective equipment used daily at work) in line with COVID-19 guidelines.
- Ensuring enhanced supply of hand sanitizers, soap, and tissues/ paper towel in all common areas.
- Increased cleaning frequency of common arears and disinfecting of turnstiles.
- Ensure compliance to the applicable regulations with regards to the transportation, to travel to and from the workplace.
- Temporary suspension of alcohol testing in order to reduce any risk of transmission.
- Maintaining social distancing in accordance with the guidelines and regulations.
- Awareness of the pandemic to our workforce through the use of posters and signage relating to COVID-19 as well as email and SMS.
- Imposing restriction on business travel both internationally and domestically.

- Minimize in-person meetings and strictly controlling number of attendees to safe numbers. Use of virtual meetings where practical; identifying and placing all employees returning from international travel on self-quarantine and ensuring that they perform their duties safety from home (Tronox KZN Sands. 2020. Procedure in Managing the Pandemic (policy document).

Tronox KZN Sands urge employees to take the following actions:

- Wash your hands with soap and water as often as possible for at least 20 seconds or use hand sanitizers.
- Cough/sneeze by covering your mouth with tissue or into your bent elbow. If you use a tissue, discard it properly and clean/ sanitize your hands immediately.
- Practice social distance in accordance with the guidelines and regulations when travelling to work and in the workplace.
- Avoid touching your face, particularly eyes, nose, and mouth with your hands to prevent them from getting infected.
- Employees that are sick, to consult a doctor and to stay at home.
- If you find yourself coughing/sneezing on a regular basis, avoid close physical contact with your coworkers and take extra precautionary measures such as staying at home.
- Consult your medical practitioner immediately if you display symptoms.
- Get yourself tested if you have been in contact with a confirmed COVID-19 person; travelled to a high-risk country; worked in or have been to a healthcare facility treating people with COVID-19, have a severe case of pneumonia with an unknown cause.
- Where you are not sure, please contact your line manager for guidance.

Source: Tronox KZN Sands. 2020. Procedure in Managing the Pandemic (policy document). Source

ANNEXURE G: Editing Certificate

EDITOR'S LETTER

Researchers Beyond-Borders (PTY) LTD
Umhlanga, Durban
South Africa
28 November 2024

To whom it may concern

Editing of Masters Dissertation: Siphelele Phumlani Biyela

Title of dissertation: T[redacted]
case study at Tronox Kzn Sands.

[redacted]

Any queries may be directed to the author of this letter.

Regards

Maleni Pillay
Researchers Beyond-Borders
consult@researchersbeyondborders.com
www.researchersbeyondborders.com

ANNEXURE H: Full approval letter from IREC (Ethical Clearance)

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375 Email:
lavishad@dut.ac.za

http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

24 March 2023

Mr S P Biyela
P.O. Box 877
Gingindlovu
3800

Dear Mr Biyela

The impact of job security on employee motivation during the COVID-19: A case study at Tronox KZN Sands
Ethics Clearance Number: IREC 296/22

The DUT-Institutional Research Ethics Committee acknowledges receipt of your notification regarding the piloting of your data collection tool.

Kindly ensure that participants used for the pilot study are not part of the main study.

In addition, the DUT-IREC acknowledges receipt of your gatekeeper permission letter.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the DUT-IREC according to the DUT-IREC SOP's.

Please note that any deviations from the approved proposal require the approval of the DUT-IREC as outlined in the DUT-IREC SOP's.

It is compulsory for a student or researcher to apply for recertification on an annual basis. The failure to do so will result in withdrawal of ethics clearance. It is the responsibility of the researcher and the supervisor to apply for recertification.

Please note that you are required to submit a Notification of Completion of Study form together with an abstract to the DUT-IREC office on completion of your study.

Yours Sincerely

Prof J K Adam
Chairperson: DUT-IREC

ANNEXURE I: Turn it In Report

THE IMPACT OF JOB SECURITY ON EMPLOYEE MOTIVATION DURING THE COVID-19: A CASE STUDY AT TRONOX KZN SANDS

ORIGINALITY REPORT

SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
19%	18%	9%	12%

PRIMARY SOURCES

1	ir.dut.ac.za Internet Source	2%
2	Submitted to Mancosa Student Paper	2%
3	Submitted to Durban University of Technology Student Paper	1%
4	Submitted to University of Witwatersrand Student Paper	1%

5	Submitted to University of KwaZulu-Natal Student Paper	1%
6	openscholar.dut.ac.za Internet Source	1%
7	www.coursehero.com Internet Source	<1%
8	www.researchgate.net Internet Source	<1%