



ZCAS UNIVERSITY

Lusaka, Zambia

**INVESTIGATING FACTORS CONTRIBUTING TO THE
UNDERPERFORMANCE OF STATE-OWNED ENTERPRISES:
EVIDENCE FROM ZAMBIA RAILWAYS LIMITED**

By

NIZAH LAWRENCE MUTAMBO

CSC11003

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of

DOCTOR OF BUSINESS ADMINISTRATION

School of Business

July, 2026

Copyright Notice

The copyright of this thesis belongs to the author under the terms of the Copyright Policy of ZCAS University Management. No part of this thesis may, therefore, be reproduced in any form without the prior written permission and consent of the author or the University Management.

Due acknowledgement shall always be made for the use of any material contained in, or derived from, this thesis.

© Nizah Lawrence Mutambo, 2026

All rights reserved.

Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference or acknowledgement, the work presented is entirely my own.

Candidate Name:

Signature:

Date:

Supervisor Name:

Signature:

Date:

Co-Supervisor Name (if applicable):
.....

Signature:

Date:

Certificate of Approval

I certify that I have read and thoroughly examined this thesis and that, in my opinion, it is fully adequate in scope and quality as a thesis for the award of the degree of Doctor of Business Administration of ZCAS University.

Examiner:

Signature:

Date:

I certify that I have read and thoroughly examined this thesis and that, in my opinion, it is fully adequate in scope and quality as a thesis for the award of the degree of Doctor of Business Administration of ZCAS University.

Examiner:

Signature:

Date:

I certify that I have read and thoroughly examined this thesis and that, in my opinion, it is fully adequate in scope and quality as a thesis for the award of the degree of Doctor of Business Administration of ZCAS University.

Examiner:

Signature:

Date:

Dedication

This work is dedicated to my lovely wife, Precious H. Mutambo, my children, Natasha and Choolwe, whose sacrifices, prayers, and unconditional support have made this achievement possible. To my parents, thank you for instilling in me the value of hard work and education. To my siblings and loved ones, your encouragement has kept me going during the most challenging moments. Above all, this research is dedicated to every individual who believes in the potential of public sector reform in Zambia. May this work serve as a contribution to the collective efforts to improve our nation's infrastructure and institutions.

Acknowledgements

First and foremost, I would like to express my sincere gratitude to Almighty God for the gift of life, strength, and wisdom throughout this academic journey.

I express sincere gratitude to my academic supervisors, Prof. Edwin Kachesa Bbenkele and Dr Burton Mweemba. Their steadfast guidance, helpful feedback, and ongoing encouragement have shaped this research and helped me complete it successfully. Your mentorship has been priceless.

I am deeply grateful to the faculty and staff of ZCAS University, School of Business, for the support and resources made available to me. Special thanks to my lecturers, Dr Austin Mwange, Dr Geoffrey Mweshi, Dr Sydney Kawimbe, and Dr Windu Matoka, whose commitment to academic excellence made this journey intellectually enriching. I extend my sincere gratitude to my course mates, Dr Robison Manda and Dr Golden Mashili, for the help rendered when needed most.

Furthermore, I also thank the management and staff of Zambia Railways Limited, as well as the respondents who participated in the study, for their cooperation and openness during data collection.

Finally, I am grateful to my family and friends for their unwavering support and understanding throughout this academic journey.

Abstract

State-Owned Enterprises play a strategic role in national development through the provision of critical infrastructure and public services. However, many state-owned enterprises in developing economies continue to experience operational, financial, managerial, and institutional challenges that undermine their performance. This study investigated the factors contributing to the underperformance of State-Owned Enterprises using Zambia Railways Limited as a case study. Specifically, the study examined the influence of maintenance practices, funding adequacy, leadership practices, competition from road transport, and government policies and regulatory frameworks on ZRL's performance.

The study adopted a pragmatic research philosophy and a convergent parallel mixed-methods design. Quantitative data were collected from 109 respondents using structured questionnaires and analyzed using descriptive statistics, Spearman's correlation and multiple regression in IBM SPSS Version 26. Qualitative data were collected through interviews, document review, and stakeholder consultations and analyzed using thematic and content analyses. Findings from both strands were integrated through triangulation.

The findings revealed that ZRL's underperformance is driven by interrelated technical, managerial, market, and regulatory challenges. Maintenance, leadership, competition from road transport, and government policies significantly influenced ZRL's performance. Maintenance challenges included aging infrastructure, inadequate preventive maintenance, and frequent rolling stock breakdowns. Leadership effectiveness emerged as the strongest predictor of performance, while competition from road transport reduced ZRL's market share and competitiveness. Policy inconsistencies and weak enforcement further constrained performance. Although funding was widely perceived as inadequate, its statistical effect was not significant, suggesting that resource utilization and financial governance are equally important.

The study contributes to knowledge in three dimensions. Theoretically, it adapts and integrates Total Productive Maintenance Theory, Contingency Theory, Institutional Theory, and Porter's Competitive Forces Model into a framework for SOEs railway reform. Methodologically, it demonstrates the value of a convergent mixed-methods approach and triangulated analysis.

Practically, the study proposes a multi-level reform strategy integrating institutional readiness, operational efficiency, market responsiveness, stakeholder engagement, and strategic transformation, supported by maintenance modernization, transformational leadership, sustainable financing, regulatory reforms, and multimodal transport partnerships to improve the performance of Zambia Railways and similar state-owned enterprises.

Keywords: *State-owned Enterprises; Maintenance Practices; Leadership Effectiveness; Funding Adequacy; Road Transport Competition; Government Policy; Regulatory Reform.*

Table of Contents

Copyright Notice.....	ii
Declaration.....	iii
Certificate of Approval	iv
Dedication	v
Acknowledgements.....	vi
Abstract.....	vii
Table of Contents.....	ix
List of Tables	xvii
List of Figures.....	xx
List of Abbreviations	xxi
CHAPTER ONE: INTRODUCTION.....	1
1.0 Introduction.....	1
1.1 Background of the Study	2
1.1.1 About Zambia Railways Limited.....	5
1.2 Research Problem	10
1.3 Justification for the Research.....	11
1.4 Research Aim.....	12
1.5 Research Objectives.....	12
1.6 Research Questions.....	12
1.7 Research Hypotheses	12
1.8 Research Scope	13
1.9 Research Contributions.....	14
1.10 Research Design.....	15

1.11	Research Approach and Method	15
1.12	Data Collection and Analysis Techniques	15
1.13	Thesis Layout.....	15
1.14	Chapter Summary	17
CHAPTER TWO: LITERATURE REVIEW.....		19
2.0	Introduction.....	19
2.1	State-Owned Enterprises and Organizational Performance.....	19
2.1.1	Evolution and Role of State-Owned Enterprises	19
2.1.2	Performance Challenges in State-Owned Enterprises	20
2.1.3	Zambia Railways Limited within Zambia’s State-Owned Enterprise Sector	20
2.1.4	Strategic Role of Zambia Railways Limited in Regional Connectivity	20
2.2	Empirical Literature	22
2.2.1	Maintenance Practices	22
2.2.2	Funding Adequacy	36
2.2.3	Leadership and Management Practices.....	48
2.2.4	Competition from Road Transport.....	53
2.2.5	Government Policies and Regulatory Frameworks	60
2.2.6	Summary of Recent Empirical Studies	68
2.3	Conceptual Framework.....	71
2.3.1	Independent Variables and Intervening Factors	72
2.3.2	Dependent Variable: ZRL Performance	74
2.3.3	Contextual and Organizational Factors.....	74
2.3.4	Feedback Loop.....	74
2.4	Operational Definitions.....	75
2.5	Theoretical Framework.....	77

2.5.1	Total Productive Maintenance (TPM) – by Seiichi Nakajima (1988).....	77
2.5.2	Institutional Theory (DiMaggio & Powell, 1983)	83
2.5.3	Contingency Theory (Fiedler, 1964).....	87
2.5.4	Porter’s Competitive Forces Model (Porter, 1980).....	93
2.5.5	Integrated Theoretical Framework.....	98
2.6	Gaps in the Literature.....	102
2.6.1	Theoretical Gap.....	105
2.6.2	Methodological Gap.....	105
2.6.3	Empirical Gap	106
2.6.4	Conceptual Gap.....	106
2.6.5	Policy and Practical Gap.....	107
2.7	Chapter Summary	107
CHAPTER THREE: RESEARCH METHODOLOGY		109
3.0	Introduction.....	109
3.1	Research Approach	109
3.2	Strategy Justification.....	110
3.3	Research Paradigm.....	111
3.4	Inductive Approaches	112
3.5	Deductive Approaches	113
3.6	Time Horizon	113
3.7	Research Strategy.....	114
3.8	Sampling Frame and Sample Size	115
3.8.1	Target Population.....	115
3.8.2	Sampling Frame	117
3.8.3	Sampling Techniques.....	118

3.8.4	Quantitative Sample Size.....	118
3.8.5	Qualitative Sample Size.....	120
3.9	Data Collection	121
3.9.1	Sources of Data.....	121
3.9.2	Data Collection Instruments	122
3.9.3	Measurement of Variables	125
3.9.4	Likert Scale	127
3.9.5	Pilot Study and Instrument Validation.....	127
3.9.6	Data Collection Procedure	128
3.10	Data Processing and Analysis.....	129
3.10.1	Data Processing.....	129
3.10.2	Quantitative Data Analysis	130
3.10.4	Qualitative Data Analysis	132
3.10.5	Integration of Quantitative and Qualitative Findings	132
3.10.6	Data Presentation	133
3.11	Reliability of Research Findings.....	133
3.12	Validity of Research Findings	134
3.13	Generalisability of Research Findings.....	135
3.14	Ethical and Access Issues	136
3.14.1	Accessibility.....	136
3.14.2	Research Ethics.....	137
3.15	Chapter Summary	138
CHAPTER FOUR: FINDINGS AND ANALYSIS		139
4.0	Introduction.....	139
4.1	Profile of Respondents.....	139

4.1.1	Response Rate	140
4.1.2	Age Distribution.....	141
4.1.3	Distribution by Department	141
4.1.4	Respondents' Position at ZRL.....	143
4.1.5	Years of Service.....	143
4.1.6	Education Qualifications.....	144
4.2	Assessment of Findings and Analysis for Each Instrument.....	146
4.2.1	Descriptive Statistics of Dependent Variable (ZRL Performance).....	146
4.2.2	Independent Variables	154
4.3	Summary statistics (Summary of Measures of Central Tendency)	182
4.4	Correlation Analysis	185
4.4.1	Interpretation of Individual Correlations	188
4.4.2	Summary of Correlation Findings	190
4.5	Regression Analysis.....	190
4.5.1	Regression Coefficients	191
4.5.2	Interpretation of Regression Results.....	192
4.5.3	Model Summary.....	194
4.5.4	Analysis of Variance (ANOVA).....	195
4.6	Hypothesis Testing.....	196
4.6.1	Hypothesis 1: Maintenance Effectiveness and ZRL performance.....	198
4.6.2	Hypothesis 2: Funding Adequacy and ZRL Performance	198
4.6.3	Hypothesis 3: Leadership Effectiveness and ZRL Performance	199
4.6.4	Hypothesis 4: Competition from Road Transport and ZRL Performance	200
4.6.5	Hypothesis 5: Government Policy and Regulatory Support and ZRL Performance	200

4.7	Cross-Tabulation.....	201
4.7.1	Cross-Tabulation between ZRL Performance and Maintenance Practice	202
4.7.2	Cross-Tabulation between ZRL Performance and Leadership Effectiveness	204
4.7.3	Cross-Tabulation between Funding Adequacy and ZRL Performance	206
4.7.4	Cross-Tabulation between Competition from Road Transport and ZRL Performance 209	
4.7.5	Cross-Tabulation between Government Policy Support and ZRL Performance....	211
4.7.6	Cross-Tabulation between Government Policy Support and Current Funding Adequacy	214
4.7.7	Further Cross-Tabulation Analysis.....	216
4.7.8	Cross-Tabulation between Leadership Effectiveness and Funding Adequacy.....	217
4.7.9	Cross-Tabulation between Maintenance Practices and Funding Adequacy	217
4.7.10	Cross-Tabulation between Leadership Effectiveness and Government Policy Support	217
4.7.11	General Observation	218
4.8	Qualitative analysis and results (Findings from interviews).....	218
4.8.1	Qualitative Data Analysis of ZRL Employees' Interview	219
4.8.2	Qualitative Data Analysis of ZRL Clients' Interviews (R12-R15)	238
4.8.3	Qualitative Data Analysis of Key Stakeholders' Interviews (R15-R19).	244
4.9	Triangulation of Quantitative and Qualitative Findings Summary.....	257
4.10	Assessment of Validity	259
4.11	Assessment of Reliability	260
4.12	Chapter Summary	261
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS		263
5.0	Introduction.....	263
5.1	Conclusions.....	263

5.1.1	Maintenance Practices as a Critical Performance Bottleneck.....	264
5.1.2	Funding Adequacy and its Limited Operational Impact.....	265
5.1.3	Leadership and Management Practices as the Strongest Predictor.....	266
5.1.4	Competition from Road Transport and Market Share Erosion.....	267
5.1.5	Government Policy and Regulatory Frameworks.....	269
5.1.6	Overall Conclusion	270
5.2	Practical/Managerial Implications and Recommendations.....	271
5.2.1	Maintenance Practices	271
5.2.2	Funding Adequacy	272
5.2.3	Leadership and Management Practice	272
5.2.4	Competition from Road Transport.....	273
5.2.5	Government Policies and Regulatory Frameworks	273
5.2.6	Integrative Recommendation	274
5.3	Contributions of the Study	274
5.3.1	Theoretical Contributions	275
5.3.2	Methodological Contributions	277
5.3.3	Practical Contributions.....	277
5.4	Limitations of the Study and Directions for Future Research	279
5.4.1	Case Study Scope.....	279
5.4.2	Sample Size and Composition	279
5.4.3	Cross-Sectional Design.....	280
5.4.4	Methodological Boundaries	280
5.4.5	Contextual Specificity.....	280
5.4.6	Future Research Directions.....	281
5.5	Final Conclusion	281

5.6	Summary	282
REFERENCES		283
APPENDICES		307
Appendix A: Descriptive Statistics on ZRL Engagement with Government Bodies to Influence Policy Implementation		307
Appendix B: Cross-Tabulation between Leadership Practices and Funding Adequacy		309
Appendix C: Chi-Square Test-Leadership Practices and Funding Adequacy		313
Appendix D: Cross-Tabulation between Maintenance Practice and Funding Adequacy		313
Appendix E: Chi-Square Test – Maintenance Practices and Funding Adequacy		317
Appendix F: Cross-Tabulation between Leadership Practices and Government Policies and Regulatory Frameworks		317
Appendix G: Chi-square Test – Leadership Practices and Government Policies and Regulatory Frameworks		323
Appendix G: One-sample Chi-Square Test Statistics for the five Independent variables		325
Appendix H: Work Schedule		326
Appendix I: Budget for the research		328
Appendix J: Questionnaire for ZRL Employees		1
Appendix K: Interview Guide		11
Appendix L: Ethical Clearance Letter		19
Appendix M: Research Introductory letter - ZCASU		20
Appendix N: Permission to conduct Research survey letter		21
Appendix O: Response to Conduct a Research Survey - ZRL		23

List of Tables

Table 1.1: Planned tonnage and revenue against actuals.....	8
Table 2.1: Factors Affecting the Implementation of Railway Maintenance.....	30
Table 2.2: Comparative Funding Models Adopted by Selected African Railway Operators.....	42
Table 2.3: Summary of Empirical Studies on Funding Adequacy in Zambia	46
Table 2.4: Competitive Strategies Adopted by Selected African Railway Operators	57
Table 2.5: Summary of Government Policy and Regulatory Studies in Zambia.....	67
Table 2.6: Summary and Critical Comparison of Key Empirical Studies.....	69
Table 2.7: Integration of Theoretical Perspectives with Study Variables	100
Table 2.8: Thematic Synthesis of Literature and Identified Research Gaps.....	103
Table 3.1: Quantitative Sample Distribution	116
Table 3.2: Qualitative Target Population.....	117
Table 3.3: Minimum Proportional Sample Size Distribution by Department	120
Table 3.4: Measurement of Variables.....	126
Table 3.5: Tests of Normality	131
Table 3.6: Reliability Analysis	134
Table 4.1: Questionnaire response rate	140
Table 4.2: Respondents' Age Range	141
Table 4.3: Departmental Representation.....	142
Table 4.4: Respondents' Position at ZRL.....	143
Table 4.5: Respondents' Work Experience	144
Table 4.6: Respondents' Level of Education.....	145
Table 4.7: ZRL Performance	146
Table 4.8: Importance of Railway Transport and ZRL Position	148
Table 4.9: ZRL is well-positioned in the Zambia Transport Sector	149
Table 4.10: ZRL Service Quality.....	150
Table 4.11: ZRL is very expensive to use in Zambia	151
Table 4.12: ZRL Service Delivery.....	152
Table 4.13: Clients only use ZRL as a last resort	153
Table 4.14: Effectiveness of the Current Maintenance Practices	155

Table 4.15: Frequency of Routine Maintenance Activities	156
Table 4.16: Adequacy of Financial Resources for Maintenance	157
Table 4.17: Contribution of Lack of Planned Maintenance to Service Disruption	158
Table 4.18: Extent to which Preventive Maintenance is Prioritized.....	159
Table 4.19: Agreement that a Robust Maintenance Plan Could Improve Reliability	160
Table 4.20: Adequacy of Current Funding and its Effect on Maintenance and Upgrading of Railway Infrastructure and Rolling Stock.....	161
Table 4.21: The Level of Funding affected the maintenance and upgrade of the railway infrastructure and the rolling stock	161
Table 4.22: Allocation of Available Funds to different Operational Areas.....	162
Table 4.23: Influence of External Financial Support on ZRL’s Performance	163
Table 4.24: Effectiveness of Leadership at ZRL	165
Table 4.25: Clarity and Effectiveness of Communication.....	166
Table 4.26: Employee Participation in Decision-Making.....	167
Table 4.27: Sufficiency of Training and Development	167
Table 4.28: Responsiveness to Operational Crises	168
Table 4.29: Comparison of Market Share between ZRL and Road Transport	170
Table 4.30: Effect of Road Transport Competition on ZRL’s Revenue	171
Table 4.31: Comparison of Service Quality between ZRL and Road Transport.....	171
Table 4.32: Optimism about ZRL’s Ability to Improve Performance.....	172
Table 4.33: Perceived Impact of External Factors on ZRL’s Performance	173
Table 4.34: Familiarity with Government Policies Affecting ZRL Operations	177
Table 4.35: Effect of Government Policies on Budget and Financial Performance	178
Table 4.36: Government Support for Operational Efficiency and Development	179
Table 4.37: Challenges in Addressing Vandalism and Encroachment	180
Table 4.38: Government Policies and the Competitive Landscape	181
Table 4.39: Summary statistics	183
Table 4.40: Correlation Coefficient results.....	187
Table 4.41: Multiple Linear Regression Coefficient	191
Table 4.42: Model Summary	194
Table 4.43: ANOVA Results	195

Table 4.44: Summary of Hypothesis Testing Results.....	197
Table 4.45: Cross-Tabulation between ZRL Performance and Maintenance Practices	202
Table 4.46: Chi-Square Test - ZRL Performance and Maintenance Practices	204
Table 4.47: Cross-Tabulation between ZRL Performance and Leadership Effectiveness	205
Table 4.48: Chi-Square Test – Leadership Practices and ZRL Performance	206
Table 4.49: Cross-Tabulation between Funding Adequacy and ZRL Performance	207
Table 4.50: Chi-Square Test – Funding Adequacy and ZRL Performance	208
Table 4.51: Cross-Tabulation between Competition from the road transport and ZRL Performance	209
Table 4.52: Chi-Square Test – Competition from road transport and ZRL Performance	211
Table 4.53: Cross-Tabulation between Government policy Support and ZRL Performance.....	212
Table 4.54: Chi-Square Test – Government policies and regulatory frameworks and ZRL Performance	214
Table 4.55: Cross-Tabulation between Government policies and regulatory frameworks and Current Funding Adequacy.....	215
Table 4.56: Chi-Square Test – Government policies and regulatory frameworks and Funding Adequacy	216
Table 4.57: Themes Emerging from Interviews on Maintenance Effectiveness (n = 11 ZRL Staff)	220
Table 4.58: Themes Emerging from Interviews on Funding Adequacy (n = 11 ZRL Employees)	223
Table 4.59: Themes Emerging from Interviews on Leadership Effectiveness (n = 11 ZRL Employees)	227
Table 4.60: Themes Emerging from Interviews on Competition from Road Transport (n = 11 ZRL Employees).....	231
Table 4.61: Themes Emerged from the Interviews on the Influence Government Policies and Regulatory Frameworks (n = 11 ZRL Employees).....	235
Table 4.62: Triangulation of quantitative and qualitative findings.....	258

List of Figures

Figure 1.1: Tonnage moved between 2014 -2023	9
Figure 1.2: Revenue generation for the years 2014 – 2023	9
Figure 2.1: Rail traffic density in SSA LICs.....	26
Figure 2.2: Comparison of Rail Traffic Density between Low-Income Sub-Saharan African Countries and High-Income Countries	27
Figure 2.3: Global Railway Funding Models	37
Figure 2.4: Major Government Funding Interventions and Performance of Zambia Railways Limited (2013-2023).....	45
Figure 2.5: Major Competitive Strategies Adopted by Modern Railway Operators	55
Figure 2.6: Global Policy Models Supporting Railway Development	62
Figure 2.7: Technical Strategy Framework for Railway Development in Sub-Saharan Africa ...	63
Figure 2.8: Conceptual Framework	72
Figure 2.9: The key principles and components of total productive maintenance	79
Figure 2.10: Porter’s Five Competitive Forces Model	95
Figure 2.11: Integrated Theoretical Framework	101
Figure 3.1: Research Onion Guiding the Study	109
Figure 3.2: Methods of data collection	122
Figure 4.1: ZRL Performance	147
Figure 4.2: Factors Customers Consider when choosing a mode of transport	174
Figure 4.3: Strategies ZRL has implemented	175
Figure 5.1: Proposed Model for ZRL performance and refor.....	276
Figure 5.2: Sub-Model – BESS Hybridization for ZRL Locomotives	278

List of Abbreviations

AfDB	<i>African Development Bank</i>
AfCFTA	<i>African Continental Free Trade Area</i>
BESS	<i>Battery Energy Storage System</i>
GIR	<i>Government Inspector of Railways</i>
GRZ	<i>Government of the Republic of Zambia</i>
HIC	<i>High Income Country</i>
IDC	<i>Industrial Development Corporation</i>
INDECO	<i>Industrial Development Corporation</i>
IoT	<i>Internet of Things</i>
LIC	<i>Low Income Country</i>
MMD	<i>Movement for Multi-Party Democracy</i>
MoTC	<i>Ministry of Transport and Communication</i>
MoTL	<i>Ministry of Transport and Logistics</i>
MOU	<i>Memorandum of Understanding</i>
NTPIP	<i>National Transport Policy Implementation Plan</i>
PF	<i>Patriotic Front</i>
PMRC	<i>Policy Monitoring and Research Centre</i>
RDA	<i>Road Development Agency</i>
RR	<i>Rhodesia Railways</i>
RSZ	<i>Railway Systems of Zambia</i>
SARA	<i>Southern African Railway Association</i>

SSA	<i>Sub-Sahara Africa</i>
SOP	<i>Standard Operating Procedure</i>
SOEs	<i>State Owned Enterprises</i>
TFR	<i>Transnet Freight Railway</i>
TPM	<i>Total Production Maintenance</i>
UIC	<i>International Union of Railway</i>
UNIP	<i>United Nation Independence Party</i>
UPND	<i>United Party for National Development</i>
ZAMTEL	<i>Zambia Telecommunication Company</i>
ZIMCO	<i>Zambia Industrial and Mining Corporation</i>
ZISC	<i>Zambia State Insurance Corporation</i>
ZP	<i>Zambia Police</i>
ZRL	<i>Zambia Railways Limited</i>
8NDP	<i>Eighth National Development Plan</i>

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Rail transport is an important mode of transport for people and goods and serves as a lifeline for the transportation of both. The efficient operation of a railway system is vital to the economic growth and development of a country (Nsengiyera, 2019). It connects different regions and facilitates global trade, industry, and connectivity. However, the performance of railway systems can be affected by a multitude of factors, some of which can hinder its optimal operation (Mwila, 2016).

According to the ZRL services and operations report (2018), railway transport offers numerous advantages, including high haulage capacity, cost-effectiveness on bulk cargo, relatively stable freight rates, enhanced safety, reliability, long-distance transport capability, and seamless integration with other transport modes. Rail transport also possesses considerable elasticity of capacity, as freight volumes can be increased through the addition of wagons to existing train formations (World Bank, 2021; UIC, 2023).

Despite these advantages, rail transport has continued to face numerous challenges, including deteriorating infrastructure and rolling stock, inadequate funding, weak management practices, unfavourable policy implementation, competition from road transport, very low train speeds, and limited rail freight services. These challenges have constrained the sector's ability to contribute effectively to national economic growth. Consequently, there is a need for empirical investigation to identify the factors affecting railway performance and do evaluate the economic and social significance of the sector (Howell Jr, 2003).

The government of the Republic of Zambia, through the Industrial Development Corporation (IDC) and the Ministry of Transport and Logistics, has the mandate of providing strategic oversight and support to state-owned enterprises to ensure their viability, profitability, and contribution to national development. ZRL, as a strategic transport parastatal, forms part of this mandate (Mwansa, 2020).

Over the years, the government has undertaken various interventions to support selected State-Owned Enterprises like ZESCO, which in 2014 received a share from euro bond amounting to \$255M, ZAMTEL, Infratel, Indeni Petroleum refinery, Zambezi river authority, ZNBS, ZSIC-HI, and ZSIC-LIFE among others. In 2013, ZRL received US\$120 million for the rehabilitation of railway infrastructure and rolling stock (Sandala, 2020).

More recently, the company was allocated k30 million annually for track maintenance and rehabilitation works (ZRL Report, 2023). In addition, policy frameworks such as Zambia Vision 2030, the Eight National Development Plan (8NDP), and the National Transport Policy Implementation plan (2019 – 2028) recognize rail transport as a strategic driver of economic growth and regional integration.

However, despite these policy commitments, operational performance has remained below expected levels. For example, the NTPIP projected average passenger and freight train speeds of 120km/h and 80km/h, respectively, by 2023 (National Transport Policy Implementation Plan, 2019). In contrast, ZRL reports indicate that average operating speeds remain between 20km/h and 30km/h (ZRL report, 2023). This discrepancy between policy aspirations and operational realities highlights the need for further investigation into the factors affecting ZRL's performance.

Accordingly, this study sought to investigate the factors contributing to the underperformance of Zambia Railway Limited. By examining maintenance practices, funding adequacy, leadership practices, competition from road transport, and government policies and regulatory frameworks, the study aimed to generate evidence-based insights to support the revitalization and long-term sustainability of Zambia's railway sector.

1.1 Background of the Study

State-Owned Enterprises (SOEs) have for a long time played a strategic role in national development by providing essential public services, managing critical infrastructure, and supporting economic growth. These enterprises operate across sectors such as transportation, energy, telecommunications, mining, and manufacturing. Their performance varies considerably across countries and is influenced by governance structures, management practices, political interventions, regulatory environments, and prevailing economic conditions (Cuervo-Cazurra et al., 2014; OECD, 2024).

The concept of state participation in economic activities has existed for centuries, however, modern SOEs emerged more prominently during the nineteenth and twentieth centuries. During the Industrial Revolution, governments established public enterprises in sectors such as railways, postal services, and telecommunications to facilitate industrialization and infrastructure development (Amsden, 1989). Following the Second World War, state ownership expanded considerably, particularly in transport, energy, and telecommunications, as governments sought to accelerate reconstruction, industrial growth, and national economic planning (Toninelli, 2000; OECD, 2024)

The expansion of SOEs became even more pronounced during the post-colonial period, when newly independent nations sought greater control over their economies. State-owned enterprises were established to manage strategic industries, accelerate industrialization, promote infrastructure development, reduce dependence on foreign firms, and advance broader socio-economic objectives such as employment creation, poverty reduction, and wealth redistribution (Butzbach et al., 2025). This trend was particularly evident in developing countries, especially in Africa, where SOEs became important instruments for state-led economic transformation and national development (Andrew, Pritchett & Woolcock, 2017)

While their performance has varied across countries, international experience demonstrates that SOEs can contribute significantly to national development when supported by effective governance, professional management, transparent operations, and sound regulatory frameworks. Countries such as Singapore, China, Finland, Norway, and South Korea have demonstrated the developmental potential of well-governed SOEs (Wu, 2010). Nevertheless, many SOEs in developing economies continue to face persistent challenges related to operational efficiency, financial sustainability, governance, and accountability, making the determinants of SOE performance an important area of academic and policy inquiry.

Within the Zambian context, State-Owned Enterprises have played a significant role in economic development and governance since independence in 1964 (Ng'andu, 2007). Under the administration of President Kenneth Kaunda, Zambia adopted a state-led development strategy aimed at promoting economic self-reliance and reducing dependence on foreign ownership. This policy direction culminated in the Mulungushi Economic Reforms of 1968, which facilitated the

expansion of state participation in strategic sectors through the nationalization of key industries and the establishment of public enterprises (Henriot, 1996)

To strengthen state control over the economy, the Zambia Industrial and Mining Corporation (ZIMCO) was established in 1970 as the principal holding company for government investments in mining, manufacturing, agriculture, transportation, and other strategic sectors. ZIMCO was mandated to coordinate state-owned enterprises, promote industrialization, support economic diversification beyond copper mining, enhance national self-sufficiency, and create employment opportunities for Zambians (Chipalo, 2011). Through this framework, SOEs became central instruments for implementing Zambia's development agenda.

Despite its strategic objectives, ZIMCO faced persistent challenges relating to operational inefficiencies, weak corporate governance, poor financial management, and excessive political influence. These challenges reduced the effectiveness of many state-owned enterprises and contributed to growing fiscal pressures on government. Consequently, following the transition from a state-led to a market-oriented economy in the early 1990s, Zambia initiated wide-ranging economic reforms that included the privatization of numerous public enterprises (Chipalo, 2011).

Beginning in 1992, the government implemented a comprehensive privatization programme aimed at improving efficiency, attracting private investment, enhancing competitiveness, and reducing the financial burden associated with loss-making enterprises. Several major state-owned companies, including Zambia Consolidated Copper Mines (ZCCM), Zambia Railways Limited (ZRL), Zambia Telecommunications Company (ZAMTEL), Maamba Collieries, and Zambia Airways, were privatized as part of this reform process (Chipalo, 2011).

However, the outcomes of privatization were mixed. Weak regulatory frameworks, limited competition, governance deficiencies, political interference, and institutional capacity constraints reduced the effectiveness of the reforms and, in some cases, failed to deliver the anticipated improvements in performance and sustainability (Kasongo, 2005).

Recognizing the strategic importance of selected public enterprises, the Government subsequently renewed its commitment to state participation in key sectors of the economy. Under the Patriotic Front administration, several strategic enterprises, including Zambia Telecommunications

Company (ZAMTEL) and Zambia Railways Limited (ZRL), were returned to government control to safeguard national interests and support long-term economic development (Parliament of Zambia, 2024; IDC, 2023).

To strengthen governance and improve the performance of state-owned enterprises, the Government re-established the Industrial Development Corporation (IDC) in January 2014 under the Industrial Development Corporation Act (Chapter 460 of the Laws of Zambia) as a wholly government-owned investment holding company. IDC was mandated to oversee state-owned enterprises, promote industrialization, create long-term shareholder value, and enhance enterprise efficiency through sound corporate governance and sustainable management practices.

Since its re-establishment, IDC has assumed oversight of enterprises operating in strategic sectors including energy, telecommunications, transportation, forestry, insurance, and mining. Zambia Railways Limited forms part of this portfolio and is expected to contribute to national economic development by providing efficient, reliable, and sustainable rail transport services (IDC Annual Report, 2023).

Despite these institutional reforms, the performance of many state-owned enterprises has remained below expectations. The Auditor General's Report on Parastatal Bodies and Other Statutory Institutions (2023) reported combined losses of K746.1 million in 2021 and K1.85 billion in 2022 among thirteen state-owned enterprises. Furthermore, only five of the thirty enterprises in which IDC held majority shareholding declared dividends during the period under review.

Zambia Railways Limited was not among the dividend-paying entities, indicating persistent operational and financial challenges. Against this background, ZRL provides an appropriate case for examining the organisational, managerial, financial, competitive, and institutional factors influencing the performance of state-owned enterprises in Zambia (IDC Annual Report, 2023).

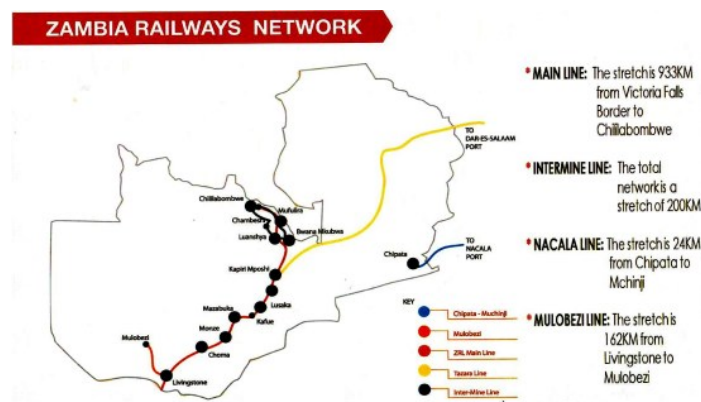
1.1.1 About Zambia Railways Limited

Against the foregoing background of state-owned enterprise reforms in Zambia, Zambia Railways Limited (ZRL) represents one of the country's most strategically important public enterprises. As the national railway operator, ZRL plays a critical role in facilitating freight and passenger

transport, supporting regional trade, reducing logistics costs, and enhancing economic integration within Zambia and the Southern African Development Community (SADC).

Zambia Railways Limited traces its origins to the former Rhodesia Railways (RR) system, which operated an integrated railway network across the Federation of Rhodesia and Nyasaland. The railway line reached the Victoria Falls Bridge in 1902, with regional headquarters located in Kabwe and the corporate headquarters in Bulawayo, present-day Zimbabwe. Following the dissolution of the Federation in 1963, the railway system continued to operate under joint ownership between Zambia and Southern Rhodesia until 1967, when the Government of Zambia enacted legislation establishing the Zambia Railways Board as an independent national railway entity (ZRL Website, 2023).

Today, ZRL operates Zambia's principal railway network, extending from Victoria Falls in the south to Chililabombwe in the north, covering approximately 933 km of mainline track. The network is complemented by approximately 200 km of inter-mine railway lines, the 24 km Nacala Corridor link connecting Chipata in Zambia to Mchinji in Malawi, and the 162 km Mulobezi branch line extending from Livingstone to Mulobezi (ZRL Services and Operations Booklet, 2018). Map 1.1 illustrates the geographical coverage of the Zambia Railways network.



Map 1.1: Zambia Railways Limited Network

Source: ZRL Services and Operation booklet, 2018

As of August 2023, ZRL operated a fleet of 17 locomotives, comprising 11 company-owned and 6 leased locomotives. The company also managed approximately 1,200 operational wagons of various types and employed approximately 703 members of staff, reflecting its continued

importance as one of Zambia's major transport and logistics service providers (ZRL Monthly Report, 2023).

ZRL was incorporated as a limited liability company in 1982 under the Railways Act and is mandated to provide both freight and passenger rail transport services. The company's vision is to be the preferred rail transport and logistics provider, while its mission is to deliver competitive and sustainable rail transport and logistics solutions that satisfy stakeholder expectations (ZRL Annual Report, 2021).

In pursuit of this mandate, ZRL is expected to contribute significantly to Zambia's socio-economic development by improving freight mobility, facilitating regional trade, supporting the mining sector, and promoting environmentally sustainable transport. However, despite this strategic mandate and attempts by the government to render support, the company has continued to experience significant operational and financial challenges, which are discussed in the following section.

Recognizing the strategic role of rail transport in national development, the Government of Zambia has incorporated railway revitalization into several national policy frameworks. The Eighth National Development Plan (8NDP) commits to increasing the proportion of bulk cargo transported by rail to at least 30%, while the National Transport Policy Implementation Plan (2019-2028) seeks to transform the railway subsector into an efficient, reliable, safe, and competitive mode of transport supported by a modern legislative framework. The policy further targeted average operating speeds of 120 km/h for passenger trains and 80 km/h for freight trains by 2023 (NTPIP, 2019).

In addition to these policy reforms, the Government invested approximately US\$120 million in 2013 for the rehabilitation of railway infrastructure and rolling stock (Sandala, 2020). Following this intervention, Zambia Railways Limited projected that freight volumes would increase to approximately three million tonnes per annum upon completion of the rehabilitation programme (ZRL Performance Report, 2014). However, available operational statistics indicate that these projections were not realized. Recent reports further show that average train speeds remain substantially below policy expectations (20 – 40km/h), reflecting broader challenges relating to

infrastructure condition, rolling stock availability, maintenance, operational efficiency, funding, and institutional capacity (ZRL Annual Report, 2023).

To illustrate this performance trend, Table 1.1 presents projected and actual freight tonnage together with revenue performance between 2014 and 2023, while Figures 1.1 and 1.2 summarize the corresponding freight and revenue trends over the same period.

Table 1.1: Planned tonnage and revenue against actuals

Year	Projected Tonnage	Projected Revenue \$	Tonnage Moved	Revenue \$	Variance In Tonnage
2014			854,231.179	30,626,882.30	
2015			791,858.307	24,221,030.49	
2016	1,175,000	29,952,900	624,848.082	14,155,492.13	550,151.918
2017	950,000	25,015,200	709,095.190	16,653,798.03	240,904.81
2018	1,345,000	40,525,720	874,367.283	23,258,588.67	470,632.717
2019	1,150,000	39,299,087	857,083.620	23,104,207.48	292,916.38
2020	1,273,500	31,794,727	1,014,058.395	23,030,658.21	259,447.605
2021	1,180,900	25,604,609	885,716.203	16,772,798.78	295,183.797
2022	1,272,750	26,676,861	727,412.550	21,530,605.51	545,337.45
2023	956,100	26,229,735	805,719.333	24,152,095.01	150,380.667

Source: Generated by the author, 2024

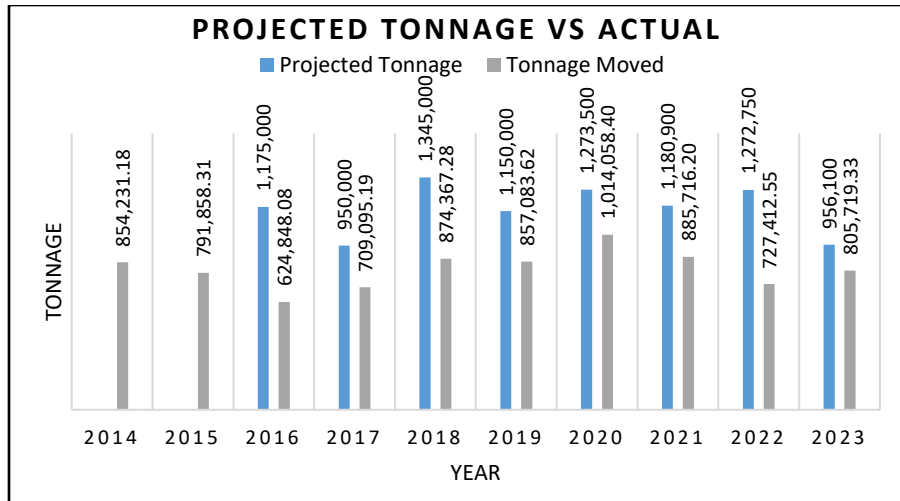


Figure 1.1: Tonnage moved between 2014 -2023

Source: ZRL Reports, 2014 -2023

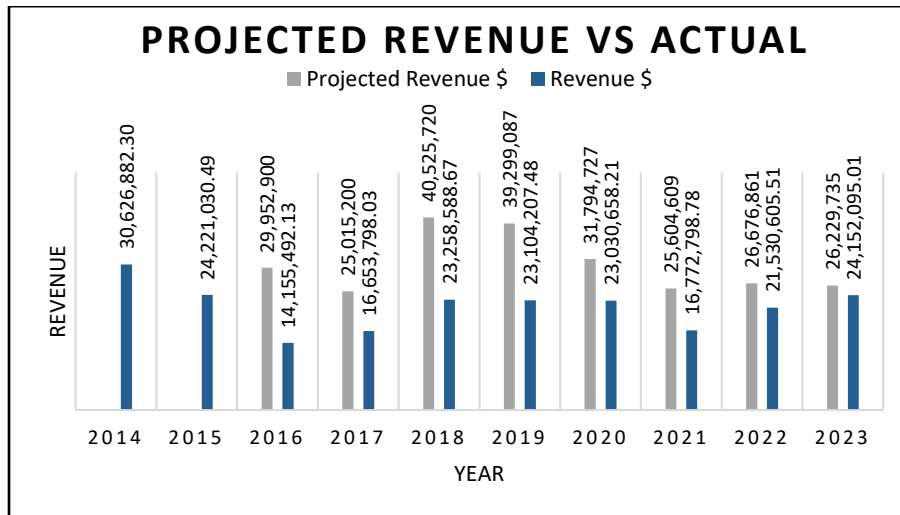


Figure 1.2: Revenue generation for the years 2014 – 2023

Source: ZRL Reports, 2014 -2023

The trends presented in Table 1.1 and Figures 1.1 and 1.2 reveal a persistent gap between projected and actual freight volumes and revenue generation. Although freight volumes increased marginally from 727,413 tonnes in 2022 to 805,719 tonnes in 2023, they remained substantially below the projected annual target of approximately three million tonnes following the 2013 rehabilitation programme. These trends suggest that the performance challenges facing Zambia Railways Limited extend beyond infrastructure investment and may be associated with broader organizational, managerial, financial, competitive, and institutional factors.

Accordingly, despite policy reforms and institutional support, Zambia Railways Limited has remained below expected operational performance levels. This persistent underperformance raises important questions regarding the underlying organizational, managerial, financial, technical, and institutional factors responsible for the company's performance, thereby motivating the present study.

1.2 Research Problem

As demonstrated in the preceding section (Table 1.1, Figure 1.1 & 1.2), Zambia Railways Limited (ZRL) has consistently failed to achieve its projected operational and financial targets despite substantial government investment in 2013, policy reforms, and institutional support. The persistent gap between projected and actual freight volumes and revenue generation demonstrates that the company's performance challenges extend beyond infrastructure investment alone and are likely influenced by broader organizational, managerial, financial, competitive, and institutional factors. Consequently, although rail transport remains strategically important for facilitating trade, reducing logistics costs, and supporting national economic development, ZRL continues to experience operational inefficiencies that undermine its competitiveness and long-term sustainability.

Previous studies have examined various aspects of railway performance in Zambia and other developing economies. For example, Mwila (2016) investigated competition between rail and road transport, Kapanda (2017) examined the historical contribution of Zambia Railways to national economic development, Kasoma & Zulu (2019) analysed structural deficiencies within the railway sector, Sandala (2020) assessed the condition of railway infrastructure, Sikazwe (2020; 2021) explored railway freight trends and future transport scenarios, while Chongo et al. (2024) examined corporate governance practices at ZRL. Although these studies have made valuable contributions to understanding railway performance, they have largely examined governance, infrastructure, competition, transport policy, or service delivery independently.

Subsequently, limited empirical research has comprehensively examined the combined influence of maintenance effectiveness, funding adequacy, leadership practices, competition from road transport, and government policy and regulatory support on the performance of ZRL within a single integrated theoretical and empirical framework. As a result, the relative contribution and

interaction of these determinants remain insufficiently understood, thereby limiting the development of comprehensive strategies for improving organizational performance.

Therefore, this study sought to investigate the factors contributing to the underperformance of ZRL. By adapting and integrating Total Productive Maintenance Theory, Institutional Theory, Contingency Theory, and Porter's Competitive Forces Model, and employing a convergent mixed-methods approach, the study aimed to generate empirical evidence that could inform policy reforms, strengthen institutional and managerial practices, and contribute to the sustainable revitalization of ZRL and other state-owned enterprises operating under similar institutional environments.

1.3 Justification for the Research

The justification for this study rests on both empirical and practical considerations. ZRL, as the country's principal rail operator, occupies a strategic position in facilitating domestic economic activity, regional trade, and industrial development. Despite repeated government interventions in the past and policy support, the company has continued to experience operational inefficiencies, declining freight market share, deteriorating infrastructure, and limited financial sustainability. Much of the existing studies and policy discussions on Zambia's transport sector have largely focused on infrastructure financing while paying limited attention to the combined influence of different variables on organizational performance.

This study addresses that gap by adopting a holistic mixed-methods approach to investigate the determinants of ZRL's underperformance. By integrating quantitative evidence with qualitative insights from management, employees, unions, ZRL clients, and policymakers, the study provides a comprehensive understanding of the organizational, operational, market, and institutional factors affecting railway performance. In doing so, it contributes to the broader literature on state-owned enterprise performance and transport sector governance in developing economies.

The study is further justified by the strategic importance of railway transport to Zambia's development agenda. An efficient railway system can reduce pressure on road infrastructure, lower transport costs, enhance safety, and support key sectors such as mining, agriculture, and manufacturing. At the regional level, Zambia's aspiration to function as a land-linked transport

and logistics hub within the Southern African Development Community (SADC) depends significantly on a reliable and competitive railway network.

Finally, the study responds to the need for evidence-based policy and institutional reforms capable of revitalizing Zambia Railways Limited. The findings are expected to inform decision-making by government, regulator, and industry stakeholders while contributing to the development of an integrated reform framework for improving the performance and sustainability of state-owned railway enterprises. In this regard, the study aligns with the objectives of Zambian Vision 2030, the Eighth National Development Plan (8NDP), and the African Union's Agenda 2063.

1.4 Research Aim

This study aimed to investigate factors contributing to the underperformance of State-Owned Enterprises, using Zambia Railways Limited as a case study, with a view to developing an evidence-based reform model to improve the performance of state-owned railway enterprises.

1.5 Research Objectives

- i. To assess the impact of maintenance practices on the performance of ZRL.
- ii. To examine the influence of funding adequacy on ZRL performance
- iii. To evaluate the effect of leadership practices on ZRL performance.
- iv. To analyze the impact of competition from road transport on ZRL performance
- v. To assess the influence of government policies and regulatory framework on ZRL

1.6 Research Questions

- i. To what extent do maintenance practices influence the performance of ZRL?
- ii. How does funding adequacy influence the performance of ZRL?
- iii. To what extent do leadership practices affect the performance of ZRL?
- iv. What is the impact of competition from road transport on the performance of ZRL?
- v. How do Government policies and regulatory frameworks influence the performance of ZRL?

1.7 Research Hypotheses

H1 – Maintenance Practices

H0: There is no significant relationship between maintenance practices and the performance of ZRL.

H1: There is a significant relationship between maintenance practices and the performance of ZRL.

H2 – Funding Adequacy

H0: There is no significant relationship between Funding Adequacy and the performance of ZRL.

H1: There is a significant relationship between Funding Adequacy and the performance of ZRL.

H3 – Leadership Efficiency

H0: There is no significant relationship between Leadership Efficiency and the performance of ZRL.

H1: There is a significant relationship between Leadership Efficiency and the performance of ZRL.

H4 – Competition from Road Transport

H0: There is no significant relationship between Competition from Road Transport and the performance of ZRL.

H1: There is a significant relationship between Competition from Road Transport and the performance of ZRL.

H5 – Government Policies and Regulatory Frameworks

H0: There is no significant relationship between Competition from Road Transport and the performance of ZRL.

H1: There is a significant relationship between Competition from Road Transport and the performance of ZRL.

1.8 Research Scope

The scope of this study was defined along four dimensions: geographical, institutional, thematic, and temporal.

Geographical scope - The study was conducted in Zambia, with a specific focus on Zambia Railways Limited. ZRL's operations extend across the national rail network and connect to regional corridors, but the study concentrated on the performance dynamics within Zambia (Chililabombwe - Livingstone) as the primary context of investigation.

Institutional scope - The research was limited to ZRL as the case study organization. This was purposively selected because of its strategic role as the country's sole state-owned rail operator, its historical and contemporary performance challenges, and its importance to national and regional transport integration.

Thematic scope - The study focused on five determinants of organisational performance derived from literature and empirical gaps: maintenance practices, funding adequacy, leadership practices, competition from road transport, and government policies. These five themes were operationalized into measurable variables and tested as predictors of ZRL's performance. The study did not cover other possible influences such as technological innovation, labour relations beyond leadership engagement, or international financing arrangements, except where they intersected with the five variables.

Temporal scope - Data collection was carried out in 2024, with the analysis reflecting stakeholder perceptions of ZRL's performance and organisational practices within the last decade (2013-2023). This period was selected because it captures ZRL's operations following the re-nationalization of the railway after the termination of the concession arrangement in 2012, and it coincides with recent government and policy efforts to revitalize the transport sector.

1.9 Research Contributions

This study contributes to theory, methodology, and practice. Theoretically, it adapts and integrates existing theories: Institutional Theory, Total Productive Maintenance (TPM), Contingency Theory, and Porter's Competitive Forces to explain railway performance in a state-owned enterprises within a developing economies. Methodologically, the study demonstrates the application of a convergent parallel mixed-methods approach by integrating quantitative and qualitative evidence through triangulation. Practically, the study provides empirical evidence that leadership effectiveness and institution readiness are more influential determinant of railway

performance than funding adequacy alone. Based on these theoretical and empirical insights, the study proposes an integrated Five-layer Reform framework presented in Chapter Five for state-owned railway transformation.

1.10 Research Design

The study adopted a convergent parallel mixed-methods research design, in which quantitative and qualitative data were collected concurrently, analysed separately, and integrated during interpretation. This design enabled the researcher to combine statistical evidence with participants' experiences, thereby providing a comprehensive understanding of the factors contributing to the underperformance of ZRL.

1.11 Research Approach and Method

The study adopted a mixed-methods research approach guided by the pragmatism research paradigm, combining both deductive and inductive reasoning. Deductive reasoning was applied in the quantitative strand to examine the relationships among the study variables and test the study hypotheses through statistical analysis. Inductive reasoning guided the qualitative strand by allowing themes and patterns to emerge from participants' experiences and perspectives. The integration of both approaches provided a comprehensive understanding of the factors contributing to ZRL's underperformance and enhanced the credibility and completeness of the findings.

1.12 Data Collection and Analysis Techniques

Primary data were collected using structured questionnaires administered through Google Forms and semi-structured interviews with employees, clients, and key stakeholders. Documentary review supplemented the primary data. Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) Version 26 through descriptive and inferential statistics, including Spearman's rho correlation, multiple linear regression, and Chi-square tests. Qualitative data were analysed using thematic analysis following Braun & Clarke's (2022) six-phase framework, and the findings were integrated with the quantitative results through triangulation.

1.13 Thesis Layout

The thesis is organized into five chapters, each addressing a distinct aspect of the research process while maintaining logical flow from problem identification to conclusions and recommendations.

Chapter One - Introduction: This chapter provides the background to the study, the statement of the problem, the research objectives, the research questions, the hypotheses, the scope, the justification, and the significance of the study. It establishes the rationale for investigating the underperformance of ZRL and outlines the study's structure.

Chapter Two - Literature Review: This chapter critically reviews theoretical and empirical literature relevant to state-owned enterprise (SOE) performance, railway sector dynamics, and the specific factors under investigation: maintenance practices, funding adequacy, leadership practices, competition from road transport, and government policies. It also presents the theoretical and conceptual underpinnings of the study, situating ZRL within broader debates on SOE performance in developing countries.

Chapter Three - Research Methodology: This chapter describes the methodological approach adopted, including the research design, population and sampling, data collection methods, measurement of variables, validity and reliability procedures, and data analysis techniques. The mixed-methods convergent design is justified as appropriate for investigating the multifaceted determinants of ZRL's performance.

Chapter Four - Findings and Interpretation: This chapter presents the empirical findings derived from quantitative and qualitative data. It includes descriptive statistics, correlation and regression analysis, and thematic analysis of interview data. The results are organized according to the study objectives and research questions, and they highlight the relationships between the independent variables and ZRL's performance as a dependent variable.

Chapter Five - Conclusions, Recommendations and Contributions: The final chapter synthesizes the findings, concluding the determinants of ZRL's underperformance, and provides targeted recommendations for maintenance, funding, leadership, competition, and policy reform. It also outlines the theoretical, methodological, and practical contributions of the study, presents its limitations, and identifies areas for further research.

1.14 Chapter Summary

The introduction chapter acts as the foundation for the entire research study. Several subsections have been covered. The study aims to investigate factors contributing to the underperformance of State-Owned Enterprises: A case study of Zambia Railways Limited. The chapter begins by emphasizing the importance of rail transport and its potential to significantly contribute to the growth of the Zambian economy if utilized effectively. Rail transport offers the advantage of bulk haulage compared to other modes of transportation.

The chapter further gave the background of the study, clearly stating when and why State-Owned Enterprises were introduced by many countries across the globe. The initial public enterprises were intended to provide essential services and infrastructure to facilitate economic growth and development. State-Owned Enterprises were first introduced in France, Russia, the United States, and Japan, among others. Further, the establishment of state-owned enterprises in Africa was influenced by various factors, including colonial history, post-independence economic development strategies, and efforts to achieve self-sufficiency and industrialization.

In Zambia, State-Owned Enterprises were established back in 1970 through ZIMCO with the main purpose of centralizing and coordinating the management of the government's interest in different industrial and mining ventures in Zambia. In 1992, the MMD government started privatizing most State-Owned Enterprises that included ZAMTEL, ZRL, ZCCM, and many more. Unfortunately, the privatization exercise did not produce results as expected. Later in 2012, the PF government saw it fit to cancel some of the concession agreements and repossessed the operational rights since most companies were not doing well under private hands. Among the companies that were repossessed included ZAMTEL and ZRL.

In an effort to improve the economy of Zambia, the Industrial Development Corporation (IDC) was incorporated again in January 2014 to superintend over the state-owned enterprises and create long-term shareholder value as an active investor as well as to lead the development of the country's national industrial capacity and create job opportunities for the people of Zambia. Unfortunately, due to a lack of proper audits at IDC some companies like ZRL have failed to perform, this is evident by the auditor's general report on the performance of State-Owned Enterprises for the period 2021 - 2022, were out of 30 companies only 5 declared dividends for

the period under review and ZRL was not among the 5, hence the study to investigate factors contributing to underperformance of ZRL.

In addition, the significance of the study was to identify factors that could have contributed to the underperformance of ZRL over the years and further recommend possible solutions. Furthermore, the justification for the study is that understanding the factors that contribute to underperformance will provide insights into how ZRL can be managed better and be operated to fulfil its role.

ZRL is a key player in the transportation sector, which is vital for the movement of goods and people and the overall economy. Identifying the reasons behind its underperformance will help in formulating strategies to improve its efficiency and effectiveness, thus contributing to economic growth through a reduction in the cost of road maintenance, reduction of traffic jams on highways, creation of job opportunities, payment of dividends to the shareholders, and many more. The Chapter concludes with the scope of work for the study, highlighting the chapters that have been considered in this study.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature relevant to the factors contributing to the underperformance of Zambia Railways Limited (ZRL). The review synthesizes theoretical, conceptual, empirical, and policy-oriented literature on the management and performance of state-owned enterprises, with particular emphasis on railway organizations operating in developing economies. The chapter examines existing knowledge on maintenance practices, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory frameworks, which constitute the key variables investigated in this study.

The chapter is organized into thematic sections corresponding to the study variables. It further presents the conceptual framework, theoretical framework, and the gaps identified in the existing literature that justify the need for the present study. The chapter concludes with a summary of the major issues arising from the literature review.

2.1 State-Owned Enterprises and Organizational Performance

State-Owned Enterprises are usually wholly or largely owned by the government at the national, regional or local level. This ownership can take many different forms, including central government control, ownership through government agencies, or ownership by public investment entities (Shirley, 2007; OECD, 2024; Butzbach, 2025)

2.1.1 *Evolution and Role of State-Owned Enterprises*

The concept of SOEs has deep historical roots, dating back many centuries. European colonial powers often established state-controlled businesses to serve their economic interests, especially in overseas colonies. For example, the British East India Company, founded in the 17th century, is an early example of a parastatal company (Cuervo-Cazurra et al., 2014; OECD, 2024).

The objectives of SOEs can vary widely depending on government policies and priorities. The general roles and goals include providing public services such as electricity, water, and transportation; fostering economic growth by investing in key industries that can also create job

opportunities; managing resources; and providing strategic controls, thereby ensuring national interests and security are maintained, among other objectives.

2.1.2 Performance Challenges in State-Owned Enterprises

Although SOEs play an important role, they often face challenges such as inefficiencies, corruption, political interference, and financial difficulties. These challenges may vary from country to country and across industries (Megginson, 1994). More recent international assessments similarly show that many SOEs underperform relative to private firms, displaying lower profitability, higher leverage, governance weaknesses and generating significant fiscal risks (Baum, Medas, Soler, & Sy, 2020; OECD, 2020).

Over the past decades, many countries have embarked on privatization and broader SOE reforms to address these challenges. Privatization involves the transfer of ownership and management control from the government to the private sector, while broader governance reforms aim to improve efficiency, reduce state intervention, and strengthen the overall performance of formerly state-owned enterprises (Megginson, 1994; Baum et al., 2020; OECD, 2020).

2.1.3 Zambia Railways Limited within Zambia's State-Owned Enterprise Sector

The government of the Republic of Zambia has a good number of SOEs managed through the Industrial Development Corporation (IDC). As earlier indicated, among them are: ZESCO, ZAMTEL, ZRL, ZAMPOST, Infratel, TAZAMA pipeline, ZCCM-HI & NAPSA (IDC website 2023). The railway industry in Zambia is a critical component of the country's economy. It plays a crucial role in the transportation of goods and passengers across the country, linking Zambia with its neighbouring countries. ZRL is the main railway company in Zambia, responsible for operating the railway system.

2.1.4 Strategic Role of Zambia Railways Limited in Regional Connectivity

Zambia Railways Limited occupies a strategic position within Zambia's regional transport network. Map 2.1 shows the principal railway corridors linking Zambia to seaports, including Dar es Salaam (through TAZARA), Beira, and Durban, which serve as critical gateways for the country's international trade and regional integration.

enhancing Zambia's competitiveness within the Southern African Development Community (SADC) trade framework.

2.2 Empirical Literature

This section reviews empirical studies on the factors influencing the performance of railway organizations and state-owned enterprises at the global, regional (Africa), and national (Zambia) levels. Consistent with the study objectives, the review focuses on five determinants of ZRL performance: maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support. The review critically compares empirical findings, identifies areas of convergence and divergence, and highlights the theoretical, methodological, and contextual gaps that justify the present study.

2.2.1 Maintenance Practices

2.2.1.1 Global-Level Literature

Maintenance effectiveness is widely recognized as one of the principal determinants of railway safety, operational reliability, and long-term organizational performance. Recent studies indicate that railway maintenance has progressively evolved from reactive maintenance approaches towards predictive, condition-based, and data-driven asset management systems supported by digital technologies and artificial intelligence (Davoodi et al., 2023; Pratico & Fedele, 2025). This transition reflects the growing recognition that effective maintenance not only reduces equipment failures but also enhances operational efficiency, improves asset utilization, and lowers life-cycle costs.

Several empirical studies conducted in developed railway systems demonstrate the positive relationship between proactive maintenance and railway performance. For example, Ivina & Palmqvist (2023) examined railway infrastructure maintenance in Sweden and found that although scheduled maintenance temporarily increases train delays during implementation, well-planned maintenance significantly improves long-term network reliability and infrastructure availability.

Similarly, Buurman, Gkiotsalitis, & Van Berkum (2023) developed optimization models for railway maintenance scheduling in the Netherlands, demonstrating that balancing maintenance

requirements with train operations minimizes network disruption while improving infrastructure reliability. These findings suggest that effective maintenance planning requires an integrated approach that considers both operational efficiency and service continuity.

Recent studies have further demonstrated that technological innovation is transforming railway maintenance practices. Popovich et al. (2021) and Cipek et al. (2021) found that hybrid-electric and battery-electric locomotives reduce dependence on conventional diesel propulsion systems, thereby lowering maintenance requirements, reducing fuel consumption, and improving environmental sustainability. Likewise, Davoodi et al. (2023) reported that the integration of digital diagnostics, intelligent monitoring systems, and energy storage technologies enables railway operators to shift from corrective maintenance towards predictive asset management, resulting in improved equipment reliability and reduced maintenance costs.

Despite broad agreement regarding the importance of maintenance, the literature reveals contrasting perspectives concerning implementation. While studies from developed railway systems generally report positive outcomes associated with predictive maintenance and digital asset management, these approaches require substantial financial investment, advanced technical expertise, and sophisticated monitoring infrastructure (Kapetanovic et al., 2021; Mongird et al., 2019). Therefore, the successful implementation of modern maintenance systems remains considerably more challenging in developing countries, where ageing infrastructure, limited technical capacity, and financial constraints continue to impede maintenance effectiveness.

Although existing global studies provide valuable evidence on modern railway maintenance practices, most have focused on technologically advanced railway systems characterized by high levels of digitalization, automation, and institutional capacity. Relatively few studies have examined how maintenance effectiveness influences organizational performance within state-owned railway enterprises operating under financial, institutional, and governance constraints typical of developing economies.

Furthermore, previous research has largely examined maintenance as an isolated technical function rather than as one of several interrelated organizational factors affecting enterprise performance. This study addresses these gaps by examining maintenance effectiveness alongside funding

adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support within an integrated theoretical and empirical framework.

2.2.1.2 Regional-Level (African Perspective)

The maintenance of railway infrastructure and rolling stock remains one of the most significant determinants of railway performance across Sub-Saharan Africa. Unlike developed railway systems, where predictive and condition-based maintenance have become standard practice, many African railway organizations continue to rely on reactive and corrective maintenance due to chronic underinvestment, ageing infrastructure, limited technical capacity, and institutional constraints (African Development Bank, 2021; Boye et al., 2023). Thus, railway systems throughout the region continue to experience declining operational reliability, low asset availability, reduced traffic volumes, and increasing maintenance backlogs, thereby limiting their contribution to regional economic development and multimodal transport integration.

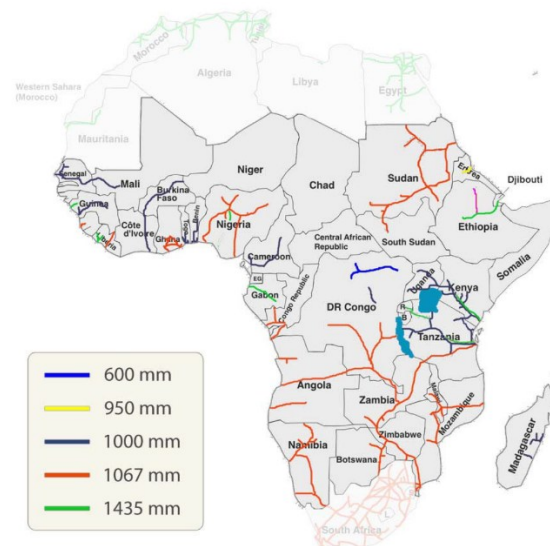
Recent empirical evidence suggests that maintenance challenges in Africa extend beyond the technical condition of railway assets. Rather, they reflect the cumulative effects of inadequate investment, fragmented railway networks, weak maintenance planning, limited asset renewal programmes, shortage of skilled personnel, and poor institutional support (Blumenfeld et al., 2019; AfDB, 2021). These factors have collectively constrained the ability of many state-owned railway enterprises to modernize their infrastructure and compete effectively with road transport.

One of the most comprehensive assessments of railway infrastructure in Sub-Saharan Africa was conducted by Blumenfeld et al. (2019), who observed that railway infrastructure in many low-income African countries remains considerably older and less developed than international standards. The authors reported that substantial sections of railway infrastructure in countries such as Ghana, Uganda, and Zambia have exceeded their intended design life, with many assets remaining in operation for more than one hundred years.

As a consequence, deteriorating track conditions, low axle-load capacities, speed restrictions, and deferred maintenance have significantly reduced railway efficiency and reliability across the continent. These findings demonstrate that infrastructure deterioration remains one of the principal constraints to railway competitiveness within the African transport sector.

Beyond ageing infrastructure, the regional railway network is characterized by limited interoperability resulting from the coexistence of different railway gauges. According to Blumenfeld et al. (2019), Cape Gauge (1,067 mm) remains the dominant railway gauge within the Southern African Development Community (SADC), while Metre Gauge (1,000 mm) continues to predominate in several East African countries. More recently, Standard Gauge Railway (1,435 mm) infrastructure has been introduced in countries such as Kenya and Ethiopia as part of broader railway modernization programmes.

Although these investments have improved national railway capacity, the coexistence of multiple railway gauges continues to constrain regional connectivity, increase transshipment costs, and complicate cross-border railway operations. Earlier observations by Olievski (2013) similarly concluded that limited interoperability remains one of the principal barriers to railway integration throughout Sub-Saharan Africa. Map 2.2 shows track gauges operated in sub-sahara Africa.



Map 2.2.: Track gauges operated in Sub-Sahara Africa

Source: Blumenfeld et al., 2019

The fragmented railway network illustrated in Map 2.2 highlights the limited physical integration of African railway systems. While Southern Africa possesses relatively better railway connectivity than other regions of the continent, much of the network remains constrained by ageing infrastructure, inconsistent maintenance standards, and limited investment in cross-border interoperability. Subsequently, railway operators often experience operational inefficiencies

arising from gauge incompatibility, additional cargo handling requirements, and increased transport costs, all of which reduce the competitiveness of rail transport relative to road freight.

Another important indicator of maintenance effectiveness is railway traffic density, which indicates infrastructure utilization and the financial capacity of railway operators to sustain maintenance programs. Blumenfeld et al. (2019) reported that most low-income Sub-Saharan African railway systems operate at traffic densities below one million traffic units per route-kilometre, considerably lower than those recorded in developed railway systems as shown in Figure 2.1. Low traffic density reduces economies of scale, limits internally generated maintenance revenue, and contributes to the progressive deterioration of railway infrastructure.

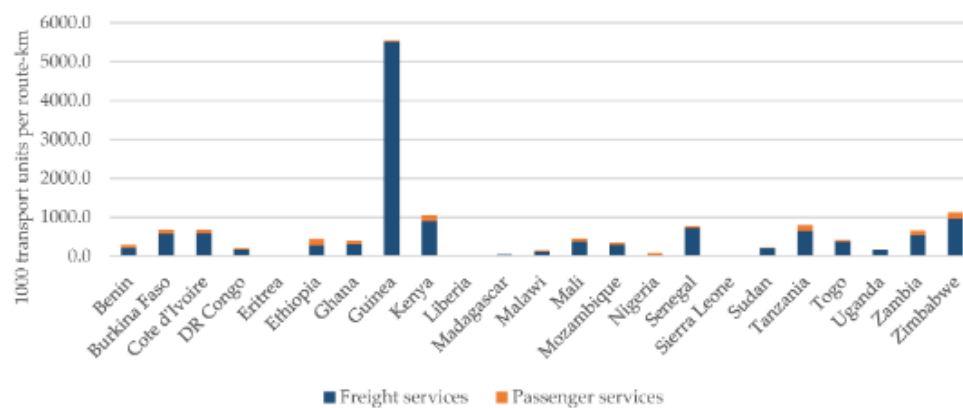


Figure 2.1: Rail traffic density in SSA LICs

Source: Blumenfeld et al., 2019

Figure 2.1 demonstrates that railway utilization across most low-income African countries remains substantially below internationally accepted benchmarks. Low traffic density not only reflects declining freight demand but also constrains the financial sustainability of railway organizations by limiting the revenue available for infrastructure rehabilitation, rolling stock renewal, and preventive maintenance programs. Consequently, many railway operators become trapped in a cycle whereby deteriorating infrastructure reduces traffic volumes, while declining traffic further limits maintenance investment.

The disparity becomes even more apparent when African railway systems are compared with those operating in developed economies. Blumenfeld et al. (2019) observed that railway traffic density in countries such as the United Kingdom and France averages approximately 4.5 million traffic

units per route-kilometre, while major railway systems in China and the United States exceed 40 million traffic units per route-kilometre as shown in Figure 2.2. Such differences illustrate the substantial gap in railway utilization between developed and developing economies and partially explain why railway operators in advanced economies are better positioned to finance modern maintenance technologies and infrastructure renewal.

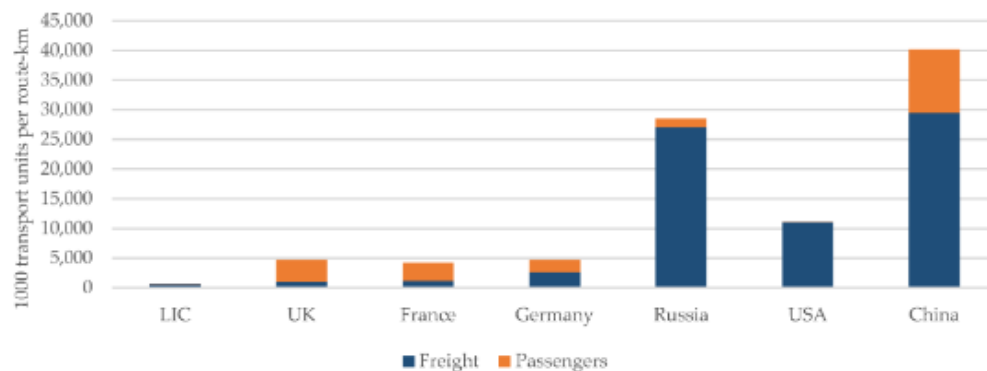


Figure 2.2: Comparison of Rail Traffic Density between Low-Income Sub-Saharan African Countries and High-Income Countries

Source: Blumenfeld et al., 2019

The comparative evidence presented in Figure 2.2 reinforces the argument that maintenance effectiveness cannot be considered independently of infrastructure utilization and financial sustainability. Higher traffic densities generate sufficient revenue to support continuous infrastructure maintenance, technological modernization, and asset renewal. Conversely, the low traffic densities characteristic of many African railway systems constrain maintenance budgets, accelerate infrastructure deterioration, and reduce the overall competitiveness of rail transport.

These findings suggest that improving maintenance effectiveness requires not only technical interventions but also broader institutional and strategic reforms capable of increasing railway utilization and long-term financial sustainability.

2.2.1.2.1 Maintenance Practices among Selected African Railway Operators

Although railway organizations across Africa operate under different institutional and economic conditions, empirical evidence suggests that they experience remarkably similar maintenance challenges. Common constraints include ageing infrastructure, inadequate maintenance funding,

shortage of skilled technical personnel, obsolete maintenance equipment, weak asset management systems, and increasing competition from road transport. Nevertheless, individual railway organizations have adopted different maintenance strategies in an effort to improve operational performance.

South Africa's Transnet Freight Rail (TFR) provides one of the most extensively documented examples of railway maintenance management on the continent. Recognizing the deterioration of critical railway infrastructure, TFR introduced planned annual maintenance shutdowns to undertake intensive track rehabilitation, signalling upgrades, and infrastructure renewal without the disruptions associated with continuous maintenance activities (Rail Safety Regulator, 2021; Boye et al., 2023). The strategy reflects a shift from predominantly reactive maintenance towards planned preventive maintenance intended to improve infrastructure reliability and operational safety.

Despite these interventions, maintenance outcomes have remained mixed. The Rail Safety Regulator (2021) reported that although the absolute number of derailments declined over the review period, derailments per million train kilometres increased after traffic volumes were normalized. This suggests that maintenance interventions alone may be insufficient where infrastructure deterioration, declining traffic volumes, vandalism, and operational constraints persist. Similarly, George et al. (2018) observed that increasing freight demand places additional pressure on ageing railway infrastructure, requiring maintenance programmes to be accompanied by sustained investment in infrastructure renewal and modern asset management systems.

Comparable experiences are evident elsewhere within the Southern African Development Community (SADC). Botswana Railways continues to prioritize preventive maintenance, routine inspections, and infrastructure renewal to maintain the operational integrity of its approximately 640-kilometre railway network. The railway operator recognizes that systematic maintenance planning is essential for ensuring service reliability, minimizing operational disruptions, and maintaining safety standards despite relatively modest traffic volumes (Botswana Railways Annual Report, 2021). Likewise, Eswatini Railway has continued to invest in track rehabilitation, bridge maintenance, signalling improvements, and terminal modernization to sustain operational efficiency and regional freight connectivity (Eswatini Railway Annual Report, 2018).

The experiences of Kenya Railways further demonstrate that infrastructure modernization alone does not guarantee improved railway performance. Following the construction of the Standard Gauge Railway (SGR), significant improvements were recorded in infrastructure quality, freight capacity, and transit times. However, studies by the World Bank (2020) and the African Development Bank (2022) indicate that maintenance planning, operational efficiency, commercial sustainability, and continued competition from road freight remain important challenges affecting long-term railway performance. These findings suggest that infrastructure investment must be complemented by effective maintenance management and broader institutional reforms if anticipated operational benefits are to be fully realized.

In the same way, the Tanzania-Zambia Railway Authority (TAZARA) continues to experience maintenance challenges associated with ageing infrastructure, inadequate financing, shortages of spare parts, and declining rolling stock availability. Despite periodic rehabilitation programmes supported by bilateral development partners, maintenance backlogs have continued to constrain operational reliability and freight volumes, illustrating the difficulties faced by multinational state-owned railway enterprises operating under constrained financial environments (AfDB, 2021; Parliament of Zambia, 2024).

Beyond individual railway operators, several empirical studies have attempted to identify the organizational factors influencing maintenance effectiveness across African railway systems. Boye et al. (2023) synthesized evidence from railway infrastructure organizations and identified critical determinants including the availability of skilled personnel, maintenance planning, maintenance history data, spare parts availability, asset renewal programmes, and effective maintenance scheduling. Equally, Bhebhe & Zincume (2020) found that maintenance effectiveness depends not only on technical maintenance activities but also on organizational planning, resource availability, workforce competence, and coordination between operational departments.

According to Boye et al. (2023), Table 2.1 below highlights factors affecting the implementation of maintenance in the Railway Infrastructure sector:

Table 2.1: Factors Affecting the Implementation of Railway Maintenance

No	Factor	Description	Reference
1	Availability of Material.	Resources such as tools, spare parts and maintenance staff should at all times be available in order to reduce the effect of reactive maintenance.	(Bhebhe & Zincume, 2020)
2	Availability of railway track and traffic delays.	Managing train traffic while conducting inspection is a crucial concern, and this can be very challenging to stop train movement on some routes to pave way for rail inspection and maintenance.	(Kumar et al., 2006)
3	Availability of skilled human resources.	Research has demonstrated over time, according to Organ et al. (1997), that it is people, not technology or computer systems, which will determine an organization's future success. Unqualified personnel perform most maintenance, which compromises the quality of maintenance procedures and equipment availability.	(Bhebhe & Zincume, 2020) (Kumar et al., 2006)
4	Lack of maintenance history data.	The lack of historical maintenance data makes it difficult to track time-based preventive maintenance activities because it is unclear when the asset was last serviced.	(Espling, 2007)
5	Unavailability of a proper maintenance schedule and asset renewal program.	Unplanned and prolonged interruption of service provision to customers due to the lack of an appropriate planned asset maintenance and renewal program.	(Liden, 2015) Eskamdarzadeh et al., 2019)

Source: Adapted from Boye et al., 2023

As summarized in Table 2.1, maintenance effectiveness is influenced by multiple organizational factors rather than by technical interventions alone. The availability of skilled maintenance personnel, reliable maintenance records, spare parts, planned maintenance schedules, and adequate operational windows collectively determine the success of railway maintenance programs. These findings reinforce the systems perspective advanced in the present study, which recognizes maintenance effectiveness as an organizational capability requiring coordinated managerial, financial, and institutional support.

More recent studies indicate that African railway organizations are gradually embracing predictive and condition-based maintenance approaches. Gackowiec (2019) observed that preventive maintenance significantly reduces equipment failures and life-cycle maintenance costs when implemented systematically. Likewise, Salawu et al. (2023) demonstrated that condition-based monitoring and predictive maintenance technologies improve railway asset reliability by enabling early fault detection and reducing unplanned maintenance interventions.

Gholipour et al. (2025) further argued that digital maintenance technologies supported by artificial intelligence, sensors, and real-time monitoring systems represent the future of railway asset management. However, the adoption of these technologies across African railway organizations remains constrained by limited investment, inadequate technical expertise, and insufficient digital infrastructure.

The comparative evidence from African railway operators reveals both convergence and divergence in maintenance practices. While all railway organizations acknowledge the importance of preventive maintenance, infrastructure renewal, and asset management, the effectiveness of these interventions largely depends on institutional capacity, financial sustainability, workforce competence, and technological readiness.

South Africa has made greater progress in implementing structured maintenance programmes, whereas countries such as Kenya have prioritized infrastructure modernization. Conversely, railway systems such as TAZARA continue to struggle with basic maintenance challenges arising from chronic underinvestment and ageing assets. These contrasting experiences suggest that maintenance effectiveness cannot be explained solely by engineering considerations but must be understood within a broader organizational and institutional context.

2.2.1.2.2 Synthesis of Regional Evidence

Generally, the regional literature demonstrates that maintenance effectiveness remains a fundamental determinant of railway organizational performance across Africa. Although empirical studies consistently identify ageing infrastructure, inadequate investment, shortages of skilled personnel, and weak maintenance planning as major constraints, they generally examine these factors independently. Comparatively limited research has examined how maintenance

effectiveness interacts with leadership effectiveness, funding adequacy, competition from road transport, and government policy to influence the performance of state-owned railway enterprises.

Furthermore, relatively few empirical studies focus specifically on ZRL using an integrated mixed-methods approach grounded in complementary organizational theories. The present study addresses these empirical, methodological, and contextual gaps by examining maintenance effectiveness as one component of a broader framework explaining the underperformance of ZRL.

2.2.1.3 Local Level (Zambian Perspective)

Empirical studies conducted in Zambia consistently identify maintenance deficiencies as one of the principal factors constraining the operational performance of ZRL. Unlike many international studies that focus on predictive maintenance technologies and digital asset management, the Zambian literature predominantly attributes poor railway performance to ageing infrastructure, inadequate maintenance funding, obsolete rolling stock, shortage of spare parts, and weak institutional support (Sandala, 2020; Kasoma & Zulu, 2019; Parliament of Zambia, 2024).

Collectively, these studies suggest that maintenance challenges have persisted despite periodic government initiatives aimed at rehabilitating and revitalizing the railway sector. Although interventions such as recapitalization, infrastructure rehabilitation, policy, and regulatory measures demonstrate government efforts to support the sector, their scale, continuity, implementation, and effectiveness have not always been sufficient to address ZRL's accumulated maintenance and modernization requirements.

One of the most comprehensive studies on railway infrastructure in Zambia was undertaken by Sandala (2020), who assessed the condition of ZRL's infrastructure and its contribution to national economic activities. The study established that deteriorating track infrastructure, ageing locomotives, inadequate maintenance equipment, and limited financial resources significantly constrained railway operations.

Sandala (2020) further observed that although government had committed substantial financial resources towards railway rehabilitation, implementation remained slow because of inadequate program funding, delayed procurement processes, and limited technical capacity. These findings

suggest that maintenance effectiveness depends not only on infrastructure investment but also on the institutional and managerial capacity required to sustain maintenance programs.

Similarly, Kasoma & Zulu (2019) analysed structural deficiencies in Zambia's railway sector and concluded that prolonged underinvestment in infrastructure maintenance had significantly reduced the railway sector's competitiveness. The study reported that deferred maintenance resulted in declining locomotive availability, speed restrictions, increased operating costs, and reduced service reliability, thereby encouraging freight operators to shift from rail to road transport. The authors further emphasized that sustainable railway revitalization requires sustained maintenance investment supported by appropriate policy reforms and institutional strengthening.

More recently, the Parliament of Zambia (2024) reviewed the performance of the rail transport sector and reported that inadequate maintenance continues to undermine railway operations despite ongoing policy reforms and government support. The Committee observed that much of ZRL's rolling stock has exceeded its economic life, while shortages of spare parts, maintenance equipment, and skilled technical personnel have reduced locomotive availability and operational efficiency. The report further noted that deteriorating infrastructure and delayed rehabilitation programmes continue to affect freight capacity, train speeds, and service reliability, thereby limiting the railway sector's contribution to national economic development.

Operational reports published by Zambia Railways Limited similarly indicate that maintenance-related challenges remain persistent. According to ZRL Annual Reports (2022; 2023), frequent locomotive failures, deteriorating track conditions, and increasing maintenance backlogs have continued to reduce operational reliability, increase transit times, and constrain freight volumes. These operational challenges have been compounded by limited maintenance funding, procurement delays, and the continued reliance on ageing rolling stock, resulting in declining asset availability and increasing operating costs.

Although these Zambian studies consistently identify inadequate maintenance as a major contributor to railway underperformance, several limitations remain evident within the existing literature. Firstly, most studies examine maintenance primarily from an infrastructure or engineering perspective without adequately considering its interaction with organizational factors

such as leadership effectiveness, funding adequacy, government policy, and competition from road transport.

Secondly, the literature largely emphasizes rehabilitation and infrastructure renewal while giving comparatively limited attention to emerging maintenance technologies such as predictive maintenance, intelligent asset management, digital diagnostics, and hybrid locomotive technologies that are increasingly being adopted internationally. Finally, existing studies remain largely descriptive, with relatively few employing integrated theoretical frameworks capable of explaining how maintenance interacts with broader organizational and institutional determinants of performance.

These observations provide an important justification for the present study. Rather than examining maintenance as an isolated technical function, this research investigates maintenance effectiveness within a broader organizational performance framework comprising variables already mentioned in the above paragraph.

By adopting a convergent mixed-methods approach grounded in theories indicated already, the study provides a more comprehensive explanation of the factors contributing to the underperformance of ZRL while extending the existing body of knowledge on the performance of state-owned railway enterprises.

2.2.1.4 Emerging Maintenance Technologies, Critical Synthesis and Research Gap

Recent developments in railway maintenance indicate a progressive shift from traditional corrective and preventive maintenance towards intelligent, predictive, and condition-based maintenance systems supported by Fourth Industrial Revolution (4IR) technologies. Advances in artificial intelligence (AI), the Internet of Things (IoT), digital twins, big data analytics, and real-time asset monitoring have enabled railway operators to improve asset reliability, optimize maintenance scheduling, reduce lifecycle costs, and minimize operational disruptions (Davoodi et al., 2023; Gholipour et al., 2025). These innovations allow maintenance decisions to be based on actual equipment condition rather than predetermined maintenance intervals, thereby improving operational efficiency and asset utilization.

Similarly, recent studies have highlighted the growing adoption of sustainable traction technologies as part of modern railway maintenance strategies. Hybrid-electric locomotives and battery energy storage systems have been shown to reduce diesel engine operating hours, lower fuel consumption, minimize mechanical wear, and extend equipment life while simultaneously reducing greenhouse gas emissions (Popovich et al., 2021; Kapetanovic et al., 2021; Cipek et al., 2021). These developments demonstrate that maintenance management is increasingly being integrated with broader objectives of operational efficiency, environmental sustainability, and energy optimization.

Despite these technological advances, empirical evidence suggests that their successful implementation depends on the availability of adequate financial resources, institutional support, skilled technical personnel, and effective leadership (African Development Bank, 2021; Boye et al., 2023). Therefore, the adoption of advanced maintenance technologies remains considerably more challenging for many railway companies in developing economies, where ageing infrastructure, limited maintenance budgets, and institutional constraints continue to impede modernization efforts.

2.2.1.4.1 Critical Synthesis of the Literature

The empirical literature reviewed at the global, regional, and local levels consistently demonstrates that maintenance effectiveness is a fundamental determinant of railway performance. However, the emphasis of previous studies varies across geographical contexts.

Research conducted in developed economies primarily focuses on predictive maintenance, intelligent asset management, and digital technologies aimed at maximizing infrastructure reliability and operational efficiency. In contrast, studies undertaken in Africa and Zambia predominantly identify ageing infrastructure, inadequate maintenance funding, shortage of skilled personnel, obsolete rolling stock, and deferred maintenance as the principal challenges affecting railway performance.

The literature further demonstrates that maintenance effectiveness cannot be viewed solely as a technical or engineering function. Rather, successful maintenance depends on the interaction of

organizational, financial, managerial, and institutional factors that collectively determine asset availability, service reliability, operational efficiency, and long-term sustainability.

Studies emphasizing technological innovation illustrate the potential benefits of predictive maintenance and digital asset management, whereas African and Zambian studies underscore the continued importance of strengthening maintenance planning, institutional capacity, workforce competence, and financial sustainability before such technologies can be effectively implemented.

Fundamentally, the reviewed literature confirms that effective maintenance remains central to improving railway performance. Nevertheless, the evidence suggests that maintenance interventions are unlikely to achieve sustainable improvements when implemented in isolation. Instead, maintenance effectiveness should be complemented by adequate funding, effective leadership, supportive government policies, and strategies that enhance the competitiveness of railway transport. This integrated perspective provides the foundation for examining maintenance effectiveness within the broader framework of organizational performance adopted in the present study.

2.2.2 Funding Adequacy

2.2.2.1 Global Level

Funding adequacy is widely recognized as one of the most critical determinants of railway sustainability, operational performance, and long-term competitiveness. Railway systems require substantial and continuous financial investment to support infrastructure development, rolling stock acquisition, maintenance, signalling modernization, digital technologies, and service expansion. Consequently, successful railway organizations have increasingly adopted diversified funding models that combine public investment with commercial revenue generation, private sector participation, and innovative financing mechanisms (International Union of Railways, 2023; World Bank, 2022).

Historically, railway infrastructure has largely been financed through direct government investment because of its strategic importance in supporting national development, regional connectivity, and economic growth. However, increasing fiscal pressures and growing infrastructure demands have prompted many countries to explore alternative financing approaches

that reduce dependence on government budgets while enhancing financial sustainability (OECD, 2023).

Recent studies indicate that financially resilient railway administrations increasingly combine government support with commercial income, public-private partnerships (PPPs), infrastructure bonds, land value capture, and property development to diversify revenue sources and improve long-term financial performance (Asian Development Bank, 2021; World Bank, 2022).

Several empirical studies demonstrate the importance of efficient financial management alongside adequate funding. Bhatia & Sharma (2021), in their study of Indian Railways, concluded that improving organizational performance requires not only increased financial investment but also effective expenditure management, cost optimization, and efficient resource allocation. The authors argued that performance improvements are more likely to be achieved when financial planning is linked directly to operational priorities and measurable performance indicators rather than relying solely on increased government expenditure.

Recent evidence further suggests that successful railway administrations increasingly view commercial diversification as an important complement to traditional funding sources. For example, railway operators in Japan have expanded beyond conventional passenger and freight services by investing extensively in property development, retail facilities, hotels, and commercial real estate surrounding railway stations. Figure 2.3 depicts global railway funding models.

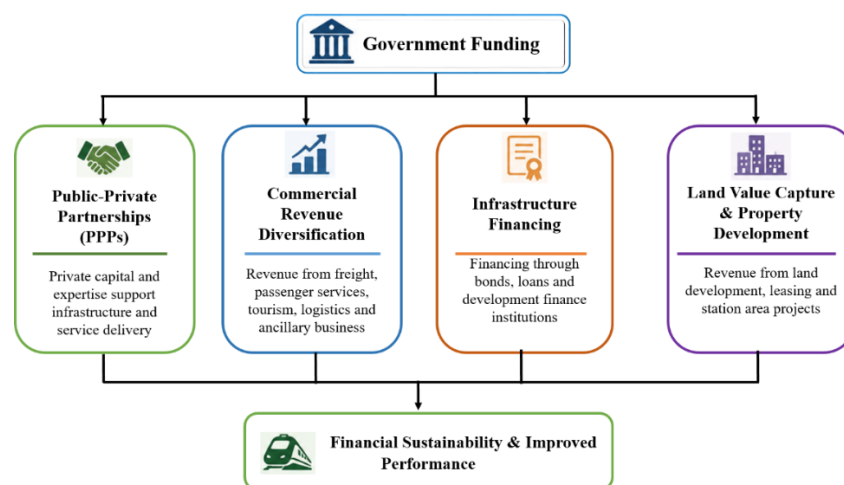


Figure 2.3: Global Railway Funding Models:

Source: Developed by the Author from OECD (2023), World Bank (2022), ADB (2021), & UIC (2023)

According to Okada (2020), this integrated business model has enabled Japanese railway companies to generate substantial non-fare revenue while reducing dependence on passenger income alone. Similarly, the East Japan Railway Company (JR East) has diversified its operations into shopping centres, office developments, tourism, and hospitality services, thereby strengthening its financial resilience while improving customer experience (JR East Annual Report, 2023).

Comparable funding strategies have also been adopted in Europe. Railway operators increasingly utilize Public-Private Partnerships (PPPs) to finance infrastructure modernization, signalling systems, and high-speed rail development. According to the European Commission (2022), PPPs have enabled governments to mobilize private capital, share investment risks, and improve project delivery while maintaining public oversight of strategic transport infrastructure. Nevertheless, the Commission cautioned that successful PPP implementation requires transparent governance structures, effective regulatory frameworks, and appropriate risk allocation between public and private partners.

North American railway operators similarly demonstrate the importance of diversified revenue models. Although freight railways in the United States and Canada operate predominantly as commercial enterprises, passenger railway organizations continue to benefit from public investment while expanding commercial revenue opportunities.

VIA Rail Canada, for example, combines government support with passenger revenue, tourism-oriented services, charter operations, and long-distance premium travel experiences to strengthen financial sustainability (VIA Rail Canada Annual Report, 2023). Likewise, several railway operators have introduced premium tourism products, seasonal luxury services, and heritage railway experiences to improve asset utilization and generate supplementary revenue during peak travel periods.

Another emerging trend is the growing emphasis on value capture financing and transit-oriented development. The World Bank (2022) observed that railway operators increasingly finance infrastructure through commercial development of railway-owned land, station redevelopment projects, and long-term property leasing arrangements. Such approaches enable railway companies

to generate sustainable revenue streams independent of fare income while simultaneously supporting urban development and increasing passenger demand.

Despite these innovations, empirical evidence demonstrates that funding adequacy remains a multidimensional challenge extending beyond the availability of financial resources. Campos et al. (2019) argued that sustained railway performance depends equally on financial governance, institutional accountability, investment prioritization, and effective project implementation. Similarly, the Organisation for Economic Co-operation and Development (OECD, 2023) emphasized that financial sustainability requires transparent governance systems capable of ensuring that available resources are efficiently allocated toward infrastructure maintenance, asset renewal, technological modernization, and operational improvement.

The global literature therefore demonstrates that successful railway administrations rarely depend on a single funding source. Rather, they combine government investment with diversified commercial activities, strategic partnerships, innovative financing mechanisms, and sound financial governance to enhance long-term sustainability. These experiences suggest that funding adequacy should be viewed not merely as the availability of financial resources but as the capacity of railway organizations to mobilize, manage, and efficiently utilize diverse sources of finance in support of organizational objectives.

2.2.2.1.1 Critical Reflection

The global evidence demonstrates a clear evolution in railway financing from traditional government-funded models towards diversified and commercially oriented financing strategies. While governments continue to play a critical role in financing strategic railway infrastructure, successful railway organizations increasingly complement public investment through innovative financing mechanisms, commercial diversification, and effective financial governance.

These findings suggest that funding adequacy is influenced not only by the volume of financial resources available but also by institutional arrangements, managerial capability, and organizational capacity to generate and utilize revenue efficiently. This broader perspective provides an important foundation for examining funding adequacy within the context of ZRL.

2.2.2.2 Regional Level (African Perspective)

Funding adequacy remains one of the most significant challenges affecting railway performance across Africa. Despite widespread recognition of rail transport as a catalyst for regional integration, trade facilitation, and sustainable economic development, railway infrastructure continues to receive considerably lower levels of investment than road transport. According to the African Development Bank (AfDB, 2021), decades of underinvestment have resulted in deteriorating infrastructure, obsolete rolling stock, limited network expansion, and declining freight market share across many African railway systems. Thus, most state-owned railway enterprises remain heavily dependent on government subsidies, exposing them to fiscal constraints and limiting their capacity to undertake large-scale infrastructure rehabilitation and modernization.

Recent empirical studies indicate that the funding challenges experienced by African railway administrations extend beyond the availability of financial resources. Bouraima et al. (2023) observed that although many African governments acknowledge the strategic importance of rail transport, public investment has continued to favour road infrastructure, creating a persistent imbalance in national transport expenditure.

The authors argued that this investment pattern has weakened railway competitiveness by limiting maintenance funding, delaying infrastructure rehabilitation, and reducing the ability of railway operators to modernize their operations. Similarly, the African Union (2019) identified inadequate and unsustainable financing as one of the principal barriers to achieving the continental railway modernization objectives articulated under Agenda 2063.

Recognizing these constraints, several African railway administrations have gradually adopted more diversified funding strategies. One notable example is Transnet Freight Rail (TFR) in South Africa, which has progressively complemented government investment through commercial borrowing, strategic partnerships with private sector organizations, and long-term infrastructure investment programs.

According to Ittmann (2017), collaboration between Transnet and private logistics partners has enabled the organization to mobilize additional financial resources, improve operational efficiency, and share investment risks associated with infrastructure modernization. More recently,

the Transnet Integrated Report (2023) highlighted continued investment in corridor modernization, signalling upgrades, and freight capacity expansion supported through a combination of internally generated revenue, commercial financing, and strategic partnerships.

Comparable funding diversification efforts are evident elsewhere within the Southern African Development Community (SADC). Botswana Railways has increasingly pursued Public-Private Partnerships (PPPs) to finance infrastructure development, rolling stock rehabilitation, and logistics expansion. According to the Botswana Railways Annual Report (2021), partnerships with private investors have enabled the railway operator to accelerate selected infrastructure projects while reducing dependence on direct government financing. Additionally, Mubila & Yepes (2017) observed that PPPs offer African railway administrations opportunities to leverage private sector expertise, mobilize additional investment capital, and improve project implementation efficiency where public resources remain constrained.

In contrast, other railway administrations continue to face significant financial constraints despite ongoing government support. Eswatini Railway, although recognized as one of the more efficient railway operators in Southern Africa, continues to depend heavily on freight revenue to finance infrastructure maintenance and network improvements. Studies by Team et al. (2013) indicate that the relatively small size of the domestic railway market limits revenue generation, thereby requiring careful financial planning and prudent asset management to maintain operational sustainability.

Similar challenges have been reported by the Tanzania-Zambia Railway Authority (TAZARA), where inadequate investment, ageing infrastructure, declining freight volumes, and limited internally generated revenue have constrained infrastructure rehabilitation despite periodic financial support from cooperating governments and development partners (AfDB, 2021).

East African railway systems present another important perspective on railway financing. Following substantial investment in the Standard Gauge Railway (SGR), Kenya Railways Corporation has benefited from large-scale government financing supported by external development loans. While this investment significantly improved infrastructure quality and freight capacity, subsequent studies suggest that long-term financial sustainability depends on increasing freight volumes, improving operational efficiency, and strengthening commercial revenue

generation to meet debt servicing obligations (World Bank, 2020; AfDB, 2022). These findings demonstrate that infrastructure investment alone is insufficient unless accompanied by sustainable financing strategies capable of supporting ongoing operations and maintenance.

Together, these regional experiences demonstrate that African railway administrations are gradually shifting from exclusive dependence on government funding towards more diversified financing models involving commercial revenue generation, strategic partnerships, concessional financing, and Public-Private Partnerships.

However, the pace of this transition varies considerably across countries depending on institutional capacity, government policy, financial governance, and market conditions. Railway operators with stronger governance structures and diversified revenue sources appear better positioned to sustain infrastructure investment than those relying predominantly on annual government budget allocations. Table 2.2 shows comparative funding models adopted by selected African Railway Operators.

Table 2.2: Comparative Funding Models Adopted by Selected African Railway Operators

Railway Operator	Principal Funding Sources	Strengths	Key Challenge
Transnet Freight Rail (South Africa)	Commercial revenue, government support, commercial borrowing, PPPs.	Diversified funding base and large freight market.	Debt burden and infrastructure backlogs.
Kenya Railways	Government investment, external development loans, freight revenue	Modern infrastructure and increased freight capacity.	Debt servicing and commercial sustainability
Botswana Railways	Government support, PPPs, freight revenue.	Strategic partnerships and project financing	Small domestic market and limited capital
Eswatini Railways	Freight revenue and government support.	Strong operational efficiency.	Limited domestic market and revenue base.
TAZARA	Government support, development partners, freight revenue.	Regional strategic importance.	Ageing infrastructure, declining freight volumes, funding shortages.

Source: Developed by the Author, 2025.

The comparative evidence presented in Table 2.2 demonstrates that while government funding remains indispensable for railway development across Africa, financially resilient railway organizations increasingly complement public investment with commercial financing, strategic partnerships, and diversified revenue generation.

Nevertheless, funding adequacy continues to depend not only on the volume of investment but also on governance quality, institutional capacity, commercial orientation, and effective financial management. These observations reinforce the proposition advanced by Institutional Theory that railway performance is influenced by the effectiveness of institutional arrangements governing resource mobilization, allocation, and utilization.

2.2.2.3 Local Level (Zambian Perspective)

Funding inadequacy has consistently been identified as one of the principal factors constraining ZRL's performance. Unlike railway systems operating in more financially diversified environments, ZRL has historically relied heavily on government financial support to finance infrastructure rehabilitation and comprehensive rolling stock maintenance. Despite government interventions aimed at revitalizing the railway sector, empirical evidence suggests that these investments have not translated into sustained improvements in operational performance, infrastructure condition, or financial sustainability (Sandala, 2020; Kasoma & Zulu, 2019; Parliament of Zambia, 2024).

One of the most comprehensive studies on railway financing in Zambia was undertaken by Sandala (2020), who examined the contribution of railway infrastructure investment to national economic development. The study concluded that although successive governments had allocated financial resources towards railway rehabilitation, funding remained inadequate, inconsistent, and largely directed towards addressing immediate operational challenges rather than supporting long-term infrastructure renewal. Furthermore, Sandala observed that project implementation was frequently constrained by delayed fund disbursement, procurement inefficiencies, and limited institutional capacity, thereby reducing the effectiveness of public investment.

Similarly, Kasoma & Zulu (2019) analysed the structural deficiencies affecting Zambia's railway sector and reported that prolonged underinvestment had significantly weakened railway

competitiveness. The authors attributed declining railway performance to inadequate infrastructure financing, ageing rolling stock, insufficient maintenance investment, and weak policy implementation. They further argued that restoring railway competitiveness requires sustained long-term investment supported by institutional reforms capable of improving financial governance and operational efficiency.

Earlier work by Mwila (2016) also highlighted the structural imbalance in transport infrastructure financing within Zambia. The study observed that public investment had increasingly favoured road transport, resulting in relatively limited financial support for railway infrastructure. Consequently, Mwila proposed the establishment of a dedicated multimodal transport infrastructure financing mechanism supported by fuel levy revenues to provide predictable long-term financing for both road and rail infrastructure. Unlike annual government budget allocations, such a financing mechanism would enable systematic infrastructure maintenance, asset renewal, and long-term investment planning.

More recently, the Parliament of Zambia (2024) reaffirmed that inadequate funding continues to constrain railway operators. The Committee on Transport, Works and Supply reported that ZRL continues to experience serious financial challenges characterized by ageing locomotives, deteriorating infrastructure, limited maintenance funding, shortages of spare parts, and declining freight competitiveness. The Committee further noted that inadequate financial resources have significantly delayed infrastructure rehabilitation programs while reducing the company's ability to compete effectively with road transport.

Financial performance reports published by Zambia Railways Limited further reinforce these observations. According to the ZRL Annual Reports (2021; 2022), the company has continued to experience constrained cash flows arising from declining freight volumes, increasing maintenance costs, and limited internally generated revenue.

These financial pressures have reduced the company's capacity to finance infrastructure rehabilitation, replace obsolete rolling stock, and invest in modern railway technologies. Similar observations were made by the Auditor General's Reports (2021; 2022), which highlighted persistent operational losses, weak returns on government investment, and the absence of dividend payments.

The empirical evidence also raises important questions regarding the effectiveness of government financial interventions. In 2013, the Government of the Republic of Zambia invested approximately US\$120 million towards railway infrastructure rehabilitation and rolling stock improvements with the objective of restoring railway competitiveness (Sandala, 2020).

However, subsequent operational performance indicates that projected freight volumes were not achieved, suggesting that financial investment alone may be insufficient to improve railway performance unless accompanied by effective governance, institutional accountability, efficient resource utilization, and complementary operational reforms. Figure 2.7 depicts major government funding interventions and performance of ZRL.

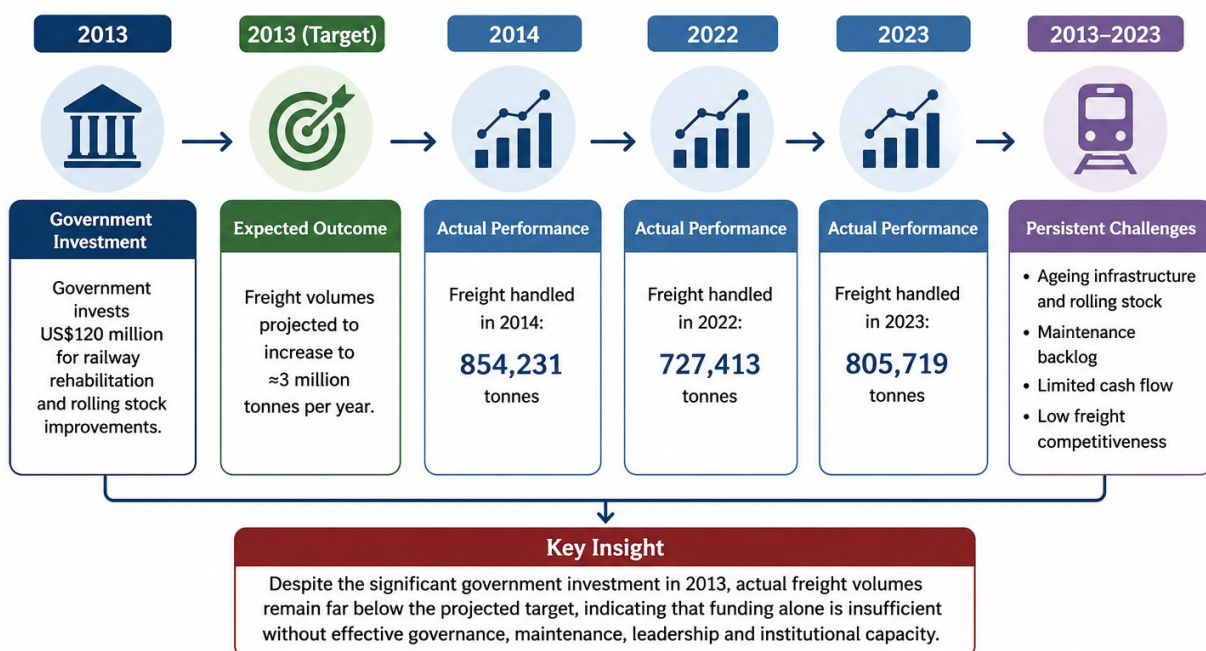


Figure 2.4: Major Government Funding Interventions and Performance of Zambia Railways Limited (2013-2023)

Source: Developed by the Author, 2026

The relationship between government investment and operational performance illustrated in Figure 2.4 suggests that financial investment alone does not automatically translate into improved organizational performance. Rather, the effectiveness of funding appears to depend on complementary factors such as maintenance effectiveness, institutional governance, leadership capability, procurement efficiency, and operational management. Again, this observation is consistent with Institutional Theory, which emphasizes that organizational performance depends

not only on the availability of resources but also on the institutional arrangements governing their allocation and utilization. Table 2.3 gives a summary of empirical studies on funding adequacy in Zambia.

Table 2.3: Summary of Empirical Studies on Funding Adequacy in Zambia

Author	Focus of Study	Major Findings	Implications
Mwila (2016)	Railway and road transport financing	Road sector receives significantly greater investment than rail; proposed multimodal infrastructure fund.	Need for sustainable and predictable railway financing.
Sandala (2020)	Railway infrastructure investment	Government funding insufficiently translated into improved operational performance due to implementation constraints.	Funding should be complemented by effective governance and institutional capacity.
Kasoma & Zulu (2019)	Structural deficiencies in Zambia's railway sector	Long-term underinvestment contributed to declining competitiveness and infrastructure deterioration.	Sustained investment and institutional reforms are required
Parliament of Zambia (2024)	Review of rail transport sector	Funding shortages continue to constrain maintenance, rehabilitation, and operational efficiency.	Greater financial sustainability and investment diversification required.

Source: Compiled by the Author (2026)

2.2.2.4 Emerging Funding Model and Critical Synthesis

The global railway industry has undergone significant changes in infrastructure financing over the past decade. Increasing fiscal constraints and growing investment requirements have encouraged railway administrations to move beyond traditional dependence on government budget allocations towards diversified financing mechanisms that improve long-term financial sustainability. Emerging financing models include Public-Private Partnerships (PPPs), infrastructure bonds, land value capture, transit-oriented development, commercial property development, green financing, climate funds, and multilateral development financing (World Bank, 2022; OECD, 2023; UIC, 2023).

Among these innovations, Public-Private Partnerships have become one of the most widely adopted financing mechanisms for railway infrastructure development. According to the World Bank (2022), PPPs enable governments to attract private capital while sharing investment risks and benefiting from private-sector technical expertise. Similarly, the OECD (2023) observed that PPPs have increasingly been used to finance railway modernization projects where public resources alone are insufficient to meet infrastructure investment requirements.

Another emerging trend involves commercial diversification as a means of strengthening railway financial sustainability. Rather than depending exclusively on passenger fares and freight charges, many railway companies have expanded into property development, logistics services, tourism, retail operations, warehousing, and station commercialisation (JR East Annual Report, 2023; Okada, 2020). These non-fare revenue streams reduce dependence on government funding while improving financial resilience during periods of fluctuating transport demand.

Recent studies have also highlighted the growing role of green financing in railway modernization. Given the comparatively low carbon emissions associated with rail transport, several international financial institutions increasingly classify railway infrastructure as a sustainable investment eligible for climate finance, green bonds, and concessional loans (International Energy Agency, 2023; European Investment Bank, 2022). These financing mechanisms have enabled railway operators in several countries to invest in energy-efficient locomotives, electrification, digital signalling systems, and low-carbon transport infrastructure while supporting broader environmental objectives.

Despite these developments, empirical evidence indicates that innovative financing mechanisms are most effective when supported by sound institutional governance and effective financial management. Studies by Campos et al. (2019) and the OECD (2023) suggest that financial sustainability depends not only on mobilizing additional financial resources but also on transparent governance, efficient resource allocation, accountability, and the alignment of investment decisions with long-term organizational objectives. Therefore, diversified funding should be viewed as a complement, rather than a substitute for, effective institutional and managerial practices.

2.2.2.4.1 Critical Synthesis

The empirical literature reviewed at the global, regional, and local levels demonstrates broad consensus that adequate funding is indispensable for sustainable railway performance. However, important differences emerge regarding how railway organizations achieve financial sustainability. Railway systems in developed economies increasingly combine government investment with commercial revenue generation, Public-Private Partnerships, property development, and innovative financing mechanisms. Conversely, most African railway organizations remain heavily dependent on government budgetary support, exposing them to fiscal uncertainty and limiting investment in infrastructure renewal and technological modernization.

The Zambian literature reflects this broader regional pattern. Existing studies consistently identify inadequate and unpredictable funding as a major contributor to the operational challenges facing ZRL. However, they also suggest that increasing financial allocations alone is unlikely to restore railway competitiveness unless accompanied by improved financial governance, institutional accountability, effective leadership, and efficient utilization of available resources.

The reviewed literature collectively demonstrates that funding adequacy should be conceptualized as more than just the availability of financial resources. Rather, it encompasses the ability of railway organizations to mobilize diverse funding sources, manage financial resources efficiently, strengthen commercial sustainability, and align investment decisions with long-term strategic objectives. This integrated perspective provides an appropriate foundation for examining funding adequacy as one of the key determinants of ZRL's performance.

2.2.3 Leadership and Management Practices

Leadership effectiveness is a critical determinant of organizational performance because it influences strategic direction, decision-making, communication, employee motivation, accountability, and organizational adaptability. In state-owned enterprises, leadership is particularly important because such organizations operate within complex institutional environments shaped by government ownership, public accountability, regulatory oversight, and political expectations. Effective leadership therefore requires both strategic vision and managerial discipline to align organizational resources with long-term performance objectives (Kotter, 2012; Armstrong & Taylor, 2023; Northouse, 2025).

2.2.3.1 Conceptual Distinction between Leadership and Management

Leadership and management are closely related yet distinct organizational functions. Leadership focuses on setting direction, communicating the vision, inspiring commitment, and guiding organizational change, while management emphasizes planning, organizing, coordinating resources, monitoring performance, and ensuring operational control (Kotter, 2012; Northouse, 2025). In practice, leadership provides strategic direction, while management ensures disciplined execution.

This distinction holds particular significance for ZRL, where underperformance may stem from deficiencies in both domains. Weak leadership can result in poor strategic direction, ineffective communication, limited innovation, and low employee morale. Similarly, weak management may manifest through inadequate planning, ineffective monitoring systems, poor resource allocation, and limited accountability. Sustainable organizational performance therefore requires the integration of both leadership and management: leadership to provide vision and drive change, and management to ensure implementation, control, and operational discipline (Bolden, 2011; Armstrong & Taylor, 2023).

2.2.3.2 Global Level

Global literature shows that high-performing organizations tend to combine visionary leadership with effective management systems. Kotter (2012) argues that organizational transformation requires leaders who can create urgency, build coalitions, communicate vision, empower employees, and institutionalize change. This is particularly relevant to railway administrations because they operate in environments requiring continuous adaptation to technological change, customer expectations, safety requirements, and competitive transport markets.

Studies on leadership further show that employee engagement, communication, and ethical decision-making are strongly associated with organizational effectiveness. Yukl, Mahsud, Hassan, & Prussia (2013) demonstrated that ethical and empowering leadership improves leader effectiveness by promoting trust, accountability, and employee commitment. Equally, Osborne & Hammoud (2017) found that effective employee engagement improves workplace performance when supported by clear communication and leadership commitment. These findings suggest that

leadership effectiveness is not limited to top-level decision-making but extends to the ability of leaders to mobilize employees toward organizational goals.

In railway and transport organizations, leadership effectiveness is also linked to safety, reliability, and change management. High-reliability organizations require leaders who promote safety culture, continuous learning, and disciplined operational practices (Weick & Sutcliffe, 2015; Dwyer, Karanikas, & Sav, 2023). This is relevant to railway operations because service failure, poor maintenance, and weak communication can have significant safety and operational consequences. Therefore, leadership in railway administrations must combine strategic foresight with operational discipline.

Generally, global literature indicates that effective leadership contributes to organizational performance through strategic alignment, employee engagement, accountability, innovation, and continuous improvement. However, most global studies are based on private-sector or highly institutionalized public-sector contexts. Their findings may not fully explain leadership challenges in African SOEs, where political interference, weak governance, and limited managerial autonomy often shape leadership effectiveness.

2.2.3.3 Regional Level (African Perspective)

Within Africa, leadership and management practices in state-owned enterprises are often constrained by governance weaknesses, bureaucratic procedures, political interference, and limited managerial autonomy. OECD (2015; 2024) emphasizes that effective governance of state-owned enterprises requires professional boards, clear performance mandates, transparency, accountability, and separation between ownership and regulatory functions. Where these conditions are weak, leadership effectiveness is often undermined by unclear authority, political influence, and weak performance accountability.

In the railway sector, regional evidence shows that leadership effectiveness is closely linked to strategic management, stakeholder engagement, and institutional capacity. Kamwere (2018), in a study of Kenya Railways Corporation, found that strategic management practices influence organizational performance through resource allocation, strategic alliances, and implementation

capability. This suggests that railway leadership must not only formulate strategies but also ensure that such strategies are supported by adequate resources and institutional commitment.

South African evidence also shows that leadership and management practices affect railway performance. Transnet SOC Ltd. (2023) highlights the importance of governance reforms, operational recovery, stakeholder collaboration, and corridor performance improvement in strengthening freight rail operations. However, continued operational challenges show that effective institutional systems, infrastructure investment, and performance accountability must support leadership reforms. Similarly, Mokoena & Sharp (2020) found that employee perspectives within Transnet Freight Rail point to the importance of customer experience management, internal communication, and organizational responsiveness.

The regional literature therefore suggests that African railway administrations require leadership capable of balancing commercial performance, public policy objectives, infrastructure constraints, and stakeholder expectations. However, evidence also shows that competent leadership may be constrained where institutional environments are characterized by political interference, weak governance structures, and inadequate funding. This reinforces the need to examine leadership effectiveness together with institutional, financial, maintenance, and competitive factors.

2.2.3.4 Local Level (Zambian Perspective)

In Zambia, leadership and management challenges have been repeatedly identified as important contributors to the underperformance of SOEs. Chipalo (2011) observed that Zambia's parastatal sector has historically faced challenges related to political influence, weak corporate governance, poor financial management, and operational inefficiency. These challenges are relevant to ZRL because the company operates within a public ownership structure where leadership decisions are influenced by government policy, shareholder oversight, and institutional arrangements.

Specific studies on ZRL confirm that leadership and governance challenges remain central to the company's performance problems. Chongo, Mandhu, Mwanza, & Mwange (2024) found that corporate governance practices at ZRL are affected by overlapping decision-making structures, political influence, and weak accountability mechanisms. These governance weaknesses reduce

managerial autonomy and weaken the ability of leadership to make timely operational and strategic decisions.

Kapanda (2017) also shows that Zambia Railways has historically been affected by shifts in policy direction, management weaknesses, and inconsistent strategic focus. Similarly, Sandala (2020) found that government investment in railway rehabilitation did not produce the expected performance improvements, partly because of weak accountability, implementation challenges, and poor utilization of resources. These findings suggest that leadership effectiveness at ZRL cannot be separated from institutional governance and financial management.

The Parliament of Zambia (2024) further observed that Zambia's railway sector continues to face challenges relating to weak performance, inadequate investment, poor infrastructure condition, and limited competitiveness. Although these challenges are partly technical and financial, they also point to the need for stronger leadership capable of coordinating maintenance, funding, stakeholder engagement, policy implementation, and operational reforms.

Fundamentally, the Zambian literature indicates that leadership effectiveness is a central factor in ZRL's performance because it influences strategic direction, accountability, resource utilization, employee motivation, maintenance prioritization, and responsiveness to market conditions. However, existing studies often examine leadership and governance separately from other performance determinants. This study therefore examines leadership effectiveness alongside other variables indicated already.

2.2.3.5 Critical Synthesis

The reviewed literature demonstrates that leadership effectiveness is a major determinant of organizational performance across global, regional, and local contexts. Globally, leadership is associated with strategic vision, employee engagement, change management, innovation, and accountability. Regionally, African railway organizations face additional leadership constraints arising from political interference, weak governance systems, limited autonomy, and inadequate institutional capacity. Locally, studies on ZRL show that leadership and governance weaknesses have contributed to poor strategic execution, weak accountability, and limited organizational transformation.

The literature further shows that leadership effectiveness does not operate in isolation. Effective leadership depends on the availability of financial resources, supportive policies, competent employees, reliable infrastructure, and an enabling institutional environment. Therefore, leadership should be understood as a cross-cutting variable that influences and is influenced by maintenance, funding, policy, and competition. This integrated understanding supports the present study's treatment of leadership effectiveness as one of the key determinants of ZRL performance

2.2.4 Competition from the Road Transport

Competition between rail and road transport has become one of the most significant determinants of railway performance worldwide. Liberalization of transport markets, improvements in highway infrastructure, and increasing customer demand for flexible logistics services have intensified competition, particularly for freight transportation. While rail transport remains more cost-effective for bulk commodities and long-distance freight, road transport continues to dominate short-haul, high-value, and time-sensitive cargo because of its flexibility, extensive network coverage, and door-to-door delivery capability (Profillidis, 2016; Nash, Benedetto, & Smith, 2017).

2.2.4.1 Global Level

Globally, competition between rail and road transport has intensified as logistics systems have become increasingly integrated and customer-oriented. Rather than competing solely on transport costs, railway operators now compete on service reliability, transit time, network connectivity, customer responsiveness, and environmental sustainability (Profillidis, 2016).

Studies conducted in Europe indicate that railway competitiveness depends largely on operational efficiency and market liberalization. Esposito et al. (2020) found that railway reforms across the European Union significantly improved freight competitiveness by introducing competition among railway operators, strengthening regulatory oversight, and improving infrastructure access. Likewise, Nash et al. (2019) observed that liberalization encouraged greater service innovation and customer responsiveness, enabling rail operators to compete more effectively with road freight services.

Operational reliability has also emerged as a major competitive advantage. Cacchiani & Toth (2012) demonstrated that improved train scheduling and timetable optimization significantly reduce delays while increasing customer confidence in railway services. Likewise, Stojadinovic (2019) argued that efficient railway capacity allocation enables rail operators to maximize infrastructure utilization while improving service quality.

Recent literature further suggests that technological innovation is becoming an increasingly important source of competitive advantage. Wang & Wang (2023) found that reforms within state-owned railway companies have significantly improved operational efficiency through digital technologies, performance monitoring systems, and better asset utilization.

In a similar way, Popovich et al. (2021) demonstrated that battery-electric locomotives substantially reduce operating costs through lower fuel consumption and maintenance requirements, thereby strengthening the competitive position of rail transport against road freight. Kapetanovic et al. (2021) reached similar conclusions, reporting that optimized onboard energy storage systems improve locomotive efficiency while reducing operating costs and emissions.

Customer service has equally become an important determinant of railway competitiveness. Guner et al. (2024) found that passenger satisfaction increasingly depends on punctuality, comfort, communication, and service quality. Likewise, Van Lierop et al. (2018) concluded that customer loyalty in public transport is strongly influenced by service reliability, convenience, and perceived value rather than pricing alone.

Together, global evidence suggests that successful railway operators compete with road transport through operational efficiency, technological innovation, customer-oriented services, and institutional reforms rather than relying solely on infrastructure investment. Figure 2.5 depicts the major competitive strategies adopted by modern railway operators.



Figure 2.5: Major Competitive Strategies Adopted by Modern Railway Operators

Source: Developed by the Author, 2026, from Nash et al. (2019); Epsosite et al. (2020)

Figure 2.5 summarizes the principal competitive strategies adopted by successful railway operators to strengthen their market position against road transport. The figure illustrates that sustainable competitiveness depends not on a single intervention but on the integration of operational efficiency, customer service quality, technological innovation, cost leadership, and strategic partnerships. These strategies collectively enhance service reliability, operational performance, and long-term competitiveness.

2.2.4.2 Regional Level (African Perspective)

The competitive relationship between rail and road transport in Africa has progressively shifted in favour of road transport over the past three decades. Despite the economic advantages of rail for long-distance bulk commodity transport, road transport continues to dominate freight and passenger markets (AfDB, 2021; World Bank, 2022). Bouraima et al. (2023) estimate that road transport accounts for approximately 80% of freight movement and more than 90% of passenger transport across much of Sub-Saharan Africa, leaving railway operators with a relatively small share of the transport market.

Several studies attribute this imbalance to decades of inadequate investment in railway infrastructure, rolling stock, and maintenance. Blumenfeld et al., (2019) observed that deteriorating infrastructure, low operating speeds, poor service reliability, and fragmented railway networks have significantly reduced the competitiveness of African railways.

Subsequently, many operators have experienced declining freight volumes, resulting in reduced revenue generation and further limiting their ability to finance infrastructure rehabilitation and service modernization. This creates a self-reinforcing cycle; declining competitiveness reduces traffic volumes, which in turn constrains investment in operational improvement.

Recent literature does, however, demonstrate that several African railway organizations have adopted strategic measures aimed at improving their competitive position. In South Africa, Transnet Freight Rail (TFR) has implemented corridor-based operating strategies focusing on improving train scheduling, reducing terminal dwell times, increasing wagon utilization, and strengthening customer engagement.

According to the Transnet Integrated Report (2023), these initiatives have improved operational efficiency and supported the movement of bulk minerals, containerized freight, and general cargo. Additionally, Mokoena & Sharp (2020) reported that operational efficiency, customer relationship management, and continuous employee development have become central elements of Transnet's competitiveness strategy.

Comparable initiatives have been reported elsewhere in the Southern African Development Community (SADC). Botswana Railways has pursued service diversification by expanding logistics services, strengthening intermodal transport, and enhancing regional freight connectivity to improve its competitiveness within the regional transport market (Botswana Railways Annual Report, 2021).

Likewise, Eswatini Railway has focused on customer-oriented logistics solutions and cross-border freight services that connect regional ports with neighbouring countries, thereby improving service flexibility (Eswatini Railway Annual Report, 2018).

Regional integration has also emerged as an important competitive strategy. Mubila & Yepes (2017) argued that improving cross-border railway connectivity within the SADC region enhances freight efficiency by reducing transit times, simplifying customs procedures, and facilitating seamless movement of goods across national boundaries. Such initiatives strengthen the comparative advantage of rail transport, particularly for long-distance freight corridors where economies of scale can be achieved more effectively than through road transport.

The experience of Kenya Railways further illustrates the importance of combining infrastructure investment with operational reforms. Following the introduction of the Standard Gauge Railway, freight transport capacity improved considerably, yet studies indicate that competition with road transport continues because customer preferences are influenced not only by infrastructure quality but also by service reliability, price competitiveness, flexibility, and logistics integration (World Bank, 2020; AfDB, 2022). These findings suggest that infrastructure modernization alone does not guarantee market competitiveness unless accompanied by customer-focused operational improvements. Table 2.4 shows the competitive strategies adopted by selected African railway operators.

Table 2.4: Competitive Strategies Adopted by Selected African Railway Operators

Railway Operator	Major Competitive Strategy	Reported Outcome
Transnet Freight Rail (South Africa)	Corridor optimization, operational efficiency, customer engagement.	Improved freight reliability and operational performance.
Botswana Railways	Service diversification and intermodal logistics.	Expanded regional freight services.
Eswatini Railways	Customer-focused logistics and cross-border connectivity.	Improved regional market.
Kenya Railways	Infrastructure modernization and logistics integration.	Increased freight capacity but continued road competition.

Source: Compiled by the Author, 2026

The African literature demonstrates that railway competitiveness depends on considerably more than infrastructure investment alone. Successful railway organizations increasingly compete through operational efficiency, customer-oriented service delivery, regional integration, logistics diversification, and continuous organizational improvement.

However, unlike railway operators in developed economies, many African railways continue to operate under financial, institutional, and infrastructure constraints that limit their ability to respond effectively to growing competition from road transport. These findings provide important insights for understanding the competitive challenges facing ZRL within the broader regional transport environment.

2.2.4.3 Local Level (Zambian Perspective)

Competition from road transport has emerged as one of the most significant factors affecting the performance of ZRL. Since the liberalization of Zambia's transport sector, road transport has increasingly become the preferred mode for both freight and passenger movement because of its flexibility, accessibility, shorter transit times, and ability to provide door-to-door services as earlier indicated (Mwila, 2016; Ministry of Transport and Communications, 2017). Subsequently, rail transport has experienced a substantial decline in market share despite its comparative advantage in transporting bulk commodities over long distances.

Mwila (2016), in a comparative analysis of road and rail transport in Zambia, reported that rail accounted for less than 10% of the national freight market, while road transport carried more than 90% of domestic freight traffic. The study attributed this imbalance to differences in infrastructure investment, operational flexibility, pricing structures, and service reliability. Mwila further observed that continued investment in road infrastructure, coupled with relatively limited investment in railway rehabilitation, has progressively strengthened the competitive position of road transport while weakening the railway sector.

Similar observations were reported by the Ministry of Transport and Communications (2017), which acknowledged that road transport has become the dominant mode of freight movement in Zambia because of its extensive network coverage and operational flexibility. Although the Government recognizes rail transport as the preferred mode for heavy and bulk cargo, inadequate infrastructure, ageing rolling stock, low operating speeds, and inconsistent service reliability continue to reduce the competitiveness of ZRL.

Recent sector reviews reinforce these findings. Kasoma & Zulu (2019) argued that declining railway competitiveness is closely associated with deteriorating infrastructure, inadequate maintenance, limited investment, and weak institutional support. According to the authors, these constraints have reduced locomotive availability, increased transit times, and weakened customer confidence, thereby encouraging freight customers to shift to road transport despite the higher external costs associated with road haulage.

The Parliament of Zambia (2024) similarly observed that the railway sector continues to face considerable competitive pressure from road transport. The Committee reported that although government policies seek to increase the proportion of bulk cargo transported by rail, ZRL continues to experience operational challenges that limit its ability to attract and retain freight customers. These challenges include ageing locomotives, inadequate maintenance, limited freight capacity, poor infrastructure condition, and prolonged transit times.

Government policy has also attempted to restore the competitive position of rail transport through regulatory intervention. Statutory Instrument No. 7 of 2018, which provides for the mandatory transportation of selected bulk commodities by rail, was introduced to increase railway freight volumes and reduce road infrastructure deterioration. However, available evidence suggests that implementation has been constrained by the limited operational capacity of ZRL. According to the ZRL Annual Report (2023), shortages of serviceable locomotives, wagon availability, and infrastructure constraints have reduced the company's ability to fully capitalize on this policy intervention.

The competitive challenges experienced by ZRL extend beyond infrastructure and operational performance. Banda (2020) found that transport users increasingly value service accessibility, flexibility, reliability, and delivery speed when selecting transport modes. These customer preferences continue to favour road transport, particularly for high-value and time-sensitive freight, while rail retains its comparative advantage mainly in the movement of bulk commodities over long distances.

Generally, the Zambian literature demonstrates broad consensus that competition from road transport has significantly contributed to the declining performance of ZRL. However, the reviewed studies also indicate that the competitive disadvantage experienced by ZRL cannot be attributed only to the growth of the road transport sector, but also reflects the interaction of challenges already indicated, which collectively reduce the railway's ability to compete effectively in the transport market. These findings underscore the importance of examining competition from road transport alongside other organizational and institutional determinants of performance within an integrated analytical framework.

2.2.5 Government Policies and Regulatory Frameworks

Government policy and regulatory frameworks play a fundamental role in shaping the performance, competitiveness, and long-term sustainability of railway systems. Unlike many other industries, railway transport is characterized by substantial infrastructure investment requirements, public ownership of strategic assets, extensive safety obligations, and significant external benefits to society. Therefore, governments influence railway performance through legislation, regulatory oversight, infrastructure investment, market liberalization, safety regulation, environmental policies, and institutional governance (OECD, 2024; World Bank, 2019).

2.2.5.1 Global Level

Across developed economies, governments have adopted different policy approaches to improve railway performance. Within the European Union (EU), railway reform has largely focused on market liberalization, regulatory harmonization, interoperability, and the promotion of competition. The successive Railway Packages introduced by the European Commission sought to separate infrastructure management from train operations, improve open access to railway networks, strengthen independent regulatory institutions, and facilitate cross-border railway services (European Commission, 2016).

According to Esposito, Cicatiello, & Ercolano (2020), these reforms significantly enhanced operational efficiency by increasing competition, improving service quality, and encouraging innovation among railway operators. Equally, Nash et al. (2019) observed that liberalization contributed to greater customer responsiveness and more efficient allocation of railway infrastructure capacity across member states.

A contrasting policy model is evident in East Asia, where railway development has been driven primarily through long-term government planning and sustained public investment. In China, railway expansion has formed an integral component of successive national development strategies, with government policies emphasizing infrastructure modernization, technological innovation, and integration of railway transport into broader economic development programs (World Bank, 2019). Rather than relying primarily on market competition, Chinese railway policy has focused on coordinated state investment, centralized planning, and institutional support to expand railway capacity and improve national connectivity.

Similarly, Japan has maintained strong government oversight of its railway sector despite the privatization of the Japan National Railways (JNR). According to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT, 2023), government policy continues to support railway safety, infrastructure renewal, technological innovation, disaster resilience, and environmental sustainability. Continuous regulatory oversight combined with long-term investment has enabled Japanese railway operators to maintain internationally recognized standards of punctuality, operational reliability, and customer service.

Recent literature also highlights the growing influence of environmental policy on railway development. Governments increasingly employ regulatory and fiscal instruments such as emissions standards, carbon reduction targets, green investment incentives, and sustainable transport policies to encourage modal shifts from road to rail transport (UIC, 2023; World Bank, 2022). These policy interventions recognize rail transport as a lower-carbon alternative capable of contributing to national climate change mitigation objectives while supporting sustainable economic development.

Beyond infrastructure investment and environmental regulation, recent studies emphasize the importance of institutional governance in determining policy effectiveness. The OECD (2024) argues that well-governed SOEs require clearly defined ownership arrangements, transparent regulatory frameworks, performance monitoring systems, and professional boards capable of balancing commercial objectives with broader public policy mandates. Furthermore, the World Bank (2019) maintains that effective railway reforms depend not only on policy formulation but also on institutional capacity, regulatory consistency, and accountability during implementation.

Collectively, the global literature demonstrates that no single policy model guarantees railway success. European countries have largely improved railway performance through market liberalization and regulatory reform, whereas Asian railway systems have achieved significant progress through coordinated government investment and long-term strategic planning.

Despite these differences, successful railway systems share common characteristics, including stable policy environments, effective regulatory institutions, sustained infrastructure investment, and strong governance arrangements. These experiences suggest that government policy contributes to railway performance not simply through legislation, but through the creation of

institutional conditions that enable railway organizations to operate efficiently, innovate continuously, and respond effectively to changing economic and transport demands. Figure 2.6 illustrates the global policy models supporting railway development.

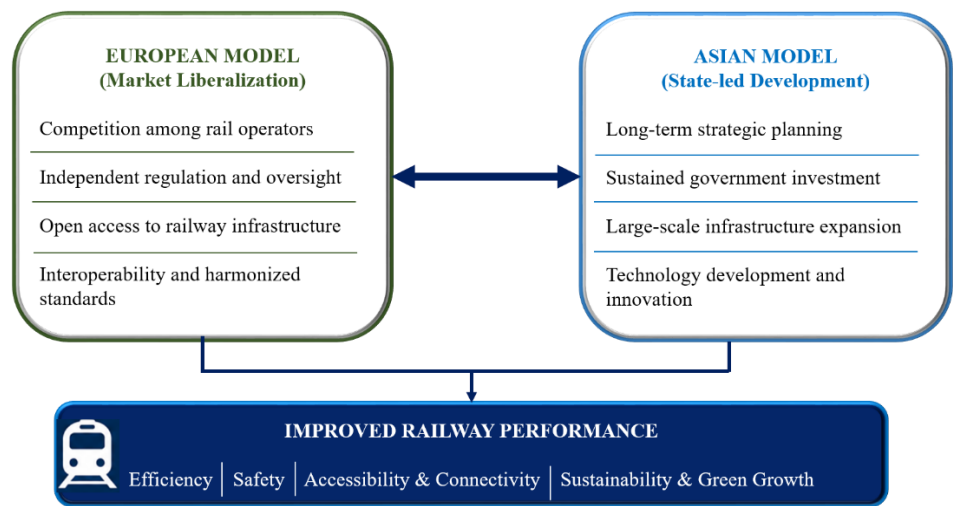


Figure 2.6: Global Policy Models Supporting Railway Development
Source: Developed by the Author, 2026

2.2.5.2 Regional Level (African Perspective)

Across Africa, government policies and regulatory frameworks have become increasingly important in efforts to revitalize railway transport and promote regional economic integration. Recognizing the strategic importance of rail transport for industrialization, trade facilitation, and sustainable development, the African Union's Agenda 2063 identifies the development of an integrated high-speed railway network as one of its flagship projects aimed at strengthening continental connectivity and reducing transport costs (African Union, 2015).

Similarly, the Program for Infrastructure Development in Africa (PIDA) identifies railway modernization as a priority intervention for improving regional trade corridors and enhancing multimodal transport integration (African Union Commission, African Development Bank, & NEPAD, 2021).

Despite these ambitious policy frameworks, implementation across many African countries has been uneven. Bouraima et al. (2023) observed that although several countries have invested substantially in new railway infrastructure, particularly standard-gauge railways, institutional reforms have generally progressed more slowly than physical infrastructure development.

Many railway sectors continue to experience weak regulatory oversight, limited private-sector participation, fragmented governance structures, and inadequate enforcement of transport policies. Consequently, improvements in infrastructure have not always translated into corresponding improvements in operational efficiency or financial sustainability.

A comprehensive perspective on railway policy implementation in Sub-Saharan Africa was provided by Blumenfeld et al. (2019), who developed a long-term technical strategy framework for railway development in low-income countries. The framework proposes a phased modernization pathway extending from legacy railway systems toward integrated, technology-driven rail networks by emphasizing eight interconnected strategic dimensions: infrastructure, signalling systems, interoperability, planning, standards, cost efficiency, digital data management, and operational security as shown in Figure 2.7.

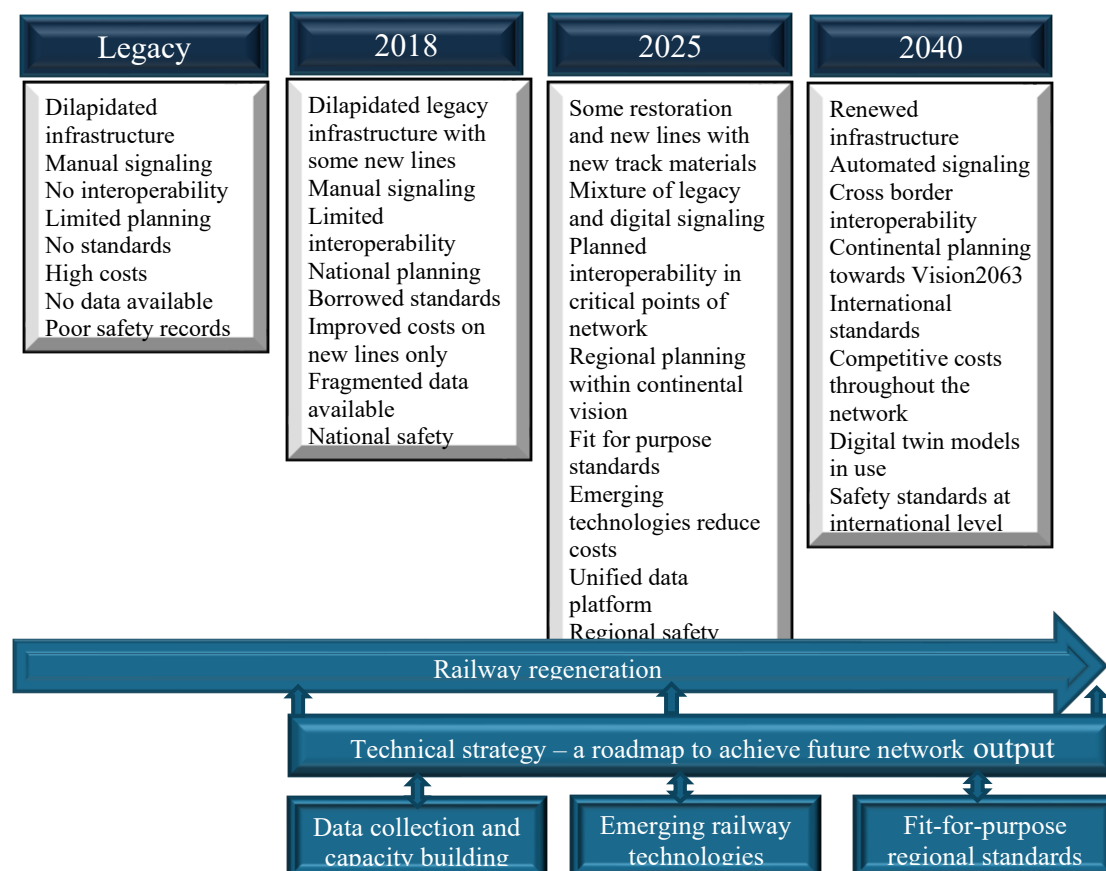


Figure 2.7 Technical Strategy Framework for Railway Development in Sub-Saharan Africa

Source: Adapted from Blumenfeld et al. (2019)

The framework illustrates that sustainable railway development requires coordinated progress across multiple institutional and technical dimensions rather than isolated infrastructure investments. Blumenfeld et al. (2019) further argue that successful modernization depends on gradual institutional capacity development, adoption of context-appropriate technologies, harmonization of technical standards, and long-term strategic planning. Without these complementary reforms, individual infrastructure projects risk becoming financially unsustainable or technologically incompatible with broader regional railway systems.

Regional experience further demonstrates the importance of effective governance and regulatory coordination. In South Africa, railway reforms have sought to improve operational performance through governance restructuring, infrastructure investment, and enhanced freight corridor management. However, operational challenges experienced by Transnet Freight Rail and the Passenger Rail Agency of South Africa (PRASA) illustrate that institutional fragmentation, infrastructure backlogs, and governance weaknesses continue to constrain railway performance despite significant public investment (PRASA, 2019; Transnet Integrated Report, 2023).

Equally, the African Union (2020) recommends that member states establish independent railway regulatory authorities capable of strengthening safety oversight, promoting regulatory consistency, encouraging private-sector participation, and harmonizing technical standards across regional railway networks. According to the African Union, effective regulation should facilitate transparent governance, reduce political interference, improve investment confidence, and support implementation of continental transport integration objectives.

The African Development Bank (2021) also emphasizes that railway policy should extend beyond infrastructure financing to include governance reform, institutional strengthening, maintenance planning, and regulatory modernization. The Bank argues that sustainable railway development requires coherent transport policies that integrate railway investment with broader national logistics strategies while creating balanced competition between road and rail transport.

The African literature demonstrates that government policy remains central to railway development across the continent. However, the evidence also suggests that policy effectiveness depends less on the existence of policy documents than on institutional capacity, regulatory enforcement, governance quality, and coordinated implementation. Thus, successful railway

modernization requires governments to integrate infrastructure investment with regulatory reform, institutional strengthening, and long-term strategic planning capable of supporting sustainable railway operations.

2.2.5.3 Local Level (Zambian Perspective)

Government policy has consistently recognized railway transport as an important component of Zambia's national development strategy. Since the early post-independence period, successive governments have introduced policy reforms intended to strengthen railway infrastructure, promote freight transport by rail, and improve the competitiveness of ZRL. More recent policy frameworks have continued to position rail transport as a strategic instrument for supporting industrialization, regional trade, environmental sustainability, and economic diversification (Government of the Republic of Zambia, 2022; Ministry of Transport and Logistics, 2022).

The Eighth National Development Plan (8NDP) identifies transport and logistics as one of the principal drivers of economic transformation. Under Strategic Development Area Five, the Government commits to increasing the proportion of bulk cargo transported by rail to at least 30% in order to reduce road congestion, lower transport costs, and improve infrastructure sustainability (GRZ, 2022).

The National Transport Policy Implementation Plan (2019-2028) also outlines a comprehensive program for modernizing Zambia's railway sector through infrastructure rehabilitation, improved operational efficiency, enhanced safety standards, and strengthened institutional governance. The policy further establishes measurable performance targets, including increasing average freight train operating speeds from approximately 30 km/h in 2019 to 80 km/h and passenger train speeds from 40 km/h to 120 km/h (Ministry of Transport and Communications, 2019).

These medium-term policy objectives are aligned with the broader national aspirations articulated in Zambia Vision 2030, which identifies efficient transport infrastructure as an essential prerequisite for achieving sustainable middle-income status (GRZ, 2006). At the continental level, these national objectives are further reinforced by the African Union's Agenda 2063, which recognizes railway transport as a strategic driver of regional integration, industrialization, and intra-African trade (African Union, 2015).

Despite the existence of these comprehensive policy frameworks, empirical evidence indicates that implementation has remained considerably below policy expectations. Operational reports published by Zambia Railways Limited show that average freight train speeds continue to range between 20 and 30 km/h, substantially below the performance targets established under the National Transport Policy Implementation Plan (ZRL Annual Report, 2023).

In the same way, although Statutory Instrument No. 7 of 2018 was introduced to facilitate the transportation of selected bulk commodities by rail, available evidence suggests that implementation has been constrained by inadequate locomotive availability, limited wagon capacity, ageing infrastructure, and operational inefficiencies (ZRL Annual Report, 2023).

Several Zambian scholars have critically examined this policy implementation gap. Kasoma & Zulu (2019) observed that while government policy demonstrates a strong commitment to railway revitalization, institutional arrangements responsible for implementation remain relatively weak. The authors supported the proposal to establish a dedicated Rail Development Agency responsible for railway infrastructure management while allowing ZRL to concentrate on commercial railway operations. According to the authors, such institutional restructuring could strengthen infrastructure maintenance, improve investment planning, and enhance long-term sector sustainability.

Mwila (2016) further argued that Zambia's transport policy has historically favoured road transport through relatively higher infrastructure investment and financing mechanisms, thereby reducing the competitiveness of railway transport. The study recommended the adoption of a more balanced multimodal transport policy capable of providing equitable investment across both road and railway infrastructure while strengthening the regulatory environment governing land transport.

Historical analysis by Kapanda (2017) equally concluded that the declining performance of ZRL reflects a combination of policy inconsistency, management challenges, inadequate investment, and changing economic conditions. The study argued that restoring the railway sector requires sustained policy commitment supported by effective institutional governance, financial sustainability, and continuous infrastructure modernization.

More recently, the Ministry of Transport and Logistics (2022) emphasized the need to modernize the Railway Act, strengthen regulatory oversight, and establish an independent railway regulator capable of improving compliance with international railway standards. These proposed reforms are intended to strengthen institutional governance, improve safety regulation, enhance investor confidence, and facilitate greater private-sector participation within Zambia's railway sector. Table 2.5 shows a summary of government policy and regulatory studies in Zambia.

Table 2.5: Summary of Government Policy and Regulatory Studies in Zambia

Author	Policy Focus	Key Findings	Policy Implications
GRZ (2006)	Vision 2030	Rail infrastructure recognized as a strategic driver of national development.	Long-term infrastructure investment required.
Ministry of Transport and Communication (2019)	National Transport Policy Implementation Plan.	Established operational targets for railway modernization.	Implementation remains below planned targets.
Mwila (2016)	Transport policy and modal competition.	Road transport continues to receive relatively greater policy support.	Need for balanced multimodal transport policy.
Kasoma & Zulu (2019)	Railway sector reform.	Institutional restructuring required to improve implementation.	Dedicated Rail Development Agency proposed.
Kapanda (2017)	Historical development of ZRL.	Policy inconsistency and management challenges contributed to decline.	Sustained policy implementation required.
Ministry of Transport and Logistics (2022)	Railway regulatory reform.	Recommended modernization of railway legislation and independent regulation.	Strong governance and regulatory oversight required.

Source: Compiled by the Author from the reviewed literature, 2024

Primarily, the Zambian literature demonstrates a broad consensus that government policies have consistently recognized the strategic importance of railway transport within national development. However, the reviewed studies indicate that the principal challenge lies not in the formulation of policy but in its implementation.

Institutional weaknesses, limited financial resources, ageing infrastructure, weak regulatory enforcement, and operational constraints have collectively reduced the effectiveness of policy

interventions intended to revitalize ZRL. These findings suggest that policy effectiveness depends on the interaction between regulatory frameworks, institutional capacity, financial sustainability, and organizational performance rather than on policy formulation alone.

2.2.6 Summary of Recent Empirical Studies

The preceding empirical review demonstrates that railway and SOEs' performance has been examined from different technical, financial, managerial, competitive, and institutional perspectives. To consolidate the evidence and demonstrate the relevance of recent research to the present study, Table 2.6 summarizes selected closely related studies, highlighting their context, Methodologies, key findings, and identified limitations relevant to the current investigation of ZRL.

Table 2.6: Summary and Critical Comparison of Key Empirical Studies

Sudy	Context	Determinant	Method/Approach	Key Empirical Finding	Identified Limitation/Gap	Link to Present Study
Ivina & Palmqvist (2023)	Sweden	Maintenance	Empirical railway infrastructure analysis	Planned maintenance can cause short-term disruption but improves long-term infrastructure reliability	Developed-country, high-capacity railway environment.	Tests maintenance performance relationship under ZRL's resource constraints.
Boye et al. (2023)	African Railway Context	Maintenance	Railway maintenance factor analysis.	Skills, materials, maintenance records and scheduling influence maintenance effectiveness.	Focuses mainly on maintenance implementation rather than integrated organizational performance.	Integrates maintenance with funding, leadership, policy and competition.
Sandala (2020)	Zambia/ZRL	Maintenance & Funding	Railway infrastructure/economic assessment.	Infrastructure deterioration, funding constraints and implementation weaknesses limit railway performance.	Primarily infrastructure focused, limited integrated organizational analysis.	Examines multiple interacting determinants of ZRL performance.
Bouraima et al. (2023)	Africa	Funding/Competition.	Regional railway development analysis.	Underinvestment and transport-sector imbalances constrain railway modernization and competitiveness.	Broad continental focus.	Provides organization specific evidence from ZRL.
Chongo et al. (2024)	Zambia/ZRL	Leadership/Governance.	Corporate governance study.	Political influence, overlapping structures and weak accountability constrain governance effectiveness.	Focuses primarily on governance.	Examines leadership together with operational and institutional determinants.

Kamwere (2018)	Kenya Railways	Leadership	Organizational/s strategic management study.	Strategic management, resource allocation and implementation capability affect performance.	Single railway and different institutional context.	Tests comparable leadership issues in ZRL.
Mokoena & Sharp (2020)	Africa/TF R	Leadership/Competition	Employee/organizational study	Internal communication, customer orientation and organizational responsiveness influence competitiveness.	More commercially developed railway environment.	Assesses applicability under ZRL's parastatal constraints.
Mwila (2016)	Zambia	Funding/Competition	Transport-sector comparative analysis.	Imbalanced road-rail investment contributes to rail's competitive disadvantage.	Predates recent policy reform.	Evaluates persistence of these relationships using newer ZRL evidence.
Kasoma & Zulu (2019)	Zambia	Maintenance/Funding/Policy	Sector review	Underinvestment, infrastructure deterioration and institutional weaknesses reduce railway competitiveness.	Primarily policy/sector level.	Provides firm-level mixed-methods evidence.
Parliament of Zambia (2024/2025)	Zambia	Multiple determinants	Parliamentary sector review.	Funding, ageing assets, maintenance and institutional constraints continue to impede railway performance.	Institutional review rather than causal empirical modelling.	Tests these factors empirically with ZRL.
Esposito et al. (2020)	European Union	Policy/Competition	Railway reform analysis.	Regulatory reform and competition can improve efficiency and service outcomes.	Developed liberalized railway markets.	Tests policy effects in a state-owned developing country context.
Wang & Wang (2023)	State-owned railway context	Reform/Performance	Organizational reform analysis.	Digitalization, performance monitoring and asset utilization can enhance operational efficiency.	Different institutional and technological environments.	Examines organizational readiness and performance constraints in ZRL.

Source: Developed by the Author from Literature Review, 2026.

2.3 Conceptual Framework

The conceptual framework guiding this study was developed from both theoretical and empirical literature, reflecting the interrelationship between technical, managerial, financial, market, and institutional factors influencing the performance of Zambia Railways Limited (ZRL). Drawing on Total Productive Maintenance (TPM) theory, Contingency Theory, Institutional Theory, and Porter's Competitive Forces Model, the framework conceptualizes ZRL's performance as a multidimensional construct determined by the interplay of maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support.

This framework serves both as a visual and analytical guide, providing a structured approach for research design, data collection, and interpretation of findings. According to Adom et al. (2018), a well-formulated conceptual framework ensures coherence and consistency in research, while Leshem & Trafford (2007) argue that it allows findings to be interpreted within a structured theoretical and empirical context. Creswell & Creswell (2018) further emphasize that visually mapping variables strengthens alignment between theory, measurement, and analysis, making the relationships between constructs clearer (Manda, 2025).

Furthermore, the framework assumes that improving railway performance requires a complete and integrated reform approach, where technical, managerial, and institutional inputs must be harmonized. It also incorporates innovation-oriented interventions. Below is Figure 2.8 depicting the conceptual framework.

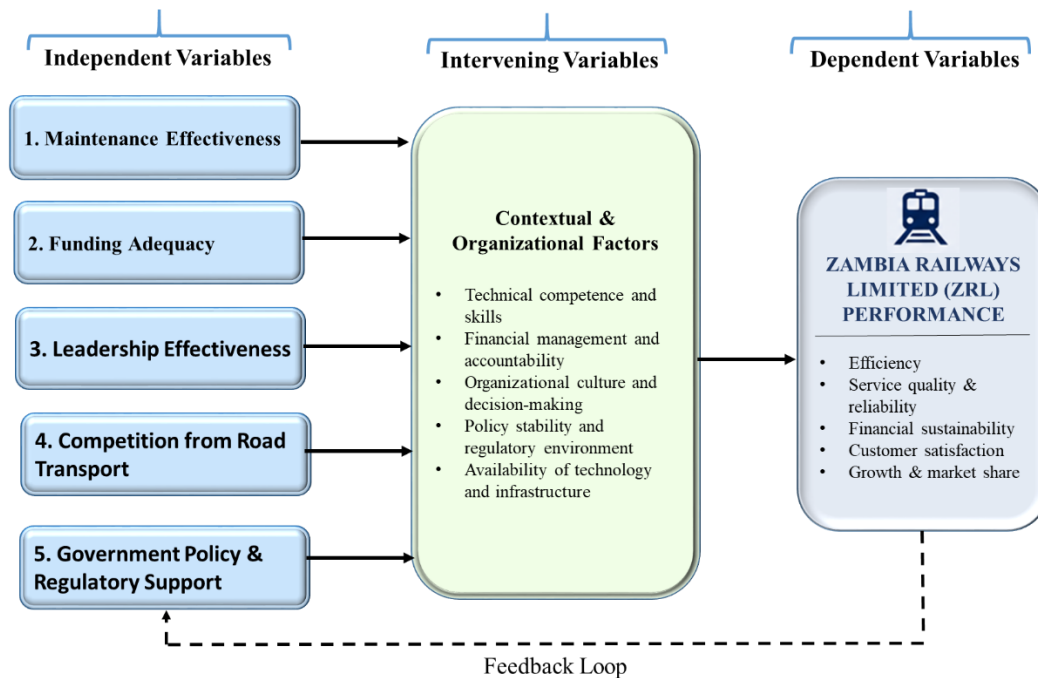


Figure 2.8: Conceptual Framework

Source: Generated by the author, 2024

2.3.1 Independent Variables and Intervening Factors

2.3.1.1 Maintenance Effectiveness

Maintenance Effectiveness refers to the extent to which ZRL is able to maintain its rolling stock, track infrastructure, signalling systems, and associated assets in a reliable and operational condition. Guided by Total Productive Maintenance (TPM) Theory (Nakajima, 1988), effective maintenance is expected to improve equipment reliability, reduce operational disruptions, and enhance service quality.

Within the conceptual framework, the relationship between maintenance effectiveness and ZRL performance is influenced by contextual factors such as employee technical competence, availability of maintenance technology and spare parts, and the organization's capacity to implement preventive and predictive maintenance programmes. These factors collectively determine the extent to which maintenance contributes to improved railway performance.

2.3.1.2 Funding Adequacy

Funding Adequacy refers to the availability, predictability, and effective utilization of financial resources required to support railway operations, infrastructure maintenance, and capital

investment. Drawing upon Institutional Theory (DiMaggio & Powell, 1983; North, 1990), this study recognizes that funding effectiveness depends not only on the amount of financial resources available but also on the institutional arrangements governing their allocation and utilization. Subsequently, contextual factors such as financial accountability, governance structures, transparency, and resource management influence how financial resources are translated into improved organizational performance.

2.3.1.3 Leadership and Management Effectiveness

Leadership Effectiveness refers to the ability of organizational leaders to provide strategic direction, make informed decisions, motivate employees, and respond to changing institutional circumstances. This variable is principally underpinned by Contingency Theory (Fiedler, 1964), complemented by Transformational Leadership Theory (Bass, 1985), which collectively suggest that effective leadership depends on both contextual conditions and the leader's ability to inspire change. Within the conceptual framework, leadership influences performance through organizational culture, employee engagement, decision-making effectiveness, and managerial adaptability, thereby enhancing the organization's capacity to respond to operational and institutional challenges.

2.3.1.4 Competition from Road Transport

Competition from Road Transport represents the external competitive pressure exerted by alternative transport modes on Zambia Railways Limited. Guided by Porter's Competitive Forces Model (Porter, 1980), the study recognizes that competition influences market share, freight volumes, customer retention, and overall organizational competitiveness. The strength of this relationship is affected by contextual factors such as customer preferences, service reliability, pricing strategies, technological innovation, and the broader transport policy environment. These factors determine the extent to which ZRL is able to compete effectively within Zambia's multimodal transport sector.

2.3.1.5 Government Policies and Regulatory Support

Government Policy and Regulatory Support refers to the institutional environment within which Zambia Railways Limited operates. Grounded in Institutional Theory (North, 1990; Scott, 2014), this variable encompasses government policies, regulatory frameworks, corporate governance arrangements, and public sector oversight that influence organizational performance. The

effectiveness of these institutional mechanisms depends on policy consistency, regulatory enforcement, governance quality, and collaboration between government and key stakeholders. Together, these contextual factors shape the operational environment within which ZRL delivers its services.

2.3.2 Dependent Variable: ZRL Performance

The dependent variable, Zambia Railways Limited Performance (ZRLP), represents the overall performance of the company. In this study, ZRL performance is conceptualized in terms of operational efficiency, service reliability, customer satisfaction, and financial sustainability.

The conceptual framework proposes that ZRLP is directly influenced by Maintenance Effectiveness, Funding Adequacy, Leadership Effectiveness, Competition from Road Transport, and Government Policy and Regulatory Support. The magnitude of these relationships is further influenced by contextual and institutional factors that either facilitate or constrain performance.

2.3.3 Contextual and Organizational Factors

Rather than functioning as independent determinants, the contextual and organizational factors included in the conceptual framework influence the strength and direction of the relationships between the independent variables and ZRL performance. These factors include employee technical competence, financial accountability, organizational culture, policy stability, regulatory effectiveness, technological capability, and resource availability. Their inclusion recognizes that improvements in maintenance, funding, leadership, competition, or policy do not automatically translate into improved ZRL performance unless supported by an enabling organizational and institutional environment.

2.3.4 Feedback Loop

The conceptual framework incorporates a feedback loop to illustrate the dynamic nature of ZRL performance. Improved organizational performance is expected to strengthen stakeholder confidence, support continued policy commitment, enhance resource allocation, and encourage organizational learning. Conversely, persistent underperformance may trigger institutional reforms, leadership changes, policy adjustments, and revised resource allocation decisions.

This feedback mechanism is consistent with Institutional Theory, which views organizations as continuously adapting to institutional expectations and performance outcomes (North, 1990; Scott, 2014). It also reflects the systems perspective adopted in this study, whereby organizational performance is viewed as an iterative process shaped by continuous interaction between organizational practices and the broader institutional environment.

2.4 Operational Definitions

To ensure conceptual clarity and consistency throughout the study, the principal variables investigated are operationally defined as follows:

Zambia Railways Limited (ZRL) - Refers to the state-owned railway enterprise mandated to provide freight and passenger railway transport services in Zambia. Within this study, ZRL serves as the unit of analysis through which the factors contributing to the underperformance of State-Owned Enterprises are examined (Parliament of Zambia, 2024; ZRL Annual Report, 2023).

ZRL Performance (ZRLP) - The dependent variable representing the overall organizational performance of Zambia Railways Limited. It is operationalized in terms of operational efficiency, service reliability, customer satisfaction, and financial sustainability, consistent with organizational performance literature (Venkatraman & Ramanujam, 1986; Kaplan & Norton, 1996). The variable was measured using respondents' perceptions captured on a five-point Likert scale and triangulated with qualitative evidence.

Maintenance Effectiveness (ME) - Refers to the extent to which ZRL effectively maintains its rolling stock, track infrastructure, signalling systems, and other operational assets to ensure reliability, availability, safety, and continuous service delivery. The definition is informed by Total Productive Maintenance Theory, which emphasizes preventive maintenance, equipment reliability, and continuous improvement (Nakajima, 1988; Ahuja & Khamba, 2008). The variable was measured using respondents' perceptions of maintenance planning, asset condition, preventive maintenance, and maintenance reliability.

Funding Adequacy (FA) - Refers to the adequacy, predictability, and effective utilization of financial resources available to support ZRL's operations, maintenance activities, and capital investment programs. Consistent with Institutional Theory, funding adequacy is viewed not only

in terms of resource availability but also the institutional arrangements governing resource allocation and accountability (North, 1990; Scott, 2014). The variable was measured using respondents' perceptions regarding the sufficiency, timeliness, and utilization of financial resources.

Leadership Effectiveness (LE) - Refers to the ability of ZRL's leadership to provide strategic direction, make effective decisions, communicate organizational goals, and coordinate organizational resources to improve organizational performance. This operational definition draws upon Contingency Theory and Transformational Leadership Theory, which emphasize leadership adaptability and organizational change (Fiedler, 1964; Bass, 1985). The variable was measured using respondents' perceptions of strategic leadership, communication, accountability, responsiveness, and decision-making effectiveness.

Competition from Road Transport (CRT) - Refers to the extent to which road transport competes with railway services for freight and passenger traffic, thereby influencing ZRL's market share, pricing competitiveness, and service demand. The definition is informed by Porter's Competitive Forces Model, which recognizes substitute services as a major source of competitive pressure (Porter, 1980; Porter, 1985). The variable was measured using respondents' perceptions of competition from road transport and its effect on railway performance.

Government Policy and Regulatory Support (GPRS) - Refers to the extent to which government policies, regulatory frameworks, institutional support, and statutory instruments facilitate or constrain the performance of Zambia Railways Limited. This definition is grounded in Institutional Theory, which recognizes formal institutions as key determinants of organizational performance (DiMaggio & Powell, 1983; North, 1990; Scott, 2014). The variable was measured using respondents' perceptions of policy consistency, regulatory enforcement, government support, and institutional governance.

2.5 Theoretical Framework

2.5.1 *Total Productive Maintenance (TPM) – by Seiichi Nakajima (1988)*

2.5.1.1 *Origin and Development of Total Productive Maintenance*

Total Productive Maintenance (TPM) was originally developed by Seiichi Nakajima (1988) in Japan as a comprehensive maintenance philosophy aimed at maximizing equipment effectiveness throughout its operational life cycle. The theory emerged from the Japanese manufacturing industry, particularly through the experiences of Nippon Denso, a supplier to Toyota Motor Corporation, where maintenance was transformed from a reactive technical function into an organization-wide management philosophy.

Nakajima (1988) argued that maintenance should not be viewed solely as the responsibility of technical personnel, but rather as a shared organizational responsibility involving operators, engineers, supervisors, and senior management. The primary objective of TPM is to maximize equipment effectiveness by eliminating equipment failures, reducing unplanned downtime, improving productivity, and fostering a culture of continuous improvement.

Building on Nakajima's foundational work, subsequent scholars have expanded TPM beyond the manufacturing sector into industries such as energy, healthcare, aviation, mining, and transportation. According to Ahuja & Khamba (2008), TPM integrates maintenance management with operational excellence by encouraging employee participation, preventive maintenance, and continuous process improvement.

Similarly, Jain et al. (2014) observed that TPM has evolved into a strategic management approach that improves organizational performance through enhanced equipment reliability, higher productivity, improved product quality, reduced operational costs, and increased employee engagement. More recently, Chaurey et al. (2023) emphasized that TPM remains an integral component of modern Lean Manufacturing and Industry 4.0 initiatives because of its ability to improve asset utilization and operational efficiency through proactive maintenance practices.

Although originally developed for manufacturing environments, TPM has increasingly been adopted within railway systems, where the reliability of rolling stock, track infrastructure,

signalling systems, and maintenance facilities directly influences operational performance. Railway operators worldwide have applied TPM principles to improve asset reliability, reduce service disruptions, enhance passenger and freight service quality, and extend infrastructure life cycles. Subsequently, TPM provides a relevant theoretical foundation for examining maintenance effectiveness within railway organizations, particularly those operating ageing infrastructure and constrained maintenance budgets.

2.5.1.2 Core Principles of Total Productive Maintenance

Total Productive Maintenance is founded on the principle that equipment reliability is a shared organizational responsibility requiring the active participation of all employees. Nakajima (1988) proposed eight interrelated pillars that collectively promote continuous improvement and maximize equipment effectiveness.

These include Autonomous Maintenance, where operators undertake routine inspection, cleaning, lubrication, and minor maintenance activities; Focused Improvement, which encourages cross-functional teams to identify and eliminate recurring operational problems; Planned Maintenance, involving preventive and predictive maintenance strategies to minimize unexpected equipment failures; Quality Maintenance, which ensures that equipment consistently operates within required quality standards; Early Equipment Management, which incorporates maintenance considerations into the design and acquisition of new equipment; Training and Education, aimed at developing employee competencies necessary for effective maintenance; Office TPM, which extends continuous improvement principles to administrative and support functions; and Safety, Health and Environment, which seeks to create a safe and environmentally sustainable workplace. Figure 2.9 illustrates the key principles and components of TPM.

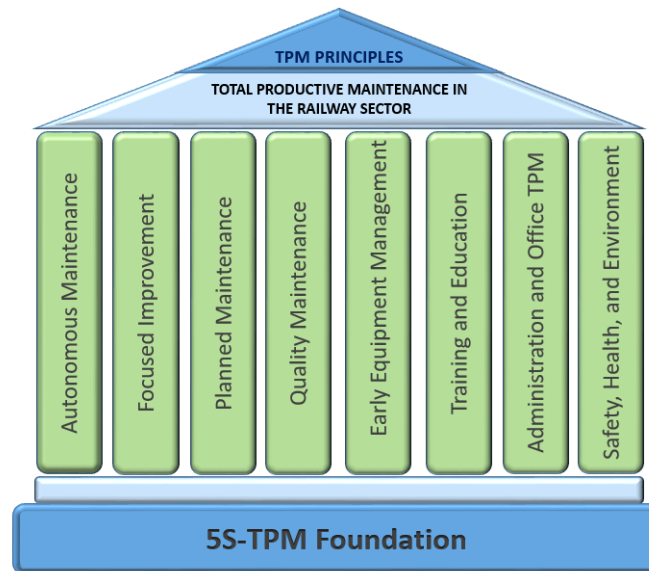


Figure 2.9: The key principles and components of total productive maintenance

Source: Adapted from Nakajima, 1988

Collectively, these principles promote a proactive maintenance culture by shifting organizations from reactive equipment repair to preventive and predictive maintenance practices. Rather than viewing maintenance as an isolated technical activity, TPM integrates operational management, employee involvement, quality assurance, and continuous improvement into a unified system for enhancing organizational performance. As a result, TPM has become one of the most widely adopted maintenance management philosophies for improving asset availability, operational reliability, equipment lifespan, and overall organizational productivity.

2.5.1.3 Application of Total Productive Maintenance in Railway Systems

Although Total Productive Maintenance (TPM) was originally developed for the manufacturing sector, its principles have been widely adopted in the railway industry because of the critical importance of equipment reliability, infrastructure availability, and operational safety. Railway systems depend on the continuous availability of rolling stock, track infrastructure, signalling equipment, telecommunications systems, and maintenance facilities to ensure reliable and efficient transport services.

Within railway operations, TPM is particularly applicable to rolling stock maintenance, where preventive and predictive maintenance practices help minimize locomotive and wagon failures, reduce service interruptions, and improve fleet availability. Modern railway operators increasingly

rely on condition-based monitoring, predictive diagnostics, and scheduled preventive maintenance to maximize locomotive reliability while reducing unexpected breakdowns and maintenance costs (Jardine & Tsang, 2021). Effective rolling stock maintenance improves train availability, operational efficiency, customer satisfaction, and ultimately organizational performance.

The principles of TPM are equally important in the maintenance of railway infrastructure, particularly track systems, bridges, culverts, and permanent way assets. Continuous inspection, routine maintenance, and timely rehabilitation reduce derailment risks, improve train speeds, and extend infrastructure life.

Similarly, TPM supports the maintenance of signalling and telecommunications systems, which are fundamental for safe train control, traffic coordination, and operational reliability. As railway systems become increasingly digitalized, maintenance has expanded beyond mechanical assets to include signalling technologies, communication networks, and intelligent monitoring systems that enhance safety and operational efficiency.

Recent international experience demonstrates the successful application of TPM within railway organizations. Railway operators in Japan, Taiwan, Singapore, and several European countries have adopted TPM principles alongside predictive maintenance technologies to improve equipment reliability, reduce downtime, and optimize maintenance planning (Chaurey et al., 2023; Transportation Review, 2025). For example, East Japan Railway Company (JR East), Taiwan High Speed Rail Corporation, and SMRT Corporation have incorporated preventive and predictive maintenance consistent with TPM, reporting improvements in asset reliability, reduced failures, enhanced service punctuality, and lower maintenance costs through systematic planning and continuous improvement (Ahuja & Khamba, 2008; Chaurey et al., 2023).

The relevance of TPM is particularly evident in the context of Zambia Railways Limited, where ageing locomotives, deteriorating track infrastructure, limited maintenance resources, and recurring equipment failures have continued to constrain operational performance. Frequent locomotive breakdowns, speed restrictions, derailments, and delayed maintenance activities reduce train availability, increase operating costs, and limit the company's ability to compete effectively with road transport.

Within this context, TPM provides an appropriate theoretical lens for understanding how maintenance effectiveness influences railway performance. However, maintenance challenges at ZRL cannot be explained solely by technical factors; they are also influenced by funding constraints, leadership effectiveness, institutional governance, and the competitive environment.

2.5.1.4 Critical Evaluation of Total Productive Maintenance Theory

TPM has been widely acknowledged as one of the most effective maintenance management philosophies for improving organizational performance through systematic asset management and continuous improvement. One of its principal strengths lies in its emphasis on maximizing equipment reliability by preventing equipment failures before they occur.

Through preventive and predictive maintenance, organizations are able to reduce unplanned downtime, improve equipment availability, extend asset life cycles, and enhance operational efficiency. In railway systems, these benefits translate into improved locomotive availability, reliable infrastructure, fewer service disruptions, enhanced passenger and freight service quality, and improved safety performance (Nakajima, 1988; Ahuja & Khamba, 2008).

Another significant strength of TPM is its organization-wide approach to maintenance management. Unlike traditional maintenance systems that place responsibility solely on technical personnel, TPM encourages the participation of operators, engineers, supervisors, and managers in maintaining organizational assets. This shared responsibility promotes a culture of continuous improvement, enhances employee ownership, reduces maintenance-related errors, and supports long-term organizational productivity. Furthermore, TPM complements modern asset management practices by encouraging data-driven maintenance planning, continuous monitoring, and systematic elimination of operational inefficiencies.

Despite these advantages, TPM has several limitations when applied to complex public sector organizations such as state-owned railway enterprises. Effective implementation requires substantial financial investment in maintenance infrastructure, specialized equipment, employee training, and modern diagnostic technologies. Organizations operating under persistent funding constraints may therefore find it difficult to implement TPM comprehensively.

Similarly, successful implementation depends on the availability of skilled personnel, sustained management commitment, and an organizational culture that supports continuous improvement. In many developing countries, these conditions are often constrained by limited technical capacity, inadequate maintenance budgets, and institutional weaknesses.

Moreover, TPM primarily focuses on improving internal operational processes and asset reliability. The theory pays relatively limited attention to broader organizational and external influences such as institutional governance, public sector accountability, political interference, regulatory environments, and market competition. These external factors frequently shape organizational performance in state-owned enterprises but fall outside TPM's explanatory scope. Thus, while TPM provides a robust framework for understanding maintenance effectiveness, it cannot independently explain the multidimensional factors contributing to organizational underperformance.

In the context of Zambia Railways Limited, maintenance effectiveness is influenced not only by technical maintenance practices but also by funding adequacy, leadership effectiveness, government policy and regulatory support, and increasing competition from road transport. These interconnected factors extend beyond TPM's assumptions and require a broader theoretical perspective.

2.5.1.5 Relevance of Total Productive Maintenance Theory to the Present Study

TPM provides the primary theoretical foundation for examining Maintenance Effectiveness (ME) as one of the key determinants of ZRL performance in this study. The theory postulates that systematic preventive maintenance, continuous improvement, and organization-wide participation in maintenance activities enhance equipment reliability, operational efficiency, service quality, and overall organizational performance (Nakajima, 1988). Within the context of ZRL, these principles are directly applicable to the maintenance of rolling stock, track infrastructure, signalling systems, and other operational assets that influence railway performance.

However, maintenance effectiveness alone cannot adequately explain the underperformance of state-owned railway enterprises. The performance of ZRL is also shaped by broader organizational and environmental factors, including funding adequacy, leadership effectiveness, government

policy and regulatory support, and competition from road transport. Therefore, while TPM provides the theoretical basis for analysing the maintenance dimension of the study, it is integrated with Institutional Theory, Contingency Theory, and Porter's Competitive Forces Model to provide a comprehensive explanation of the multidimensional factors contributing to the underperformance of SOEs, using ZRL as empirical evidence.

2.5.2 Institutional Theory (DiMaggio & Powell, 1983)

2.5.2.1 Origin and Development of Institutional Theory

Institutional Theory emerged from organizational sociology and institutional economics as a framework for explaining how organizations are shaped by the formal and informal rules governing their operating environment. The modern development of the theory is largely attributed to DiMaggio and Powell (1983), who argued that organizations do not operate solely according to economic or technical considerations but also respond to institutional pressures arising from laws, regulations, professional norms, and societal expectations. They introduced the concept of institutional isomorphism, explaining that organizations gradually become similar because they face common regulatory, normative, and social pressures.

From an economic perspective, North (1990) further advanced Institutional Theory by defining institutions as the "rules of the game" that structure political, economic, and social interactions. According to North (1990), institutions comprise both formal institutions, such as constitutions, legislation, regulations, and organizational policies, and informal institutions, including customs, traditions, organizational culture, and behavioural norms. These institutional arrangements influence organizational performance by shaping incentives, reducing uncertainty, promoting accountability, and guiding decision-making processes.

Subsequent scholars have expanded Institutional Theory beyond its traditional sociological roots to explain organizational performance within both public and private sector institutions. Scott (2014) conceptualized institutions as consisting of three complementary pillars: the regulative pillar, which emphasizes laws and regulatory compliance; the normative pillar, which focuses on professional standards, organizational values, and ethical expectations; and the cultural-cognitive pillar, which reflects shared beliefs, routines, and organizational culture. Together, these institutional dimensions explain why organizations operating under similar economic conditions

may exhibit different levels of performance depending on the quality of their governance structures and institutional environments.

2.5.2.2 Core Concepts of Institutional Theory

Institutional Theory posits that organizational behaviour and performance are shaped not only by internal managerial decisions but also by the institutional environment within which organizations operate (DiMaggio & Powell, 1983; North, 1990). Organizations seek legitimacy by conforming to the formal and informal rules governing their operating environment, including government regulations, professional standards, cultural expectations, and societal norms (Scott, 2014). Consequently, organizational effectiveness depends not only on technical efficiency but also on the ability to align organizational practices with institutional expectations.

DiMaggio and Powell (1983) identified three mechanisms through which institutions influence organizational behaviour:

- **Coercive isomorphism** arises from formal pressures exerted by governments, legislation, regulatory agencies, and funding institutions. For state-owned enterprises (SOEs), these pressures include compliance with government policies, statutory regulations, public accountability requirements, and corporate governance frameworks.
- **Normative isomorphism** originates from professional standards, education, industry best practices, and ethical expectations that shape decision-making and managerial behaviour.
- **Mimetic isomorphism** occurs when organizations imitate successful institutions in response to uncertainty, adopting proven governance structures, management systems, and operational practices to improve performance (DiMaggio & Powell, 1983; Scott, 2014).

North (1990) further distinguished between formal institutions (constitutions, legislation, policies, regulations, and contractual arrangements, and informal institutions) and informal institutions (organizational culture, traditions, customs, values, and behavioural norms). Together, these institutional arrangements reduce uncertainty, coordinate organizational behaviour, and influence resource allocation, accountability, and organizational performance.

Scott (2014) subsequently integrated these perspectives into three complementary institutional pillars: the regulative pillar, emphasizing legal and regulatory compliance; the normative pillar,

focusing on organizational values and professional obligations; and the cultural-cognitive pillar, which reflects shared beliefs and organizational routines. Collectively, these concepts provide a comprehensive framework for understanding how institutional environments shape organizational performance, particularly within public sector and SOEs.

Institutional Theory has been widely applied to explain governance reforms in railway administrations operating under public ownership. Studies of Deutsche Bahn, Indian Railways, and South African Rail Commuter Corporation have shown that regulatory reforms, corporate governance structures, government oversight, and institutional accountability significantly influence organizational efficiency, investment decisions, and service delivery (Scott, 2014; Hope, 2016).

2.5.2.3 Critical Evaluation of Institutional Theory

Institutional Theory has been widely applied in public administration, corporate governance, and state-owned enterprise research because it provides a comprehensive explanation of how external institutional environments influence organizational behaviour and performance (Scott, 2014; Greenwood et al., 2017).

One of its principal strengths is that it extends organizational analysis beyond internal operational processes by recognizing the influence of government policies, regulatory frameworks, stakeholder expectations, and governance structures on organizational effectiveness. The theory is particularly relevant to public enterprises, where institutional legitimacy, political oversight, and public accountability significantly influence strategic decision-making and operational outcomes (North, 1990; Scott, 2014).

Another important contribution is its explanation of organizational convergence through institutional isomorphism. Organizations operating within similar regulatory and institutional environments often adopt comparable governance structures, management practices, and accountability mechanisms in pursuit of legitimacy rather than purely economic efficiency (DiMaggio & Powell, 1983). This perspective provides valuable insights into why many SOEs implement similar governance reforms, performance management systems, and regulatory compliance mechanisms despite differences in organizational performance.

Despite these strengths, Institutional Theory has several limitations. The theory places considerable emphasis on institutional conformity while giving relatively limited attention to managerial agency, innovation, operational efficiency, and competitive market dynamics (Greenwood et al., 2017). It assumes that organizations primarily respond to institutional pressures but provides less explanation for why they operate under similar institutional environments and often achieve markedly different performance outcomes.

Furthermore, Institutional Theory does not explicitly address technical maintenance systems, leadership adaptability, or competitive forces, all of which are important determinants of performance in the railway sector. Subsequently, while the theory provides a robust framework for explaining institutional governance and regulatory influences, it is insufficient on its own to explain the multidimensional factors contributing to the underperformance.

2.5.2.4 Relevance of Institutional Theory to the Present Study

Institutional Theory provides the principal theoretical foundation for examining the influence of Government Policy and Regulatory Support (GPRS) and Funding Adequacy (FA) on the performance of Zambia Railways Limited. As an SOE, ZRL operates within an institutional environment characterized by government ownership, statutory regulations, public accountability requirements, and policy directives that collectively influence organizational governance, funding mechanisms, strategic decision-making, and operational performance. The theory therefore offers an appropriate lens for examining how institutional arrangements shape organizational effectiveness within the public railway sector.

The theory is also relevant to the Funding Adequacy (FA) variable because public sector financing is largely determined by institutional arrangements established through government policies, budgetary processes, statutory regulations, and shareholder oversight. In state-owned enterprises such as ZRL, the adequacy, predictability, and utilization of financial resources depend largely on government funding mechanisms, institutional governance, and public investment priorities. Accordingly, funding adequacy may be viewed as an institutional outcome influenced by policy decisions and governance structures rather than purely a financial management issue (North, 1990; Scott, 2014).

The theory is particularly relevant to this study because ZRL's performance is influenced by formal institutional mechanisms such as transport policies, regulatory frameworks, corporate governance structures, and government funding arrangements, as well as informal institutional factors including organizational culture, managerial practices, and stakeholder expectations. These institutional conditions determine the extent to which the ZRL can implement maintenance programs, allocate financial resources efficiently, strengthen leadership practices, and respond to an increasingly competitive transport environment.

However, Institutional Theory alone cannot fully explain the underperformance of ZRL because organizational performance is also influenced by operational maintenance practices, leadership effectiveness, and competition from road transport. Consequently, this study integrates Institutional Theory with Total Productive Maintenance Theory, Contingency Theory, and Porter's Competitive Forces Model to provide a comprehensive theoretical framework capable of explaining the complex institutional, operational, managerial, and competitive factors contributing to the underperformance of State-Owned Enterprises, using ZRL as empirical evidence.

2.5.3 Contingency Theory (Fiedler, 1964)

2.5.3.1 Originl and Development

Contingency Theory was originally developed by Fred Fiedler (1964) to explain that no single leadership or management style is universally effective across all organizational situations. Contrary to traditional management theories that advocate one best way of leading organizations, Fiedler argued that leadership effectiveness depends on the degree of alignment between a leader's style and the situational context in which leadership is exercised. According to Fiedler (1964), organizational performance improves when leadership characteristics match environmental conditions rather than when organizations adopt standardized management approaches.

Fiedler's Contingency Theory identifies three situational variables that determine leadership effectiveness: leader-member relations (the degree of trust and confidence between leaders and subordinates), task structure (the clarity and routine nature of assigned duties), and position power (the authority available to leaders to influence organizational decisions) (Fiedler, 1964). Collectively, these variables determine whether task-oriented or relationship-oriented leadership is more appropriate under particular organizational conditions.

The theory has subsequently evolved beyond leadership matching to become a broader organizational perspective emphasizing adaptability and contextual decision-making. Donaldson (2001) argued that organizational structures, management systems, and strategic decisions should continuously adapt to environmental uncertainty if organizations are to achieve sustained performance. More recently, Shala, Prebreza, & Ramosaj (2021) reaffirmed that organizations operating in dynamic environments should adopt flexible leadership approaches capable of responding to technological change, market competition, and institutional pressures.

2.5.3.2 Transformational Leadership Theory

Recognizing the importance of leadership behaviour in organizational performance, later scholars complemented Contingency Theory with Transformational Leadership Theory, originally introduced by James MacGregor Burns (1978) and further developed by Bernard M. Bass (1985). While Contingency Theory emphasizes that leadership effectiveness depends on the ability of managers to adapt their style to changing organizational and environmental conditions, Transformational Leadership Theory explains how leaders inspire employees to embrace organizational change, exceed normal performance expectations, and pursue a shared organizational vision (Bass, 1985; Northouse, 2025).

Transformational leadership is characterized by four interrelated dimensions: idealized influence, whereby leaders serve as ethical role models; inspirational motivation, through which leaders communicate a compelling organizational vision; intellectual stimulation, which encourages creativity and innovation in solving organizational problems; and individualized consideration, whereby leaders mentor and develop employees according to their individual needs (Bass & Avolio, 1994; Northouse, 2025).

Unlike transactional leadership, which primarily emphasizes supervision, compliance, and reward systems, transformational leadership seeks to cultivate employee commitment, organizational learning, innovation, and continuous improvement, making it particularly suitable for organizations undergoing strategic transformation.

Recent empirical evidence reinforces the relevance of transformational leadership within state-owned enterprises and public transport organizations. Badarai et al. (2023) developed a leadership-

organizational performance model for state-owned enterprises in emerging economies and found that transformational leadership positively influences organizational performance by strengthening employee engagement, strategic alignment, and organizational adaptability.

Correspondingly, Azmy and Perkasa (2024) reported that transformational leadership significantly improves employee performance through innovative work behaviour in a public transportation company, demonstrating the importance of visionary leadership in service-oriented transport organizations.

Furthermore, Sherry (2025) established a strong relationship between leadership practices and safety culture within commuter railway operations, concluding that effective leadership contributes directly to operational reliability, employee commitment, and organizational resilience. Complementing these findings, Kaunda et al. (2023) found that effective governance and professional leadership structures significantly enhance the performance of state-owned enterprises by improving accountability, strategic decision-making, and organizational sustainability.

The practical application of transformational leadership is also evident across several leading railway organizations worldwide. In the United Kingdom, Network Rail has strengthened employee engagement, collaborative leadership, and safety culture as central components of its organizational transformation program following major institutional reforms (Network Rail, 2023). Likewise, Deutsche Bahn (2024) has embedded transformational leadership principles within its corporate strategy by promoting digital transformation, employee empowerment, sustainability, and customer-centered service delivery to enhance competitiveness in an increasingly dynamic transport market (Deutsche Bahn AG, 2024).

In Japan, the East Japan Railway Company has institutionalized continuous improvement, employee participation, leadership development, and organizational learning, contributing to internationally recognized standards of safety, punctuality, and operational excellence (East Japan Railway Company, 2023). Similarly, Transnet SOC Ltd. has prioritized leadership development, stakeholder engagement, governance reforms, and employee capability building as key components of its freight rail recovery strategy and long-term organizational renewal program (Transnet SOC Ltd., 2023).

The experiences of these railway organizations demonstrate that transformational leadership extends beyond motivating employees; it creates organizational cultures that encourage innovation, adaptability, accountability, and continuous improvement. Such leadership characteristics are particularly important for railway organizations operating within rapidly changing technological, institutional, and competitive environments.

Accordingly, while Contingency Theory explains the necessity for leaders to adapt their leadership style according to organizational and environmental circumstances, Transformational Leadership Theory explains the mechanisms through which leaders motivate employees, build organizational commitment, stimulate innovation, and successfully implement change.

The integration of these complementary theories therefore provides a more comprehensive theoretical foundation for understanding leadership effectiveness within state-owned railway enterprises such as ZRL, where sustainable organizational performance depends not only on adapting to contextual challenges but also on creating a shared vision capable of driving long-term institutional and operational transformation.

2.5.3.3 Core Concepts of Contingency Theory

The central premise of Contingency Theory is the concept of fit, which suggests that organizational effectiveness is achieved when leadership approaches, management practices, and organizational structures are appropriately aligned with prevailing internal and external conditions (Fiedler, 1964; Donaldson, 2001). Rather than prescribing universal management principles, the theory argues that managers should continuously assess organizational circumstances and adopt strategies that best respond to the specific challenges confronting the organization. Consequently, effective management is viewed as a dynamic process requiring continuous adaptation to changing operational, institutional, technological, and competitive environments.

Another important concept is leadership adaptability, which emphasizes the ability of managers to respond effectively to environmental uncertainty and organizational complexity. As organizations experience changes in technology, market conditions, stakeholder expectations, and regulatory requirements, leadership practices must evolve accordingly to maintain organizational effectiveness (Donaldson, 2001). Shala et al. (2021) argue that managers operating in highly

dynamic environments should demonstrate flexibility in decision-making, communication, problem-solving, and resource allocation rather than relying on rigid administrative procedures.

Contingency Theory also emphasizes organizational flexibility, which refers to the ability of an organization to modify its structures, processes, and operational systems in response to environmental changes. Flexible organizations are better positioned to manage operational disruptions, allocate resources efficiently, respond to customer needs, and exploit emerging opportunities. In contrast, highly bureaucratic organizations often experience slow decision-making, poor coordination, and reduced responsiveness, thereby limiting organizational performance (Donaldson, 2001; Madlock, 2018).

The theory further recognizes the importance of contextual decision-making, whereby managerial decisions should reflect the specific operational realities facing different functional areas within an organization. Consequently, decisions relating to maintenance, financial resource allocation, human resource management, customer service, and strategic planning should be tailored to the prevailing circumstances rather than guided by standardized administrative procedures. This perspective acknowledges that different departments may require different management approaches to achieve optimal performance (Fiedler, 1964; Armstrong & Taylor, 2020).

Contingency Theory has been widely applied in railway management to explain how leadership adapts to changing operational and environmental conditions. Railway operators such as Network Rail, Societe Nationale des Chemins de fer Français (SNCF), and Queensland Rail have adopted adaptive management approaches in response to technological innovation, safety requirements, and evolving customer expectations. These experiences demonstrate that effective railway leadership depends on aligning management practices with organizational and environmental conditions rather than relying on standardized administrative approaches (Donaldson, 2001; Shala et al., 2021).

Finally, the theory recognizes that organizational performance is influenced by the interaction between leadership behaviour, organizational systems, and the external environment. Sustainable performance therefore depends on the ability of managers to continuously align organizational resources, employee capabilities, operational processes, and strategic priorities with changing environmental conditions. This interactional perspective makes Contingency Theory particularly

relevant for organizations operating in complex and uncertain environments, such as state-owned railway enterprises, where political, economic, technological, and market conditions are constantly evolving (Donaldson, 2001; Shala et al., 2021).

2.5.3.4 Critical Evaluation of Contingency Theory

Contingency Theory has been widely recognized as one of the most influential management theories because it rejects the assumption that a single leadership or organizational approach is universally applicable. Instead, it acknowledges the complexity of organizational environments and provides managers with a flexible framework for selecting leadership styles and management practices that best suit prevailing circumstances (Fiedler, 1964; Donaldson, 2001). This flexibility makes the theory particularly valuable in organizations operating within dynamic political, economic, and technological environments, including state-owned enterprises.

A major strength of Contingency Theory is its ability to explain variations in organizational performance under different environmental conditions. The theory recognizes that organizational success depends on the interaction among leadership, organizational structure, available resources, and external environmental factors rather than on any single management practice (Donaldson, 2001). As a result, it has been widely applied in organizational management, strategic planning, public administration, and change management to explain why organizations facing similar challenges frequently achieve different performance outcomes (Shala et al., 2021).

Despite these contributions, Contingency Theory has several limitations. One criticism is that the theory provides limited guidance regarding how managers should determine the most appropriate leadership approach for a given situation. The concept of "best fit" remains largely dependent on managerial judgement, making practical implementation difficult in complex organizations (Donaldson, 2001).

In addition, the theory pays relatively little attention to institutional governance, public policy, and regulatory influences that significantly affect SOE performance. Similarly, it does not explicitly explain technical maintenance systems, organizational financing mechanisms, or competitive market pressures. Consequently, while Contingency Theory provides a valuable framework for understanding leadership effectiveness and organizational adaptability, it cannot independently

explain the multiple factors influencing organizational performance. These limitations justify its integration with Total Productive Maintenance Theory, Institutional Theory, and Porter's Competitive Forces Model.

2.5.3.5 Relevance of Contingency Theory to the Present Study

Contingency Theory provides the principal theoretical foundation for examining Leadership Effectiveness (LE) as a determinant of ZRL performance in this study. The theory supports the view that effective leadership depends on the ability of managers to respond appropriately to changing organizational circumstances rather than relying on fixed management practices (Fiedler, 1964; Donaldson, 2001). Within ZRL, leadership effectiveness extends beyond administrative supervision to include strategic decision-making, resource coordination, employee engagement, problem-solving, and organizational change management.

The theory is particularly relevant because ZRL operates within an environment characterized by ageing infrastructure, financial constraints, increasing competition from road transport, evolving government policies, and growing stakeholder expectations. These conditions require leadership that is capable of adapting management approaches to changing operational realities while maintaining organizational effectiveness.

The complementary perspective offered by Transformational Leadership Theory further reinforces this argument by emphasizing the importance of strategic vision, employee motivation, effective communication, and organizational transformation in improving institutional performance (Bass, 1985).

Nevertheless, leadership effectiveness alone cannot fully explain the underperformance of ZRL. Organizational performance is equally influenced by the study variables. Accordingly, this study integrates the four theories underpinning this study to provide a comprehensive theoretical framework for explaining the multidimensional factors contributing to the underperformance of ZRL.

2.5.4 Porter's Competitive Forces Model (Porter, 1980)

2.5.4.1 Origin and Development of Porter's Competitive Forces Model

Porter's Competitive Forces Model was developed by Michael Porter (1980) as a strategic framework for analysing the competitive structure of industries. The model argues that organizational performance is shaped not only by internal resources but also by external market forces that influence profitability, competitiveness, and strategic positioning. Porter (1980) identified five forces that determine the intensity of competition within an industry: rivalry among existing competitors, threat of new entrants, threat of substitute products or services, bargaining power of buyers, and bargaining power of suppliers.

Porter (1985) later extended this thinking through the concept of competitive advantage, emphasizing that organizations must position themselves strategically in response to industry pressures. Subsequent strategic management scholars have continued to apply the model across sectors, including transport, logistics, manufacturing, and public infrastructure (Johnson et al., 2020; Rothaermel, 2021). In the transport sector, the model is useful because railway operators compete not only with other rail companies but also with road transport, inland waterways, pipelines, ports, and logistics service providers.

2.5.4.2 Core Concepts of Porter's Competitive Forces Model

Porter's model is based on the assumption that the competitive strength of an organization depends on the interaction of five external forces:

- **Competitive rivalry** refers to the intensity of competition among existing firms in the same industry. In railway transport, rivalry may arise from competing rail operators, logistics companies, and road freight providers.
- **Threat of substitutes** occurs when customers can switch to alternative transport modes. For railways, road transport is often the most significant substitute because it offers flexibility, door-to-door delivery, and shorter response times.
- **Bargaining power of buyers** reflects the ability of customers to influence prices, service quality, and delivery conditions. Large freight customers, such as mining companies and bulk cargo shippers, may exert strong bargaining power where alternative transport options are available.

- **Bargaining power of suppliers** relates to the influence of suppliers of locomotives, spare parts, fuel, signalling equipment, and maintenance technologies. Where suppliers are few or specialized, railway operators may face high procurement costs and delays.
- **Threat of new entrants** refers to the possibility of new competitors entering the market. In railway transport, this threat is usually low because rail operations require high capital investment, specialized infrastructure, regulatory approvals, and long-term asset commitments.

Figure 2.10 depicts Porter's five competitive forces as explained above.

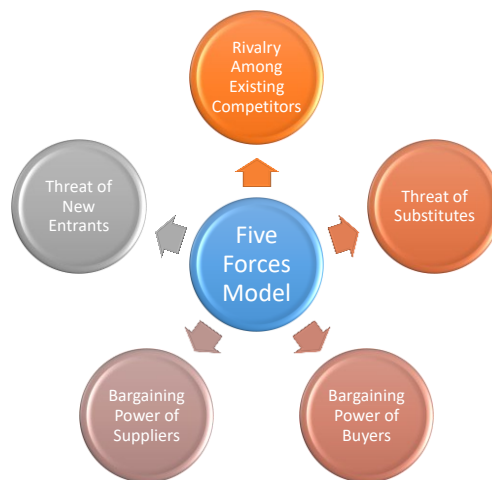


Figure 2.10: Porter's Five Competitive Forces Model

Source: Adopted from Porter (1980)

2.5.4.3 Application of Porter's Competitive Forces Model in Railway Systems

Porter's model is highly applicable to railway systems because railways operate within a broader transport market where customers can choose between rail, road, pipeline, air, and maritime transport depending on cost, reliability, flexibility, and service quality. In freight transport, road haulage often represents the strongest substitute because it provides greater route flexibility, faster dispatch, and direct customer delivery. Therefore, railway competitiveness depends not only on internal efficiency but also on how effectively rail operators respond to external market pressures.

International railway experience illustrates the relevance of Porter's model. In North America, Canadian National Railway competes with trucking and other logistics providers by strengthening intermodal services, improving operational efficiency, and integrating rail with broader supply-

chain solutions (Canadian National Railway, 2023; Rodrigue, 2020). In Europe, Deutsche Bahn and DB Cargo operate in a freight market where road logistics remains a major competitive pressure, leading to strategies focused on modernization, digital freight management, restructuring, and intermodal transport solutions (Deutsche Bahn, 2023; European Commission, 2022).

In Africa, Kenya Railways has faced continuing competition from road freight even after investment in the Standard Gauge Railway. Although the SGR increased rail freight capacity, road transport continues to influence freight pricing, modal choice, and customer preference, demonstrating the continued relevance of substitute transport modes in railway competitiveness (World Bank, 2020; African Development Bank, 2022). Similarly, Transnet Freight Rail in South Africa has experienced competition from road transport, operational constraints, and declining freight volumes, prompting reforms aimed at improving rail reliability, corridor performance, and logistics competitiveness (Transnet, 2023; National Treasury South Africa, 2022).

These examples demonstrate that railway performance is shaped by both internal operational capacity and external market forces. In the context of ZRL, Porter's model provides an appropriate theoretical lens for analyzing the effect of competition from road transport on organizational performance, helping to explain how road transport rivalry, customer switching behaviour, supplier constraints, and limited strategic responsiveness affect ZRL's market share, revenue generation, and long-term competitiveness.

2.5.4.4 Critical Evaluation of Porter's Competitive Forces Model

Porter's Competitive Forces Model has become one of the most influential strategic management frameworks for analysing industry competitiveness and organizational positioning. One of its principal strengths lies in its ability to systematically evaluate the external market environment by identifying the competitive pressures that influence organizational performance and long-term sustainability (Porter, 1980; Porter, 1985). Unlike theories that focus primarily on internal organizational capabilities, Porter's model recognizes that strategic success depends largely on how organizations respond to industry competition, customer expectations, supplier relationships, substitute products, and potential market entrants.

Another important strength of the model is its applicability across diverse industries, including transport and logistics, where organizations operate within highly competitive and rapidly evolving markets (Johnson et al., 2020; Rothaermel, 2021). The framework enables managers to identify sources of competitive advantage, evaluate market opportunities, anticipate competitive threats, and formulate strategies that enhance organizational resilience.

Within the railway sector, the model provides a structured basis for analysing competition between rail and road transport while supporting strategic initiatives aimed at improving service quality, pricing, operational efficiency, and customer retention. Despite these strengths, several limitations have been identified in the literature. The model assumes relatively stable industry structures and pays limited attention to rapidly changing technological, political, and institutional environments that increasingly influence competitiveness (Grant, 2022).

Furthermore, Porter's framework focuses primarily on external market forces while giving comparatively little consideration to internal corporate capabilities such as leadership effectiveness, maintenance systems, organizational culture, governance structures, and financial resource management. For public enterprises, additional influences including government ownership, regulatory interventions, political priorities, and public accountability extend beyond the explanatory scope of the model (Johnson et al., 2020).

Furthermore, although Porter's model provides a robust framework for analyzing external competitive pressures, it cannot independently explain the complex challenges experienced by state-owned railway enterprises. Its integration with other theories underpinning this study enables both internal organizational capabilities and external competitive influences to be examined simultaneously, thereby providing a more comprehensive explanation of ZRL underperformance.

2.5.4.5 Relevance of Porter's Competitive Forces Model to the Present Study

Porter's Competitive Forces Model provides the principal theoretical foundation for examining the influence of Competition from Road Transport (CRT) on the performance of ZRL. The theory explains how competition from substitute transport modes influences market share, freight volumes, pricing strategies, customer retention, and the whole organizational competitiveness (Porter, 1980).

In Zambia's transport sector, road transport has increasingly become the dominant freight mode because of its flexibility and other advantages already indicated have significantly affected ZRL's ability to attract and retain freight traffic.

The model is particularly relevant because it provides a strategic perspective for understanding how external market pressures influence performance beyond internal operational efficiency. It supports the proposition that improving railway performance requires not only efficient maintenance systems and effective leadership but also strategic responses to changing customer preferences, technological developments, pricing dynamics, and competition from alternative transport providers. Subsequently, the theory provides an appropriate conceptual basis for analysing the Competition from Road Transport (CRT) variable investigated in this study.

However, external competition alone does not fully explain ZRL's underperformance. The company's performance is equally shaped by other study variables. Accordingly, this study integrates Porter's Competitive Forces Model with Total Productive Maintenance Theory, Institutional Theory, and Contingency Theory to provide a comprehensive theoretical framework capable of explaining factors contributing to the underperformance of ZRL as a State-Owned Enterprise.

2.5.5 Integrated Theoretical Framework

2.5.5.1 Integrating the Theoretical Perspectives

No single theory adequately explains the complex factors contributing to the underperformance of State-Owned Enterprises (SOEs), particularly within the railway sector. While each of the four theories adopted in this study explains an important dimension of ZRL performance, each also has inherent limitations when considered independently. Therefore, this study adopts an integrated theoretical framework that combines the four theories to provide a comprehensive explanation regarding factors influencing the performance of ZRL.

Total Productive Maintenance Theory explains how effective maintenance systems contribute to equipment reliability, operational efficiency, asset availability, and service quality (Nakajima, 1988). However, the theory focuses primarily on internal operational processes and does not

adequately explain the influence of institutional governance, leadership, funding arrangements, or external market competition.

Institutional Theory complements TPM by explaining how formal and informal institutional arrangements, including government policies, regulatory frameworks, corporate governance structures, and public funding mechanisms, influence organizational performance (DiMaggio & Powell, 1983; North, 1990; Scott, 2014). This perspective is particularly relevant for state-owned enterprises, where government ownership and institutional oversight significantly affect strategic decision-making and resource allocation. Nevertheless, Institutional Theory provides limited explanation of operational maintenance systems, leadership adaptability, and competitive market behaviour.

Contingency Theory extends the framework by explaining how leadership effectiveness depends on organizational and environmental conditions rather than universal management principles (Fiedler, 1964; Donaldson, 2001). Supported by Transformational Leadership Theory (Bass, 1985), it provides a useful perspective for understanding how leadership practices influence organizational adaptability, employee engagement, and strategic decision-making. However, the theory does not adequately explain the institutional environment, technical maintenance systems, or competitive forces affecting railway administrations.

Porter's Competitive Forces Model contributes the external strategic perspective by explaining how competition from substitute transport modes, customer bargaining power, supplier relationships, market rivalry, and barriers to entry influence organizational competitiveness (Porter, 1980; Porter, 1985). Within the railway industry, the model is particularly useful for analyzing competition between rail and road transport. Nevertheless, it gives limited attention to internal ZRL capabilities such as maintenance management, leadership practices, governance structures, and public sector institutional arrangements.

Collectively, these four theories provide complementary rather than competing explanations of ZRL performance. Their integration enables the present study to simultaneously examine operational efficiency, institutional governance, leadership effectiveness, funding adequacy, and external competitive pressures within a single conceptual framework.

2.5.5.2 Theoretical Integration with Study Variables

The theoretical integration adopted in this study is summarized in Table 2.7 and illustrated in Figure 2.11

Table 2.7: Integration of Theoretical Perspectives with Study Variables

Theory	Principal Variable(s) Explained	Major contribution to the Study	Key Limitation
Total Productive Maintenance Theory (Nakajima, 1988)	Maintenance Effectiveness (ME)	Explains how preventive maintenance, equipment reliability and continuous improvement influence operational performance.	Does not adequately explain governance, funding or competition.
Institutional Theory (DiMaggio & Powell, 1983; North, 1990)	Government Policy & Regulatory Support (GPRS); Funding Adequacy (FA)	Explains how institutional governance, public policy, regulation and funding mechanisms influence SOE performance.	Gives limited attention to operational management and competitive markets
Contingency Theory (Fiedler, 1964), Supported by Transformational Leadership Theory (Bass, 1985)	Leadership Effectiveness (LE)	Explains how leadership effectiveness depends on organizational and environmental conditions.	Does not explicitly address maintenance systems, funding arrangements, or market competition
Porter's Competitive Forces Model (Porter, 1980)	Competition from Road Transport (CRT)	Explains how external competitive forces influence organizational competitiveness and market performance.	Focuses mainly on external competition and overlooks internal organizational capabilities.

Source: Developed by the researcher (2026).

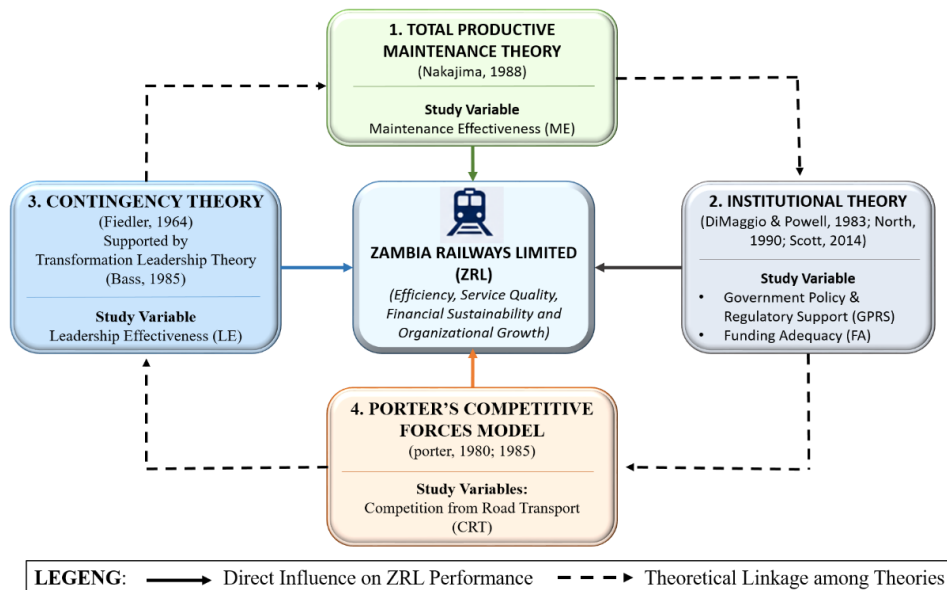


Figure 2.11: Integrated Theoretical Framework

Source: Developed by the researcher, 2026.

2.5.5.3 Theoretical Contribution of the Study

The principal theoretical contribution of this study lies not in the development of an entirely new theory but in the integration and contextual adaptation of four complementary theories to explain the multidimensional factors contributing to the underperformance of SOE within developing economies.

Previous studies have generally applied these theories independently to explain maintenance management, institutional governance, leadership, or market competition. In contrast, the present study demonstrates that the ZRL's performance cannot be adequately understood through a single theoretical lens because organizational performance is simultaneously influenced by operational, institutional, managerial, financial, and competitive factors.

Accordingly, the integrated framework developed in this study provides a more comprehensive explanation of railway performance by linking the five variables within a unified theoretical perspective. This integrated approach advances existing knowledge by illustrating how these factors interact to shape organizational performance in state-owned railway enterprises. Therefore, the framework may also serve as a useful analytical model for examining similar challenges in other SOEs operating within comparable institutional and competitive environments.

2.6 Gaps in the Literature

The preceding empirical literature demonstrates that considerable research has been undertaken on maintenance practices, funding adequacy, leadership and management practices, competition from road transport, and government policy and regulatory support. However, despite these contributions, important knowledge gaps remain regarding the factors influencing the performance of state-owned railway enterprises, particularly within the Zambian context. Table 2.8 summarizes the major findings from the reviewed literature and highlights the principal research gaps that informed the present study.

Table 2.8: Thematic Synthesis of Literature and Identified Research Gaps

Variable	Guiding Theory	Global Level	Regional Level	Local Level	Identified Research Gaps
Maintenance Practices	Total Production Maintenance (TPM) Theory	Studies in Europe and Asia (e.g., Japan, Germany, and China) emphasize predictive and total productive maintenance (TPM) frameworks (Nakajima, 1988; IEA, 2019).	Predictive and preventive maintenance improve reliability and operational efficiency regionally (Blumenfeld et al., 2019),	Studies on ZRL identify ageing locomotives, reactive maintenance practices, inadequate spare parts as major contributors to poor operational performance (Sandala, 2020; Kasoma & Zulu, 2019; ZRL Annual Report, 2021-2023).	Limited integrated evidence on how maintenance effectiveness influences ZRL performance using a mixed-methods approach
Funding Adequacy	Institutional Theory	Global studies emphasize sustainable financing models through PPPs and commercialization (World Bank, 2018; OECD, 2020).	Regional evidence highlights reliance on government subventions and underutilized PPP mechanisms (OECD, 2022; AfDB, 2021).	Sustainable railway performance depends on diversified financing and effective governance (Kasoma & Zulu, 2019)	Few studies examine the combined influence of funding adequacy and institutional governance on ZRL performance.
Leadership Practices	Contingency Theory	International research links transformational leadership to organizational performance (Kotter, 1990; Yukl, 2013).	African studies (Adusei, 2021; Ohemeng, 2015) reveal politicized leadership in SOEs and weak performance accountability.	Effective leadership enhances strategy implementation, innovation, and organization performance (Kapanda, 2017; Chongo et al, 2024).	Limited empirical assessment of leadership effectiveness alongside other determinants of railway performance
Competition from Road Transport	Porter's Competitive Forces Model	Globally, intermodal integration is emphasized promote efficiency (Porter, 1980; Rodrigue, 2020)	Regionally, road transport dominates due to lower costs and better infrastructure	Road transport dominance freight markets because of flexibility and service responsiveness (MoTC, 2017; Mwila, 2016; Parliament of Zambia, 2024)	Limited integrated analysis of how road competition interacts with organizational

			(UNECA, 2018; SADC, 2020).		factors affecting ZRL performance.
Government Policy and Regulatory Support	Institutional Theory	Global frameworks emphasize independent regulation and policy coherence (OECD, 2019).	African contexts highlight weak regulatory enforcement and policy inconsistency (AfDB, 2022).	Zambian literature (GRZ, 2017; SI No. 7 of 2018) identifies political interference but offers little empirical validation.	Few studies evaluate policy implementation and regulatory support jointly influence the performance of railway SOEs.

Source: Compiled by the author from reviewed literature, 2024 - **Continuation**

Table 2.8 synthesizes the principal empirical findings reviewed across the global, African, and Zambian literature. The evidence demonstrates broad consensus that the five variables significantly influence railway performance. However, previous studies have generally examined these determinants independently, adopted single theoretical perspectives, or relied predominantly on descriptive or qualitative approaches.

Subsequently, there remains limited integrated empirical evidence explaining how these factors collectively influence the performance of state-owned railway enterprises within the Zambian context. The present study addresses these shortcomings by integrating four complementary theoretical perspectives and employing a convergent mixed-methods design to examine the combined influence of the five determinants on the performance of ZRL.

2.6.1 Theoretical Gap

The reviewed literature demonstrates that previous studies have largely relied on single theoretical perspectives to explain the performance of railway institutions. Maintenance studies commonly employ Total Productive Maintenance (TPM) Theory (Nakajima, 1988); leadership studies frequently adopt Contingency Theory (Fiedler, 1964); governance studies are generally grounded in Institutional Theory (DiMaggio & Powell, 1983; Scott, 2014), while competition studies often utilize Porter's Competitive Forces Model (Porter, 1980).

Although these theories provide valuable insights into specific dimensions of railway performance, they have rarely been integrated into a unified framework capable of explaining the complex interactions among technical, organizational, institutional, and competitive factors affecting state-owned railway enterprises. Accordingly, this study addresses the theoretical gap by integrating the four complementary theories into a single analytical framework for examining the factors contributing to the underperformance of ZRL.

2.6.2 Methodological Gap

Previous studies investigating railway performance in Zambia and other developing countries have predominantly employed qualitative case studies, descriptive surveys, or document reviews. Although these studies have generated valuable insights, relatively few have adopted convergent

mixed-methods designs capable of integrating quantitative and qualitative evidence to provide a more comprehensive understanding of organizational performance.

Furthermore, most previous studies have examined individual determinants of railway performance independently, with limited triangulation between statistical findings and stakeholder perspectives. This study addresses these methodological limitations by employing a convergent mixed-methods approach that combines questionnaire surveys, semi-structured interviews, document review, and advanced quantitative and qualitative analyses to enhance the validity, reliability, and robustness of the findings.

2.6.3 Empirical Gap

The reviewed literature consistently identifies maintenance deficiencies, inadequate funding, weak leadership, increasing competition from road transport, and policy implementation challenges as major contributors to railway underperformance. However, existing studies have largely examined these determinants independently, with limited empirical evidence explaining their combined influence on the performance of state-owned railway enterprises.

Within Zambia, previous research has focused on individual aspects of railway performance, including infrastructure development (Sandala, 2020), competition between road and rail transport (Mwila, 2016), historical development (Kapanda, 2017), structural challenges (Kasoma & Zulu, 2019), and corporate governance (Chongo et al., 2024). Nevertheless, limited empirical research has simultaneously examined maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy within a single integrated analytical framework.

This study addresses this empirical gap by investigating the combined influence of these five determinants on the performance of Zambia Railways Limited.

2.6.4 Conceptual Gap

Most existing studies conceptualize railway performance using linear relationships between isolated independent and dependent variables. Such approaches inadequately capture the complex interactions among organizational, institutional, financial, technical, and competitive factors affecting state-owned enterprises.

This study addresses the conceptual gap by developing an integrated conceptual framework that recognizes the interrelationships among maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, government policy and regulatory support, and ZRL performance.

2.6.5 Policy and Practical Gap

Although Zambia has introduced several policy initiatives aimed at revitalizing the railway sector, including Vision 2030, the National Transport Policy Implementation Plan (2019-2028), the Eighth National Development Plan, and Statutory Instrument No. 7 of 2018, available evidence suggests that implementation has remained below expectations. Existing studies largely focus on policy formulation rather than evaluating the effectiveness of policy implementation and institutional enforcement.

This study therefore contributes to the policy literature by providing empirical evidence on how government policy and regulatory support influence the performance of ZRL and by generating evidence that may inform future railway reforms and SOE governance.

2.7 Chapter Summary

This chapter presented a comprehensive and critical review of the literature relevant to the factors influencing the performance of state-owned enterprises, with particular emphasis on railway administrations and Zambia Railways Limited (ZRL). The chapter examined empirical evidence relating to the key study variables, followed by the conceptual framework, theoretical framework, and an assessment of the gaps in the existing literature.

The empirical literature was reviewed across five thematic areas corresponding to the study objectives: maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support. For each thematic area, evidence was synthesized from global, African, and Zambian contexts to establish existing knowledge, areas of convergence and divergence, and issues requiring further investigation. The review showed that although these factors have been widely examined in different contexts, relatively limited empirical research has investigated their combined influence on the performance of state-owned railway enterprises, particularly within the Zambian context.

Building on the empirical evidence, the chapter presented the conceptual framework illustrating the relationships between the five independent variables and ZRL performance as the dependent variable. The framework provided an integrated representation of how maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support may interact in explaining organizational performance within the specific institutional and operational context of ZRL.

The chapter subsequently examined the theoretical foundations underpinning the study, drawing on Total Productive Maintenance (TPM) Theory, Institutional Theory, Contingency Theory, and Porter's Competitive Forces Model. These theoretical perspectives provided complementary explanations of the technical, managerial, institutional, and competitive dimensions of railway performance and established the theoretical basis for examining the study variables within an integrated framework.

Finally, the review identified theoretical, empirical, contextual, conceptual, and methodological gaps in the existing literature. In particular, it highlighted the limited integration of multiple theoretical perspectives, the tendency of previous studies to examine performance determinants independently, the scarcity of context-specific empirical evidence on ZRL, the predominance of evidence from contexts that differ institutionally and operationally from Zambia, and the limited application of mixed-methods approaches capable of integrating quantitative relationships with stakeholder experiences. These gaps established the justification for examining the five determinants collectively within the context of ZRL.

Fundamentally, the chapter established the empirical, conceptual, and theoretical foundation for the study and demonstrated the need for a context-specific and integrated investigation of the factors contributing to the underperformance of ZRL. The next chapter presents the research methodology adopted to investigate these factors and address the study objectives and research questions.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

The methodological choices adopted in this study are guided by the Research Onion proposed by Saunders et al. (2019) as illustrated in Figure 3.1, which provides a systematic framework for developing a coherent research methodology. The framework illustrates the sequential decisions undertaken in selecting the research philosophy, approach, methodological choice, research strategy, time horizon, and techniques and procedures employed in the study.

Guided by this framework, the present study adopted pragmatism as the underlying philosophical paradigm, combined deductive and inductive reasoning within a convergent parallel mixed-methods design, employed a case study strategy, adopted a cross-sectional time horizon, and utilized both quantitative and qualitative data collection and analysis techniques. The subsequent sections discuss each methodological decision in detail.



Figure 3.1: Research Onion Guiding the Study

Source: Adapted from Saunders et al, 2019

3.1 Research Approach

The research approach provides the logical framework that links the research objectives with the methods used to collect and analyse data (Saunders et al., 2019; Creswell & Creswell, 2018). It

determines whether the study seeks to develop theory from observations (inductive), test existing theory using empirical evidence (deductive), or combine both approaches where appropriate.

This study adopted a combined inductive-deductive research approach, consistent with the pragmatic paradigm and convergent mixed-methods design. The deductive approach was employed to test the relationships between the independent variables- maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support, and the performance of Zambia Railways Limited (ZRL). This was achieved through the development of hypotheses derived from existing theories and empirical literature and subsequently tested using quantitative statistical techniques.

The inductive approach complemented the quantitative analysis by allowing qualitative evidence obtained through semi-structured interviews to generate deeper insights into the contextual, organizational, and institutional factors influencing ZRL's performance. The qualitative findings enabled the researcher to interpret stakeholders' experiences, identify emerging themes, and explain statistical relationships that could not be adequately understood through quantitative data alone.

The integration of both approaches enabled the study to benefit from the strengths of quantitative and qualitative research while minimizing the limitations associated with relying on a single approach. Consequently, the combined inductive-deductive approach was considered appropriate for achieving the study objectives and developing a comprehensive understanding of the factors contributing to the underperformance of Zambia Railways Limited.

3.2 Strategy Justification

Selecting an appropriate research strategy is essential for ensuring that the research design adequately addresses the study objectives and research questions (Yin, 2018; Saunders et al., 2019). The present study sought to investigate the complex organizational, operational, institutional, and competitive factors contributing to the underperformance of ZRL. Such a multidimensional problem required a research strategy capable of capturing both measurable relationships and contextual explanations.

Accordingly, the study adopted a convergent parallel mixed-methods strategy, integrating quantitative and qualitative data collected during the same phase of the research process. The quantitative component provided measurable evidence regarding the relationships among the study variables through statistical analysis, while the qualitative component generated in-depth insights into participants' experiences, perceptions, and explanations regarding organizational performance. The integration of both datasets during interpretation strengthened the credibility and comprehensiveness of the findings through methodological triangulation (Creswell & Plano Clark, 2018).

The mixed-methods strategy was particularly appropriate because the study investigated multiple dimensions of ZRL performance that could not be adequately explained using quantitative or qualitative methods alone. For example, while statistical analyses established the strength and direction of relationships between maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, government policy and regulatory support, and railway performance, qualitative interviews explained why such relationships existed within the institutional context of Zambia Railways Limited.

Furthermore, the chosen strategy supports the development of evidence-based recommendations by combining objective statistical evidence with stakeholder perspectives, thereby providing a richer and more balanced understanding of the challenges facing Zambia Railways Limited. This approach is consistent with the pragmatic orientation of the study, which advocates selecting research methods that best address the research problem rather than adhering exclusively to a single methodological tradition.

3.3 Research Paradigm

A research paradigm refers to the philosophical worldview that guides how knowledge is generated, interpreted, and validated throughout the research process (Kuhn, 1970; Creswell & Creswell, 2018). It provides assumptions regarding the nature of reality (ontology), the relationship between the researcher and the phenomenon under investigation (epistemology), and the methods considered appropriate for generating knowledge (methodology). Common paradigms include positivism, interpretivism, and pragmatism.

Positivism assumes that reality is objective and can be measured through observable facts using quantitative methods. Researchers working within the positivist paradigm typically seek to test hypotheses, establish causal relationships, and generate findings that can be generalized to larger populations (Saunders et al., 2019). Although this paradigm provides strong statistical rigour, it offers limited understanding of participants' experiences and the contextual factors influencing organizational behaviour.

In contrast, interpretivism argues that reality is socially constructed and that understanding human behaviour requires exploring individuals' experiences, meanings, and interpretations. Consequently, interpretivist research primarily relies on qualitative methods such as interviews, observations, and document analysis to generate rich contextual understanding (Creswell & Creswell, 2018). While this approach provides detailed insights, it is less suited to testing hypotheses or quantifying relationships among variables.

Given the nature of the present study, pragmatism was adopted as the guiding research paradigm. Pragmatism recognizes that no single philosophical perspective is sufficient to explain complex real-world problems and therefore encourages the use of multiple methods where appropriate (Morgan, 2014). The underperformance of ZRL is influenced by technical, financial, managerial, institutional, competitive, and policy-related factors, which cannot be comprehensively understood using either quantitative or qualitative methods in isolation.

The pragmatic paradigm therefore provided an appropriate philosophical foundation for integrating quantitative survey data with qualitative interview findings within a convergent mixed-methods design. Quantitative methods enabled the testing of hypotheses and measurement of relationships among the study variables, while qualitative methods provided contextual explanations and stakeholder perspectives that enriched the interpretation of the statistical findings. This integration enhanced the validity, credibility, and practical relevance of the study, making pragmatism the most suitable paradigm for achieving the study objectives.

3.4 Inductive Approaches

The inductive component of this study was implemented through qualitative inquiry involving semi-structured interviews with purposively selected participants possessing extensive knowledge

of Zambia Railways Limited. Rather than testing predetermined hypotheses, the interviews sought to explore participants' experiences, perceptions, and explanations regarding the organisational factors influencing railway performance. The collected narratives were analysed using thematic analysis, allowing patterns and themes to emerge from the data. These emergent themes were subsequently integrated with the quantitative findings to provide contextual explanations and strengthen the interpretation of statistical results.

3.5 Deductive Approaches

The deductive component of the study was implemented through the quantitative phase of the research. Existing theories, including Total Productive Maintenance Theory, Institutional Theory, Contingency Theory, and Porter's Competitive Forces Model, informed the formulation of the conceptual framework and research hypotheses. Structured questionnaires were then administered to collect quantitative data, which were analysed using descriptive statistics, Spearman's correlation analysis, and multiple regression analysis in SPSS to test the hypothesised relationships between the independent variables and ZRL performance.

3.6 Time Horizon

The time horizon defines the temporal scope within which data are collected and analyzed. It influences the depth of insights that can be drawn and determines whether the study captures a single point in time or patterns of change over a longer period (Saunders et al., 2019). In research design, two main types of time horizons are typically recognized: cross-sectional and longitudinal.

A cross-sectional design involves the collection of data at a single point in time to provide a snapshot of a particular phenomenon, while a longitudinal design gathers data over an extended period to analyse trends, developments, or causal relationships (Bell, Bryman & Harley, 2022).

This study adopted a cross-sectional time horizon because it aimed to examine and understand the current factors contributing to the underperformance of ZRL. The research sought to capture existing conditions, perceptions, and relationships among key variables within a defined period.

The choice of a cross-sectional design was also consistent with the study's convergent parallel mixed-methods approach, which allows the simultaneous collection of quantitative and qualitative

data. This temporal alignment enabled the researcher to gather complementary datasets efficiently and integrate them during interpretation. Given that the study focused on identifying and explaining current challenges rather than tracking changes over time, a cross-sectional horizon was methodologically appropriate and practically feasible.

Adopting a cross-sectional time horizon provided a reliable basis for analyzing the immediate determinants of ZRL's underperformance, producing results that are both contextually relevant and empirically robust within the study's defined timeframe.

3.7 Research Strategy

This study adopted a case study research strategy focusing on Zambia Railways Limited. A case study strategy was considered appropriate because it allows for an in-depth investigation of complex organizational and institutional phenomena within their real-life context (Yin, 2018). The strategy was particularly suitable for this research because the underperformance of ZRL is influenced by multiple interconnected factors.

The use of a case study strategy enabled the researcher to obtain a detailed contextual understanding of ZRL's operational environment, institutional structures, and managerial processes. Unlike broader survey strategies that often prioritize generalization, the case study approach facilitated an intensive examination of the specific conditions and realities affecting ZRL as a state-owned railway enterprise. This allowed the researcher to explore how institutional, financial, operational, and regulatory factors interact to influence organizational performance over time.

According to Saunders et al. (2019), a case study strategy is appropriate when the research seeks to answer "how" and "why" questions within contemporary organizational settings where the researcher has limited control over events. In this study, the strategy helped explain why ZRL continues to experience operational inefficiencies despite the existence of policy frameworks, government interventions, and strategic reforms aimed at revitalizing the railway sector.

The strategy further enabled the integration of multiple sources of evidence, including questionnaires, interviews, documentary analysis, and institutional reports. This enhanced the depth, validity, and contextual richness of the study by allowing the researcher to examine the

problem from different institutional and stakeholder perspectives. The inclusion of employees from various departments, such as operations, technical services, finance, and administration, also strengthened the comprehensiveness of the inquiry.

In addition, the case study strategy aligned well with the study's pragmatic philosophical orientation, which emphasizes practical understanding of real-world problems and context-specific solutions. By focusing on ZRL as a representative parastatal transport enterprise in Zambia, the study generated insights that may also contribute to understanding broader performance challenges affecting state-owned enterprises in developing economies

3.8 Sampling Frame and Sample Size

Sampling is a critical stage of the research process because it determines the extent to which the selected participants adequately represent the population under investigation. An appropriate sampling framework enhances the credibility, validity, and reliability of research findings by ensuring that relevant participants are selected using systematic procedures (Saunders et al., 2019; Creswell & Cress, 2018). This section describes the target population, sampling frame, sampling techniques, and sample size adopted for both the quantitative and qualitative components of the study.

3.8.1 Target Population

The target population refers to the complete group of individuals or entities possessing the characteristics relevant to a study and to whom the research findings are intended to apply (Cooper & Schindler, 2014; Creswell & Creswell, 2018). For this study, the target population comprised employees, management, customers, and key stakeholders directly or indirectly involved in the operations, governance, and regulation of ZRL. These groups were considered appropriate because they possess practical knowledge and experience regarding the technical, financial, managerial, operational, and policy issues influencing the performance of the organisation.

For the quantitative component, the study population consisted of 703 employees distributed across the Operations, Technical Services, Commercial, Finance, Human Resources and Administration, Corporate Planning, and Legal departments. These departments collectively

represent the core operational and administrative functions of Zambia Railways Limited and therefore provided a comprehensive basis for examining organisational performance.

For the qualitative component, the study targeted 26 key informants possessing strategic knowledge of the railway sector. These included Executive Committee members, senior managers, engineers, planners, representatives from the Industrial Development Corporation (IDC), the Ministry of Transport and Logistics, Railway Industry Technocrat, major railway customers, a member of the Board of Directors, and operational employees participating in a focus group discussion. Their inclusion enabled the study to obtain both organisational and external stakeholder perspectives. Tables 3.1 and 3.2 present the composition of the quantitative and qualitative sample distribution, respectively.

Table 3.1: Quantitative Sample Distribution

Department / Institution	Sample Distribution	Percentage %
Operations	32	26.6
Commercial	14	11.7
Finance	10	8.3
Corporate planning	2	1.7
Technical	48	40.0
Legal	2	1.7
Human Resources & Administration	12	10.0
Total	120	100%

Source: Developed by the Author, 2024.

Table 3.2: Qualitative Target Population

Department / Institution	Target Population	Percentage %
ExCom	2	7.7
Operations	1	3.8
Commercial	1	3.8
Finance	1	3.8
Corporate planning	1	3.8
Technical	4	15.4
Stakeholders (IDC, Min. of T&L, Technocrat)	4	15.4
Clients (Impala, SLS, Reload, Zambia Sugar)	5	19.2
Board Member	2	7.7
Focused Group (1)	5	19.2
Total	26	100%

Source: Developed by the Author, 2024.

3.8.2 Sampling Frame

A sampling frame is the actual list or source from which study participants are selected (Saunders et al., 2019). It provides an operational representation of the target population and ensures that every eligible participant has an opportunity to be included within the selected sampling procedure.

For the quantitative component, the sampling frame consisted of the official employee establishment records obtained from ZRL's Human Resources and Administration Department. The records contained departmental staff lists covering Operations, Technical Services, Commercial, Finance, Human Resources and Administration, Corporate Planning, and Legal.

For the qualitative component, the sampling frame comprised senior management personnel, Executive Committee members, technical specialists, government officials, major railway customers, and other stakeholders identified through organisational records and consultation with ZRL management. These individuals were selected because of their direct involvement in railway operations, policy formulation, infrastructure management, regulation, or service utilization.

The use of separate sampling frames for the quantitative and qualitative components ensured that each dataset was obtained from participants best suited to address the respective research objectives while supporting methodological triangulation.

3.8.3 Sampling Techniques

Different sampling techniques were employed for the quantitative and qualitative components of the study in accordance with the convergent mixed-methods design.

The quantitative survey employed quota sampling to ensure proportional representation of employees across the major functional departments of ZRL. Quota sampling was considered appropriate because it enabled respondents to be selected according to departmental composition, thereby improving the representativeness of the sample and ensuring that perspectives from both operational and administrative units were adequately captured.

For the qualitative component, purposive sampling was adopted to identify participants possessing specialised knowledge and experience relevant to the study. Purposive sampling is widely recommended in qualitative research because it facilitates the selection of information-rich participants capable of providing detailed insights into the phenomenon under investigation (Patton, 2015). The selected participants occupied strategic positions within ZRL and related stakeholder institutions, enabling the study to capture informed perspectives on study variables.

The combination of quota and purposive sampling complemented the mixed-methods design by balancing representativeness in the quantitative component with depth of understanding in the qualitative inquiry.

3.8.4 Quantitative Sample Size

Determining an appropriate sample size is essential for ensuring that survey findings are sufficiently representative while remaining practically feasible. According to Creswell & Creswell (2018), sample size should be adequate to achieve reliable statistical analysis while considering available resources and the nature of the research. Similarly, Sekaran & Bougie (2020) emphasize that an adequately selected sample improves the validity, reliability, and generalizability of research findings.

The quantitative sample was drawn from the total workforce of 703 employees of ZRL. The required sample size was determined using Slovin's Formula (Slovin, 1960), which is appropriate when the population size is known, but population variability is unknown.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

- n = required sample size
- N = population size (703); and
- e = acceptable margin of error

Substituting the values into the formula:

$$n = \frac{703}{1 + 703(0.0831)^2} = 120$$

The margin of error formula used:

$$e = \sqrt{\frac{\frac{N}{n} - 1}{N}} = \sqrt{\frac{\frac{703}{120} - 1}{703}} = 0.083\%$$

Accordingly, a target sample of 120 respondents was determined for the quantitative survey.

The implied margin of error was approximately 8.31%, obtained by rearranging Slovin's formula using the known population (703) and the calculated sample size (120). This margin of error was considered acceptable given the exploratory nature of the study and practical constraints associated with data collection, including the geographical distribution of railway stations, accessibility of respondents, and available research resources.

Although a 5% margin of error is generally recommended for large-scale confirmatory studies, methodological literature acknowledges that exploratory and organisational research may reasonably employ margins of error between 5% and 10% without compromising the usefulness of the findings (Babbie, 2020; Etikan & Bala, 2017). Consequently, the findings of this study should be interpreted within this level of sampling precision.

Table 3.3 presents the proportional allocation of respondents across the various departments of Zambia Railways Limited.

Table 3.3: Minimum Proportional Sample Size Distribution by Department

Departments	Target Population	Sample Size
Operations	32	26
Commercial	14	12
Finance	10	9
Corporate planning	2	2
Technical	48	36
Legal	2	2
Human Resources & Administration	12	9
Total	120	96

Source: Developed by the Author, 2024.

3.8.5 Qualitative Sample Size

Unlike quantitative research, qualitative inquiry does not seek statistical representativeness but rather information richness and depth of understanding. Consequently, qualitative sample adequacy is generally determined by data saturation, the point at which additional interviews no longer generate new information or themes relevant to the research objectives (Guest et al., 2006; Saunders et al., 2018).

For this study, 26 key informants were initially identified through purposive sampling based on their strategic roles, professional expertise, and direct involvement in railway operations, governance, and policy formulation. These participants are highlighted in Table 3.2.

During data collection, interviews continued until theoretical and thematic saturation was achieved. Saturation occurred after 15 interview sessions, by which stage no substantially new themes or insights were emerging. The final qualitative dataset comprised 19 participants, as one interview session involved a focus group of five participants.

The achieved qualitative sample was therefore considered adequate because it captured diverse organizational and external stakeholder perspectives while satisfying the principle of data

saturation recommended in qualitative research (Guest et al., 2006; Braun & Clarke, 2022). The combination of quantitative survey responses and qualitative expert interviews further strengthened the credibility of the findings through methodological triangulation, which is a defining characteristic of convergent mixed-methods research (Creswell & Creswell, 2018).

3.9 Data Collection

Data collection is a critical stage in the research process as it provides the empirical evidence required to address the research objectives and answer the research questions (Saunders et al., 2019). In line with the convergent mixed-methods design adopted in this study, both quantitative and qualitative data were collected concurrently to provide complementary evidence regarding the factors contributing to the underperformance of ZRL. The integration of multiple data sources enhanced the credibility and comprehensiveness of the findings through methodological triangulation (Creswell & Plano Clark, 2018).

3.9.1 Sources of Data

Data for this study were obtained from both primary and secondary sources to ensure comprehensive coverage and triangulation of evidence. This approach aligns with the pragmatic research philosophy and the convergent parallel mixed-methods design, which emphasizes the integration of multiple data types to achieve a deeper and more reliable understanding of complex organisational phenomena (Kumar, 2018).

Secondary data were collected from a range of documentary sources, including Zambia Railways Limited archives, government policy documents, academic journal articles, books, industry reports, newspapers, and credible online resources. These materials provided essential background information on the historical, institutional, and operational context of ZRL, as well as broader insights into the governance and performance of State-Owned Enterprises in Zambia. The secondary data also helped to validate and contextualize findings from the primary research, thereby enhancing the overall reliability of the study.

Primary data were gathered through structured questionnaires, semi-structured and unstructured interviews. Structured questionnaires were administered to ZRL employees to collect quantitative data on key performance factors such as maintenance practices, funding adequacy, leadership

effectiveness, competition, and policy support. Semi-structured and unstructured interviews were conducted with selected staff from ZRL, the Industrial Development Corporation (IDC), the Ministry of Transport and Logistics, the Government Inspectorate of Railways (GIR), selected ZRL clients, and other relevant stakeholders. These interviews provided qualitative insights into management practices, institutional constraints, and policy influences shaping ZRL's operational performance.

By combining multiple data collection methods, the study ensured methodological triangulation, allowing for both quantitative measurement and qualitative explanation. Figure 3.2 below illustrates the data collection methods employed in this study.

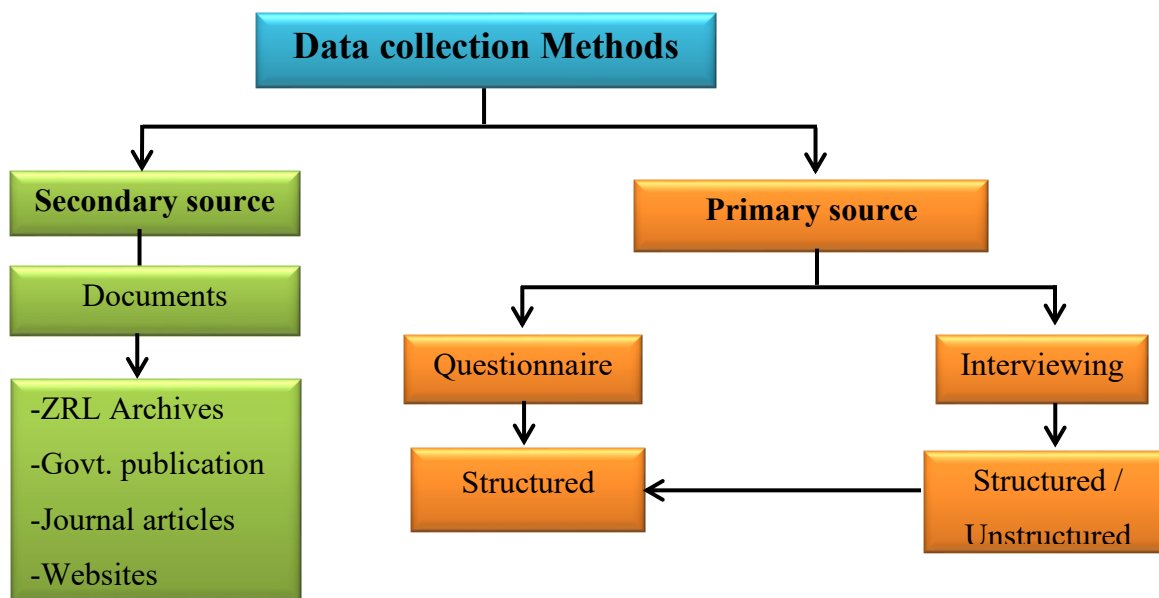


Figure 3.2: Methods of data collection

Source: Developed by the Author through extraction from Kumar, 2018.

Primary data refer to information collected firsthand by the researcher for the specific purpose of the study. Such data are original, unprocessed, and have not been previously published, making them more reliable, authentic, and valid than secondary sources (Kumar, 2018). The study utilized two key primary data collection methods, interviews and questionnaires, to gather both qualitative and quantitative evidence, as illustrated in Figure 3.2.

3.9.2 Data collection Instruments

3.9.2.1 Questionnaire

Given the study's mixed-methods design, a semi-structured questionnaire was developed to collect both quantitative and qualitative data. A questionnaire is a written instrument containing a series of questions designed to produce consistent, measurable responses from respondents (Kumar, 2018; Singh, 2017).

The questionnaire combined closed-ended questions, including Likert-scale and multiple-choice formats, to generate measurable data, and open-ended questions to allow respondents to elaborate on their views. To minimize ambiguity, the researcher ensured that all questions were clearly phrased, logically ordered, and visually well-structured. The design aimed to make the questionnaire user-friendly and engaging, prompting respondents to interact naturally as though in a conversational exchange.

Questionnaires were distributed via email and online platforms (including WhatsApp links) to reach a broader audience within ZRL. Despite challenges in achieving a 100% response rate, a sufficient number of completed questionnaires were collected for analysis. The instrument was pre-tested with a small pilot group to check clarity, wording, and layout before full deployment (Saunders, Lewis & Thornhill, 2019).

The questionnaire method offered several advantages, including cost-effectiveness, time efficiency, and providing respondents with anonymity, which encouraged honest responses, especially on sensitive organisational matters. These strengths made it a suitable instrument for collecting large-scale quantitative data in a resource-constrained environment (Malhotra et al., 2012; Kumar, 2018).

3.9.2.2 Interviews

According to Kumar (2018), interviewing is an essential technique for exploring underlying motivations, perceptions, and behaviours that influence people's decisions and attitudes. Within an organisational context, interviews provide valuable insights into performance challenges and institutional dynamics.

For this study, interviews were conducted with strategically selected participants as shown in Table 3.2. The interviews were designed to capture a comprehensive understanding of the technical, managerial, financial, and policy-related factors affecting ZRL's performance.

As indicated in section 3.8.5, data saturation was achieved after 15 interview sessions, at this point no new themes or insights were emerging, indicating sufficient depth and coverage in qualitative data. Both structured and unstructured formats were employed to balance consistency with flexibility, in-person and telephone interviews were used to enhance accessibility and participation (Kumar, 2018). This interview process allowed for the collection of rich narrative data, which provided deeper explanations and contextual understanding to complement the quantitative findings derived from the survey.

3.9.2.3 Document Review (Secondary Data)

Secondary data refer to information previously collected by other researchers or institutions for different purposes but repurposed for the current study (Sutton & Austin, 2015). Such data are often readily available, time-efficient to obtain, and useful for contextualizing primary findings.

For this study, secondary data were drawn from ZRL archives, government publications, academic journals, books, industry reports, and reputable online databases, like earlier stated. These materials provided historical and institutional insights into ZRL's operational performance, financial challenges, and policy environment. The researcher also reviewed annual reports, audit reports, strategic plans, financial statements, and government policy documents related to the rail transport sector.

Access to digital libraries and online repositories facilitated the retrieval of recent scholarly works relevant to the study's theme, while physical archives at ZRL provided institutional records that supported triangulation of findings. This secondary data analysis helped to achieve the following:

- i. Contextualize ZRL's underperformance within national transport and economic policy frameworks;
- ii. Compare ZRL's operational trends with other railway administrations; and
- iii. Corroborate or contrast evidence obtained from primary data.

The researcher prioritized recent and credible sources, relying on older materials only when historically or theoretically significant (Christensen, Johnson & Turner, 2011).

3.9.3 Measurement of Variables

The study was guided by one dependent variable, Zambia Railways Limited Performance (ZRLP), and five independent variables, namely Maintenance Effectiveness (ME), Funding Adequacy (FA), Leadership Effectiveness (LE), Competition from Road Transport (CRT), and Government Policy and Regulatory Support (GPRS). These variables were operationalised in accordance with the conceptual framework and operational definitions presented in Chapter Two (Creswell & Plano Clark, 2018).

The dependent variable, ZRL Performance (ZRLP), was operationalised through respondents' perceptions of operational efficiency, service reliability, and customer satisfaction. These indicators reflected the extent to which ZRL was perceived to provide timely, reliable, efficient, and competitive railway services.

The independent variables were measured as follows. Maintenance Effectiveness (ME) was assessed using indicators relating to the condition and reliability of rolling stock, track maintenance, preventive maintenance programmes, and maintenance planning practices. Funding Adequacy (FA) measured respondents' perceptions regarding the sufficiency, consistency, timeliness, and utilisation of financial resources available to ZRL. Leadership Effectiveness (LE) was evaluated through indicators relating to strategic decision-making, communication, accountability, responsiveness, and stakeholder engagement.

Furthermore, Competition from Road Transport (CRT) assessed the extent to which road transport influenced freight and passenger market share, pricing competitiveness, service flexibility, and customer preference. Government Policy and Regulatory Support (GPRS) measured respondents' perceptions regarding policy consistency, regulatory enforcement, institutional support, and the implementation of statutory instruments affecting railway operations.

All quantitative variables were measured using structured Likert-scale questionnaire items, while qualitative interviews provided additional contextual explanations that strengthened the interpretation of the quantitative findings. The quantitative data generated were subsequently analysed using descriptive statistics, Spearman's rank correlation, and multiple linear regression

techniques to determine the relationships among the study variables. Table 3.4 summarizes the measurement of variables employed in the study.

Table 3.4: Measurement of Variables

Variable	Key Indicators	Measurement Scale	Data Type	Analysis used
Leadership Effectiveness (LE)	Strategic decision-making, communication, accountability, and responsiveness.	Five-point Likert scale	Ordinal	Descriptive Statistics, Spearman's rho, Multiple Regression
Maintenance Effectiveness (ME)	Rolling stock condition, track maintenance, and preventive systems	Five-point Likert scale	Ordinal	Descriptive Statistics, Spearman's rho, Multiple Regression
Funding Adequacy (FA)	Funding sufficiency, allocation efficiency, timeliness of disbursement	Five-point Likert scale	Ordinal	Descriptive Statistics, Spearman's rho, Multiple Regression
Competition from Road Transport (CRT)	Freight diversion, pricing competitiveness, service flexibility, market share	Five-point Likert scale	Ordinal	Descriptive Statistics, Spearman's rho Correlation; Multiple Linear Regression
Government Policy & Regulatory Support (GPRS)	Policy consistency, regulatory enforcement, institutional support	Five-point Likert scale	Ordinal	Descriptive Statistics, Spearman's rho, Multiple Regression
ZRL Performance (ZRLP) (Dependent Variable)	Operational efficiency, service reliability, and customer satisfaction	Five-point Likert scale	Ordinal	Dependent variable in Correlation and Regression Analyses

Source: Developed by the Author, 2024.

3.9.4 Likert Scale

A five-point Likert scale was adopted to measure respondents' perceptions regarding the independent and dependent variables investigated in this study. The response categories were coded as 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

The five-point Likert scale was selected because it provides an appropriate balance between measurement sensitivity and respondent convenience. Compared with scales containing a larger number of response categories, the five-point scale is easier for respondents to understand, reduces respondent fatigue, and encourages higher response consistency while still providing sufficient variability for meaningful statistical analysis (Likert, 1932; Boone & Boone, 2012).

Furthermore, five-point Likert scales are widely used in organizational and management research because they generate reliable ordinal data suitable for descriptive statistics and non-parametric inferential analyses, including Spearman's rank correlation analysis. Although multiple linear regression was subsequently employed to examine predictive relationships among the study variables, the composite Likert-scale scores have been widely accepted in social science research for such analyses when supported by appropriate diagnostic testing (Hair et al., 2022).

3.9.5 Pilot Study and Instrument Validation

Before the main data collection exercise, the research instruments were subjected to expert review and pilot testing to assess their suitability, clarity, and ability to collect data relevant to the study objectives. According to Creswell & Creswell (2018), pilot studies assist researchers in identifying ambiguities, improving question wording, and enhancing the overall quality of research instruments before full-scale data collection.

The questionnaire and interview guide were initially reviewed by the research supervisors and other academic experts in research methodology and railway management. Their comments focused on the clarity of the questions, logical sequencing, relevance to the study objectives, and adequacy of the constructs being measured. The instruments were subsequently revised to improve wording, eliminate ambiguities, and ensure consistency with the conceptual framework.

Following expert review, a pilot study was conducted using a small group of 10 respondents possessing characteristics similar to those of the target population, but were not included in the

final study sample. The pilot study evaluated the clarity of the questionnaire items, the appropriateness of the response options, the estimated time required to complete the questionnaire, and the practicality of the data collection procedures. Feedback obtained during the pilot exercise resulted in minor modifications to question wording, sequencing, and instructions, thereby improving the readability and usability of the questionnaire.

The pilot exercise further contributed to establishing face validity, content validity, and the overall reliability of the research instruments. Face validity was achieved by ensuring that the questionnaire appeared to measure the intended constructs, while content validity was enhanced through expert evaluation of its adequacy in covering all variables (Taherdoost, 2016). These validation procedures increased confidence that the instruments were capable of generating reliable and valid data for the main study.

3.9.6 Data Collection Procedure

Data collection commenced after obtaining an introductory letter from ZCAS University and securing permission from Zambia Railways Limited to conduct the study. Participants were informed about the purpose of the research, and their voluntary participation was sought through informed consent before the administration of the research instruments.

Consistent with the convergent parallel mixed-methods design adopted for the study, quantitative and qualitative data were collected concurrently. The structured questionnaire was developed using Google Forms, enabling efficient electronic data collection and management. The questionnaire link was distributed to respondents through email and social media platforms, making it accessible to employees located across different departments and workstations of ZRL. Respondents completed the questionnaire electronically at their convenience, after which the responses were automatically captured within the Google Forms platform before being exported for coding and analysis in the Statistical Package for the Social Sciences (SPSS) Version 26.

Qualitative data were collected through semi-structured interviews with purposively selected participants. With participants' consent, some interviews were audio-recorded; otherwise, the majority declined to be recorded, so the researcher took notes on all relevant points, while detailed field notes were maintained to capture additional observations and contextual information.

Secondary data were collected concurrently through a review of relevant documents, including ZRL Annual Reports, Auditor General's Reports, government policy documents, strategic plans, Acts of Parliament, institutional reports, and peer-reviewed academic literature. These documentary sources complemented the primary data and strengthened the study through methodological triangulation.

Upon completion of data collection, questionnaire responses, interview transcripts, and documentary evidence were organised, coded, and securely stored to maintain confidentiality and facilitate subsequent data processing and analysis.

3.10 Data Processing and Analysis

The study employed both quantitative and qualitative data processing and analysis techniques consistent with the convergent parallel mixed-methods design. Quantitative and qualitative data were processed and analysed separately before being integrated during the interpretation stage to facilitate methodological triangulation. This approach enabled the study to provide a comprehensive understanding of the factors contributing to the underperformance of ZRL.

3.10.1 Data Processing

Prior to analysis, all collected data were subjected to appropriate processing procedures to ensure completeness, accuracy, and consistency. Quantitative questionnaire responses were checked for completeness, edited where necessary, coded using Microsoft Excel, and entered into the Statistical Package for the Social Sciences (SPSS) Version 26. Data cleaning procedures were undertaken to identify missing values, inconsistencies, duplicate entries, and data entry errors before statistical analysis commenced.

Qualitative interview data, some of which were audio-recorded, with participants' consent, and subsequently transcribed exact. The transcripts were reviewed alongside field notes to verify accuracy before coding and thematic analysis. Secondary data obtained from reports, policy documents, annual reports, and archival records were organized according to the study objectives to facilitate comparison with the primary data.

3.10.2 Quantitative Data Analysis

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) Version 26, as mentioned already in section 3.10.1. Both descriptive and non-parametric inferential statistical techniques were employed.

i. Descriptive Statistics

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize respondents' perceptions regarding maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, government policy and regulatory support, and the performance of ZRL. These statistics provided an overall description of respondent characteristics and the distribution of responses.

ii. Spearman's Rank Correlation Analysis

Spearman's Rank Correlation Coefficient (Spearman's rho) was employed to determine the strength and direction of relationships between the independent variables and the dependent variable. Spearman's rho was preferred to Pearson's Product Moment Correlation because the study variables were measured using ordinal Likert-scale data and did not fully satisfy the assumptions of normality required for parametric analysis. The technique was therefore appropriate for assessing monotonic relationships among the study variables.

iii. Multiple Linear Regression Analysis

Multiple linear regression analysis was performed to examine the extent to which maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support collectively and individually predicted the performance of ZRL. The regression analysis enabled the researcher to determine the relative contribution of each independent variable while controlling for the influence of the remaining predictors.

The regression model adopted in the study is expressed as follows:

$$YZRLP = a + \beta_1 XME + \beta_2 XFA + \beta_3 XLE + \beta_4 XCRT + \beta_5 XGPPS + \epsilon$$

Where:

- YZRLP: ZRL Performance (Dependent Variable)
- a: Constant

- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$: Coefficient for Independent Variables
- XME: Maintenance Effectiveness
- XFA: Funding Adequacy
- XLE: Leadership Effectiveness
- XCRT: Competition from Road Transport
- XGPRS: Government Policies and Regulations Support
- ϵ : Error term

To ensure the robustness of the regression model, multicollinearity diagnostics were performed using Tolerance and Variance Inflation Factor (VIF)

3.10.3 Test of Normality

A test of normality was conducted to determine whether the distribution of the study variables satisfied the assumptions required for parametric analysis, such as Pearson's correlation and multiple regression. The Kolmogorov-Smirnov and Shapiro-Wilk tests were applied in SPSS to assess the normality of the composite mean scores for all variables, as shown in Table 3.5 below:

Table 3.5: Tests of Normality

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ME	.176	109	.000	.933	109	.000
FA	.309	109	.000	.734	109	.000
LE	.137	109	.000	.948	109	.000
CRT	.249	109	.000	.815	109	.000
GPRS	.138	109	.000	.933	109	.000
ZRLPerf	.155	109	.000	.908	109	.000
a. Lilliefors Significance Correction						

Source: Generated from SPSS, 2024

The results of both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate that all variables had significance values less than 0.05, implying a violation of the normality assumption. Consequently, non-parametric statistical methods were deemed more appropriate for the analysis of relationships among variables.

3.10.4 Qualitative Data Analysis

Qualitative data obtained through semi-structured interviews were analyzed using thematic analysis, following the framework proposed by Braun & Clarke (2022). Thematic analysis was considered appropriate because it provides a systematic and flexible method for identifying, analyzing, and interpreting patterns of meaning within qualitative data.

The analysis combined deductive and inductive reasoning. Deductive coding was guided by the study objectives, conceptual framework, and theoretical foundations, while inductive coding allowed new concepts and explanations to emerge directly from participants' experiences.

The thematic analysis followed six stages below:

1. Familiarization with the data through repeated reading of interview transcripts and review of field notes to gain a comprehensive understanding of participants' responses.
2. Generating initial codes by identifying and labelling meaningful words, phrases, and statements relevant to the research objectives.
3. Searching for themes by grouping related codes into broader categories representing common ideas and emerging patterns.
4. Reviewing themes to examine coherence within themes and distinctions between themes, ensuring that they accurately reflected participants' accounts.
5. Defining and naming themes by refining the thematic structure and assigning clear, descriptive labels to each theme.
6. Producing the report by integrating the themes with supporting quotations and interpreting the findings alongside the quantitative results and existing literature.

The six-stage thematic analysis provided a systematic and transparent framework for analysing the qualitative data. The resulting themes were subsequently compared and integrated with the quantitative findings to explain statistical relationships and address the study objectives. This process strengthened methodological triangulation and enhanced the credibility, dependability, and interpretive depth of the study's findings (Braun & Clarke, 2022).

3.10.5 Integration of Quantitative and Qualitative Findings

Following the separate analyses, the quantitative and qualitative findings were integrated during the interpretation stage. Integration was achieved through methodological triangulation by

comparing statistical results with qualitative evidence obtained from interviews and documentary sources.

The integration process sought to identify areas of convergence, complementarity, and divergence between the two datasets. Statistical relationships identified through Spearman's correlation and multiple regression analyses were interpreted alongside participants' narratives concerning maintenance deficiencies, leadership practices, funding constraints, competition from road transport, and government policy implementation. This process enhanced the validity and credibility of the findings while providing a richer and more comprehensive understanding of the factors influencing the performance of Zambia Railways Limited.

3.10.6 Data Presentation

The analyzed data were presented using tables, charts, and graphs to facilitate interpretation and comparison of the findings. Tables were used to summarize descriptive statistics, correlation coefficients, regression results, and qualitative themes, while graphs and charts illustrated respondent characteristics, variable distributions, and major trends. Selected quotations from interview participants were incorporated where appropriate to support and enrich the interpretation of the quantitative findings.

3.11 Reliability of Research Findings

Reliability refers to the extent to which a research instrument consistently measures the phenomenon under investigation and produces stable and dependable results when administered under similar conditions (Babbie, 2020; Bryman, 2016). A reliable instrument minimizes measurement error and enhances confidence in the consistency of the data collected.

To assess the internal consistency of the questionnaire, Cronbach's Alpha (α) coefficient was computed using the Statistical Package for the Social Sciences (SPSS) Version 26. Cronbach's Alpha values range from 0 to 1, with higher values indicating greater internal consistency among questionnaire items. According to Nunnally (1978), an alpha coefficient of 0.70 or above is generally considered acceptable for established research instruments, while values above 0.60 may be considered acceptable in exploratory research (Hair et al., 2022).

The reliability analysis results are presented in Table 3.6. The overall questionnaire achieved a Cronbach's Alpha coefficient of 0.731, indicating satisfactory internal consistency. Five of the six constructs recorded alpha values equal to or exceeding the recommended threshold of 0.70, namely Leadership Effectiveness (0.720), Maintenance Effectiveness (0.705), Funding Adequacy (0.720), Government Policy and Regulatory Support (0.768), and ZRL Performance (0.849).

Although the construct measuring Competition from Road Transport recorded a slightly lower Cronbach's Alpha coefficient (0.623), this value remains acceptable for exploratory studies involving newly adapted measurement items (Hair et al., 2022). Consequently, the construct was retained because it remained theoretically important to the study and exhibited acceptable internal consistency.

Generally, the reliability analysis confirmed that the research instrument consistently measured the intended constructs and was therefore considered suitable for the subsequent statistical analyses as shown in Table 3.6.

Table 3.6: Reliability Analysis

Variables	No. of items	Cronbach's Alpha Value
Leadership Practices	4	0.720
Maintenance Practices	4	0.705
Funding Adequacy	2	0.720
Competition from the road users	4	0.623
Government Policies & Regulations	7	0.768
ZRL Performance	4	0.849
Total	25	0.731

Source: Generated by the author from SPSS, 2024

3.12 Validity of Research Findings

Validity refers to the extent to which a research instrument accurately measures the concepts it is intended to measure and whether the findings genuinely reflect the phenomenon under investigation (Cooper & Schindler, 2014; Creswell & Creswell, 2018). Establishing validity

enhances confidence that the conclusions drawn from a study are accurate, credible, and aligned with the research objectives.

In this study, validity was primarily achieved through content validity, face validity, and methodological triangulation. As discussed in Section 3.9.5, the research instruments underwent expert review and pilot testing prior to the main data collection exercise to ensure that the questionnaire items adequately represented the study constructs and were clearly understood by respondents.

In addition, methodological triangulation strengthened the validity of the findings by integrating quantitative data obtained through structured questionnaires with qualitative evidence from semi-structured interviews and documentary review. The convergence of evidence from these complementary data sources enhanced the credibility of the findings by allowing results obtained from one method to be corroborated using another (Creswell & Plano Clark, 2018).

Furthermore, the operationalisation of the study variables was guided by the conceptual framework and supported by established theoretical and empirical literature, thereby ensuring that each construct was measured consistently with its intended meaning. Collectively, these procedures provided reasonable assurance that the research instruments and resulting findings were valid and fit for the purpose of investigating the factors contributing to the underperformance of Zambia Railways Limited.

3.13 Generalisability of Research Findings

Generalisability refers to the extent to which the findings of a study may be applied beyond the specific context in which the research was conducted (Yin, 2018). In quantitative studies, generalisability is often associated with probability sampling and large representative samples, whereas case study research primarily seeks analytical generalisation, whereby findings contribute to theory and may inform similar contexts rather than being statistically generalised to an entire population.

The present study adopted a single case study strategy focusing on ZRL. Therefore, the findings are primarily applicable to ZRL and should be interpreted within its institutional, operational, and regulatory environment. Although the use of a single organisation limits statistical generalisation

to other state-owned enterprises, the study provides valuable analytical insights into how maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support influence organisational performance within a state-owned railway context.

The use of a convergent mixed-methods design, together with methodological triangulation involving questionnaires, semi-structured interviews, and documentary analysis, strengthened the credibility and transferability of the findings. Furthermore, the inclusion of respondents from multiple functional departments within ZRL, together with external stakeholders enabled the study to capture a broad range of institutional perspectives.

While caution should be exercised when applying the findings directly to other organisations, the conceptual framework, analytical approach, and recommendations developed in this study may be applicable to other railway state-owned enterprises operating under comparable institutional, financial, and regulatory conditions, particularly within Zambia and Sub-Saharan Africa.

3.14 Ethical and Access Issues

Ethical and access considerations are fundamental to ensuring that research is conducted responsibly, transparently, and in a manner that protects the rights and welfare of participants (Saunders et al., 2019). This study adhered to accepted ethical principles throughout the planning, data collection, analysis, and reporting stages. In addition, appropriate institutional approvals and organisational permissions were obtained before the commencement of fieldwork.

3.14.1 Accessibility

Access refers to the researcher's ability to obtain permission to collect data from organisations and participants relevant to the study (Saunders et al., 2019). Before commencing data collection, an official introductory letter was obtained from ZCAS University to facilitate access to ZRL and other participating stakeholder institutions. Formal permission was subsequently granted by ZRL, while cooperation was also obtained from relevant organisations, including the Ministry of Transport and Logistics, the Industrial Development Corporation (IDC), Industry experts, and selected railway customers.

Access to respondents was facilitated through the Human Resources Department and departmental management, who assisted in identifying eligible participants without influencing their responses. As discussed in Section 3.9.6, the structured questionnaire was administered electronically using Google Forms and distributed through email and social media platforms, thereby improving accessibility for respondents located at different stations and operational centres. Semi-structured interviews with purposively selected participants were conducted at mutually convenient times and locations to minimise disruption to organisational operations and daily schedules.

Although access to some senior officials was constrained by work schedules and operational commitments, these challenges were mitigated through flexible interview scheduling and the use of virtual communication where appropriate. Consequently, sufficient data were successfully collected to address the objectives of the study.

3.14.2 Research Ethics

Research ethics are concerned with protecting the rights, dignity, privacy, and welfare of research participants while ensuring that research is conducted honestly and responsibly (Creswell & Creswell, 2018; Bryman, 2016). This study complied with the ethical standards governing academic research throughout the research process.

Participation in the study was entirely voluntary. Before administering the questionnaire or conducting interviews, all participants were informed of the purpose of the study, the nature of their involvement, and their right to decline participation or withdraw from the study at any stage without penalty. Participants' informed consent was obtained before data collection.

To safeguard confidentiality and anonymity, respondents were not required to provide personal identifiers such as NRC or employee numbers on the questionnaire, providing a name was also optional. Interview responses were anonymised during transcription and reporting by using codes rather than participants' identities. The information collected was used solely for academic purposes and was not disclosed to any third party without prior authorisation.

The researcher further ensured that all electronic and documentary data were securely stored and accessed only by the researcher. Throughout the analysis and reporting of the findings, every effort was made to present the results objectively, accurately, and honestly without fabrication,

falsification, or misrepresentation of the data. In addition, all sources of information used in the study were appropriately acknowledged and referenced to uphold the principles of academic integrity and avoid plagiarism.

The study therefore complied with the ethical principles of voluntary participation, informed consent, confidentiality, anonymity, beneficence, non-maleficence, and academic integrity, thereby ensuring that participants' rights and welfare were adequately protected throughout the research process.

3.15 Chapter Summary

This chapter presented the research methodology adopted to investigate the factors contributing to the underperformance of Zambia Railways Limited (ZRL). It described and justified the research approach, strategy, philosophical paradigm, and time horizon underpinning the study, highlighting the suitability of the convergent parallel mixed-methods design for addressing the research objectives.

The chapter further outlined the sampling framework, sample size determination procedures, and data collection methods employed in gathering both quantitative and qualitative data. It also explained the measurement of variables, data processing procedures, and analytical techniques, including descriptive statistics, Spearman's rank correlation, multiple linear regression, and thematic analysis, together with the integration of quantitative and qualitative findings through methodological triangulation.

In addition, the chapter discussed the procedures adopted to ensure the reliability, validity, and generalisability of the research findings, as well as the ethical and access considerations observed throughout the study. Collectively, these methodological procedures provided a rigorous and systematic framework for generating credible evidence on the factors influencing the performance of ZRL. The subsequent chapter presents the analysis, interpretation, and discussion of the empirical findings.

CHAPTER FOUR: FINDINGS AND ANALYSIS

4.0 Introduction

This chapter presents the empirical findings and analysis of the study based on both quantitative and qualitative data collected in accordance with the convergent parallel mixed-methods design. The findings are organised according to the study objectives, with each section integrating quantitative and qualitative evidence to provide a comprehensive understanding of the factors influencing the performance of Zambia Railways Limited (ZRL).

The chapter begins by presenting the profile of the respondents, followed by the analysis of findings for each study objective. Quantitative data are analysed using descriptive statistics, Spearman's rank correlation analysis, and multiple linear regression, while qualitative data are analysed using thematic analysis. The findings from both strands are subsequently integrated through methodological triangulation to explain areas of convergence, complementarity, and divergence, thereby providing a richer interpretation of the results.

The qualitative findings were organised into five overarching themes corresponding to the principal study variables: maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support. These themes provided the basis for interpreting participants' experiences and were integrated with the quantitative findings under each study objective through methodological triangulation.

Where applicable, the study hypotheses are evaluated based on the quantitative findings, while qualitative evidence is used to explain and contextualise the statistical results. The chapter also presents evidence supporting the validity and reliability of the findings before concluding with a summary of the key empirical results. The interpretation of the findings is guided by the theoretical framework and empirical literature reviewed in Chapter Two.

4.1 Profile of Respondents

The target population consisted of 703 employees from various departments of Zambia Railways Limited, ZRL clients, and stakeholders. The questionnaire was sent to only ZRL staff, and the

following personal or rather demographic information was captured: Age range, Position at ZRL, Work experience with ZRL, Department, and Level of Academic qualification attained.

4.1.1 Response Rate

The study targeted a quantitative sample of 120 respondents from the selected departments of ZRL. Accordingly, 120 questionnaires were distributed electronically through Google Forms via email and WhatsApp. Of these, 109 questionnaires were completed and returned, representing an achieved response rate of 90.8%, while 11 questionnaires (9.2%) were not returned, as presented in Table 4.1.

Table 4.1: Questionnaire response rate

Response	Frequency	Percentage (%)
Questionnaires returned	109	90.8
Questionnaires not returned	11	9.2
Total	120	100

Source: Developed by the author, 2024

The achieved response rate of 90.8% was considered satisfactory and provided a high level of participation for the subsequent analysis. Babbie (2020) notes that higher response rates can reduce the potential for non-response bias, although a high response rate alone does not necessarily guarantee sample representativeness. The achieved response rate therefore provided a strong basis for proceeding with the analysis while recognizing that representativeness also depends on the sampling design and characteristics of the respondents.

Furthermore, the adequacy of the achieved sample was assessed in relation to the statistical procedures employed in the study. The multiple regression model included five independent variables, and the 109 valid respondents provided approximately 21.8 respondents per predictor. Applying the commonly cited criterion of ($N \geq 50 + 8m$), where (m) represents the number of predictor variables, a regression model with five predictors requires a minimum sample of 90 respondents (Green, 1991).

The achieved sample of 109 therefore exceeded this minimum requirement. In addition, based on a conventional medium effect size ($(f^2=.15)$), an alpha level of .05, five predictors, and 109

respondents, the estimated statistical power was approximately .88, exceeding the conventional minimum threshold of .80 for adequate statistical power (Cohen, 1988). Accordingly, despite being slightly lower than the targeted sample of 120, the achieved sample of 109 was considered adequate for the multiple regression and other inferential analyses conducted in the study.

4.1.2 Age Distribution

The investigation aimed to identify and capture the respondents' age group. This was extremely important because age influences a person's work experience, perceptions, attitudes, and institutional memories. Furthermore, age ranges helped to demonstrate that data came from a broad and balanced range of participants. Table 4.2 below presents the findings on the respondents' age range from the survey.

Table 4.2: Respondents' Age Range

Age Range					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 - 30	10	9.2	9.2	9.2
	30 - 40	46	42.2	42.2	51.4
	40 - 50	36	33.0	33.0	84.4
	50 - 60	16	14.7	14.7	99.1
	60 - 70	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Field Survey SPSS Output, 2024

As can be seen from Table 4.2 above, 75% of the respondents were between 30 and 50 years old. This suggests that the insights gathered are largely informed by individuals with considerable work experience at ZRL, providing credibility to the findings related to long-standing ZRL challenges.

4.1.3 Distribution by Department

This investigation aimed to amplify the voice of each department at ZRL. Seven departments were identified and selected for the distribution of questionnaires. These departments play a vital role in ZRL's operations. Quota sampling was used to select respondents from each department. Table

4.3 below illustrates the seven departments at ZRL with the corresponding number of selected respondents.

Table 4.3: Departmental Representation

Department					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Commercial	14	12.8	12.8	12.8
	Operations	28	25.7	25.7	38.5
	Finance	8	7.3	7.3	45.9
	Technical Services	47	43.1	43.1	89.0
	Human Resources and Administration	9	8.3	8.3	97.2
	Corporate planning	1	.9	.9	98.2
	Legal	2	1.8	1.8	100.0
	Total	109	100.0	100.0	

Source: Field Survey SPSS Output, 2024

The researcher aimed to have at least a respondent from each department; the number of respondents from each department was determined by the size of the department and its role at ZRL. The survey reviewed that Commercial had fourteen (14) respondents, representing 12.8%, Operations had 28 respondents, representing 25.7%, From Finance Eight (8) respondent, representing 7.3%, Technical Services had forty-seven respondents, representing 43.1%, Humana Resources and Administration nine responded, representing 8.3%, Corporate Planning had only one response, and Legal two responded representing 1.8%, respectively.

Technical Services had the highest number of respondents because the department encompasses four (4) critical sections, namely: Infrastructure, Signals & Telecommunication, Motive Power, and Carriage & Wagon. Additionally, in the railway industry, the Technical Services department is considered one of the most essential departments, making significant contributions to the company's operations.

It is responsible for the maintenance and upgrades of the company's Infrastructure, Motive Power, and Signals & Telecoms. Maintenance workshops are widely acknowledged as essential to railway safety and efficiency, forming the backbone of rail operations (Transport Review, 2025), while

telecom infrastructure acts as the operational “lifeblood”, ensuring seamless coordination across rail networks (Softech Rail, 2024).

4.1.4 Respondents' Position at ZRL

Respondents' job positions were captured to understand how perceptions of ZRL’s performance varied across different company roles. This helped identify whether challenges were experienced uniformly or differed by level of responsibility and access to decision-making. The researcher considered the junior, senior, Middle management, Manager, and Director Levels. Table 4.4 below shows the respondents' positions at different levels of the ZRL structure.

Table 4.4: Respondents' Position at ZRL

Position at Zambia Railways Limited					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Director level	1	.9	.9	.9
	Manager level	6	5.5	5.5	6.4
	Middle Management level	43	39.4	39.4	45.9
	Senior Officer level	27	24.8	24.8	70.6
	Junior Officer level	32	29.4	29.4	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author SPSS Output, 2024

As shown in Table 4.4 above, the majority of respondents (39.4%) were from the middle management level, followed by junior officers (29.4%) and senior officers (24.8%). This indicates that the study captured substantial input from operational and supervisory personnel who are closely involved in the day-to-day functions of the organization. While representation from top management was minimal (only 0.9% at the director level), the insights from the more populous operational tiers provide a grounded understanding of the challenges affecting ZRL’s performance from an implementation standpoint.

4.1.5 Years of Service

This investigation was aimed at ascertaining how long the respondents had worked with Zambia Railways Limited. This was important for the study in that it gives an idea of how experienced

respondents may be. Table 4.5 below clearly shows the range of years in terms of work experience, frequency, and response rate percentage.

Table 4.5: Respondents' Work Experience

Work Experience with Zambia Railways Limited					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 - 5	13	11.9	11.9	11.9
	5 - 10	27	24.8	24.8	36.7
	10 - 15	44	40.4	40.4	77.1
	15 - 20	15	13.8	13.8	90.8
	Above 20	10	9.2	9.2	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

Table 4.5 above represents the distribution of respondents categorized based on their years of work experience with ZRL. The majority of respondents, 40.4%, have 10 to 15 years of experience, indicating a significant portion of the workforce consists of mid-career employees who likely possess substantial institutional knowledge. The second-largest group, 24.8%, has 5 to 10 years of experience, suggesting a considerable number of relatively experienced employees. Meanwhile, 13.8% have 15 to 20 years of service, and 9.2% have over 20 years, reflecting a smaller but notable presence of long-serving employees who may hold senior or specialized roles. The smallest group, 11.9%, has 1 to 5 years of experience, indicating fewer newer employees in the sample.

This distribution suggests that ZRL's workforce is mainly composed of employees with moderate to extensive experience, which could influence perceptions of factors contributing to underperformance, such as management practices or operational inefficiencies, as longer-serving employees might be more aware of general issues. Generally, the data shows that most respondents are experienced employees, which gives credibility to the study's findings since they are based on insights from individuals who have spent a considerable amount of time within ZRL and are likely to be familiar with both its operational history and performance challenges.

4.1.6 Education Qualifications

Investigating this aspect was aimed at identifying the respondents' highest level of education. Table 4.6 below depicts the survey's findings.

Table 4.6: Respondents' Level of Education

Highest Academic Qualification					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PHD	1	.9	.9	.9
	Master's Degree	13	11.9	11.9	12.8
	Bachelor's Degree	36	33.0	33.0	45.9
	Diploma	47	43.1	43.1	89.0
	Certificate	12	11.0	11.0	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

The research findings indicated that most of the respondents have a varied educational profile in the workforce. The largest group, 43.1%, holds a diploma, suggesting that a significant portion of employees have mid-level tertiary qualifications, likely equipping them with practical skills relevant to their roles.

The second-largest group, 33%, possesses a bachelor's degree, indicating a substantial presence of employees with higher education who may occupy technical or managerial positions. Certificate holders account for 11%, reflecting a smaller group with entry-level qualifications, mainly in operational and support roles. Master's degree holders constitute 11.9%, suggesting a modest number of employees with advanced expertise, potentially in leadership or specialized functions.

Only one respondent (0.9%) holds a PhD, indicating minimal representation of doctoral-level education. This distribution suggests that ZRL's workforce is relatively well-educated, with a strong emphasis on diploma and bachelor's degree qualifications, indicating that respondents are likely to have a sufficient academic background to understand and critically reflect on the operational and strategic challenges affecting ZRL's performance.

To contextualize the inferential analyses, the following section first presents univariate (descriptive) statistics for the principal study variables. These summaries describe the distribution, central tendency and variability of responses, beginning with the dependent variable (ZRL

performance). The univariate results provide the foundational understanding of the datasets prior to conducting bivariate analyses, including correlation and cross-tabulation tests, which examine relationships between pairs of variables.

The chapter then proceeds to multivariate analysis through multiple regression modelling to assess the combined influence of maintenance practices, funding, leadership, competition, and government policy on ZRL performance. Detailed SPSS output tables are presented in the Appendices, while only summarized tables and key interpretations are in the main text to enhance readability and analytical flow.

4.2 Assessment of Findings and Analysis for Each Instrument

This section presents the descriptive analysis of the study variables, beginning with the dependent variable, Zambia Railways Limited (ZRL) Performance, followed by the independent variables: maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support. Measures of central tendency and dispersion, including means and standard deviations, are used to summarise respondents' perceptions and provide an initial understanding of the data before the inferential analyses presented in subsequent sections.

4.2.1 Descriptive Statistics of Dependent Variable (ZRL Performance)

Table 4.7 below depicts respondents' general perception of the overall performance of ZRL for the last ten (10) years.

Table 4.7: ZRL Performance

ZRL Performance over the last ten years					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	2.8	2.8	2.8
	Fair	31	28.4	28.4	31.2
	Poor	52	47.7	47.7	78.9
	Very poor	23	21.1	21.1	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

Table 4.7 presents the univariate descriptive statistics for ZRL’s performance over the past ten years, based on 109 valid responses. The results show that nearly half of the respondents (48%) rated the company’s performance as Poor, while a further 21% rated it as Very Poor. Only 28.4% of respondents considered the performance fair, and a very small proportion (2.8%) rated it as Good.

The modal category (most frequent response) is “Poor,” indicating that this perception dominates employee and stakeholder views. The median response also falls in the “Poor” category, suggesting that the general tendency of responses leans toward negative evaluations of ZRL’s performance.

The bar chart in Figure 4.1 below visually reinforces this distribution, showing a sharp peak in the “Poor” category and a steep decline toward “Fair” and “Good.” This right-skewed pattern demonstrates that most respondents perceive the company as underperforming, with only a small fraction expressing a moderately positive view.

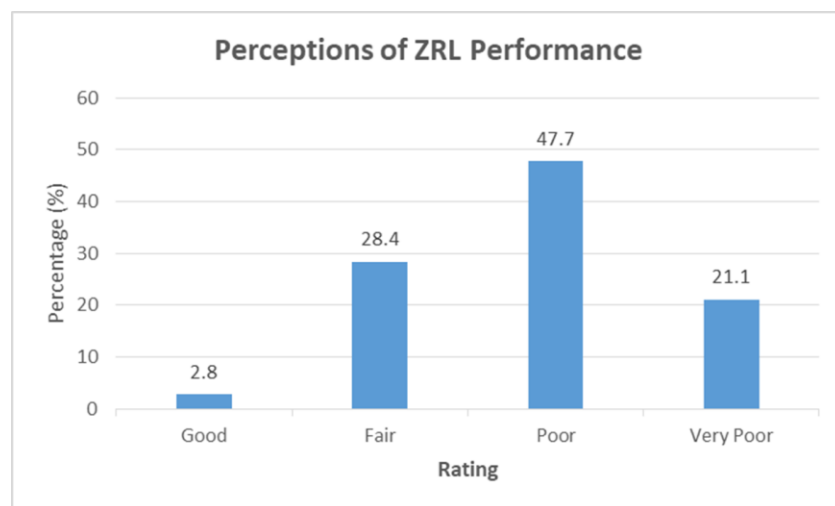


Figure 4.1: ZRL Performance

Source: SPSS Output Generated by the Author, 2024

Generally, these findings imply widespread dissatisfaction with ZRL’s operational and financial outcomes over the last decade. The results provide an essential baseline for subsequent analyses, particularly the cross-tabulation and correlation results in Section 4.6, which explore how factors such as maintenance practices, leadership effectiveness, funding adequacy, competition, and government policy relate to this low performance.

4.2.1.1 Importance of Railway Transport

Table 4.8: Importance of Railway Transport and ZRL Position

Railway transport is important for the growth of the <i>Zambian</i> economy					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	5.5	5.5	5.5
	Disagree	2	1.8	1.8	7.3
	Not sure	3	2.8	2.8	10.1
	Agree	11	10.1	10.1	20.2
	Strongly Agree	87	79.8	79.8	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

Table 4.8 presents respondents' perceptions regarding the importance of railway transport to Zambia's economic growth. The findings show overwhelming consensus among respondents: 80% strongly agreed, and an additional 10% agreed that railway transport is vital for Zambia's economic development. Only a small minority (7%) disagreed or strongly disagreed, while 3% were undecided.

This overwhelmingly positive response indicates a shared understanding among stakeholders that railway transport remains a strategic driver of economic efficiency and regional connectivity in Zambia. The result aligns with national policy priorities and empirical literature emphasizing the railway sector's role in enabling industrial growth, trade competitiveness, and regional integration. For instance, World Bank (2019) highlights that efficient railway systems reduce transportation costs, enhance bulk commodity movement such as copper and agricultural products, and promote sustainable trade corridors in Sub-Saharan Africa.

Similarly, stakeholders in Zambia's transport sector have emphasized that reliable railway infrastructure is critical for supporting economic diversification, facilitating exports, reducing logistics costs, and minimizing overreliance on road transport (Parliament of Zambia, 2024). The African Union (2020) also stresses that modern rail systems are essential for achieving the African Continental Free Trade Area (AfCFTA) objectives by linking production hubs and ports across the region.

Therefore, the near-unanimous agreement among respondents supports the broader policy view that revitalizing ZRL is not only a matter of corporate reform but also a national economic imperative. The finding also strengthens the justification for investigating the internal and external factors, such as maintenance, funding, and policy alignment, which hinder ZRL’s ability to fulfil this critical economic role.

Table 4.9: ZRL is well-positioned in the Zambia Transport Sector

ZRL is well-positioned in the Zambian transport sector					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	4	3.7	3.7	3.7
	Disagree	5	4.6	4.6	8.3
	Not sure	9	8.3	8.3	16.5
	Agree	24	22.0	22.0	38.5
	Strongly Agree	67	61.5	61.5	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by Author, 2024

The findings in Table 4.9 above indicate that a large majority (84%) of respondents either agreed or strongly agreed that ZRL is well-positioned within the national transport sector. This suggests that despite its well-documented operational inefficiencies, ZRL still occupies a strategically important role in Zambia’s transport and logistics landscape.

This perception aligns with Kapanda (2017), who noted that ZRL’s central geographical position, linking the Copperbelt, Lusaka, and the southern trade corridor, gives it inherent strategic value within Zambia’s transport network. Similarly, the African Development Bank (2022) emphasized that the railway remains critical for facilitating regional integration and reducing transportation costs for bulk commodities.

The relatively high confidence in ZRL’s strategic positioning contrasts sharply with subsequent findings on service quality and usage levels (Tables 4.10 and 4.11), which reveal persistent weaknesses in operational performance and market utilization. This contrast reflects the gap between ZRL’s potential as a national asset and its actual performance, a theme repeatedly highlighted in the literature review by Mwila (2016) and World Bank (2020).

4.2.1.2 ZRL Service Quality

Table 4.10: ZRL Service Quality

ZRL is extensively used in Zambia					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	22	20.2	20.2	20.2
	Disagree	63	57.8	57.8	78.0
	Not sure	17	15.6	15.6	93.6
	Agree	5	4.6	4.6	98.2
	Strongly Agree	2	1.8	1.8	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

As shown in Table 4.10 above, the majority of respondents (78%) disagreed or strongly disagreed that ZRL is extensively used in Zambia, while only 6% agreed with the statement. This demonstrates a widespread perception that railway utilization in Zambia remains limited despite ZRL's strategic location and historical importance (as highlighted in Table 4.9).

This finding underscores a persistent modal imbalance in Zambia's transport sector, where road transport dominates freight and passenger movement. According to Mwila (2016) and SADC (2019), this imbalance results from decades of underinvestment in rail infrastructure, poor rolling-stock maintenance, and the liberalization of road freight operations that favour private trucking companies. Furthermore, World Bank (2020) emphasized that while ZRL retains a strategic position in theory, its share of national freight traffic has declined to below 10% due to operational inefficiencies and slow service delivery.

4.2.1.3 ZRL Usage Level

Table 4.11: ZRL is very expensive to use in Zambia

ZRL is very expensive to use in Zambia					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	35	32.1	32.1	32.1
	Disagree	53	48.6	48.6	80.7
	Not sure	10	9.2	9.2	89.9
	Agree	6	5.5	5.5	95.4
	Strongly Agree	5	4.6	4.6	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

The data in Table 4.11 reveal that 81% of respondents disagreed or strongly disagreed that ZRL is expensive to use, suggesting a general perception that railway services are relatively affordable compared to other transport modes. Only 10% of respondents viewed ZRL as expensive, while 9% were undecided.

This finding provides an important contrast to the preceding table (Table 4.10), where respondents noted that ZRL is not extensively used. The combination of these two results indicates that cost is not the primary barrier to railway utilization in Zambia. Rather, the low usage of ZRL appears to be driven by non-price factors such as poor service reliability, infrequent schedules, and deteriorating infrastructure, issues consistently identified in both the literature and qualitative interviews.

According to Tambi (2015) and Kapanda (2017), the perceived affordability of ZRL services has not translated into increased patronage because service quality, speed, and consistency are more influential determinants of customer choice in the logistics sector. Similar observations have been made in East African railways systems, where operational inefficiencies, service delays and equipment reliability challenges have undermined the competitiveness of rail freight transport despite relatively lower transport costs (World Bank, 2019; Taylor, 2020).

4.2.1.4 ZRL Service Delivery

Table 4.12: ZRL Service Delivery

The service delivery by ZRL is very poor					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	8	7.3	7.3	7.3
	Disagree	26	23.9	23.9	31.2
	Not sure	40	36.7	36.7	67.9
	Agree	29	26.6	26.6	94.5
	Strongly Agree	6	5.5	5.5	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

As shown in Table 4.12, respondents expressed mixed but generally critical views of ZRL's service delivery. A combined 32% believe that service delivery is poor, while 31% disagreed with this statement. Notably, a substantial 37% were neutral, suggesting uncertainty or inconsistency in service quality across different ZRL operations.

This pattern complements findings from Table 4.11, which showed that respondents do not perceive ZRL to be expensive. The contrast implies that ZRL's challenges are not cost-related but service-related, confirming that users perceive value for money to be undermined by unreliable or inconsistent service standards.

Literature supports this interpretation. Kapanda (2017) noted that inefficiencies in service delivery within Zambia Railways stem from maintenance delays, rolling stock shortages, and managerial weaknesses, all of which affect reliability and turnaround times. Similarly, Bouraima et al. (2023) found that poor communication with clients and delayed freight handling were major contributors to declining confidence in railway services.

Furthermore, the high neutral response (37%) may reflect limited engagement between ZRL and its clients, suggesting that customers may lack sufficient exposure to ZRL services to form strong opinions. Similar findings have been reported in public transport studies where weak customer communication, inconsistent service delivery, and limited service reliability reduced customer satisfaction and loyalty perceptions (Van Lierop, Badami, & El-Geneidy, 2018; Guner et al, 2024).

4.2.1.5 Clients Only Use ZRL as a Last Resort

Table 4.13: Clients only use ZRL as a last resort

Clients only use ZRL as a last resort					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	16	14.7	14.7	14.7
	Disagree	26	23.9	23.9	38.5
	Not sure	24	22.0	22.0	60.6
	Agree	29	26.6	26.6	87.2
	Strongly Agree	14	12.8	12.8	100.0
	Total	109	100.0	100.0	

Source: SPSS Output Generated by the Author, 2024

As presented in Table 4.13, the responses suggest a divided but concerning perception about the utilization of Zambia Railways Limited (ZRL). Approximately 39% of respondents believe that clients resort to ZRL services only as a last option, while 39% disagree with this view. The remaining 22% were neutral.

This balance between agreement and disagreement indicates that although some clients remain loyal to ZRL, a significant portion only use the railway when alternatives, such as road transport, are unavailable or impractical. This aligns with findings from Table 4.12, which indicated dissatisfaction with ZRL's service delivery. Together, the results suggest that service inefficiency, reliability issues, and limited accessibility have led to reduced preference for ZRL, causing customers to view the railway as a fall-back rather than a first-choice transport mode.

This observation resonates with existing literature. Chongo (2024) emphasized that many users in Zambia consider rail transport unreliable due to frequent delays and inadequate service coverage. Likewise, Kapanda (2017) argued that the dominance of road transport in Zambia's logistics sector is not merely due to policy bias but also because ZRL has failed to maintain competitive service levels. Similarly, Zambia Railways Limited (Annual Report, 2019) acknowledges that declining operational efficiency has eroded customer trust, especially in freight operations.

Furthermore, the finding reflects the competitive displacement effect noted by World Bank (2017), where inefficiencies in public rail systems drive clients toward private or road-based alternatives.

The neutrality among 22% of respondents could also point to low service visibility or inconsistent performance, a sign that ZRL's market position is both weak and unstable.

4.2.1.6 Summary of Findings on ZRL Performance

The analysis of ZRL's performance over the past decade (Tables 4.8-4.13) reveals a generally weak operational position, consistent with national and regional concerns about the declining role of rail transport in Zambia's economy. The majority of respondents rated ZRL's performance as poor or very poor, with accompanying perceptions of low service quality, limited market utilization, and inefficiency in delivery.

Specifically, while most respondents acknowledged that railway transport remains vital to Zambia's economic growth (Table 4.8), they simultaneously expressed skepticism about ZRL's market positioning and competitiveness. The majority disagreed that the railway is extensively used (Table 4.10), and many perceived that clients turn to ZRL only as a last resort (Table 4.13). These sentiments are reinforced by concerns over service affordability and reliability (Table 4.12), suggesting that ZRL's operational weaknesses have undermined both public confidence and market preference.

These findings align with earlier studies that attributed the poor state of Zambia's railway system to systemic challenges such as inadequate investment, leadership inefficiencies, policy inconsistency, and competition from road transport (Kapanda, 2017; World Bank, 2017; Chongo, 2024). Consequently, the current study proceeds to examine the independent variables, each of which is hypothesized to influence ZRL's performance outcomes.

The following section presents descriptive and inferential analyses of these determinant factors, exploring how they interact with and contribute to the overall underperformance of ZRL. This progression enables a deeper understanding of the institutional and operational mechanisms that must be addressed to restore the railway's strategic relevance in Zambia's transport sector.

4.2.2 Independent Variables

The independent variables represent the key factors believed to influence the performance of ZRL. These include Maintenance practices, Funding Adequacy, Leadership Practices, Competition, and

Governmental policies and regulatory frameworks. Descriptive analysis of these variables was conducted to assess how respondents perceived their impact on ZRL performance. The results provided insight into which factors are considered most significant by employees and stakeholders, offering a foundation for further correlation or regression analysis in subsequent sections.

4.2.2.1 Maintenance Practices

The first objective of the study was to assess the extent respondents agreed with the impact of maintenance practices on the performance of Zambia Railways Limited. Maintenance practices play a pivotal role in determining the operational efficiency and reliability of railway systems. Effective maintenance ensures the availability, safety, and longevity of rolling stock and infrastructure, thereby directly influencing organizational performance and customer satisfaction. Within the conceptual framework of this study, maintenance practices form one of the key operational efficiency dimensions hypothesized to affect Zambia ZRL's performance.

Poor maintenance, on the other hand, leads to frequent breakdowns, service delays, and increased operating costs, undermining competitiveness against road transport. As Boye et al. (2023) and Blumenfeld et al. (2019) observed in regional contexts, persistent underperformance in African railways is closely linked to critical maintenance optimization gaps, aging assets, and inadequate maintenance schedules, challenges that are clearly reflected at ZRL. The subsequent analysis presents respondents' perceptions of the current state of maintenance practices at ZRL.

Table 4.14: Effectiveness of the Current Maintenance Practices

How would you rate the effectiveness of the current maintenance practices at ZRL, especially towards the rolling stock and railway infrastructure?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	20	18.3	18.3	18.3
	Ineffective	56	51.4	51.4	69.7
	Moderate	25	22.9	22.9	92.7
	Effective	7	6.4	6.4	99.1
	Very Effective	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Table 4.14 presents respondents' views on the effectiveness of ZRL's current maintenance practices, particularly toward the rolling stock and railway infrastructure. The findings show that the majority of respondents, 51%, rated maintenance practices as ineffective, while an additional 18% perceived them as very ineffective. Only 6% of respondents viewed the practices as effective, and a mere 1% as very effective. About 23% indicated a moderate level of effectiveness. This distribution reveals that approximately 70% of respondents rated ZRL's maintenance performance negatively (very ineffective or ineffective).

These findings suggest that maintenance activities at ZRL are largely inadequate and fail to sustain reliable service delivery. The predominance of negative responses implies that the railway's rolling stock and infrastructure are in poor condition, likely due to ageing equipment, insufficient funding, and irregular maintenance schedules. This aligns with earlier studies by Boye et al. (2023) and Blumenfeld et al. (2019), who both identified the unavailability of skilled human resources, lack of maintenance history data, and the absence of proper maintenance schedules as key barriers to railway performance in Southern Africa.

Similarly, Sandala (2020) identified chronic underfunding for program implementation as a primary cause of delayed railway plans and lack of technical capacity at ZRL, reinforcing the notion that maintenance inefficiency is a major contributor to underperformance.

Table 4.15: Frequency of Routine Maintenance Activities

How frequently are routine maintenance activities carried out on ZRL's railway infrastructure and rolling stock?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Infrequently	14	12.8	12.8	12.8
	Infrequently	42	38.5	38.5	51.4
	Partially Frequently	41	37.6	37.6	89.0
	Frequently	8	7.3	7.3	96.3
	Very Frequently	4	3.7	3.7	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024)

The results in Table 4.15 show that a significant proportion of respondents rated ZRL's maintenance activities as infrequent (39%) or partially frequent (38%). Only a small proportion perceived them as frequent (7%) or very frequent (4%), while 13% reported that maintenance was carried out very infrequently. These results suggest that maintenance activities at ZRL are not conducted regularly or systematically, indicating possible deficiencies in the maintenance planning and execution framework.

This finding aligns with Boye et al. (2023) and Bhebhe & Zincume (2020), who emphasized that the unavailability of a proper maintenance schedule and skilled personnel have contributed to declining rolling stock reliability and infrastructure safety in the railway sector. Similarly, Liden (2015) noted that maintenance of railway infrastructure is critical to having an efficient functioning transportation system, and the inability to maintain it consistently leads to frequent breakdowns. The observed irregularity at ZRL, therefore, reflects the institutional and financial constraints documented in the regional literature, which have undermined the company's operational readiness.

Table 4.16: Adequacy of Financial Resources for Maintenance

How adequate are the financial resources allocated to the maintenance activities to execute the scheduled maintenance plan promptly and efficiently at ZRL?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Inadequate	23	21.1	21.1	21.1
	Inadequate	60	55.0	55.0	76.1
	Moderate	22	20.2	20.2	96.3
	Adequate	3	2.8	2.8	99.1
	Very Adequate	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

The findings show that the majority of respondents rated financial allocations for maintenance as inadequate (76%), while only a negligible proportion considered them adequate (3%) or very adequate (1%). This overwhelming perception of financial insufficiency underscores a chronic underfunding problem within ZRL's maintenance framework.

Consistent with World Bank (2018) and the ZRL Annual Report (2020), such underfunding limits the timely procurement of spare parts, delays scheduled works, and forces the company to defer essential maintenance tasks. When combined with the frequency results from Table 4.15, it becomes evident that irregular maintenance cycles are closely tied to resource constraints.

Table 4.17: Contribution of Lack of Planned Maintenance to Service Disruption

To what extent does the lack of planned maintenance activities on the railway infrastructure and rolling stock contribute to service disruptions at ZRL?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	1	.9	.9	.9
	Insignificantly	4	3.7	3.7	4.6
	Moderate	8	7.3	7.3	11.9
	Significantly	39	35.8	35.8	47.7
	Very Significantly	57	52.3	52.3	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

The majority (88%) of respondents indicated that the lack of planned maintenance significantly contributes to service disruptions. Only about 5% of respondents downplayed its influence.

This near-unanimous agreement demonstrates that the absence of proactive maintenance planning leads to frequent derailments, downtime, and poor service reliability, findings echoed by Boye et al. (2023), who noted that poor scheduling at ZRL results in cascading system inefficiencies. These disruptions ultimately affect customer confidence and revenue generation.

Table 4.18: Extent to which Preventive Maintenance is Prioritized

To what extent does ZRL prioritize preventive maintenance over reactive maintenance, that is, fixing rolling stock and railway truck faults as they occur?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	15	13.8	13.8	13.8
	Not much	62	56.9	56.9	70.6
	Moderate	17	15.6	15.6	86.2
	Often	8	7.3	7.3	93.6
	Very Much	7	6.4	6.4	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Over 70% of respondents reported that ZRL prioritizes preventive maintenance either “not much” (57%) or “not at all” (14%), indicating that the company remains largely reactive, repairing infrastructure and rolling stock after faults occur. Only about 14% believed preventive maintenance is practiced “often” or “very much.”

This reactive culture aligns with evidence from Stenstrom et al. (2016) and the African Development Bank (2020), which attribute escalating maintenance costs in railways to deferred repairs and a lack of predictive, planned approaches. The results complement Table 4.17, confirming that the absence of planned and preventive maintenance underpins service disruptions. The perception further aligns with literature emphasizing that maintenance remains a critical determinant of operational efficiency in railways. Nakajima’s (1971) Total Productive Maintenance (TPM) underscores that without a structured and preventive approach, organizations often resort to reactive maintenance, leading to higher costs and reduced reliability.

Table 4.19: Agreement that a Robust Maintenance Plan Could Improve Reliability

Do you agree that a robust maintenance plan in place at ZRL can help reduce derailments, increase motive power reliability and ultimately reduce transit time for the trains?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	4.6	4.6	4.6
	Disagree	4	3.7	3.7	8.3
	Not sure	2	1.8	1.8	10.1
	Agree	7	6.4	6.4	16.5
	Strongly Agree	91	83.5	83.5	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

A remarkable 84% of respondents strongly agreed that a robust maintenance plan could enhance reliability, reduce derailments, and shorten transit times, with an additional 6% agreeing. Only about 8% disagreed.

This strong consensus shows that respondents recognize maintenance reform as a vital intervention area for ZRL. It confirms earlier qualitative findings that link infrastructure neglect to operational inefficiency. As the African Development Bank (2021) observed, modernizing rail maintenance systems is central to the continental transport integration agenda and sustainable railway revival strategies in sub-Saharan Africa.

4.2.2.2 Perception on Funding Adequacy

Adequate and well-structured funding is the backbone of any efficient railway system. For SOEs like ZRL, funding is not only a financial issue but also a strategic enabler for maintenance, modernization, and service reliability. Inadequate capital injection and poor resource allocation have long been identified as structural constraints in sub-Saharan railways, resulting in aging infrastructure, equipment failures, and reduced competitiveness (World Bank, 2019; Bouraima et al., 2023).

Within ZRL’s operational context, funding adequacy and allocation efficiency determine the extent to which scheduled maintenance, rehabilitation, and expansion programs can be

implemented as planned. Therefore, examining employees' and stakeholders' perceptions of funding adequacy and its effects on maintenance provides valuable insight into one of the critical determinants of ZRL's performance.

Table 4.20: Adequacy of Current Funding and its Effect on Maintenance and Upgrading of Railway Infrastructure and Rolling Stock

Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Funding	19	17.4	17.4	17.4
	Inadequate	84	77.1	77.1	94.5
	Moderate	4	3.7	3.7	98.2
	Very adequate	2	1.8	1.8	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Table 4.21: The Level of Funding affected the maintenance and upgrade of the railway infrastructure and the rolling stock

The level of funding affected the maintenance and upgrading of the railway infrastructure and the rolling stock					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Negatively	71	65.1	65.1	65.1
	Negatively	19	17.4	17.4	82.6
	Neutral	13	11.9	11.9	94.5
	Positively	5	4.6	4.6	99.1
	Very Positively	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Both Table 4.20 and 4.21 depict results showing the adequacy of current funding and its perceived impact on Infrastructure and rolling stock maintenance.

The results in Table 4.20 reveal a strong perception among respondents that funding to Zambia Railways Limited is grossly inadequate. Approximately 95% of respondents rated ZRL’s funding as either no funding or inadequate, indicating prolonged undercapitalization. This finding is consistent with the observations of Zambia Railways Limited (2022) and Sandala (2020), whose analysis of the US\$120 million government injection highlighted governance weaknesses and poor utilization, demonstrating how dependency on inconsistent capital has constrained ZRL’s ability to sustain core operations.

A corresponding 83% of respondents indicated that the level of funding has affected maintenance and upgrading negatively (Table 4.21). Only 6% perceived a positive impact. This close alignment between perceived funding inadequacy and negative maintenance outcomes underscores the general nature of ZRL’s financial challenges.

The finding therefore, suggests that ZRL’s financial model remains unsustainable for long-term infrastructure renewal. The predominance of negative responses demonstrates how continuing underfunding cascades into deferred maintenance, increased derailments, and rolling stock inefficiency, as noted by the International Union of Railways (2020) and the Auditor General's report (2021-2022), which documented ZRL's failure to meet freight targets and its continued loss-making status.

Table 4.22: Allocation of Available Funds to different Operational Areas

ZRL allocates its available funds to different operational areas like maintaining the railway infrastructure, spares for locomotives, signals and telecoms, ICT, training, etc.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffectively	17	15.6	15.6	15.6
	Ineffectively	55	50.5	50.5	66.1
	Moderate	27	24.8	24.8	90.8
	Effectively	8	7.3	7.3	98.2
	Very Effectively	2	1.8	1.8	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Table 4.22 indicates that a majority of respondents (66%) rated ZRL’s allocation of funds as ineffective. Only 9% viewed allocation practices as effective. This suggests that even within limited financial inflows, internal distribution mechanisms are perceived as poorly structured, with limited prioritization toward critical operational areas such as track rehabilitation, spare parts procurement, ICT, or signaling and telecommunication maintenance.

This perception aligns with Kapanda (2017) and Chongo et al. (2024), who noted that overlapping decision-making, political influence, and weak corporate governance are key weaknesses in Zambian SOEs that lead to inefficient internal resource allocation. In ZRL’s case, limited autonomy in decision-making and governance likely contributes to suboptimal use of the available funds.

Therefore, the findings imply that improving financial management efficiency, through transparent allocation frameworks, performance-based budgeting, and stronger accountability systems, could enhance the overall operational effectiveness of ZRL even within current funding limitations.

Table 4.23: Influence of External Financial Support on ZRL’s Performance

How has the presence or absence of external financial support, like government subsidies, loans and grants, influenced the performance of ZRL?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Negatively	74	67.9	67.9	67.9
	Negatively	25	22.9	22.9	90.8
	Moderate	8	7.3	7.3	98.2
	Positively	2	1.8	1.8	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

The results in Table 4.23 further reveal that 91% of respondents felt that the absence of external financial support, such as government subsidies, loans, or grants, has negatively affected ZRL’s performance. This finding resonates with prior regional studies indicating that the sustainability of railway operations depends on continued external investment and subsidy mechanisms to bridge infrastructure deficits (African Development Bank, 2021).

Furthermore, the findings corroborate Bouraima et al. (2023) and World Bank (2019), who emphasized that the financial health of railway operators in Sub-Saharan Africa heavily depends on consistent state and donor support, given the sector's low commercial returns but high public utility value. Additionally, funding constraints at ZRL should be understood as both a direct and indirect contributor to underperformance, shaping outcomes across other key domains such as maintenance effectiveness, management practices, and compliance with government policy. This interconnectedness suggests that improving financial adequacy will be critical for achieving sustainable reform in Zambia's rail sector.

Therefore, the four funding-related variables present a logical narrative: ZRL suffers not only from inadequate government funding but also from weak internal resource management and insufficient external financial partnerships. These interlinked factors reinforce one another to prolong operational inefficiency, poor maintenance outcomes, and overall institutional underperformance.

4.2.2.3 Leadership Practices

The study sought to understand the level of leadership practices at ZRL by evaluating the extent to which respondents agreed with the statements on Leadership practices. Leadership plays a pivotal role in shaping organizational direction, culture, and performance, especially in state-owned enterprises such as ZRL.

Effective leadership ensures that strategic goals are translated into actionable outcomes through clear communication, participatory decision-making, staff empowerment, and effective crisis response. Equally, weak leadership has been linked to operational inertia, poor motivation, and policy implementation failures across parastatals in sub-Saharan Africa (World Bank, 2019; Chongo et al., 2024).

In the proposed model (Figure 5.1) of this study, leadership effectiveness is situated within the Institutional Readiness layer, influencing both Operational Efficiency (maintenance and funding utilization) and Strategic Transformation (policy alignment and performance). The following section presents respondents' perceptions of leadership practices at ZRL.

Table 4.24: Effectiveness of Leadership at ZRL

Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision-making and overall management.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	5	4.6	4.6	4.6
	Ineffective	46	42.2	42.2	46.8
	Neutral	38	34.9	34.9	81.7
	Effective	19	17.4	17.4	99.1
	Very Effective	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

The results in Table 4.24 above show that 47% of respondents rated leadership as ineffective and very ineffective, with only 18% rating it as effective. This overwhelming negative sentiment indicates that ZRL’s leadership has failed to inspire confidence or demonstrate adequate strategic oversight.

This finding echoes Chongo et al. (2024), who specifically identified overlapping decision-making and political influence as key factors undermining effective corporate governance and leadership at ZRL. It also aligns with World Bank (2019) observations that the absence of transformational leadership impedes modernization in African transport SOEs.

Moreover, the low leadership ratings resonate with earlier results on funding adequacy (Table 4.20), where most respondents identified weak financial management. Ineffective leadership therefore, appears to compound fiscal constraints by limiting resource optimization and strategic planning.

Table 4.25: Clarity and Effectiveness of Communication

How clear and effective is the communication between management and employees at ZRL in terms of upholding strategic vision and planning?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	14	12.8	12.8	12.8
	Ineffective	41	37.6	37.6	50.5
	Neutral	47	43.1	43.1	93.6
	Effective	6	5.5	5.5	99.1
	Very Effective	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

In Table 4.25 above, 50% of respondents described communication between management and employees as ineffective, while 43% remained neutral. Only 6% considered communication effective. The results imply that communication breakdown is a major bottleneck at ZRL, undermining coordination and implementation of strategic initiatives. According to Kotter (1996) and Armenakis & Harris (2009), transparent communication is the cornerstone of change leadership; it reduces uncertainty and fosters collective ownership of organizational goals.

This communication deficit reinforces earlier findings on maintenance inefficiency (Table 4.14), where inadequate feedback mechanisms between engineers, planners, and management may be delaying maintenance decisions. Thus, poor leadership communication indirectly worsens operational inefficiencies.

Table 4.26: Employee Participation in Decision-Making

To what extent are employees at various levels involved in the decision-making process at ZRL					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	34	31.2	31.2	31.2
	Ineffective	56	51.4	51.4	82.6
	Neutral	11	10.1	10.1	92.7
	Effective	7	6.4	6.4	99.1
	Very Effective	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

As shown in Table 4.26 above, Participation in decision-making was rated overwhelmingly low, 83% of respondents viewed it as ineffective. Only 7% felt it was effective. Such results portray ZRL as a highly bureaucratic organization, dominated by top-down directives rather than participatory governance. This structure limits staff innovation and accountability, contradicting best practices in organizational management that emphasize empowerment and shared responsibility (Fiedler, 1964; McGregor, 1960).

Linking this to funding and maintenance outcomes, limited employee input may explain recurring inefficiencies in budget execution and maintenance scheduling. Staff closest to technical operations are excluded from decisions that directly affect infrastructure and service quality, contributing to the overall performance decline observed in Section 4.4.1.

Table 4.27: Sufficiency of Training and Development

How sufficient are the training and development programs provided by management for enhancing employee skills and performance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	21	19.3	19.3	19.3
	Ineffective	69	63.3	63.3	82.6
	Neutral	11	10.1	10.1	92.7
	Effective	8	7.3	7.3	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

As depicted from Table 4.27 above, the majority (83%) rated ZRL’s training and development initiatives as ineffective, while only 7% found them effective. This lack of continuous professional development indicates poor human-capital investment. According to Nakajima (1971) and Total Productive Maintenance (TPM) principles, systematic employee training is essential for maintaining equipment reliability and operational efficiency.

When viewed alongside the earlier maintenance findings (Tables 4.14-4.19), the absence of a strong training culture directly translates into lower technical competence and recurring faults in rolling stock and track systems. Thus, leadership’s failure to institutionalize staff capacity building perpetuates performance shortfalls.

Table 4.28: Responsiveness to Operational Crises

Rate the effectiveness of ZRL responding to operational challenges and crises, like derailments and the unavailability of rolling stock					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	15	13.8	13.8	13.8
	Ineffective	47	43.1	43.1	56.9
	Neutral	17	15.6	15.6	72.5
	Effective	23	21.1	21.1	93.6
	Very Effective	7	6.4	6.4	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Respondents’ views on crisis management were also negative: 57% rated ZRL’s response to operational crises, such as derailments and rolling-stock breakdowns, as ineffective. Only 28% felt the response was neutral, and 28% perceived it as effective (Table 4.28).

This suggests weak contingency planning and delayed decision-making, both of which are critical in rail safety and service continuity. Ahmed, Greenleaf & Sacks (2014) emphasize that crisis preparedness is a major indicator of institutional resilience in rail operations. The lack of proactive management also aligns with earlier results showing weak preventive maintenance and poor funding prioritization in Table 4.18 and 4.20, respectively.

Across all leadership dimensions, strategic direction, communication, participatory decision-making, training, and crisis management, ZRL exhibits a consistent pattern of managerial weakness. The evidence reinforces correlations identified in Section 4.6.3, where leadership effectiveness showed a statistically significant positive association with ZRL performance.

Leadership deficiencies therefore act as both direct and indirect determinants of underperformance, directly by impeding decision quality and accountability, and indirectly by weakening maintenance execution, resource allocation, and staff motivation. These findings align with DiMaggio & Powell (1983) and Chongo et al. (2024), who argue that institutional inertia and poor leadership synergy are central to the persistent underperformance of African parastatals.

In summary, the analysis of leadership practices has revealed that managerial inefficiencies at ZRL, manifested through weak communication, limited employee participation, inadequate training, and poor crisis management, have significantly undermined institutional readiness and operational efficiency. However, ZRL's performance challenges cannot be attributed solely to internal management failures. External environmental pressures, particularly competition from road transport, have further compounded these operational inefficiencies by diverting freight and passenger traffic away from the rail network.

As Zambia's road transport sector continues to expand, benefiting from flexible logistics and relatively higher investment, ZRL faces declining market share and revenue performance. The next section therefore, analyses the impact of competition from road transport on ZRL's operational and financial outcomes, situating the discussion within the broader context of market responsiveness and intermodal transport dynamics.

4.2.2.4 Competition from Road Transport

The fourth objective aimed at analyzing the extent respondents agreed with the statements on competition from road transport and how it affects the performance of Zambia Railways Limited. Competition from road transport has been one of the most significant external pressures undermining ZRL's operational and financial performance. As part of the Market Responsiveness layer in the proposed conceptual framework, this dimension evaluates ZRL's capacity to adapt to competitive market dynamics and shifting customer preferences.

In Zambia, the rapid expansion of road infrastructure, coupled with the flexibility and speed of trucking services, has placed rail transport at a strategic disadvantage (World Bank, 2023). Therefore, this section presents respondents' perceptions of ZRL's competitiveness relative to road transport across multiple dimensions, including market share, revenue, service quality, optimism for improvement, and external environmental factors.

Table 4.29: Comparison of Market Share between ZRL and Road Transport

How would you compare the market share of ZRL to that of road transport for both passenger and freight trains?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ZRL has much less	85	78.0	78.0	78.0
	ZRL has less	21	19.3	19.3	97.2
	About the same	1	.9	.9	98.2
	ZRL has much less	2	1.8	1.8	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author SPSS, 2024

The findings in Table 4.29 show that an overwhelming 97% of respondents indicated that ZRL's market share is less than that of road transport. This confirms the widely acknowledged dominance of road transport in Zambia's freight and passenger markets. According to the World Bank (2023), more than 90% of freight and passenger movement in Zambia occurs by road due to its logistical flexibility, shorter transit times, and more extensive network coverage. This underscores the marginalization of railways in the national transport mix, reflecting general underinvestment and poor modernization at ZRL, as noted in earlier sections on funding and maintenance in Tables 4.20 and 4.16, respectively.

Table 4.30: Effect of Road Transport Competition on ZRL’s Revenue

To what extent has competition from road transport has affected ZRL’s revenue in the past five years?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very negatively	68	62.4	62.4	62.4
	Negatively	31	28.4	28.4	90.8
	No impact	5	4.6	4.6	95.4
	Positively	4	3.7	3.7	99.1
	Very Positively	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author SPSS, 2024

Table 4.30 above depict a combined 91% of respondents reported that competition from road transport has negatively affected ZRL’s revenue over the past five years. This perception highlights the financial strain caused by declining freight volumes and reduced passenger patronage. The results align with those of Bouraima et al. (2023), who argue that in liberalized transport markets, underfunded and inefficient railways often lose competitiveness to more agile road transport systems. The earlier findings on inadequate maintenance (Table 4.14) and poor leadership (Table 4.24) reinforce this dynamic, suggesting that internal inefficiencies have made ZRL more vulnerable to external market pressures.

Table 4.31: Comparison of Service Quality between ZRL and Road Transport

How does the quality of service provided by ZRL compare to that of road transport in terms of timeliness, reliability and customer satisfaction?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Much Worse	15	13.8	13.8	13.8
	Worse	82	75.2	75.2	89.0
	Same	3	2.8	2.8	91.7
	Better	9	8.3	8.3	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Service quality comparisons further highlight the competitive disadvantage faced by ZRL. As shown in Table 4.31, 89% of respondents rated ZRL’s service quality as worse or much worse than road transport in terms of timeliness, reliability, and customer satisfaction. This sentiment is echoed in studies by Blumenfeld et al. (2019), which associate declining rail patronage across Sub-Saharan Africa with poor service standards and infrastructure deterioration stemming from low traffic density and underinvestment.

The result also complements findings from earlier sections (Tables 4.14-4.16 & 4.24), where maintenance inefficiencies and leadership weaknesses were cited as major contributors to poor service delivery. Together, these findings suggest that operational weaknesses within ZRL have directly translated into diminished customer confidence and competitiveness.

Table 4.32: Optimism about ZRL’s Ability to Improve Performance

How optimistic are you about ZRL’s ability to improve its performance despite competition from road transport?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Unoptimistic	5	4.6	4.6	4.6
	Unoptimistic	3	2.8	2.8	7.3
	Neutral	13	11.9	11.9	19.3
	Optimistic	49	45.0	45.0	64.2
	Very Optimistic	39	35.8	35.8	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Despite the competitive disadvantages, 81% of respondents expressed optimism about ZRL’s potential to improve performance despite competition from road transport (Table 4.32). This positive outlook implies that respondents still believe ZRL can regain market relevance through strategic interventions such as improved maintenance regimes, leadership reform, and customer-focused service innovation. This finding aligns with the African Union's (2022) report, which highlights that African railways can regain competitiveness by embracing modernisation, private sector partnerships, and digital logistics solutions. The optimism expressed by respondents, therefore, reflects a recognition that internal transformation can offset external market pressures.

Table 4.33: Perceived Impact of External Factors on ZRL’s Performance

How do you perceive the impact of external factors such as economic conditions, government policies or market competition on the performance of Zambia Railways Limited?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very High	71	65.1	65.1	65.1
	High	18	16.5	16.5	81.7
	Moderate	15	13.8	13.8	95.4
	Low	4	3.7	3.7	99.1
	Very Low	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

As shown in Table 4.33, 82% of respondents indicated that external factors such as economic conditions, government policies, and market competition have a high or very high impact on ZRL’s performance. This finding reinforces the interconnected nature of ZRL’s challenges, where structural inefficiencies are compounded by policy, economic, and regulatory constraints.

The International Union of Railways (UIC, 2024) notes that the resilience of railway enterprises in developing economies depends not only on internal operational reforms but also on supportive external environments, including consistent government funding, fair regulatory practices, and integrated transport planning. These observations tie back to the Institutional Readiness layer of the proposed model in Chapter 5, which highlights the critical role of government and policy in shaping rail performance outcomes.

Furthermore, Figure 4.2 shows the factors customers consider when choosing a mode of transport.

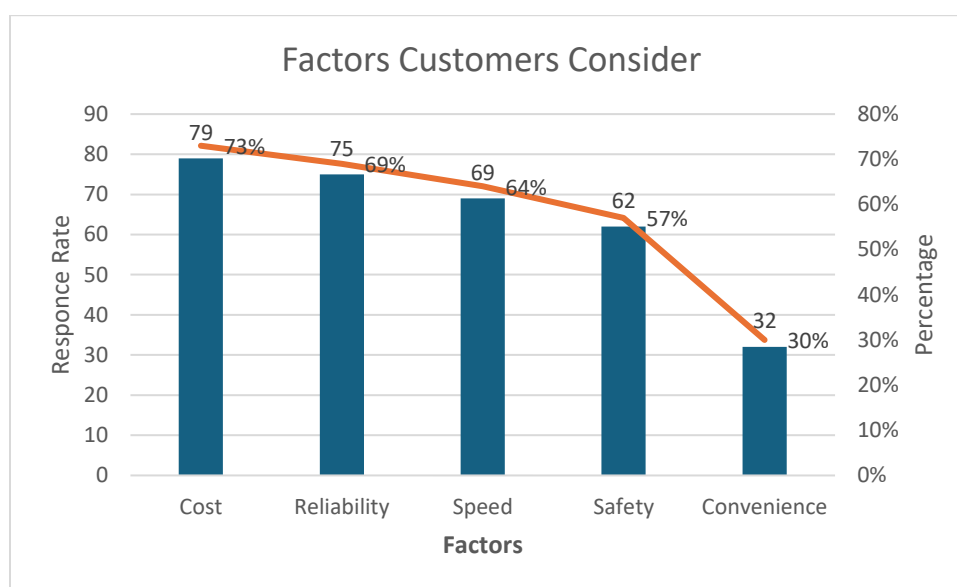


Figure 4.2: Factors Customers Consider when choosing a mode of transport

Source: Generated by the Author, 2024

The data from Figure 4.2 shows that the major factors influencing clients' choice of ZRL are cost, reliability, speed, and safety. These align with ZRL's foundational objectives, which emphasized providing a cheap and reliable means of transportation to support national development and regional trade. Cost emerged as the most significant factor, with 73% of respondents identifying it as a primary consideration, followed by reliability at 69%. Speed (64%) and safety (57%) also featured prominently, while convenience was the least prioritized factor (30%).

These findings are consistent with the literature on rail transport in developing economies. As already highlighted, customers often prioritize affordability and dependability when evaluating rail versus road transport, particularly in resource-constrained settings (World Bank, 2019; UIC, 2024). Rail's competitive edge has historically been its ability to transport bulk cargo at lower costs, but poor reliability and inefficiencies have eroded this advantage. Moreover, safety remains a key determinant of customer confidence in rail services; derailments and outdated infrastructure have been cited as major challenges undermining public trust in ZRL's services (Boye et al., 2023; ZRL Reports, 2022-2023).

Furthermore, the emphasis on cost and reliability reflects broader trends identified in studies of transport behavior in Zambia and other developing countries. For example, institutional

inefficiencies and inadequate funding often result in unreliable services, forcing customers to turn to road transport despite its higher relative cost (Mwila, 2016; Bouraima et al., 2023). This aligns with the survey’s findings that convenience ranks lowest, as ZRL’s outdated schedules and limited routes diminish its competitiveness against road transport, which offers greater flexibility.

In summary, the survey results confirm that ZRL’s ability to meet its core objectives of low-cost, reliable, safe, and efficient services remains central to its competitiveness. However, gaps in reliability and safety continue to undermine performance, validating the literature’s concern that without modernization and improved maintenance practices, railways in developing economies struggle to meet customer expectations.

Figure 4.3 depicts strategies ZRL has implemented to mitigate the impact of competition from the road transport sector.

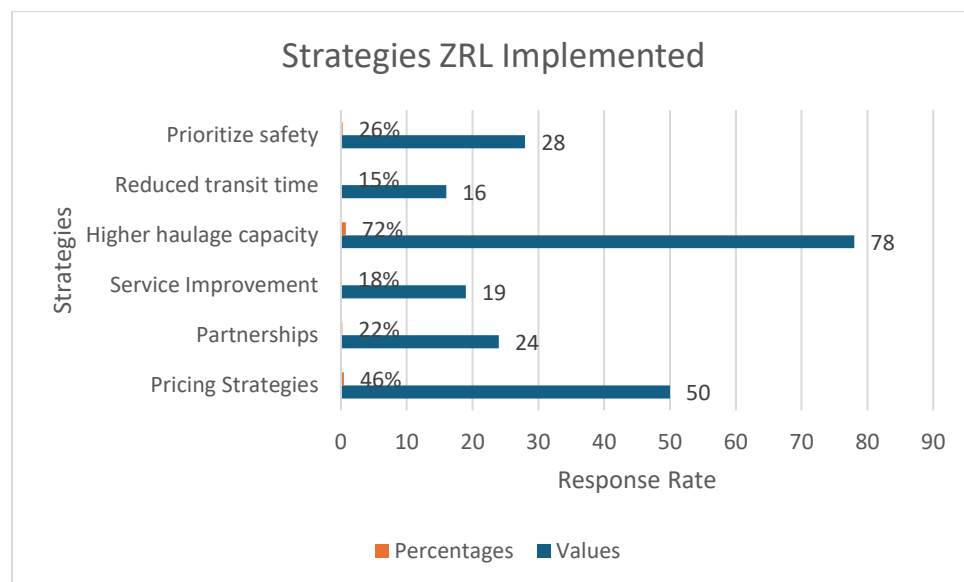


Figure 4.3: Strategies ZRL has implemented

Source: Generated by the Author, 2024

Figure 4.3 above highlights the strategies ZRL has adopted to counter competition from road transport. The most prominent strategy is higher haulage capacity, reported by 72% of respondents. This underscores ZRL’s emphasis on leveraging rail’s natural advantage in moving bulk cargo efficiently, aligning with literature that identifies capacity utilization as one of the core strengths of railway systems in developing economies (World Bank, 2019; UIC, 2024). By focusing on

volume, ZRL aims to remain relevant in bulk transport markets such as mining and agriculture, where rail is traditionally more competitive than road transport.

Pricing strategies, acknowledged by 46% of respondents, demonstrate ZRL's attempt to enhance cost competitiveness. As Profillidis (2016) notes, cost-competitiveness remains one of the strongest selling points for rail, particularly for bulk commodities. However, without addressing service reliability and speed, lower prices alone may not be sufficient to attract customers who prioritize convenience and timely delivery (Mwila, 2016).

Safety prioritization, mentioned by 26% of respondents, reflects growing recognition that safety incidents, such as derailments, erode customer confidence in rail transport. The literature emphasizes that safety is central to institutional legitimacy, as poor safety records not only undermine customer trust but also increase operational costs and deter potential investment (Boye et al. 2023; UIC, 2024).

Strategies such as partnerships (22%) and service improvements (18%) are less frequently noted but are crucial in fostering long-term competitiveness. Partnerships with private sector players and regional stakeholders have been highlighted in the literature as essential for modernizing parastatal operations and attracting funding for infrastructure rehabilitation (World Bank, 2019). Yet, the relatively low emphasis on this strategy suggests that ZRL has not fully embraced collaborative approaches as a pathway to reform.

Finally, reduced transit time, reported by only 15% of respondents, is the least implemented strategy. This finding reveals a significant weakness, as speed is a key determinant of competitiveness in modern logistics. The neglect of transit efficiency contrasts with global best practices, where modernization and technology adoption under the Fourth Industrial Revolution (4IR) have focused heavily on improving turnaround times (UIC, 2024). The limited prioritization of transit time resonates with broader critiques that ZRL continues to operate under outdated management practices that focus more on inputs (such as volume and pricing) than customer-centered performance outcomes.

In summary, while ZRL has pursued strategies such as higher haulage capacity and competitive pricing, its limited focus on transit efficiency, partnerships, and service innovation reflects a

reactive rather than proactive approach. This supports the literature’s conclusion that without holistic reforms, integrating funding, leadership, safety, and technological modernization, rail parastatals like ZRL will continue to lose market share.

4.2.2.5 Government Policies and Regulatory Frameworks

The fifth objective of the study was to assess the extent to which respondents agreed with the statements on the influence of Government policies and regulatory frameworks on the performance of ZRL. Government policy and regulatory frameworks play a decisive role in shaping the operational environment, competitiveness, and financial stability of parastatal organizations such as ZRL. Within the Institutional Readiness layer of the proposed model in chapter five (figure 5.1), policy consistency, regulatory oversight, and enforcement are central determinants of institutional performance.

A well-aligned policy framework can enhance funding access, curb infrastructure encroachment, and facilitate market protection. Equally, fragmented or inconsistent government policies can constrain operational flexibility and hinder modernization. The following tables (4.34-4.38) present respondents’ perceptions of the adequacy, clarity, and impact of current government policies and regulatory frameworks affecting ZRL’s operations

Table 4.34: Familiarity with Government Policies Affecting ZRL Operations

How familiar are you with the government policies and regulatory frameworks that affect the operations of ZRL?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Unfamiliar	4	3.7	3.7	3.7
	Unfamiliar	7	6.4	6.4	10.1
	Moderately Familiar	55	50.5	50.5	60.6
	Familiar	31	28.4	28.4	89.0
	Very Familiar	12	11.0	11.0	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Findings in Table 4.34 indicate that 51% of respondents were moderately familiar, and 28% familiar, with policies regulating ZRL’s operations, while 10% were unfamiliar. This moderate familiarity suggests that, although respondents possess a general awareness of the regulatory environment, there is limited in-depth understanding of how these policies directly influence ZRL’s operational and financial outcomes. The finding aligns with Chongo et al. (2024), who identified governance weaknesses and political interference as factors that can disrupt strategic alignment and policy implementation within ZRL. Increasing policy awareness across all organizational levels could therefore enhance ZRL’s responsiveness to institutional reforms.

Table 4.35: Effect of Government Policies on Budget and Financial Performance

How have government policies and regulatory frameworks affected the budget and financial performance of ZRL?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very negatively	41	37.6	37.6	37.6
	Negatively	36	33.0	33.0	70.6
	No Impact	9	8.3	8.3	78.9
	Positively	22	20.2	20.2	99.1
	Very Positively	1	.9	.9	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

A significant 71% of respondents perceived government policies as hurting the ZRL’s financial performance, while only 21% reported a positive influence, as shown in Table 4.35 above. This reinforces earlier findings in the funding section (Table 4.21), where over 77% of the respondents rated ZRL’s funding as inadequate and irregular. Therefore, financing was identified as a key barrier to operational efficiency, indicating that ZRL’s funding challenges are rooted in policy-level constraints other than internal mismanagement.

Furthermore, the findings support long-standing arguments that inconsistent and restrictive government policies undermine parastatal financial autonomy (World Bank, 2019; Kapanda, 2017). Such policies often lead to delayed subsidies, politically influenced budget allocations, and inadequate capital investment. In ZRL’s case, these constraints appear to worsen liquidity

challenges, limiting the company’s capacity to maintain and modernize infrastructure, a finding consistent with the World Bank (2019) report on transport sector governance in Sub-Saharan Africa.

Table 4.36: Government Support for Operational Efficiency and Development

How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision-making?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Unsupportive	25	22.9	22.9	22.9
	Unsupportive	40	36.7	36.7	59.6
	Moderately	30	27.5	27.5	87.2
	Supportive	10	9.2	9.2	96.3
	Very Supportive	4	3.7	3.7	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Regarding the level of policy support, 60% of respondents described current government policies as unsupportive, while 27.5% rated them moderately supportive. Only 13% found them supportive to any meaningful extent (Table 4.36).

This finding complements the leadership analysis under Table 4.22, where limited managerial autonomy and ineffective decision-making (47%) were highlighted as key weaknesses. It suggests that ZRL’s leadership challenges may not only be internal but also structurally embedded within a restrictive policy environment, and that the regulatory environment does not actively promote ZRL’s efficiency or development, but rather constrains managerial autonomy and decision-making flexibility.

The finding aligns with DiMaggio and Powell’s (1983) Institutional Theory, which argues that bureaucratic structures and coercive institutional pressures within state-owned enterprises often restrict innovation, flexibility and organizational adaptability. In ZRL’s case, excessive regulatory control, weak institutional coordination and policy inertia appear to be constraining the transition toward a more efficient and performance-oriented governance system.

Table 4.37: Challenges in Addressing Vandalism and Encroachment

How Challenging is it for ZRL to combat vandalism and encroachments in relation to current government policies and regulations to promote safety and preserve land for future expansion of the railway infrastructure?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Challenging	86	78.9	78.9	78.9
	Challenging	15	13.8	13.8	92.7
	Neutral	6	5.5	5.5	98.2
	Unchallenging	2	1.8	1.8	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS, 2024

Table 4.37 shows that an overwhelming 79% of respondents rated efforts to combat vandalism and encroachment under existing policies as “very challenging.” This reflects inadequate enforcement mechanisms and inter-agency coordination to protect railway assets. Vandalism and illegal settlements along the railway corridor compromise safety and hinder future expansion efforts. Although ZRL, in partnership with Zambia Police (ZP), have signed an MOU to combat vandalism and encroachments, the impact remains minimal.

In addition, this challenge supports earlier observation under maintenance practice (Table 4.19), where inadequate infrastructure protection and resource constraints were seen to hinder the effectiveness of scheduled maintenance activities. To further support the finding, UIC (2024) and Boye et al. (2023) emphasized that in contexts where state enforcement is weak, railway operators suffer from asset degradation and higher maintenance costs, ultimately reducing investor confidence. This finding thus underscores the need for stronger legislative protection and institutional collaboration between ZRL, local councils, and law enforcement bodies.

Table 4.38: Government Policies and the Competitive Landscape

Do government policies and regulatory frameworks shape the competitive landscape for ZRL in relation to other transport modes (e.g., road transport) to protect its market share?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	41	37.6	37.6	37.6
	Disagree	19	17.4	17.4	55.0
	Not Sure	17	15.6	15.6	70.6
	Agree	16	14.7	14.7	85.3
	Strongly Agree	16	14.7	14.7	100.0
	Total	109	100.0	100.0	

Source: Generated by the Author from SPSS Output, 2024

Results in Table 4.38 above show that 55% of respondents disagreed that government policies protect ZRL's market share, while only 29% agreed. This corroborates findings under the competition section (Table 4.29), where 97% of the respondents acknowledged that road transport's dominance was attributed not only to service efficiency but also to a policy bias favoring road development over rail, as evidenced in the on-going road construction and rehabilitation projects, a typical example is the dual carriage way between Lusaka and Ndola currently under construction (RDA, 2024).

Therefore, this indicates that the regulatory framework disproportionately favors road transport, mirroring the World Bank (2023) finding that Zambia's transport policy heavily prioritizes road infrastructure over rail development. As a result, ZRL operates at a systemic disadvantage due to unequal access to subsidies, flexible licensing for road operators, and the absence of a level playing field in transport pricing. This imbalance constrains ZRL's ability to compete effectively and undermines its long-term viability. Mwila (2016) noted this fact as well.

Generally, these results help explain the poor performance ratings reported earlier in (Table 4.7), where over 68% of respondents rated ZRL performance as poor, indicating that ZRL's inefficiencies are not solely operational but stem from deep-seated institutional and policy-related challenges.

4.2.2.6 ZRL Engagement with Government Bodies to Influence Policy Improvement

The table on this aspect is presented in the appendix A, offering valuable insights into potential institutional strategies. The vast majority of respondents (over 85%) endorsed proactive engagement with government agencies through policy dialogue, stakeholder workshops, and public-private partnerships (PPPs). These findings echo Kotter's (1996) and Chongo et al. (2024) recommendations that public enterprises must not only adapt to their regulatory environment but also actively influence it through advocacy, collaboration, and evidence-based engagement. Building stronger ties with policymakers and the private sector can help ZRL secure supportive reforms and mobilize resources for modernization.

4.3 Summary statistics (Summary of Measures of Central Tendency)

Summary statistics provide a concise overview of the data by presenting measures of central tendency, specifically the mean, median, mode, and standard deviation. These measures describe the central position of responses within each variable, thereby indicating general respondent sentiment. In this study, they help determine whether perceptions of ZRL's performance and related factors lean toward positive, negative, or neutral tendencies. According to Pallant (2020), measures of central tendency are essential in descriptive analysis as they simplify large datasets and highlight dominant patterns for interpretation.

Table 4.39: Summary statistics

Statistics									
		Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	Rate effectiveness of ZRL responding to operational challenges and crises like derailments and unavailability of rolling stock	Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	How would you compare the market share of ZRL to that of road transport for both passenger and freight trains?	How have government policies and regulations affected the budget and financial performance of ZRL ?	How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?	ZRL Performance last Ten years
N	Valid	109	109	109	109	109	109	109	109
	Missing	0	0	0	0	0	0	0	0
Mean		2.68	2.63	1.92	2.20	1.28	2.14	2.34	3.87
Median		3.00	2.00	2.00	2.00	1.00	2.00	2.00	4.00
Mode		2	2	2	2	1	1	2	4
Std. Deviation		.849	1.152	.611	.847	.668	1.158	1.047	.771

Source: Generated by the Author from SPSS, 2024

The summary of measures of central tendency for key variables related to ZRL's performance is presented in Table 4.39. The analysis provides an overview of the general perception of respondents regarding leadership, operational response, funding, maintenance, competition, government policy, and overall performance.

The results show that the mean for leadership effectiveness was 2.68, with a median of 3.00 and a mode of 2.00, suggesting that respondents were generally neutral to negative in their assessment of ZRL's leadership in addressing organizational challenges, decision-making, and overall management. This implies that although some respondents were moderate in their views, the

dominant perception leaned toward ineffectiveness. This observation is consistent with the frequency results in Table 4.24, where the majority rated leadership as either ineffective or very ineffective (47%).

The mean score of 2.63 for ZRL's effectiveness in responding to operational challenges and crises (such as derailments and rolling stock unavailability), coupled with a median of 2.00 and a mode of 2.00, indicates a consensus that the company's crisis response mechanisms are weak. This further supports earlier findings under Section 4.4.2.3, Tables 4.24 & 4.28, which highlighted managerial and operational inefficiencies as critical constraints on performance.

Regarding funding adequacy, the mean of 1.92, median of 2.00, and mode of 2.00 indicate that respondents largely viewed the financial support from the shareholder (Government) and other stakeholders as inadequate. This finding aligns with the earlier discussion in Section 4.4.2.2 under Table 4.20, where about 95% of respondents rated current funding as insufficient, indicating that funding constraints remain a major hindrance to maintenance, modernization, and operational expansion (World Bank, 2019; Sandala, 2020).

The mean for maintenance effectiveness was 2.20, with both the median and mode equal to 2.00, demonstrating that the maintenance practices at ZRL are widely perceived as ineffective. This complements findings in Tables 4.14 and 4.15, where most respondents reported infrequent or poorly executed maintenance, confirming that maintenance inefficiency directly affects ZRL's reliability and performance.

When comparing ZRL's market share to that of road transport, the mean was 1.28, median 1.00, and mode 1.00, showing an overwhelming agreement that ZRL has a much smaller market share than road transport. This result corroborates the findings discussed in Section 4.4.2.4 under Table 4.28, which established that competition from road transport has significantly reduced ZRL's freight and passenger volumes, and further supported the World Bank (2023) report.

For the impact of government policies on ZRL's financial performance, the mean of 2.14, median 2.00, and mode 1.00 indicate that government policies are perceived as negatively affecting the company's budget and operations. Similarly, the supportiveness of government policies recorded a mean of 2.34, median 2.00, and mode 2.00, suggesting that the policies and regulatory

frameworks currently in place are unsupportive or only moderately supportive of ZRL's development. These findings reinforce earlier results under Section 4.4.2.5 (Table 4.35 & 4.36), which attributed much of ZRL's stagnation to an unfavourable policy environment and limited regulatory protection.

Finally, the overall performance of ZRL over the past ten years yielded a mean of 3.87, a median of 4.00, and a mode of 4.00, showing that the majority of respondents (69%) rated ZRL's performance as poor, as evidenced in Table 4.7. The higher end of the scale for this variable reflects widespread dissatisfaction with operational outcomes, aligning with findings from Chongo et al. (2024), which point to sustained underperformance in Zambia's state-owned enterprises due to broad institutional and governance weaknesses.

In conclusion, the summary statistics presented in Table 4.39 provide a clear overview of respondent perceptions across the key determinants of ZRL's performance. The results consistently point to broad weaknesses in leadership effectiveness, maintenance practices, and funding adequacy, compounded by unsupportive policy and intense competition from road transport. These findings form a quantitative foundation for deeper statistical exploration in the subsequent sections.

The next section, 4.6 Correlation Analysis, builds on these descriptive results by examining the strength and direction of associations among the major variables: leadership, funding, maintenance, competition, government policy, and ZRL performance. This will help determine which factors are most strongly linked to ZRL's underperformance. Section 4.6.1 then complements this by using cross-tabulation to further illustrate how these relationships manifest across categories of respondents, providing a more robust understanding of the interplay between institutional and operational variables influencing ZRL's performance.

4.4 Correlation Analysis

Correlation analysis was conducted to examine the strength and direction of the association among the study variables: Maintenance Effectiveness (ME), Funding Adequacy (FA), Leadership Effectiveness (LE), Competition from Road Transport (CRT), Government Policy Support (GPS), and ZRL Performance (ZRLPerf). Since the preliminary tests of normality presented in Table 3.4

indicated that all study variables significantly departed from normality ($p < 0.05$), the study adopted Spearman's rho correlation coefficient (ρ). Spearman's rho is a non-parametric statistical technique appropriate for analyzing ordinal data obtained from Likert-scale measurements and datasets that do not satisfy the assumptions required for parametric correlation analysis (Pallant, 2020; Prion & Haerling, 2014).

Spearman's rho measures the strength and direction of the monotonic association between two variables, with correlation coefficients ranging from -1 to +1. A positive coefficient indicates that as one variable increases, the other tends to increase, while a negative ρ signifies that as one variable increases, the other tends to decrease. The strength of the relationship was interpreted using guidelines proposed by Schober, Boer, & Schwarte (2018), as noted by Mweemba (2022):

- 0.00-0.10 = negligible
- 0.10-0.39 = weak
- 0.40-0.69 = moderate
- 0.70-0.89 = strong
- 0.90-1.00 = very strong

The correlation matrix is presented in Table 4.40 below.

Table 4.40: Correlation Coefficient results

Correlations			ME	FA	LE	CRT	GPS	ZRLPerf
Spearman's rho	Maintenance Effectiveness (ME)	Correlation Coefficient	1.000	.463**	.434**	.470**	.435**	-.388**
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000
		N	109	109	109	109	109	109
	Funding Adequacy (FA)	Correlation Coefficient	.463**	1.000	.452**	.460**	.498**	-.380**
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000
		N	109	109	109	109	109	109
	Leadership Effectiveness (LE)	Correlation Coefficient	.434**	.452**	1.000	.359**	.421**	-.439**
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000
		N	109	109	109	109	109	109
	Competition from Rod Transport (CRT)	Correlation Coefficient	.470**	.460**	.359**	1.000	.526**	-.441**
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000
		N	109	109	109	109	109	109
	Government Policy Support (GPS)	Correlation Coefficient	.435**	.498**	.421**	.526**	1.000	-.620**
		Sig. (2-tailed)	.000	.000	.000	.000	.	.000
		N	109	109	109	109	109	109
	ZRL Performance (ZRLPerf)	Correlation Coefficient	-.388**	-.380**	-.439**	-.441**	-.620**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	109	109	109	109	109	109

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

Source: Generated by the author from SPSS Version 26, 2024

The results presented in Table 4.40 reveal statistically significant associations among all study variables at the 1% significance level ($p < 0.001$). Moderate positive correlations were observed among the independent variables ($\rho = 0.359\text{-}0.526$), suggesting that maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support are closely interrelated organisational factors. In other words, respondents who reported favourable conditions in one organisational area generally tended to report favourable conditions in the other organisational areas.

Conversely, statistically significant negative correlations were observed between each independent variable and ZRL Performance ($\rho = -0.380$ to -0.620). The negative coefficients should be interpreted in the context of the coding orientation of the dependent variable. Higher scores on the ZRL Performance scale represented greater organisational underperformance. Consequently, the negative relationships indicate that respondents who perceived stronger maintenance systems, more adequate funding, more effective leadership, better management of competition, and stronger government policy support also tended to perceive lower levels of ZRL underperformance, implying better organisational performance.

It is important to note that correlation analysis demonstrates statistical association rather than causation. Accordingly, the relationships reported in this section should not be interpreted as evidence that one variable causes changes in another. Instead, they indicate that the variables are systematically associated, thereby providing an empirical basis for the subsequent multiple regression analysis, which examines the unique predictive contribution of each independent variable while controlling for the effects of the remaining variables.

4.4.1 Interpretation of Individual Correlations

4.4.1.1 Government Policy and Regulatory Support (GPRS) and ZRL Performance

Government Policy and Regulatory Support exhibited the strongest statistically significant association with Zambia Railways Limited Performance ($\rho = -0.620$, $p < 0.001$), representing a moderate negative relationship. Considering the coding of the dependent variable, this finding suggests that respondents who perceived stronger policy and regulatory support also tended to perceive lower levels of organisational underperformance. The finding supports Institutional

Theory, which argues that organisational performance is strongly influenced by the quality of institutional arrangements, regulatory stability, and governance structures (Scott, 2014).

4.4.1.2 Leadership Effectiveness (LE) and ZRL Performance

Leadership Effectiveness demonstrated a statistically significant moderate negative association with organisational performance ($\rho = -0.439$, $p < 0.001$). This indicates that respondents reporting higher levels of leadership effectiveness also tended to report lower levels of organisational underperformance. The finding is consistent with Transformational Leadership Theory (Bass, 1985) and Contingency Theory (Fiedler, 1964), both of which emphasise the importance of adaptive, strategic, and visionary leadership in enhancing organisational performance.

4.4.1.3 Competition from Road Transport (CRT) and ZRL Performance

Competition from Road Transport exhibited a statistically significant moderate negative association with organisational performance ($\rho = -0.441$, $p < 0.001$). This suggests that respondents who perceived stronger competitive pressure from road transport also tended to perceive poorer organisational performance. However, this relationship should be interpreted as an association rather than evidence that road competition directly causes organisational decline. The finding nevertheless reflects the increasingly competitive environment within which ZRL operate.

4.4.1.4 Maintenance Effectiveness (ME) and ZRL Performance

Maintenance Effectiveness recorded a statistically significant weak negative association with organisational performance ($\rho = -0.388$, $p < 0.001$). This finding suggests that respondents who perceived maintenance practices to be more effective also tended to report lower levels of organisational underperformance. The observed relationship is consistent with the principles of Total Productive Maintenance (TPM), which emphasise preventive maintenance as a key driver of operational reliability and service quality (Nakajima, 1988).

4.4.1.5 Funding Adequacy (FA) and ZRL Performance

Funding Adequacy also exhibited a statistically significant weak negative association with organisational performance ($\rho = -0.380$, $p < 0.001$). Although respondents generally associated adequate funding with improved organisational conditions, the relatively weaker correlation

suggests that financial resources alone may not be sufficient to improve organisational performance. Rather, funding appears to operate alongside leadership, governance, and maintenance practices in influencing organisational outcomes.

4.4.2 *Summary of Correlation Findings*

Overall, the Spearman's rank correlation analysis demonstrated statistically significant associations among all study variables. Moderate positive relationships among the independent variables indicate that the organisational, financial, technical, competitive, and institutional dimensions of Zambia Railways Limited are closely interconnected rather than operating independently. Likewise, the statistically significant negative associations between each independent variable and Zambia Railways Limited Performance suggest that improvements in these organisational conditions are associated with lower levels of organisational underperformance.

The magnitude of the correlation coefficients further indicates that no single factor sufficiently explains the performance of Zambia Railways Limited. Instead, organisational performance appears to result from the interaction of multiple technical, managerial, financial, competitive, and institutional factors. These findings support the integrated conceptual framework presented in Chapter Two, which conceptualises organisational performance as a multidimensional outcome influenced by the combined effects of maintenance effectiveness, funding adequacy, leadership effectiveness, competition from road transport, and government policy and regulatory support.

While the correlation analysis establishes statistically significant associations among the study variables, it does not determine the independent contribution of each predictor to ZRL performance. The subsequent section therefore employs multiple linear regression analysis to examine the unique predictive effect of each independent variable while controlling for the influence of the remaining predictors.

4.5 Regression Analysis

To determine the independent contribution of the study variables to ZRL's performance, a standard multiple linear regression analysis was performed. The dependent variable was respondents' perceived performance of ZRL over the preceding ten years, while the independent variables

comprised Maintenance Effectiveness (ME), Funding Adequacy (FA), Leadership Effectiveness (LE), Competition from Road Transport (CRT), and Government Policy and Regulatory Support (GPRS).

Unlike correlation analysis, which examines associations between variables, multiple regression estimates the unique predictive effect of each independent variable while statistically controlling for the influence of the remaining predictors. This enables the identification of those factors that independently explain variations in ZRL performance. The results of this analysis are presented below in Tables 4.41, 4.42, and 4.43, respectively:

4.5.1 Regression Coefficients

Table 4.41: Multiple Linear Regression Coefficients

Coefficients								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
(Constant)	5.571	.237		23.468	.000			
ME	-.161	.079	-.176	-2.042	.044	.828	1.208	
FA	.002	.074	.003	.029	.977	.762	1.312	
LE	-.259	.078	-.285	-3.303	.001	.830	1.205	
CRT	-.192	.082	-.205	-2.340	.021	.808	1.238	
GPRS	-.155	.068	-.211	-2.285	.024	.725	1.379	
a. Dependent Variable: ZRLP								

Source: Generated by the Author from SPSS Version 26, 2024

$$YZRLP = a + (\beta_1 * ME) + (\beta_2 * FA) + (\beta_3 * LE) + (\beta_4 * CRT) + (\beta_5 * GPRS) + \epsilon$$

$$ZRLP = 5.571 + -0.161 ME + 0.002 FA + -0.259 LE + -0.192 CRT + -0.155 GPRS$$

The regression model indicates that four of the five independent variables were statistically significant predictors of ZRL's performance at the 5% significance level. These include Maintenance Effectiveness (ME), Leadership Effectiveness (LE), Competition from Road

Transport (CRT), and Government Policy and Regulatory Support (GPRS). Funding Adequacy (FA), however, was not statistically significant ($p = 0.977$).

Before interpreting the coefficients, multicollinearity diagnostics were examined. The Variance Inflation Factor (VIF) values ranged from 1.205 to 1.379, while tolerance values ranged from 0.725 to 0.830. Since all VIF values were substantially below the commonly accepted threshold of 10 (Hair et al., 2022), multicollinearity was not considered a concern, indicating that each predictor contributed independently to the model.

The negative regression coefficients should be interpreted in relation to the coding of the dependent variable. Higher values of the ZRL Performance variable represented greater organisational underperformance. Consequently, the negative coefficients indicate that improvements in maintenance effectiveness, leadership effectiveness, management of road transport competition, and government policy support are associated with lower levels of ZRL underperformance, reflecting improved company performance.

4.5.2 Interpretation of Regression Results

4.5.2.1 Leadership Effectiveness

Leadership Effectiveness emerged as the strongest statistically significant predictor of ZRL's performance ($\beta = -0.285$, $p = 0.001$). This finding indicates that, after controlling for all other variables in the model, respondents who perceived higher levels of leadership effectiveness also tended to perceive lower levels of organisational underperformance. The relatively large standardized coefficient further suggests that leadership contributes more to explaining variations in organisational performance than any other predictor included in the model.

4.5.2.2 Competition from Road Transport

Competition from Road Transport was also a statistically significant predictor of organisational performance ($\beta = -0.205$, $p = 0.021$). This finding suggests that respondents who perceived stronger competitive pressures from road transport also tended to perceive poorer organisational performance after controlling for the influence of the remaining variables. The result highlights

the importance of external competitive pressures in shaping Zambia Railways Limited's operational performance.

4.5.2.3 Government Policy and Regulatory Support

Government Policy and Regulatory Support remained a statistically significant predictor ($\beta = -0.211$, $p = 0.024$). This indicates that respondents who perceived stronger government policy support and more effective regulatory frameworks also tended to report lower levels of organisational underperformance. The finding demonstrates that institutional and regulatory conditions continue to play an important role in influencing organisational performance.

4.5.2.4 Maintenance Effectiveness

Maintenance Effectiveness also made a statistically significant independent contribution to organisational performance ($\beta = -0.176$, $p = 0.044$). Although its predictive effect was smaller than those of leadership, competition, and government policy, the result indicates that maintenance practices remain an important determinant of operational performance after accounting for the effects of the other variables.

4.5.2.5 Funding Adequacy

Funding Adequacy did not make a statistically significant independent contribution to ZRL performance ($\beta = 0.003$, $p = 0.977$). Although funding was positively associated with the other variables in the correlation analysis (Table 4.40), its predictive influence disappeared after controlling for leadership, maintenance, competition, and government policy.

This finding does not imply that funding is unimportant. Rather, it suggests that the influence of funding on organisational performance may operate indirectly through other organisational capabilities, particularly maintenance effectiveness, leadership effectiveness, and government policy implementation. In other words, financial resources alone may be insufficient to improve performance unless they are effectively allocated, managed, and supported by appropriate institutional and governance structures. This interpretation is explored further during the qualitative triangulation and discussion in subsequent sections.

4.5.3 Model Summary

The regression analysis demonstrates that Leadership Effectiveness, Competition from Road Transport, Government Policy and Regulatory Support, and Maintenance Effectiveness each make statistically significant independent contributions to explaining ZRL's performance. Among these predictors, Leadership Effectiveness exhibited the largest standardized regression coefficient, indicating that it contributes the greatest unique explanatory power within the model.

Although Funding Adequacy was not a statistically significant independent predictor, its significant correlations with the other variables suggest that funding remains an important enabling condition rather than a direct determinant of performance. This distinction provides an important explanation for the apparent difference between the correlation and regression results and underscores the multidimensional nature of ZRL performance.

The regression findings therefore support the conceptual framework presented in Chapter Two by demonstrating that ZRL's performance is shaped by the combined influence of technical, managerial, competitive, and institutional factors rather than any single organisational determinant. These quantitative findings are subsequently triangulated with the qualitative evidence to provide a more comprehensive explanation of the factors contributing to the underperformance of Zambia Railways Limited.

Table 4.42: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.603 ^a	.363	.332	.630
a. Predictors: (Constant), GPRS, CRT, LE, ME, FA.				

Source: Generated by the Author from SPSS Version 26, 2024

The model summary presented in Table 4.42 provides an overall assessment of the explanatory power of the multiple regression model. The multiple correlation coefficient ($R = 0.603$) indicates a moderate relationship between the observed values of ZRL's performance and the values predicted by the combined set of independent variables.

The coefficient of determination ($R^2 = 0.363$) indicates that approximately 36% of the variation in respondents' perceptions of ZRL's performance is explained collectively by Maintenance Effectiveness, Funding Adequacy, Leadership Effectiveness, Competition from Road Transport, and Government Policy and Regulatory Support. After adjusting for the number of predictors included in the model, the Adjusted R^2 of 0.332 suggests that approximately 33.2 of the variation in ZRL performance is reliably explained by the regression model.

Although the explanatory power of the model is moderate, it demonstrates that the selected institutional and operational variables account for a meaningful proportion of the observed variation in the company performance. The remaining 66.8% of the variation may be attributed to other factors not examined in the present study, including organisational culture, technological capability, employee motivation, infrastructure age, labour relations, macroeconomic conditions, and broader political and market dynamics.

The Standard Error of the Estimate (0.630) indicates the average deviation between the observed and predicted values of the dependent variable. The relatively small prediction error suggests that the regression model provides a reasonably good fit to the observed data.

4.5.4 Analysis of Variance (ANOVA)

Table 4.43: ANOVA Results

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.328	5	4.666	11.757	.000 ^b
	Residual	40.874	103	.397		
	Total	64.202	108			
a. Dependent Variable: ZRLP						
b. Predictors: (Constant), GPRS, CRT, LE, ME, FA.						

Source: Generated by the author from SPSS, 2024

The Analysis of Variance (ANOVA) was conducted to determine whether the regression model, taken as a whole, provides a statistically significant prediction of ZRL's performance.

As presented in Table 4.43, the regression model was statistically significant ($F(5,103) = 11.757$, $p < 0.001$). This indicates that the five independent variables, considered jointly, significantly explain variations in organisational performance. Consequently, the null hypothesis that all regression coefficients are simultaneously equal to zero is rejected.

The regression sum of squares (23.328) represents the proportion of variation explained by the model, while the residual sum of squares (40.874) represents unexplained variation. These results are consistent with the coefficient of determination ($R^2 = 0.363$) presented in Table 4.42, confirming that the model explains a statistically significant proportion of the variability in ZRL's performance.

Taken together, the model summary, regression coefficients, and ANOVA results demonstrate that the proposed regression model is statistically adequate for explaining organisational performance. The findings therefore provide empirical support for the study's conceptual framework, which proposes that organisational performance is jointly influenced by technical, managerial, competitive, financial, and institutional factors rather than by any single determinant operating in isolation.

4.6 Hypothesis Testing

Hypothesis testing was conducted to determine whether the institutional and operational factors examined in this study significantly influence the performance of Zambia Railways Limited (ZRL). The hypotheses were evaluated using a combination of the One-Sample Chi-Square Test, Spearman's rank correlation analysis, and multiple linear regression analysis.

The One-Sample Chi-Square Test was used to determine whether respondents' perceptions for each study variable were evenly distributed across the response categories. Spearman's rank correlation analysis assessed the strength and direction of the associations between each independent variable and organisational performance, while multiple regression analysis determined the independent predictive contribution of each variable after controlling for the influence of the remaining predictors.

A significance level of 0.05 was adopted throughout the study. Accordingly, hypotheses with p-values less than 0.05 were considered statistically significant. The overall hypothesis testing results are presented in Table 4.44 below.

Table 4.44: Summary of Hypothesis Testing Results

No	Variable	Null Hypothesis	Chi-Square Sig.	Correlation (ρ)	Regression (p-value)	Decision
H1	Maintenance Effectiveness (ME)	The categories of ME occur with equal probabilities	.000	-0.388	.044	Rejects H0
H2	Funding Adequacy (FA)	The categories of LE occur with equal probabilities	.000	-0.380	.977	Fail to reject (Regression)
H3	Leadership Effectiveness (LE)	The categories of LE occur with equal probabilities	.000	-0.439	.001	Rejects H0
H4	Competition from Road Transport (CRT)	The categories of CRT occur with equal probabilities	.000	-0.441	.021	Rejects H0
H5	Government Policy & Regulatory Support (GPRS)	The categories of GPRS occur with equal probabilities	.000	-0.620	.024	Rejects H0

Asymptotic significances are displayed. The significance level is .050

Source: Generated by the Author from SPSS, 2024

The One-Sample Chi-Square results indicate that respondents' perceptions regarding all five study variables were statistically significant ($p < 0.001$), suggesting that responses were not evenly distributed across the Likert-scale categories. This demonstrates that respondents held clear and consistent perceptions regarding the importance of each institutional and operational factor.

However, the Spearman's correlation and multiple regression analyses provide stronger evidence regarding the relationships between the study variables and ZRL's performance. While correlation analysis established statistically significant associations between all independent variables and organisational performance, multiple regression identified which variables independently predicted performance after controlling for the remaining predictors. Consequently, the regression results provide the primary basis for accepting or rejecting the study hypotheses.

4.6.1 Hypothesis 1: Maintenance Effectiveness and ZRL performance

H0₁: Maintenance Effectiveness does not significantly influence the performance of Zambia Railways Limited.

H1₁: Maintenance Effectiveness significantly influences the performance of Zambia Railways Limited.

The Spearman's rank correlation analysis revealed a statistically significant association between Maintenance Effectiveness and ZRL Performance ($\rho = -0.388$, $p < 0.001$) (Table 4.40). The regression analysis further demonstrated that Maintenance Effectiveness remained a statistically significant independent predictor of ZRL performance ($\beta = -0.176$, $p = 0.044$) (Table 4.41). The One-Sample Chi-Square Test also yielded a statistically significant result ($p < 0.001$), indicating that respondents consistently regarded maintenance as an important organisational issue.

Accordingly, the null hypothesis was rejected, and it was concluded that Maintenance Effectiveness significantly influences the performance of ZRL.

This finding is consistent with Nakajima (1988) and Gackowiec (2019), who emphasised preventive maintenance as a critical determinant of railway reliability and operational efficiency.

4.6.2 Hypothesis 2: Funding Adequacy and ZRL Performance

H0₂: Funding Adequacy does not significantly influence the performance of Zambia Railways Limited.

H1₂: Funding Adequacy significantly influences the performance of Zambia Railways Limited.

Spearman's rank correlation analysis demonstrated a statistically significant association between Funding Adequacy and ZRL Performance ($\rho = -0.380$, $p < 0.001$) (Table 4.40). The One-Sample

Chi-Square Test likewise indicated that respondents consistently perceived funding adequacy as an important ZRL issue ($p < 0.001$).

However, the regression analysis showed that Funding Adequacy did not make a statistically significant independent contribution to ZRL performance after controlling for the remaining variables ($\beta = 0.003$, $p = 0.977$) (Table 4.41).

Accordingly, the null hypothesis was not rejected. Although respondents perceived funding as important and funding was significantly associated with organisational performance, it did not independently predict performance within the regression model. This finding suggests that funding operates primarily as an enabling factor, whose influence is mediated through maintenance effectiveness, leadership effectiveness, and government policy support rather than directly affecting ZRL performance.

This interpretation is consistent with Sandala (2020), who argued that financial investment alone cannot improve organisational performance without effective governance and resource utilization.

4.6.3 Hypothesis 3: Leadership Effectiveness and ZRL Performance

H0₃: Leadership Effectiveness does not significantly influence the performance of Zambia Railways Limited.

H1₃: Leadership Effectiveness significantly influences the performance of Zambia Railways Limited.

Leadership Effectiveness demonstrated a statistically significant association with ZRL Performance ($\rho = -0.439$, $p < 0.001$) and remained the strongest statistically significant predictor in the regression analysis ($\beta = -0.285$, $p = 0.001$). The One-Sample Chi-Square Test also produced a statistically significant result ($p < 0.001$).

The null hypothesis was therefore rejected, confirming that Leadership Effectiveness significantly influences ZRL's performance.

This finding supports Bass (1985), Kotter (2012), & Chongo et al. (2024), who emphasise effective leadership as a prerequisite for organisational transformation and improved institutional performance.

4.6.4 Hypothesis 4: Competition from Road Transport and ZRL Performance

H0₄: Competition from Road Transport does not significantly influence the performance of Zambia Railways Limited.

H1₄: Competition from Road Transport significantly influences the performance of Zambia Railways Limited.

The correlation analysis revealed a statistically significant association between Competition from Road Transport and ZRL Performance ($\rho = -0.441$, $p < 0.001$). Similarly, regression analysis identified Competition from Road Transport as a statistically significant independent predictor ($\beta = -0.205$, $p = 0.021$). The Chi-Square Test further confirmed statistically significant respondent perceptions ($p < 0.001$).

Therefore, the null hypothesis was rejected, confirming that Competition from Road Transport significantly influences ZRL's performance. The finding is consistent with Mwila (2016), who observed that road transport remains Zambia Railways Limited's principal competitor for freight transportation.

4.6.5 Hypothesis 5: Government Policy and Regulatory Support and ZRL Performance

H0₅: Government Policy and Regulatory Support does not significantly influence the performance of Zambia Railways Limited.

H1₅: Government Policy and Regulatory Support significantly influences the performance of Zambia Railways Limited.

Government Policy and Regulatory Support exhibited the strongest correlation with ZRL performance ($\rho = -0.620$, $p < 0.001$) and remained a statistically significant predictor in the regression analysis ($\beta = -0.211$, $p = 0.024$). The One-Sample Chi-Square Test also yielded a statistically significant result ($p < 0.001$).

Consequently, the null hypothesis was rejected, confirming that Government Policy and Regulatory Support significantly influences the performance of ZRL.

This finding supports Institutional Theory and is consistent with Mwila (2016) & Hope (2016), who argued that consistent policy implementation, regulatory stability, and institutional governance are fundamental to improving the performance of public enterprises.

4.7 Cross-Tabulation

Cross-tabulation, also known as a contingency table analysis, is a statistical technique used to examine the relationship or association between two categorical variables (Creswell & Creswell, 2018). It enables researchers to assess how one variable's distribution varies across the categories of another, thus revealing interaction patterns that may not be immediately apparent through descriptive statistics alone. In social science and organizational research, cross-tabulation is particularly useful for identifying associations between factors influencing institutional performance, attitudes, or behaviors (Kothari, 2014).

In the context of this study, cross-tabulation was conducted to analyze the relationships between the independent variables and the dependent variable. These analyses were designed to complement the correlation and regression findings by providing a categorical-level view of how variations in institutional and operational factors align with perceived performance outcomes.

To improve interpretability and ensure meaningful comparisons, response categories from the original five-point Likert scale were collapsed into three broader categories, forming the “Merged” variables (e.g., Leadership_Merged, FundingAd_Merged, ZRLPerf_Merged). This recoding process reduced redundancy and addressed sparsity in some cells, thereby satisfying the Chi-square test's expected frequency requirements. For instance, responses such as “Very Effective” and “Effective” were combined into a single category, while “Very Ineffective” and “Ineffective” were grouped. This approach enhances the interpretation of the relationships and the stability of statistical results.

Generally, the cross-tabulation analysis presented in this section provides a statistical summary of how internal and external factors interact to shape ZRL's performance. Each cross-tabulation is accompanied by a Chi-square test of independence to determine whether observed associations are statistically significant. Through this approach, the study not only identifies the existence of relationships among variables but also strengthens the evidence base for understanding the

complex interaction of leadership, funding, maintenance, competition, and policy influences on ZRL's organizational effectiveness.

4.7.1 Cross-Tabulation between ZRL Performance and Maintenance Practice

Cross-tabulation Table 4.45 and the Chi-square test in Table 4.46 provide details on the statistically significant relationship between the two variables being cross-tabulated (ZRL performance and Maintenance practices). The data for both variables are present and complete for all 109 cases in the dataset. Furthermore, this indicates that all data points are accounted for and there are no gaps in the dataset for the two variables.

Table 4.45: Cross-Tabulation between ZRL Performance and Maintenance Practices

Maintenance_Merged * ZRLperf_Merged Crosstabulation						
			ZRLperf_Merged			Total
			1	2	3	
Maintenance_Merged	1	Expected Count	2.1	21.6	52.3	76.0
		% within Maintenance_Merged	0.0%	19.7%	80.3%	100.0%
		% within ZRLperf_Merged	0.0%	48.4%	81.3%	69.7%
	2	Expected Count	.7	7.1	17.2	25.0
		% within Maintenance_Merged	8.0%	48.0%	44.0%	100.0%
		% within ZRLperf_Merged	66.7%	38.7%	14.7%	22.9%
	3	Expected Count	.2	2.3	5.5	8.0
		% within Maintenance_Merged	12.5%	50.0%	37.5%	100.0%
		% within ZRLperf_Merged	33.3%	12.9%	4.0%	7.3%
Total	Expected Count		3.0	31.0	75.0	109.0
	% within Maintenance_Merged		2.8%	28.4%	68.8%	100.0%
	% within ZRLperf_Merged		100.0%	100.0%	100.0%	100.0%

Source: Generated by the Author from SPSS, 2024

Codes for ‘how do you rate the performance of ZRL for the last ten years?’ (ZRLpef_Merged)

1= Excellent/Good

2= Fair

3= Poor/Very Poor

Codes for ‘how would you rate the effectiveness of the current maintenance practice at ZRL?’

(Maintenance_Merged)

1= Very Ineffective/Ineffective

2= Moderate

3= Effective/ Very Effective

The results presented in Table 4.45 show the association between maintenance practices and ZRL’s performance over the past ten years. The findings reveal that a majority (80.3%) of respondents who perceived maintenance practices at ZRL as ineffective also rated the company’s overall performance as poor. In contrast, those who rated maintenance as moderate or effective tended to give more positive performance ratings, with 48% and 50% rating performance as fair, and 44% and 37.5% rating it as good, respectively. This pattern demonstrates a clear positive trend, as the effectiveness of maintenance practices improves, so does the perceived performance of the organization.

These results align with the earlier Spearman’s rho correlation findings (Table 4.40), which revealed a moderate negative correlation between maintenance effectiveness and ZRL performance ($r = -.388$, $p < .01$). Similarly, in the regression analysis, maintenance emerged as a significant predictor of performance ($\beta = -0.161$, $p = 0.044$), underscoring the critical role of maintenance in sustaining railway operations.

Finally, the findings emphasize that poor maintenance practices are a key contributor to ZRL’s underperformance. Enhancing the maintenance of rolling stock, tracks, and signalling and telecommunication systems could therefore yield substantial improvements in operational efficiency and reliability, ultimately improving ZRL’s performance outcomes.

Table 4.46: Chi-Square Test - ZRL Performance and Maintenance Practices

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.875 ^a	4	.001
Likelihood Ratio	18.720	4	.001
Linear-by-Linear Association	16.923	1	.000
N of Valid Cases	109		
a. 4 cells (44.4%) have expected count less than 5. The minimum expected count is .22.			

Source: SPSS Output Generated by the Author, 2024

The Chi-Square test results in Table 4.46 show a statistically significant relationship between maintenance practices and ZRL performance. The p-value of 0.001, being well below the 0.05 threshold, confirms that variations in maintenance effectiveness are significantly associated with differences in perceived organizational performance. The Linear-by-Linear Association ($p = .000$) further indicates a strong monotonic trend, suggesting that as maintenance effectiveness improves, performance ratings also increase.

4.7.2 Cross-Tabulation between ZRL Performance and Leadership Effectiveness

Table 4.47 below presents the cross-tabulation between ZRL's performance over the past ten years and respondents' perceptions of leadership effectiveness at ZRL in terms of addressing organizational challenges, strategic decision-making and overall management. The analysis aims to determine how variations in leadership quality relate to perceived organizational performance outcomes.

Table 4.47: Cross-Tabulation between ZRL Performance and Leadership Effectiveness

Leadership_Merged * ZRLperf_Merged Crosstabulation						
			ZRLperf_Merged			Total
			1	2	3	
Leadership_Merged	1	Expected Count	1.4	14.5	35.1	51.0
		% within Leadership_Merged	0.0%	13.7%	86.3%	100.0%
		% within ZRLperf_Merged	0.0%	22.6%	58.7%	46.8%
	2	Expected Count	1.0	10.8	26.1	38.0
		% within Leadership_Merged	7.9%	21.1%	71.1%	100.0%
		% within ZRLperf_Merged	100.0%	25.8%	36.0%	34.9%
	3	Expected Count	.6	5.7	13.8	20.0
		% within Leadership_Merged	0.0%	80.0%	20.0%	100.0%
		% within ZRLperf_Merged	0.0%	51.6%	5.3%	18.3%
Total		Expected Count	3.0	31.0	75.0	109.0
		% within Leadership_Merged	2.8%	28.4%	68.8%	100.0%
		% within ZRLperf_Merged	100.0%	100.0%	100.0%	100.0%

Source: Generated by the Author from SPSS, 2024

Code for 'how would you rate the effectiveness of the current leadership at ZRL in terms of addressing organization challenges, strategic decision-making and overall management?'

(Leadership_Merged)

1= Very Ineffective/Ineffective

2= Neutral

3= Effective/very Effective

The cross-tabulation results in Table 4.47 above reveal a clear association between leadership effectiveness and ZRL performance. A majority of respondents (86%) who rated leadership as ineffective (coded 1) also perceived ZRL's performance as poor (category 3). Similarly, 71% of those who viewed leadership as moderately effective (2) also rated performance as poor, reinforcing a pattern where lower leadership ratings correspond with weaker performance perceptions. In contrast, respondents who perceived leadership as effective (3) overwhelmingly rated ZRL performance as fair (80%), suggesting that improved leadership practices correlate with better institutional outcomes.

Generally, the cross-tabulation indicates that enhanced leadership effectiveness is strongly linked to improved perceptions of performance, consistent with the earlier Spearman's rho correlation results that identified a moderate negative ($r = -.439$, $p < .01$) relationship between leadership quality and ZRL performance.

Table 4.48: Chi-Square Test – Leadership Practices and ZRL Performance

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.125 ^a	4	.000
Likelihood Ratio	36.162	4	.000
Linear-by-Linear Association	21.746	1	.000
N of Valid Cases	109		
a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is .55.			

Source: SPSS Output Generated by the Author, 2024

The Chi-Square test results in Table 4.48 above indicate a statistically significant association between leadership effectiveness and performance. The strong Linear-by-Linear Association ($p = .000$) further confirms a positive, monotonic trend, suggesting that as leadership effectiveness improves, perceptions of ZRL's performance also rise accordingly.

4.7.3 Cross-Tabulation between Funding Adequacy and ZRL Performance

Table 4.49 below presents the cross-tabulation between the perceived adequacy of funding received by ZRL from the shareholder (Government) to support its operations and ZRL

performance over the past ten years. The objective is to determine whether variations in funding levels are associated with differing perceptions of the company's performance outcomes.

Table 4.49 Cross-Tabulation between Funding Adequacy and ZRL Performance

FundingAd_Merged * ZRLperf_Merged Crosstabulation						
			ZRLperf_Merged			Total
			1.00	2.00	3.00	
FundingAd_Merged	1.00	Expected Count	2.7	28.2	68.1	99.0
		% within FundingAd_Merged	1.0%	30.3%	68.7%	100.0%
		% within ZRLperf_Merged	33.3%	96.8%	90.7%	90.8%
	2.00	Expected Count	.2	2.3	5.5	8.0
		% within FundingAd_Merged	12.5%	12.5%	75.0%	100.0%
		% within ZRLperf_Merged	33.3%	3.2%	8.0%	7.3%
	3.00	Expected Count	.1	.6	1.4	2.0
		% within FundingAd_Merged	50.0%	0.0%	50.0%	100.0%
		% within ZRLperf_Merged	33.3%	0.0%	1.3%	1.8%
	Total		Expected Count	3.0	31.0	75.0
% within FundingAd_Merged			2.8%	28.4%	68.8%	100.0%
% within ZRLperf_Merged			100.0%	100.0%	100.0%	100.0%

Source: Generated by the Author from SPSS, 2024

Codes for 'how would you rate the current funding received by ZRL for its operations and maintenance needs from the shareholders and other stakeholders?' (FundingAd_Merged)

1= No Funding/Inadequate

2= Moderate

3= Adequate/ Very adequate

The cross-tabulation results presented in Table 4.49 reveal a strong relationship between funding adequacy and perceived performance. The majority of respondents (69%) who rated funding as

inadequate (category 1.00) also assessed ZRL’s performance as poor (category 3.00). This concentration suggests that funding shortfalls are commonly perceived as a key driver of ZRL’s underperformance. Likewise, among respondents who viewed funding as moderate (2.00), 75% still rated performance as poor, indicating that even moderate financial support is insufficient to yield substantial performance improvements.

Interestingly, the small group of respondents who perceived funding as adequate (3.00) were evenly split between good and poor performance (50% each). Although this proportion is minimal, it implies that while increased funding may improve operational outcomes, its effectiveness also depends on how efficiently such resources are managed and deployed.

Generally, the table demonstrates that inadequate or inconsistent funding is closely linked with lower performance ratings, reaffirming earlier correlation findings that identified funding constraints as a contributor to ZRL’s continued operational inefficiency.

Table 4.50: Chi-Square Test – Funding Adequacy and ZRL Performance

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.627 ^a	4	.000
Likelihood Ratio	9.140	4	.058
Linear-by-Linear Association	2.070	1	.150
N of Valid Cases	109		
a. 6 cells (66.7%) have expected count less than 5. The minimum expected count is .06.			

Source: Generated by the Author from SPSS, 2024

The Chi-Square test results in Table 4.50 above indicate a statistically significant association between funding adequacy and ZRL’s performance. This implies that differences in perceived funding levels correspond meaningfully with variations in performance assessments. The non-significant Linear-by-Linear Association ($p = .150$) suggests that while the relationship is strong overall, it is not strictly linear, indicating that improvements in funding do not automatically translate into proportionate performance gains.

These findings underscore the conclusion that funding adequacy is a critical yet complex determinant of performance. While essential, it must be coupled with accountability, prioritization, and strategic reinvestment to realize measurable operational improvements.

4.7.4 Cross-Tabulation between Competition from the road Transport and ZRL Performance

Table 4.51 below presents the cross-tabulation between respondents' perceptions of the extent competition from road transport has affected ZRL's performance over the past ten years. The purpose is to establish whether increased competition from the road sector corresponds with ZRL's underperformance

Table 4.51: Cross-Tabulation between Competition from the road transport and ZRL Performance

Competition_Merged * ZRLperf_Merged Crosstabulation						
			ZRLperf_Merged			Total
			1	2	3	
Competition_Merged	1	Expected Count	2.7	28.2	68.1	99.0
		% within Competition_Merged	2.0%	25.3%	72.7%	100.0%
		% within ZRLperf_Merged	66.7%	80.6%	96.0%	90.8%
	2	Expected Count	.1	1.4	3.4	5.0
		% within Competition_Merged	0.0%	40.0%	60.0%	100.0%
		% within ZRLperf_Merged	0.0%	6.5%	4.0%	4.6%
	3	Expected Count	.1	1.4	3.4	5.0
		% within Competition_Merged	20.0%	80.0%	0.0%	100.0%
		% within ZRLperf_Merged	33.3%	12.9%	0.0%	4.6%
Total	Expected Count		3.0	31.0	75.0	109.0
	% within Competition_Merged		2.8%	28.4%	68.8%	100.0%
	% within ZRLperf_Merged		100.0%	100.0%	100.0%	100.0%

Source: Generated by the Author from SPSS, 2024

Codes for ‘to what extent has competition from road transport affected ZRL’s revenue?’ (Competition_Merged).

1= Very negatively/Negatively

2= No Impact

3= Positively/Very positively

The results in Table 4.51 above indicate a strong perceived relationship between competition from road transport and ZRL’s performance outcomes. A large proportion of respondents (73%) who rated road competition as very high (category 1) also viewed ZRL’s performance as poor (category 3). This finding underscores a widespread belief that increased competition from road transport has severely undermined ZRL’s market share and revenue performance (Mwila, 2016; Bouraima et al., 2023).

Additionally, 25% of respondents in the same category rated ZRL’s performance as fair, suggesting that while some stakeholders recognize partial resilience, the overwhelming perception remains that road transport poses a dominant competitive threat. Equally, respondents who rated road competition as moderate (category 2) or low (category 3) tended to associate it with relatively better performance outcomes. For instance, 20% of those who viewed competition as low rated ZRL’s performance as good, compared to only 2% under very high competition.

Over and above, the table demonstrates that as perceived competition from road transport intensifies, performance ratings of ZRL decline significantly. This pattern highlights the detrimental influence of modal competition on rail transport operations, confirming that road transport has eroded ZRL’s freight volumes and profitability, a trend consistent with regional findings by Bouraima et al. (2023) and Blumenfeld et al. (2019).

Table 4.52: Chi-Square Test – Competition from road transport and ZRL Performance

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.715 ^a	4	.005
Likelihood Ratio	13.580	4	.009
Linear-by-Linear Association	12.276	1	.000
N of Valid Cases	109		
a. 7 cells (77.8%) have expected count less than 5. The minimum expected count is .14.			

Source: Generated by the Author from SPSS, 2024

The Chi-Square results in Table 4.52 above indicate a statistically significant association between perceived road transport competition and ZRL performance. This suggests that variations in ZRL's performance ratings are not random but systematically linked to the extent of competition from road transport. The Linear-by-Linear Association ($p = .000$) further reveals a strong monotonic relationship, implying that as road competition intensifies, ZRL's performance consistently declines.

These results validate earlier correlation findings, reinforcing the conclusion that intermodal competition, particularly from heavily subsidized and well-maintained road networks, remains one of the principal external pressures undermining ZRL's operational efficiency and financial sustainability.

4.7.5 Cross-Tabulation between Government Policy Support and ZRL Performance

The cross-tabulation presented in Table 4.53 examines the association between respondents' perceptions of government policy and regulatory support and their assessment of ZRL's overall performance. The analysis provides insight into how stakeholders link the effectiveness of government policies to the organization's operational outcomes.

Table 4.53: Cross-Tabulation between Government policy Support and ZRL Performance

GovernmentPolicy_Merged * ZRLperf_Merged Crosstabulation						
			ZRLperf_Merged			Total
			1	2	3	
GovernmentPolicy_Merged	1	Expected Count	1.8	18.5	44.7	65.0
		% within GovernmentPolicy_Merged	1.5%	13.8%	84.6%	100.0%
		% within ZRLperf_Merged	33.3%	29.0%	73.3%	59.6%
	2	Expected Count	.8	8.5	20.6	30.0
		% within GovernmentPolicy_Merged	3.3%	46.7%	50.0%	100.0%
		% within ZRLperf_Merged	33.3%	45.2%	20.0%	27.5%
	3	Expected Count	.4	4.0	9.6	14.0
		% within GovernmentPolicy_Merged	7.1%	57.1%	35.7%	100.0%
		% within ZRLperf_Merged	33.3%	25.8%	6.7%	12.8%
Total	Expected Count		3.0	31.0	75.0	109.0
	% within GovernmentPolicy_Merged		2.8%	28.4%	68.8%	100.0%
	% within ZRLperf_Merged		100.0%	100.0%	100.0%	100.0%

Source: SPSS Output, 2024

Codes for ‘how supportive are the current government policies and regulatory frameworks in fostering the development and operational efficiency of ZRL without interfering in decision-making?’ (GovernmentPolicy_Merged).

1= Very Unsupportive/Unsupportive

2= Moderately

3= Supportive/Very Supportive

The results reveal a clear pattern where perceptions of weak or negative government policy align with lower performance ratings for ZRL. Among respondents who rated government policies as “Unsupportive” (1), a large majority (85%) also rated ZRL’s performance as poor, while only 2% rated performance as good. Similarly, respondents who perceived policy as “Moderately Supportive” (2) showed a mixed but improving trend, with 47% rating performance as fair and 50% rating it as poor.

Conversely, those who viewed government policy as “Supportive” (3) showed relatively more favorable performance ratings, with 57% rating ZRL’s performance as fair and 36% as poor. Although this group forms a smaller proportion (13% of the total), it demonstrates that positive perceptions of policy are associated with higher performance assessments.

These findings suggest that respondents generally perceive policy inefficiency and regulatory weakness as closely tied to ZRL’s poor performance, while more supportive policies are linked with moderate performance outcomes. In other words, when government policy is perceived as enabling, respondents tend to view ZRL as performing better; when it is viewed as restrictive or inconsistent, performance ratings decline.

This reinforces the broader conclusion that government policy and institutional support play a pivotal role in shaping the operational environment and performance outcomes of state-owned enterprises such as ZRL. The trend aligns with earlier findings by Chongo et al. (2024) and Kapanda (2017), who noted that ineffective or inconsistent policy frameworks constrain the financial and managerial autonomy of parastatal organizations, ultimately limiting their ability to achieve operational efficiency and growth.

Table 4.54: Chi-Square Test – Government policies and regulatory frameworks and ZRL Performance

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.924 ^a	4	.001
Likelihood Ratio	19.813	4	.001
Linear-by-Linear Association	17.121	1	.000
N of Valid Cases	109		
a. 4 cells (44.4%) have expected count less than 5. The minimum expected count is .39.			

Source: SPSS Output, 2024

The Chi-Square test results, as shown in Table 4.54 above, indicate that the association is significant. Since the p-value is well below the conventional significance level of 0.05, this confirms that perceptions of government policy support are not independent of perceptions of ZRL’s performance.

The Likelihood Ratio further supports this relationship, reinforcing that variations in policy support levels correspond with variations in performance ratings. Additionally, the Linear-by-Linear Association statistic reveals a significant positive linear trend, as government policy and regulatory support improve, perceptions of ZRL’s performance tend to improve correspondingly.

This statistical evidence complements the descriptive results from the cross-tabulation table, confirming that government policies and regulatory frameworks exert a significant influence on ZRL’s operational outcomes. In line with earlier studies by Chongo et al. (2024) and Kapanda (2017), this finding underscores the importance of coherent, stable, and supportive policy environments in enhancing the performance and sustainability of state-owned enterprises.

4.7.6 Cross-Tabulation between Government Policy Support and Current Funding Adequacy

The cross-tabulation in Table 4.55 below examines the relationship between respondents’ perceptions of government policies and the adequacy of funding received by ZRL. The results reveal a clear pattern, where the negative perceptions of government policies are strongly associated with inadequate funding levels.

Table 4.55: Cross-Tabulation between Government policies and regulatory frameworks and Current Funding Adequacy.

GovernmentPolicy_Merged * FundingAd_Merged Crosstabulation						
			FundingAd_Merged			Total
			1.00	2.00	3.00	
GovernmentPolicy_Merged	1	Expected Count	59.0	4.8	1.2	65.0
		% within GovernmentPolicy_Merged	93.8%	6.2%	0.0%	100.0%
		% within FundingAd_Merged	61.6%	50.0%	0.0%	59.6%
	2	Expected Count	27.2	2.2	.6	30.0
		% within GovernmentPolicy_Merged	86.7%	13.3%	0.0%	100.0%
		% within FundingAd_Merged	26.3%	50.0%	0.0%	27.5%
	3	Expected Count	12.7	1.0	.3	14.0
		% within GovernmentPolicy_Merged	85.7%	0.0%	14.3%	100.0%
		% within FundingAd_Merged	12.1%	0.0%	100.0%	12.8%
Total		Expected Count	99.0	8.0	2.0	109.0
		% within GovernmentPolicy_Merged	90.8%	7.3%	1.8%	100.0%
		% within FundingAd_Merged	100.0%	100.0%	100.0%	100.0%

Source: SPSS Output, 2024

As can be seen from the results in Table 4.55 above, a large majority (94%) of respondents who viewed government policies as “very negative” also rated ZRL’s funding as “inadequate.” Similarly, 87% of those who described government policies as “negative” reported inadequate funding. In contrast, respondents who rated government policies as “positive” were more likely to associate them with “adequate” or “very adequate” funding, though these cases were comparatively few (14%).

This distribution suggests that policy effectiveness and funding adequacy are closely linked in the perceptions of stakeholders, when government policies are perceived as weak or misaligned, ZRL’s operational financing is also viewed as insufficient. This aligns with qualitative feedback that highlighted delays in budget disbursement and limited capital investment as policy-driven constraints on ZRL’s performance (ZRL Report, 2023).

Table 4.56: Chi-Square Test – Government policies and regulatory frameworks and Funding Adequacy

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.355 ^a	4	.003
Likelihood Ratio	11.739	4	.019
Linear-by-Linear Association	4.207	1	.040
N of Valid Cases	109		
a. 6 cells (66.7%) have expected count less than 5. The minimum expected count is .26.			

Source: SPSS Output Generated by the Author, 2024

The Pearson Chi-Square value, as shown in Table 4.56 above, indicates a statistically significant association between government policies and ZRL’s funding adequacy at the 0.01 level. This suggests that as perceptions of government policy improve, funding adequacy tends to increase correspondingly. The significant Linear-by-Linear Association also points to a directional trend, implying that the more favourable the policy environment, the higher the perceived adequacy of funding.

These findings reinforce earlier conclusions that ZRL’s performance challenges are partially policy-driven, reflecting the systemic influence of regulatory and fiscal frameworks on parastatal funding outcomes. This is consistent with the arguments advanced by Chongo et al. (2024) and Kapanda (2017), who noted that misaligned government policies and inconsistent financial support mechanisms undermine the sustainability of state-owned enterprises.

4.7.7 Further Cross-Tabulation Analysis

To deepen understanding of how key organizational factors interact and influence the overall performance of ZRL, cross-tabulation analyses were conducted between selected variables. The detailed tables are presented in the Appendix section, while this section provides a concise interpretation of the observed associations.

Cross-tabulation was used to identify patterns of dependence among categorical variables such as leadership effectiveness, funding adequacy, maintenance practices, and government policy

support. The Chi-square test of independence was further applied to assess the statistical significance of these associations.

4.7.8 Cross-Tabulation between Leadership Effectiveness and Funding Adequacy

As shown in Appendix B & C, respectively, a strong association exists between leadership effectiveness and the adequacy of funding received by ZRL. The results indicate that the majority of respondents who perceived leadership at ZRL as ineffective also rated funding as inadequate. The Chi-square test revealed a statistically significant relationship ($\chi^2 = 35.341$, $df = 12$, $p < 0.001$), confirming that leadership performance is closely tied to how financial resources are mobilized and managed. This suggests that weak leadership capacity in financial planning and decision-making may have undermined the ability of the organization to secure and efficiently utilise funds, thereby constraining operational and maintenance activities.

4.7.9 Cross-Tabulation between Maintenance Practices and Funding Adequacy

According to Appendix D & E, a significant relationship was also found between maintenance practices and funding adequacy ($\chi^2 = 26.744$, $df = 12$, $p = 0.008$). Respondents who rated maintenance as ineffective were more likely to report that ZRL's funding was inadequate. This finding highlights a reinforcing loop where insufficient funding limits effective maintenance, while poor maintenance practices lead to further operational inefficiencies and reduced financial performance. The result underscores the importance of timely and adequate funding allocations to sustain infrastructure reliability, improve rolling stock availability, and enhance service delivery.

4.7.10 Cross-Tabulation between Leadership Effectiveness and Government Policy Support

The results presented in Appendix F & G show a statistically significant association between leadership effectiveness and government policy support ($\chi^2 = 41.982$, $df = 16$, $p < 0.001$). Respondents who rated ZRL's leadership as ineffective also tended to perceive government policies as unsupportive.

This suggests that policy inconsistency and excessive political interference may have weakened managerial autonomy and strategic decision-making within the organization. The finding aligns with literature suggesting that the performance of state-owned enterprises is heavily influenced by

the extent of governmental control and the predictability of policy frameworks (Chongo et al., 2024).

4.7.11 General Observation

Generally, the cross-tabulation analyses reveal strong interdependencies among leadership effectiveness, funding adequacy, maintenance practices, and government policy support. Weak leadership and inadequate funding appear mutually reinforcing, leading to limited maintenance efficiency and overall poor performance at ZRL. Moreover, inconsistent or restrictive government policy frameworks may further exacerbate these challenges by constraining managerial discretion and resource allocation. The significant Chi-square results across most relationships affirm that enhancing leadership capacity, ensuring consistent policy support, and improving funding mechanisms could collectively strengthen ZRL's operational and financial performance.

4.8 Qualitative analysis and results (Findings from interviews)

This section presents an in-depth analysis of qualitative data gathered through structured interviews conducted with selected respondents, guided by a discussion protocol aligned with the study objectives. The purpose was to complement the quantitative findings and provide deeper insights into the underlying factors affecting the performance of ZRL.

To analyse the data, thematic analysis was employed. This involved identifying, organizing, and interpreting patterns or themes that emerged from the interview transcripts. The themes were drawn based on both the literature review and gaps observed in the quantitative phase, particularly where respondents had shown limited confidence or clarity in addressing certain survey questions. As emphasized by Mweemba (2022), qualitative data analysis often begins with data reduction, a process of condensing large volumes of raw information into meaningful and manageable categories through selection, simplification, and abstraction. This approach was instrumental in enabling the researcher to systematically filter and reorganize the data for meaningful interpretation.

The emerging themes were aligned with key variables identified in the research framework, namely: Maintenance Effectiveness, Funding Adequacy for Infrastructure and Operations, Leadership Effectiveness, Competition from Road Transport, and Government Policy and

Regulatory Support. These themes were critical in exploring how internal operational inefficiencies and external environmental pressures interact to influence the overall performance of ZRL.

Out of a targeted sample of 26 interviewees, the researcher successfully conducted 14 interviews and one focus group comprising five members, ultimately representing a 73% response rate. It is worth noting again that the researcher reached the saturation point at 15 interview session. The richness of the data obtained offered valuable qualitative depth to reinforce and expand upon the statistical findings, thereby enhancing the robustness of the mixed-methods approach employed in this study.

4.8.1 Qualitative Data Analysis of ZRL Employees' Interview

This section presents findings from interviews conducted with eleven ZRL employees (R1-R11). The thematic analysis followed a hybrid approach, combining both predetermined themes drawn from the research objectives and emergent themes derived inductively from participant narratives. Respondents were drawn from multiple departments, including operations, technical services, finance, and marketing, providing diverse insights into both the operational and managerial dimensions of ZRL. The findings are organized around the five main objectives of the study.

4.8.1.1 Objective 1 - Maintenance Practices

Maintenance was consistently identified by employees as one of the most critical factors influencing ZRL's operational performance. Table 4.57 below summarizes the key themes and subthemes that emerged from the employee interviews.

Table 4.57: Themes Emerging from Interviews on Maintenance Effectiveness (n = 11 ZRL Staff)

Theme Type	Major Theme	Representative Codes/Subthemes	Participants Mentioning (n =11)
Predetermined	Poor Preventive Maintenance Culture	Reactive maintenance, preventive schedule not followed, breakdown maintenance	9
Predetermined	Inadequate Resources and Spare Parts.	Spare parts shortages, obsolete equipment, delayed procurement.	10
Predetermined	Delayed Maintenance Cycles	Departments are underfunded, priority on emergency repairs over preventive work	8
Predetermined	Safety and Reliability Concerns	Train breakdowns, derailments, and reduced speed limits due to poor track condition.	6
Emergent	Weak Managerial Oversight	Poor supervision, delayed decisions, weak accountability.	6
Emergent	Skills Retention Challenges	Skilled technicians and Engineers leaving, inadequate refresher training.	5
Emergent	Suggested Reforms	SOP enforcement, modern diagnostic systems, preventive maintenance	11

Source: Field interview data, 2024

The themes presented in Table 4.57 were generated through the thematic analysis procedure described in Section 3.10. Interview transcripts were systematically coded and grouped into categories before being refined into the major themes presented above. The number of participants mentioning each theme is presented to indicate the prominence of the issues raised and should not be interpreted as a statistical measure of importance.

The interviews revealed a strong consensus among employees that maintenance practices at ZRL are severely inadequate and constitute one of the principal contributors to the organisation's declining performance. Participants consistently described the maintenance culture as predominantly reactive rather than preventive, with maintenance activities being undertaken only after equipment failure had occurred.

R3 described the situation as: *"Firefighting maintenance repairs are often rushed after breakdowns, while scheduled preventive maintenance plans exist only on paper."*

Similarly, Participants R6 and R9 indicated that persistent shortages of spare parts and modern diagnostic equipment frequently result in train delays, prolonged locomotive downtime, and service cancellations.

Respondents from the Technical Services Department (R10 and R11) explained that although maintenance schedules exist, inadequate funding and delays in spare-part procurement make it difficult to adhere to routine maintenance intervals. As R10 explained: *"Even if we plan maintenance cycles, the resources to execute them are not available. We have locomotives that have been out of service for months waiting for spare parts."*

Another prominent theme concerned safety and operational reliability. Participants (R1, R5, R7, and R8) reported that deteriorating track infrastructure and ageing locomotives have significantly reduced service reliability and increased operational risk. R8 remarked: *"We operate under temporary speed restrictions on several sections due to track wear, which increases delays and customer complaints."*

Similarly, R4 and R6 indicated that derailments and locomotive failures have become increasingly common, resulting in cargo losses and a decline in customer confidence. The interviews further identified weak managerial oversight as an emerging factor contributing to ineffective maintenance. R2 observed that: *"There is little accountability for repeated maintenance failures."*

Likewise, R7 indicated that technical recommendations from operational staff were frequently overlooked by senior management, while R9 described this situation as creating: *"A culture of resignation and low staff morale."*

Despite these challenges, respondents proposed several practical interventions aimed at improving maintenance effectiveness. R11 recommended implementing routine maintenance after every trip, while R3 and R10 advocated for the revival of structured preventive maintenance programs supported by modern diagnostic technologies. Furthermore, R5 recommended continuous staff capacity building and benchmarking maintenance practices against regional railway operators such as Transnet Freight Rail and Nakala Logistics of Mozambique.

4.8.1.1.1 Integrated Discussion

The qualitative findings strongly complement the quantitative results by providing practical explanations for the statistical relationships observed earlier. As presented in the regression analysis (Table 4.41), Maintenance Effectiveness was found to be a statistically significant predictor of Zambia Railways Limited's performance ($p = 0.044$), indicating that maintenance practices are significantly associated with organisational performance.

Similarly, the Spearman's rank correlation analysis (Table 4.40) demonstrated significant positive associations between maintenance effectiveness and leadership effectiveness ($\rho = 0.434$, $p < 0.01$) as well as funding adequacy ($\rho = 0.463$, $p < 0.05$), suggesting that effective maintenance depends not only on technical capability but also on sound leadership and adequate resource allocation.

These findings are further supported by the descriptive statistics (Table 4.14), where 69.7% of respondents perceived maintenance practices to be either ineffective or very ineffective, reflecting widespread dissatisfaction across the organisation.

The interview findings explain these statistical relationships by revealing that ineffective maintenance is driven by inadequate funding, shortages of spare parts, weak managerial oversight, ageing infrastructure, and insufficient implementation of preventive maintenance programmes. Together, the quantitative and qualitative findings indicate that improving maintenance effectiveness requires an integrated approach involving strengthened management commitment, adequate resource allocation, enhanced preventive maintenance planning, and continuous investment in technical capacity.

These findings support the principles of Total Productive Maintenance (TPM) discussed in Chapter Two, which emphasise proactive maintenance as a means of improving equipment reliability and operational performance (Nakajima, 1988). They are also consistent with the findings of Buurman et al. (2023), who demonstrated that preventive maintenance significantly reduces railway failures and improves operational reliability. Similarly, the Industrial Development Corporation (IDC) Chief Executive Officer (2025) emphasised the urgent need for fleet modernisation, track rehabilitation, and signalling upgrades as critical interventions for restoring the competitiveness of Zambia's railway sector..

4.8.1.2 Objective 2 - Funding Adequacy

This section examines employees' perceptions of funding adequacy and its influence on the operational performance of Zambia Railways Limited (ZRL). The interviews explored the adequacy, predictability, allocation, and utilisation of financial resources, as well as respondents' views regarding sustainable financing mechanisms capable of supporting the long-term viability of the organisation.

Table 4.58: Themes Emerging from Interviews on Funding Adequacy (n = 11 ZRL Employees)

Theme Type	Major Theme	Representative code/Subthemes	Participants Mentioning(n =11)
Predetermined	Prolonged Underfunding	Insufficient operational budgets, inadequate capital investment, inability to sustain maintenance.	10
Predetermined	Inconsistent Government Support	Delays government disbursements, unpredictable funding cycles	9
Predetermined	Poor internal Resource Allocation	Limited investment rolling stock, infrastructure, and safety systems.	8
Predetermined	Overdependence on Government	Heavy reliance on government bailouts, limited commercial revenue streams	7
Emergent	Deferred Maintenance and Project Delays	Incomplete rehabilitation projects, delayed infrastructure renewal	6
Emergent	Weak Financial Governance	Poor accountability, lack of transparency, politically influenced expenditure	5
Emergent	Proposed Financial Reforms	Railway Infrastructure Fund, Public-Private Partnerships, commercialization, improved budgeting	11

Source: Field interview data, 2024

The themes presented in Table 4.58 were generated using the thematic analysis procedure described in Section 3.10. Interview transcripts were systematically coded and grouped into categories before being refined into the major themes presented above.

The overwhelming view among employees is that inadequate and inconsistent funding is a persistent and fundamental barrier to ZRL's effective performance. Respondents revealed that the organization's operations most times rely on government subsidies, which are often delayed, unpredictable, or insufficient to meet even routine operational needs.

R3 observed: *"Sometimes funds come mid-year when most programs are already behind schedule, so we end up firefighting instead of planning. By the time funds are released, costs have escalated, and the urgency has multiplied."* Several respondents (R4, R6, and R8) emphasized that funding inadequacies are not just about the total amount allocated but how the little that is received is managed. R4 remarked: *"Most of the funds go to administrative costs, leaving very little for technical operations."*

Similarly, R7 explained that shortages of signaling components and lubricants, and other essential maintenance materials frequently arise because of poor budgeting priorities and internal inefficiencies.

Employees also expressed frustration over deferred rehabilitation projects, such as track renewal works between Kabwe and Kapiri, which stalled due to funding constraints, and also the rehabilitation of the track from Chingola to Livingstone that was discontinued after a successful feasibility study by the contractor. R2 explained: *"We have unfinished projects across the network, the story is always the same: funding stopped halfway."*

Participants also identified overdependence on government support as a major structural weakness. Several respondents (R1, R5, R9, and R10) argued that ZRL lacks sustainable commercial revenue streams capable of supporting long-term operations independently. As R5 noted: *"We can't depend on the shareholder for everything. We need partnerships, private sector participation, and stronger commercial agreements to generate our own revenue."*

The interviews further highlighted concerns regarding financial accountability. R8 observed: *"Sometimes funds come but there is no transparency in how they are used. The results don't reflect the resources received."*

Likewise, R11 indicated that political influence occasionally affects expenditure priorities, resulting in investments that favour visibility rather than operational impact.

Despite these challenges, participants proposed several practical reforms. The most frequently suggested intervention was the establishment of a dedicated Railway Infrastructure Fund to provide predictable financing for maintenance and infrastructure renewal. Other recommendations included expanding Public-Private Partnerships (PPPs), developing joint ventures with mining and logistics companies, commercialising railway assets, and strengthening internal budgeting and financial accountability systems.

4.8.1.2.1 Integrated Discussion

The qualitative insights from ZRL employees strongly reinforce the quantitative findings presented earlier. Although regression results (Table 4.41) showed that Funding Adequacy did not have a statistically significant independent effect on ZRL performance ($\beta = 0.003$, $p = 0.977$), this does not imply that funding is unimportant. Rather, the qualitative evidence demonstrates that funding inadequacy indirectly affects performance through its influence on maintenance, leadership effectiveness, infrastructure rehabilitation, and the organization's ability to respond to competition pressures.

The correlation results (Table 4.40) also support this interpretation. Funding Adequacy was positively and significantly associated with government policy support ($\rho = 0.498$, $p < 0.001$) and competition from road transport ($\rho = 0.460$, $p < 0.001$), suggesting that financial constraints are closely linked to broader institutional and competitive challenges facing ZRL.

Descriptive statistics (Table 4.21) further revealed that 95% of respondents rated funding as inadequate, while 83% believed that insufficient funding negatively affects maintenance and infrastructure upgrading. These findings are consistent with employee perceptions that ZRL's performance challenges are rooted in chronic under-capitalization and ineffective resource utilization.

This combined evidence suggests that funding challenges in ZRL are structural rather than temporary. Without a predictable and sustainable financing framework, the organisation is likely to remain constrained by operational inefficiencies and infrastructure deterioration. This finding is consistent with Sandala (2020), who observed that despite the Government recapitalization of

Zambia Railways in 2013, performance improvements remained limited due to weak accountability and project implementation challenges.

Similarly, the Auditor General's Reports (2021-2022) identified numerous safety incidents associated with delayed maintenance and inadequate investment, while the Eighth National Development Plan (8NDP, 2022) emphasized the need for substantial investment in transport infrastructure. Furthermore, the Minister of Transport and Logistics has repeatedly emphasized that Zambia Railways requires significant capital investment to achieve full modernization.

In summary, both quantitative and qualitative findings converge on the conclusion that funding adequacy, while not an independent predictor of performance in the regression model, remains a critical enabling factor that influences maintenance effectiveness, infrastructure quality, leadership capacity, and long-term organisational sustainability. Therefore, sustainable financing reforms and improved governance are essential for the successful revitalization of ZRL.

4.8.1.3 Objective 3 - Leadership Effectiveness

This section examines employees' perceptions of leadership effectiveness and its influence on the performance of ZRL. The interviews explored strategic leadership, communication, accountability, managerial autonomy, and decision-making processes. Particular attention was given to how leadership practices influence organisational performance, employee motivation, and the implementation of operational and strategic initiatives.

Table 4.59: Themes Emerging from Interviews on Leadership Effectiveness (n = 11 ZRL Employees)

Theme Type	Major Theme	Representative code/Subthemes	Participants Mentioning (n =11)
Predetermined	Weak Strategic Leadership	Lack of long-term vision, reactive decision-making, absence of strategic planning	9
Predetermined	Poor Communication and Coordination	Delayed feedback, unclear reporting lines, weak interdepartmental coordination	8
Predetermined	Political Interference	Leadership appointments influenced by politics rather than merit.	8
Predetermined	Limited Accountability	Weak performance monitoring, poor follow-up on tasks.	7
Emergent	Low Staff morale	Demotivation, favouritism, slow management response.	5
Emergent	Need for Leadership Development	Management training, empowerment, innovation, and succession planning	7
Emergent	Detached Executive Management	Senior leadership rarely interacts with operational teams	5

Source: Field interview data, 2024

The themes presented in Table 4.59 were generated using the thematic analysis procedure described in Section 3.10. Interview transcripts were systematically coded and grouped into categories before being refined into the major themes presented above.

Across all employee groups, leadership at ZRL was widely perceived as ineffective and characterised by reactive decision-making, weak strategic planning, limited engagement with operational staff, and ineffective communication. Participants consistently indicated that leadership challenges extend beyond individual managers and reflect broader governance and institutional weaknesses.

The most prominent theme concerned weak strategic leadership. Participant R3 observed: *"Most of our decisions are reactive. We wait until something breaks before we act instead of planning."* Similarly, Participant R6 explained: *"There is no consistent plan. Every new leader seems to start from scratch."* These responses suggest that leadership instability has weakened institutional continuity and reduced the organisation's ability to pursue long-term strategic objectives.

Senior participants (R9 and R10) acknowledged these challenges from a managerial perspective. Participant R9 stated: *"Strategic decisions often take too long because approvals have to pass through too many offices, including the shareholders' representatives."* Likewise, Participant R10 remarked: *"We spend more time responding to crises than managing the system. Leadership needs to empower middle managers to make operational decisions."*

Another recurring theme was poor communication and coordination. Participants (R1, R4, R7, and R8) indicated that reporting structures were often unclear and that excessive centralisation of decision-making resulted in duplication of effort and delayed operational responses. As Participant R8 explained: *"Sometimes two departments work on the same problem without coordination. That's how we lose time and money."*

Participants also highlighted political interference as a significant impediment to effective leadership. Participant R5 commented that *"Most top appointments are political. That makes it difficult for professionals to implement decisions objectively."* Similarly, Participant R2 observed: *"We are managed more like a government department than a commercial enterprise."* These responses indicate that respondents perceived limited managerial autonomy as a significant barrier to ZRL effectiveness.

The interviews further revealed concerns regarding staff morale and leadership engagement. Participants R4, R6, and R11 indicated that employees often felt unrecognised and insufficiently supported. According to Participant R6: *"People feel invisible here; even when we achieve something, it goes unnoticed."*

Despite these concerns, respondents proposed several practical reforms. Participants advocated strengthening leadership capacity through merit-based appointments, management development programmes, performance-based evaluation systems, improved communication, and greater

delegation of operational decision-making. As R9 concluded: "*ZRL needs to return to a performance culture where decisions are data-driven rather than politically driven.*"

4.8.1.3.1 Integrated Discussion

The qualitative findings strongly complement the quantitative evidence by demonstrating how leadership practices influence virtually every aspect of organisational performance at Zambia Railways Limited. The multiple regression analysis (Table 4.41) identified Leadership Effectiveness as the strongest statistically significant predictor of organisational performance ($\beta = -0.259$, $p = 0.001$).

The negative regression coefficient should not be interpreted as suggesting that effective leadership reduces performance. Rather, it reflects the coding direction of the leadership variable, whereby higher scores represented increasing perceptions of leadership deficiencies. Consequently, the negative coefficient indicates that poorer leadership is associated with lower ZRL performance.

The importance of leadership is further supported by the ANOVA results, which revealed statistically significant differences in organisational performance across leadership categories, and by the Chi-square analysis (Table 4.48), which demonstrated significant variation in respondents' perceptions of leadership effectiveness ($p < 0.001$).

Similarly, the Spearman's rank correlation analysis (Table 4.40) revealed significant positive associations between Leadership Effectiveness and Maintenance Effectiveness ($\rho = 0.434$, $p < 0.001$), Funding Adequacy ($\rho = 0.452$, $p < 0.001$), Government Policy and Regulatory Support ($\rho = 0.421$, $p < 0.001$), and Competition from Road Transport ($\rho = 0.359$, $p < 0.001$). These findings suggest that leadership is closely associated with the organisation's ability to manage technical, financial, institutional, and competitive challenges.

The descriptive statistics further reinforce this conclusion, with approximately 47% of respondents rating leadership as ineffective, reflecting widespread concerns regarding weak strategic direction, inadequate accountability, poor communication, and slow decision-making. These perceptions closely mirror the interview findings, where participants consistently associated ineffective

leadership with reactive management, political interference, weak coordination, and declining employee morale.

The convergence between the quantitative and qualitative findings indicates that leadership functions as a cross-cutting organisational capability, influencing the effectiveness of maintenance, funding utilisation, policy implementation, and competitive positioning. Rather than operating independently, leadership provides the strategic direction and governance necessary for other organisational resources to contribute meaningfully to improved performance.

These findings support the Transformational Leadership Theory discussed in Chapter Two, which emphasises visionary leadership, employee motivation, communication, and organisational change as prerequisites for improved organisational performance (Bass, 1985). They are also consistent with the principles of Contingency Theory, which argues that leadership effectiveness depends upon adapting managerial behaviour to organisational circumstances (Fiedler, 1964).

Furthermore, the findings corroborate those of Chongo et al. (2024), who identified weak corporate governance and limited managerial autonomy as major constraints affecting the performance of Zambian state-owned enterprises. Similar conclusions were reached by Osborne and Hammoud (2017), who demonstrated that organisations characterised by effective leadership, employee engagement, and strong communication systems consistently achieve superior organisational performance.

Therefore, both quantitative and qualitative evidence converge to demonstrate that leadership effectiveness constitutes one of the most influential determinants of Zambia Railways Limited's performance. Strengthening leadership capacity through merit-based appointments, enhanced managerial autonomy, strategic planning, effective communication, and performance-oriented governance is therefore likely to contribute significantly to the sustainable revitalisation of the organisation.

4.8.1.4 Objective 4 - Competition from Road Transport

This section examines employees' perceptions of how competition from road transport influences the operational performance and market competitiveness of ZRL. The interviews explored the extent of road transport competition, infrastructure disparities, customer preferences, pricing,

government investment priorities, and strategic responses required to improve ZRL’s competitive position. Below is Table 4.60 showing the themes under objective four of the study.

Table 4.60: Themes Emerging from Interviews on Competition from Road Transport (n = 11 ZRL Employees)

Theme Type	Major Theme	Representative Code/Subthemes	Participants Mentioning (n =11)
Predetermined	Strong Market Competition from Road Transport	Road transport dominates freight and passenger traffic, aggressive competition	10
Predetermined	Poor Rail Infrastructure and Delays	Ageing infrastructure, slow train speed, derailments, unreliable schedules	9
Predetermined	Inadequate Government Support for Rail Sector	Unequal investment between road and rail infrastructure	8
Emergent	Customer Preference for Road Transport	Door-to-door service, flexibility, reliability, shorter transit times	7
Emergent	Pricing and Operational Inefficiencies	High operating costs, inconsistent services schedule, poor responsiveness	6
Emergent	Strategic Neglect of Rail Market Share	weak marketing, limited innovation, slow modernization.	5

Source: Field interview data, 2024

The themes presented in Table 4.60 were generated using the thematic analysis procedure described in Section 3.10. Interview transcripts were systematically coded and organised into categories before being refined into the six major themes presented above.

Participants consistently identified competition from road transport as one of the most significant external challenges facing ZRL. Across operational, technical, and managerial levels, respondents described road transport as enjoying substantial competitive advantages arising from superior infrastructure, greater service flexibility, and stronger public investment.

The dominant theme concerned the growing market dominance of road transport. Participant R3 observed: *"Road transport has taken almost everything-both passengers and freight. People prefer it because it is faster and more flexible."*

Similarly, R8 explained: *"Most businesses no longer rely on ZRL because road transport delivers directly to their warehouses."* These responses reflect a widely shared perception that road transport has steadily eroded Zambia Railways Limited's market share over time.

Another prominent theme related to poor railway infrastructure and unreliable service delivery. Participants indicated that ageing locomotives, deteriorating track infrastructure, and frequent breakdowns have reduced customer confidence in rail transport. Participant R5 remarked: *"Our locomotives are too old, and breakdowns are frequent. By the time we deliver cargo, trucks have already completed several trips."*

Likewise, R6 added: *"Even when we secure contracts, customers lose confidence because of delays and poor communication."* Senior participants (R9 and R10) highlighted broader strategic and policy concerns. R9 noted: *"ZRL continues to operate using outdated systems while road operators keep modernising their fleets."*

Similarly, R10 argued: *"The absence of an integrated national transport strategy balancing road and rail has contributed significantly to the current situation."* Participants also perceived unequal government investment between transport modes as a major contributor to ZRL's declining competitiveness. Participant R2 observed: *"Every year more resources go into roads, while the railway receives very little attention."* In addition, R4 stated: *"Even when maintenance funding is requested, approval takes much longer than for road projects."*

Another recurring theme concerned changing customer preferences. Respondents indicated that customers increasingly favour road transport because of its flexibility, shorter delivery times, and door-to-door service. Participant R1 explained: *"Customers have lost confidence in rail because road transport is faster and can reach almost any destination."*

Several respondents (R7, R8, and R11) further observed that ZRL has made limited effort to market its services or improve customer engagement. As Participant R7 remarked: *"We hardly*

advertise our services anymore. Many potential customers are unaware of what ZRL can still offer."

Despite these challenges, participants remained optimistic that Zambia Railways Limited could regain part of its market share through infrastructure rehabilitation, fleet modernisation, improved service reliability, and stronger government support. R9 concluded: *"If we invest in modern locomotives, rehabilitate the railway network, and improve customer service, rail can still compete effectively."*

4.8.1.4.1 Integrated Discussion

The qualitative findings complement the quantitative evidence by demonstrating how competition from road transport influences ZRL's operational performance and market competitiveness. While the statistical analysis established significant associations between competition and ZRL performance, the interview findings explain the practical mechanisms through which road transport has progressively displaced rail as the preferred mode of freight and passenger transport.

The Spearman's rank correlation analysis (Table 4.40) revealed statistically significant positive associations between Competition from Road Transport and several organisational variables, particularly Maintenance Effectiveness, indicating that deteriorating infrastructure and poor service reliability increase ZRL's competitive disadvantage. Similarly, the Chi-square analysis (Table 4.44) demonstrated statistically significant variation in respondents' perceptions regarding the effects of road transport competition ($p < 0.001$), suggesting widespread agreement that competition constitutes a major challenge facing the organisation.

The descriptive findings further reinforce this conclusion by indicating that the majority of respondents perceived competition from road transport as having a substantial negative influence on ZRL's ability to attract and retain freight and passenger traffic. These quantitative findings closely correspond with the interview results, where participants consistently attributed ZRL's declining market share to ageing infrastructure, unreliable services, inadequate marketing, and unequal public investment between road and rail transport.

Importantly, the qualitative findings demonstrate that competition itself is not the fundamental cause of ZRL's underperformance. But instead, competition exposes existing organisational

weaknesses relating to infrastructure condition, operational efficiency, customer service, and strategic positioning. In other words, respondents perceived road transport as outperforming rail because it has adapted more effectively to changing market demands while ZRL has struggled to modernise its operations.

These findings are consistent with Mwila (2016), who reported that ZRL accounts for only a small proportion of national freight traffic, while road transport dominates the sector because of greater flexibility and accessibility. In a similar way, Sikazwe et al. (2021) argued that historical investment patterns have consistently favoured road infrastructure, leaving the railway sector underfunded and less competitive.

Collectively, both quantitative and qualitative findings converge to indicate that improving ZRL's competitive position requires more than reducing road competition. Instead, the organisation must strengthen its operational efficiency through infrastructure rehabilitation, fleet modernisation, improved customer service, commercial innovation, and supportive transport policies that promote a more balanced and integrated multimodal transport system.

4.8.1.5 Objective 5 - Government Policy and Regulatory Frameworks

This section examines employees' perceptions regarding the influence of government policies and regulatory frameworks on the operational performance of Zambia Railways Limited. The interviews explored policy consistency, regulatory enforcement, government investment priorities, organisational autonomy, and institutional governance. Respondents generally acknowledged the importance of government support but expressed concern regarding inconsistent policy implementation, bureaucratic delays, and political interference that continue to constrain organisational performance. Below is Table 4.61 depicting themes on objective five.

Table 4.61: Themes Emerged from the Interviews on the Influence Government Policies and Regulatory Frameworks (n = 11 ZRL Employees)

Theme Type	Major Theme	Representative code/Subthemes	Participants Mentioning (n =11)
Predetermined	Inconsistent Government Support	Charging transport priorities, political interference, lack of policy continuity	10
Predetermined	Weak Policy Enforcement and Monitoring	Poor implementation of reforms, weak follow-up mechanisms	9
Predetermined	Bureaucratic Delays Decision-Making	Lengthy approval procedures for budgets and infrastructure projects	7
Emergent	Absence of Integrated Transport Policy	Road transport prioritized over rail, fragmented transport planning	6
Emergent	Government Ownership and Control	Political influence in leadership appointments and operational decisions	5
Emergent	Need for Regulatory Reform and Autonomy	Independent regulation, separation of policy and operations, increased managerial autonomy.	5

Source: Field interview data, 2024

The themes presented in Table 4.61 were generated using the thematic analysis procedure described in Section 3.10. Interview transcripts were systematically coded and grouped into categories before being refined into the major themes presented above.

Participants consistently indicated that government policy and regulatory frameworks play a fundamental role in shaping the operational environment within which Zambia Railways Limited operates. While respondents acknowledged the existence of supportive national policies and strategic plans, they generally perceived policy implementation to be inconsistent, fragmented, and heavily influenced by political considerations.

The most frequently identified theme concerned inconsistent government support and policy continuity. R4 observed: *"Every new minister comes with a different agenda. Sometimes we start projects, then they get abandoned when leadership changes."* Similarly, R6 remarked: *"There is no continuity in policy direction. We need a long-term transport policy that remains consistent even when leadership changes."*

Several participants cited the cancellation of previously approved railway rehabilitation programmes following changes in government as evidence of inconsistent policy implementation.

Another major concern related to bureaucratic delays and weak policy implementation. (R2, R3, R5, R7-R11) reported that lengthy approval procedures frequently delayed maintenance programmes, procurement processes, and infrastructure rehabilitation projects. As R5 explained: *"You can have a simple maintenance request take months to receive approval. By the time funding is released, the problem has become much worse."*

Likewise, R10 stated: *"Operational decisions have become overly politicised. Even technical issues sometimes require political clearance before action can be taken."*

Participants also highlighted the absence of an integrated national transport policy that adequately balances investment between road and rail transport. R3 commented: *"Government policies always seem to favour road transport. Rail rarely receives the same level of attention during budget allocations."*

Additionally, R9 observed: *"Billions are invested in road infrastructure every year, yet the railway receives very little funding despite both sectors falling under the same ministry."*

The interviews further revealed concerns regarding government ownership and political interference. Participants perceived that political influence over board appointments and executive management limited professional decision-making and reduced organisational accountability. R1 explained: *"Sometimes appointments are politically influenced, and this affects both morale and accountability."*

Furthermore, R7 argued that: *"The Board and management should be given greater autonomy to make professional decisions without waiting for political direction."*

The interview findings suggest that although government policies recognise the strategic importance of Zambia Railways Limited, inconsistent implementation, political interference, bureaucratic inefficiencies, and limited institutional autonomy continue to undermine the effectiveness of these policy interventions.

4.8.1.5.1 Integrated Discussion

The qualitative findings strongly reinforce the quantitative evidence by demonstrating that government policy and regulatory support constitute one of the most influential institutional determinants of ZRL's performance. While respondents acknowledged the existence of supportive policy frameworks, they consistently argued that weak implementation, fragmented governance, and political interference have limited their effectiveness.

This interpretation is strongly supported by the quantitative analysis. The Spearman's rank correlation results (Table 4.40) revealed that Government Policy and Regulatory Support exhibited statistically significant positive associations with Leadership Effectiveness ($\rho = 0.421$, $p < 0.001$), Maintenance Effectiveness ($\rho = 0.435$, $p < 0.001$), Funding Adequacy ($\rho = 0.498$, $p < 0.001$), and Competition from Road Transport ($\rho = 0.526$, $p < 0.001$). Most notably, Government Policy and Regulatory Support demonstrated the strongest association with Zambia Railways Limited's performance ($\rho = -0.620$, $p < 0.001$), indicating that weaknesses in policy implementation are closely associated with declining organisational performance.

The regression analysis (Table 4.41) similarly demonstrated that Government Policy and Regulatory Support remained a statistically significant predictor of organisational performance after controlling for the other independent variables. These findings suggest that government policy influences organisational performance not only directly but also indirectly through its effects on leadership effectiveness, funding adequacy, infrastructure development, and the organisation's competitive position.

The descriptive findings further support this conclusion, with respondents generally expressing low levels of satisfaction regarding the consistency and effectiveness of government support for the railway sector. These perceptions closely mirror the interview findings, where participants

consistently described policy inconsistency, delayed implementation, bureaucratic control, and political interference as major barriers to ZRL effectiveness.

The convergence between the quantitative and qualitative findings indicates that government policy functions as both an enabling and a constraining factor. Effective policies create the institutional environment necessary for investment, maintenance, commercialisation, and organisational reform. However, inconsistent implementation, excessive political influence, and fragmented governance significantly reduce the effectiveness of these policy interventions.

These findings support the principles of Institutional Theory, which argues that organisational performance is strongly influenced by the institutional environment, governance structures, and regulatory arrangements within which organisations operate (DiMaggio & Powell, 1983).

The findings are also consistent with Mwila (2016) and Kapanda (2017), who identified policy inconsistency, inadequate institutional coordination, and limited investment as major contributors to the decline of Zambia's railway sector. Furthermore, Hope (2016) argued that effective public enterprise reform depends upon policy consistency, institutional stability, and governance systems that minimise political interference while strengthening organisational accountability.

Both quantitative and qualitative findings converge to demonstrate that government policy and regulatory support represent a foundational driver of organisational performance. Sustainable revitalisation of ZRL will therefore require consistent policy implementation, strengthened institutional governance, increased managerial autonomy, improved regulatory coordination, and long-term government commitment to railway development.

4.8.2 Qualitative Data Analysis of ZRL Clients' Interview (R12-R15)

This section presents the qualitative findings derived from interviews with some of ZRL's major clients, including freight customers and logistics partners. The purpose of this section is to capture the clients' perspectives on how maintenance, funding, leadership, competition, and government policies influence ZRL's operational performance and service reliability. Their views provided critical external validation of the internal conditions described by ZRL employees and helped reveal the broader market realities confronting the company.

4.8.2.1 Objective 1 - Maintenance Practices and Performance

Respondents (R12-R15) consistently indicated that ZRL's maintenance practices are inadequate and directly undermine operational reliability. They highlighted that freight services are often delayed due to mechanical failures, derailments, and rolling stock breakdowns reported most frequently. R12 described maintenance at ZRL as *"reactive rather than preventive,"* while R13 noted that *"train schedules are unpredictable because locomotives and wagons are poorly maintained."* R14 emphasized that these disruptions have led to substantial logistical and financial losses for their companies, with some cargo delayed for weeks.

Respondents also expressed frustration that ZRL's infrastructure, particularly the track and signaling systems, is outdated, limiting both safety and speed. R15 explained that while rail transport should be cheaper for bulk haulage, *"the inefficiencies caused by poor maintenance erode any cost advantage."* Collectively, respondents argued that the absence of a structured preventive maintenance program contributes to frequent service interruptions and declining customer confidence.

4.8.2.1.1 Integration with Quantitative Findings

Quantitative results with reference to Table 4.40 revealed a significant relationship between maintenance effectiveness and ZRL's performance, confirming that as maintenance practices deteriorate, the overall performance declines too. The Chi-Square test shown in Table 4.46 also rejected the null hypothesis for maintenance ($p = .000$), showing significant variability in respondent views, consistent with respondents' diverse but generally negative experiences.

Thus, both quantitative and qualitative data converge on the same conclusion that maintenance inefficiencies critically hinder ZRL's performance.

Therefore, there is strong convergence between the qualitative and quantitative strands. Respondents' accounts corroborate the statistical evidence that maintenance failures reduce reliability, profitability, and competitiveness. Their testimonies provide real-world examples of how deferred maintenance translates into poor service delivery and customer dissatisfaction.

4.8.2.2 Objective 2 - Funding Adequacy

Respondents stressed that inadequate funding is the root cause of ZRL's persistent operational problems. R12 and R14 noted that the company has failed to replace old locomotives or upgrade track infrastructure due to lack of capital investment. R15 highlighted that "*ZRL depends heavily on government funding for recapitalization, but the expected support is inconsistent.*" Respondents further expressed that funding shortfalls have a direct bearing on maintenance delays and the company's inability to meet freight demand, forcing many businesses to shift to road transport.

4.8.2.2.1 Integration with Quantitative Findings

Quantitatively, funding adequacy showed a positive but statistically insignificant coefficient ($\beta = 0.003$, $p = .977$) in Table 4.40, implying that while funding is perceived as important, its measurable impact on performance was weak. However, the Chi-Square test ($p = .000$) indicated significant variation in perceptions.

Respondents' perspectives help explain this discrepancy, funding exists on paper but is poorly utilized or inconsistently disbursed. Thus, while quantitative results show weak direct correlation, qualitative narratives uncover the mediating influence of mismanagement and delayed financing. Emergent theme under this section was Short-Termism in Financial Planning. Respondents complained that ZRL plans "*year by year, not strategically,*" highlighting the absence of a multi-year capital plan. This qualitative evidence supports the regression model's modest explanatory power ($R^2 = 0.363$), showing that short-term financing contributes to sustained inefficiency.

4.8.2.2.2 Synthesis of Findings

The quantitative and qualitative findings were largely complementary and mutually reinforcing. While the quantitative analysis indicated that funding inadequacy exhibited a relatively weak statistical relationship with ZRL performance, the qualitative evidence provided important contextual insights into this result. Interview participants consistently highlighted that the challenges extends beyond the absolute level of funding received and is more closely associated with resource allocation priorities, delays in fund disbursement, and inefficiencies in the utilization of available resources.

Subsequently, the qualitative findings suggest that improving financial management and funding utilization mechanisms may be as important as increasing funding levels. Collectively, the findings indicate that funding reform remains a critical prerequisite for enhancing maintenance effectiveness, service reliability, and ultimate performance at ZRL.

4.8.2.3 Objective 3 - Leadership Effectiveness

Some respondents criticized ZRL's management approach, describing it as bureaucratic, unresponsive, and lacking a customer-oriented mindset. R12 argued that "management decisions are slow, and there's little accountability that has been noticed over the years." R13 pointed out that there's minimal engagement between management and customers, saying, *"We only hear from ZRL when there's a delay, not before or when demanding for a payment."*

R14 like others mentioned that leadership changes often lead to disruptions in strategic direction, while R15 noted that it seems some decisions are politically influenced rather than guided by market data or performance indicators. The ultimate perception was that management practices are outdated and detached from customer needs.

4.8.2.3.1 Integration with Quantitative Findings

The regression analysis (Table 4.41) found leadership effectiveness to be a significant predictor of performance, confirming the central role of leadership in driving operational outcomes. The Chi-Square test also revealed significant differences ($p = .000$), supporting clients' varied experiences. Therefore, both data strands converge, ineffective leadership has a measurable negative impact on ZRL's performance and is felt directly by clients through unreliable service and poor communication.

Emergent theme one was Politicization and Managerial Instability, in which respondents observed that leadership changes occur with each political cycle, disrupting strategic continuity. This theme converges with regression findings ($\beta = -0.285$, $p = 0.001$), confirming that leadership effectiveness is the strongest predictor of performance decline.

Emergent theme two was Trust Erosion and Commercial Risk, where respondents recounted losing business due to unreliable service. R13 explained, *"Every delay damages our reputation with*

customers; we can't depend on ZRL anymore." This emergent theme adds depth to the leadership-performance correlation (Table 4.40), showing that poor governance creates ripple effects in customer confidence and contract sustainability.

4.8.2.3.2 *Synthesis of Findings*

The integration of findings suggests strong convergence, both respondents' experiences and quantitative evidence underscore that leadership is a key determinant of performance. Ineffective leadership hinders responsiveness, innovation, and customer satisfaction, hence prolonging ZRL's decline.

4.8.2.4 *Objective 4 - Competition from Road Transport*

Respondents unanimously agreed that road transport has become ZRL's strongest competitor. R12 emphasized that "road transport is faster, more flexible, and predictable." R14 noted that logistics firms prefer road due to convenience, adding, *"By the time ZRL delivers, we've already completed two trips by truck."*

Respondents further mentioned that while rail should be cheaper for bulk freight, delays, unreliable schedules, and poor coordination make it uncompetitive. R13 suggested that ZRL could regain competitiveness by digitizing freight tracking and offering guaranteed delivery times.

4.8.2.4.1 *Integration with Quantitative Findings*

Quantitative data revealed a statistically significant negative correlation between Competition from Road Transport and ZRL Performance ($\rho = -0.441$, $p < 0.001$) as shown in Table 4.40. This finding indicates that increasing competition from road transport is associated with declining railway performance. The ANOVA results (Table 4.43) further demonstrated significant differences in organisational performance across the categories of competition, reinforcing the importance of competitive pressures in shaping ZRL's operational outcomes.

These findings strongly align with respondents' views that competition from road transport has eroded ZRL's market share and revenue due to road transport's superior flexibility, accessibility, and service efficiency. The emergent theme was Perceived Cost Inefficiency. One participant (R13) observed that: *"ZRL's rates are not competitive compared to the delays we endure."*

This qualitative insight complements the descriptive findings presented earlier, which showed low customer satisfaction with pricing, service reliability, and value for money. Together, these findings suggest that improving service quality, operational efficiency, and customer responsiveness is essential if Zambia Railways Limited is to regain its competitive position within the transport sector.

4.8.2.4.2 Synthesis of Findings

There is perfect convergence between both data strands. Statistical results confirm that as road competition intensifies, ZRL's performance deteriorates, and client narratives vividly explain the operational mechanisms behind this trend.

4.8.2.5 Objective 5 - Government Policy and Regulatory Support

When discussing government policy, clients offered a mixed view, acknowledging policy intent but criticizing poor enforcement and suspected political interference. R12 and R15 like others, cited Statutory Instrument 7 of 2018, which mandates that at least 30% of bulk cargo be moved by rail. However, they stressed that compliance is minimal because there are no penalties for non-adherence.

R14 noted, *“Government pronouncements are good, but they lack follow-through. Private players will continue using roads unless enforcement becomes real and that they are seriously engaged.”* Others pointed to inconsistent policy direction.

4.8.2.5.1 Integration with Quantitative Findings

Regression analysis (Table 4.41) revealed a statistically significant relationship between Government Policy Support and ZRL Performance ($\beta = -0.211$, $p = 0.024$), indicating that weaknesses in policy implementation and regulatory support are associated with poorer organisational outcomes. While the quantitative findings confirm the importance of policy as a determinant of performance, the qualitative findings provide deeper insight into the implementation challenges that limit its effectiveness.

The respondents consistently emphasized policy inconsistency, weak enforcement, bureaucratic delays, and political interference as major obstacles to organisational reform. Therefore, the

qualitative findings complement rather than contradict the quantitative results by explaining why supportive policies have not translated into sustained improvements in performance.

4.8.2.5.2 Synthesis of Findings

The findings exhibit strong complementarity. Government policies and regulatory frameworks have the potential to support railway revitalization; however, inconsistent implementation and weak institutional enforcement limit their practical impact. Respondents repeatedly emphasized the need for stronger enforcement mechanisms, stable regulatory frameworks, and depoliticized oversight to improve organisational performance.

These qualitative observations reinforce the quantitative finding that government policy significantly influences ZRL performance. While policy frameworks exist, implementation gaps continue to constrain their effectiveness, thereby limiting operational and financial improvements.

4.8.2.6 Brief Summary

Across all research objectives, the qualitative narratives converge strongly with the quantitative findings. Maintenance deficiencies, leadership weaknesses, competition from road transport, and policy implementation gaps emerged as the principal determinants of ZRL's underperformance. Funding, although not statistically significant in the regression model, was shown through qualitative evidence to function as an enabling factor influencing maintenance, infrastructure development, and long-term organisational sustainability.

Generally, the integrated findings demonstrate that ZRL's challenges are multidimensional and require coordinated institutional, operational, financial, and strategic reforms to achieve sustainable performance improvement.

4.8.3 Qualitative Data Analysis of Key Stakeholders' Interviews (R16-R19).

This section presents the qualitative analysis of interviews conducted with key external stakeholders closely associated with the governance, oversight, and policy direction of ZRL. The participants included senior representatives drawn from government oversight bodies, industry regulators, and corporate supervisory entities, all of whom possess deep institutional knowledge of the railway sector and its operational ecosystem.

The purpose of engaging these stakeholders was to obtain macro-level insights into the financial, and regulatory factors influencing ZRL's performance, beyond internal operational and managerial perspectives. Their contributions provided critical context for understanding how policy formulation, institutional coordination, and sectoral competition collectively shape ZRL's operational landscape.

The analysis was structured around the study's five core objectives, identifying both predetermined and emergent themes that reflected stakeholders' institutional perspectives on the railway sector's structural challenges.

4.8.3.1 Objective 1 - Maintenance Effectiveness and ZRL Performance

Interviews with key institutional stakeholders, representing oversight, regulatory, and supervisory roles, revealed a shared concern regarding the deteriorating state of ZRL's maintenance culture. Stakeholders generally described the maintenance regime as reactive rather than preventive, emphasizing that most interventions occur only after equipment failure or derailments. One respondent (R16) pointed out that "*the maintenance system is largely corrective, with insufficient allocation for scheduled or condition-based maintenance*", a pattern that reflects underfunding and weak planning frameworks.

Another stakeholder (R17) noted that ageing infrastructure, much of which dates back to the 1970s, remains a major constraint, and that "*ZRL continues to depend on outdated and unreliable locomotives, wagons and track infrastructure, making maintenance a constant firefighting exercise rather than a structured process.*"

This aligns with independent assessments by the Ministry of Transport and Logistics (2023), which observed that over 60% of ZRL's mainline tracks require urgent rehabilitation, while rolling stock availability has fallen below 40% of operational demand.

Emergent themes also surfaced around institutional dependency and weak autonomy. Respondents acknowledged that some maintenance decisions are often delayed due to bureaucratic approval processes involving the shareholder (Government) and the Industrial Development Corporation (IDC). R18 reflected that "*without a predictable budget cycle or decentralized decision-making*

authority, ZRL cannot plan maintenance effectively, even the procurement of spare parts take months as it is the case currently.”

Another emergent theme was the lack of performance-based maintenance frameworks. Respondents noted the absence of measurable maintenance targets and accountability mechanisms, making it difficult to track progress or justify recurrent funding allocations.

4.8.3.1.1 Integration with Quantitative Findings

These qualitative insights also support the quantitative correlation ($\rho = -0.388$, $p < 0.001$) and regression ($\beta = -0.176$, $p = 0.044$) results, which identified maintenance effectiveness as a statistically significant predictor of ZRL performance. The mean rating of 2.20 in the summary statistics (Table 4.39) further corroborates this perception of inadequacy.

Both data strands collectively indicate that the maintenance function is one of the weakest operational areas within ZRL, affecting reliability, safety, and service continuity. Furthermore, the respondents' emphasis on reactive maintenance and bureaucratic inefficiency complements employee accounts (R1-R11), who expressed frustration over delayed spare parts and obsolete equipment. The triangulated evidence suggests that the maintenance inefficiencies are not merely operational but institutionally embedded, reflecting governance and funding deficiencies.

4.8.3.1.2 Synthesis of Findings

The findings reveal a consistent narrative across the institutional levels that maintenance practices at ZRL are constantly underdeveloped, underfunded, and administratively constrained. Stakeholders concur that unless the company transitions from reactive maintenance to predictive and preventive strategies, system reliability will remain low and derailments frequent.

The synthesis further underscores the need for a dedicated maintenance modernization program, integrated with IDC oversight and line Ministry support. This would entail structured capital injections, decentralized decision-making authority, and measurable key performance indicators (KPIs) for Technical services department. Generally, the findings consistently demonstrate that ineffective maintenance remains one of the principal contributors to ZRL's operational underperformance, with evidence converging across stakeholder interviews, employee interviews, and quantitative analyses.

4.8.3.2 Objective 2 - Funding and Financial Constraints

Across all key stakeholder interviews, respondents consistently emphasized that funding inadequacy remains one of the most enduring structural weaknesses undermining ZRL's operational performance. Respondents converged in their views that the company's financial model has remained outdated and unsustainable since the end of direct government subsidies in the late 1990s.

According to R16, *“ZRL's capital structure is not designed to sustain modern railway operations; most of its revenue is absorbed by recurrent costs, leaving little or nothing for infrastructure renewal.”* R17 added that funding disbursements are often delayed, and when released, they are typically allocated to emergency maintenance or statutory obligation arrears rather than planned capital investment.

These sentiments echo the financial management issues highlighted by the World Bank (2022), which noted that Zambia's rail sector faces prolonged underinvestment, averaging less than 10% of what is required annually to meet infrastructure rehabilitation targets.

Another emerging theme was the limited diversification of funding sources. Both R18 and R19 pointed out that ZRL remains heavily dependent on the national treasury, with minimal efforts to engage private investors or leverage Public-Private Partnerships (PPPs). As R18 stated, *“the institution lacks an investment-friendly framework; potential private partners are discouraged by regulatory uncertainties and weak assurance of return on investment.”*

Respondents also pointed out that past capital injections, such as the US\$120 million recapitalization in 2013, failed to improve performance. As R17 observed, it was *“treated as a bailout, not an opportunity to build capacity or introduce modern systems, due to weak accountability mechanisms.”*

Generally, the interviews revealed that while respondents acknowledged the government's occasional interventions, the absence of a predictable, performance-based funding mechanism has prolonged dependency and inefficiency within ZRL.

4.8.3.2.1 Integration with Quantitative Findings

The qualitative insights strongly complement the quantitative regression results presented in Table 4.41, which revealed that Funding Adequacy (FA) had a statistically insignificant relationship ($p = 0.977$) with ZRL's performance. This statistical outcome aligns with respondent's observations that funding alone has not driven performance improvements due to mismanagement, poor prioritization, and lack of accountability.

The correlation analysis (Table 4.40) revealed moderate positive and statistically significant associations between Funding Adequacy and Maintenance Effectiveness ($\rho = .463$, $p < .001$), Leadership Effectiveness ($\rho = .452$, $p < .001$), Competition from Road Transport ($\rho = .460$, $p < .001$), and Government Policy Support ($\rho = .498$, $p < .001$).

These findings suggest that funding is closely intertwined with other ZRL processes. However, the regression analysis demonstrated that funding did not independently predict organisational performance after controlling for the remaining variables, indicating that its influence is largely indirect and mediated through governance, leadership, and maintenance effectiveness.

4.8.3.2.2 Synthesis of Findings

In synthesis, stakeholder perspectives depict funding inadequacy as both a financial and institutional dilemma. The findings converge with the regression and correlation analyses in showing that mere capital injections have failed to yield tangible improvements, primarily because of ineffective utilization, poor monitoring, and lack of strategic investment planning.

An emergent theme from this analysis is “institutional misalignment between funding and organizational capability”, the mismatch between ZRL's operational needs and the government's fiscal allocation model. Stakeholders advocated for the adoption of performance-linked financing, where disbursements are tied to measurable operational targets, as practised in regional models like Transnet (South Africa).

Finally, the integration of qualitative and quantitative data suggests that funding reform must go hand-in-hand with governance reform. Without stronger accountability and transparent resource utilization, even substantial funding will fail to reverse ZRL's performance decline.

4.8.3.3 Objective 3 – Leadership / Management Practices

Stakeholders consistently identified leadership and governance as the most critical determinants of ZRL's long-term performance. Unlike operational employees, whose concerns centred primarily on daily management practices, external stakeholders emphasised institutional governance, managerial autonomy, and strategic leadership.

According to R16, *“management at ZRL operates within a limited autonomy framework”*; this observation was reinforced by R17, who noted that political interference in appointments and decision-making has historically undermined the professionalism and independence of ZRL's management.

R18 added that there is a disconnect between strategic planning and operational implementation, citing examples where management has formulated excellent plans that remain unexecuted due to poor follow-through and lack of monitoring mechanisms. In addition, R19 observed that *“ZRL has a tendency to recycle outdated operational models that do not reflect current market realities or technological advancements.”*

Respondents also pointed to weak internal communication and accountability systems, particularly between management and unionized employees. One recurring theme was that some directors often lack railway-specific technical competence, which limits their ability to make informed decisions on infrastructure, safety, and logistics. R17 emphasized, “Some senior executives come from outside the rail sector; this gap affects the quality of strategic and technical decisions.”

In addition, staff motivation and organizational culture emerged as critical areas of concern. Respondents agreed that low morale, limited incentives, and an entrenched bureaucratic culture have curtailed innovation and productivity. These perceptions mirror long-standing criticisms raised in the Auditor General's (2020) report, which highlighted ineffective leadership structures, poor performance appraisal systems, and inadequate management accountability at ZRL.

Generally, the interviews revealed that management inefficiencies are not isolated incidents but deeply linked to governance structures, skill deficiencies, and a lack of operational autonomy.

4.8.3.3.1 Integration with Quantitative Findings

The qualitative findings strongly converge with the regression analysis results presented in Table 4.41, which identified Leadership Effectiveness as the most influential determinant of ZRL Performance ($\beta = -0.285$, $p = 0.001$). This statistical significance underscores the central role of leadership and management practices in shaping organisational performance.

Furthermore, the correlation analysis shown in Table 4.40 revealed a significant positive association between Leadership Effectiveness and Maintenance Effectiveness ($\rho = 0.434$, $p < 0.001$), indicating that effective leadership is closely associated with improved maintenance planning, resource allocation, and operational efficiency. In addition, Leadership Effectiveness also exhibited a significant positive association with Government Policy Support ($\rho = .421$, $p < .001$), suggesting that effective leadership is strengthened by supportive institutional and regulatory environments.

The qualitative findings provide deeper insights into these relationships by highlighting political interference, inadequate managerial competence, limited autonomy, and weak accountability as major constraints to leadership effectiveness. These institutional and governance issues help explain the mechanisms through which leadership influences organisational outcomes, extending beyond what quantitative measures alone can capture.

Rather than diverging, the qualitative findings complement the quantitative results by demonstrating that leadership effectiveness is not only an individual managerial attribute but also a function of the institutional environment within which leaders operate. Respondents emphasized that weak corporate governance and limited organisational autonomy often undermine leadership initiatives, thereby constraining the overall performance of ZRL.

4.8.3.3.2 Synthesis of Findings

Synthesizing both quantitative and qualitative findings, the study confirms that management and leadership challenges emerged as the most influential determinants of Zambia Railways Limited's operational efficiency and strategic renewal. The strong convergence between statistical evidence and stakeholder perceptions suggests that governance and leadership challenges outweigh purely resource-based constraints in explaining ZRL's persistent underperformance.

An emergent theme described as institutionalized managerial inertia captures this dynamic, whereby leadership often defaults to short-term operational responses rather than pursuing long-term structural transformation. Respondents consistently emphasized the need for:

- i. Depoliticizing management appointments to promote merit-based recruitment;
- ii. Revising the corporate governance framework to strengthen managerial autonomy and accountability; and
- iii. Introducing performance-based contracts linked to measurable operational and financial outcomes.

These recommendations are consistent with regional reform trends identified by the Southern African Railways Association (SARA, 2023), which emphasized the importance of corporate governance, professional leadership, and institutional reforms in railway revitalization.

In summary, both the quantitative and qualitative findings demonstrate that funding, maintenance, and infrastructure interventions alone are unlikely to transform ZRL unless accompanied by sustained improvements in corporate governance, leadership capability, institutional accountability, and strategic autonomy.

4.8.3.4 Objective 4 - Competition from Road Transport

Respondents unanimously identified competition from road transport as one of the principal external constraints on ZRL's performance. They attributed the railway's declining market share not only to the rapid expansion of the road transport sector but also to long-standing policy preferences, infrastructure investment imbalances, and ZRL's limited capacity to respond strategically to changing market conditions. R16 explained that road transport enjoys consistent policy and financial support, which has resulted in a disproportionate development of road infrastructure compared to rail. *“Every year, substantial funding is allocated to the Road Development Agency (RDA), while railway funding is treated as a secondary priority,”* the respondent noted.

R17 emphasized that the liberalization of the transport sector has intensified competition, as private trucking firms can rapidly adjust prices, routes, and delivery schedules to meet customer needs, flexibility that rail transport currently lacks. R18 observed that logistical efficiency and

door-to-door delivery give road transport a competitive edge, especially for short to medium-distance freight. *“Rail cannot compete when clients want cargo picked and delivered to their doorstep,”* he said, highlighting ZRL’s limited integration with last-mile delivery systems.

Another recurring theme among stakeholders was ZRL’s reliability deficit. R19 noted that frequent derailments, aging rolling stock, and delays in wagon turnaround time have caused many clients to shift to road transport permanently. This view resonates with the African Union Commission’s (2022) report on the state of transport in Southern Africa, which found that inefficient rail operations and outdated infrastructure have diverted over 70% of regional freight to roads.

Respondents also pointed to regulatory imbalance as a major obstacle. R16 noted, *“The current transport policy favours road, both in financing and in enforcement. There are no incentives for companies to use rail over road, even for bulk cargo that rail could handle more efficiently.”* They recommended the introduction of freight incentives or tax relief for rail users, a measure also proposed in the Ministry of Transport and Logistics’ (2023) draft multimodal transport policy.

Overall, respondents perceived road competition as a structural threat rather than a temporary challenge, a result of policy bias, technological lag, and strategic inertia at both national and corporate levels.

4.8.3.4.1 Integration with Quantitative Findings

The qualitative findings closely complement the quantitative results. The regression analysis (Table 4.41) identified Competition from Road Transport as a statistically significant predictor of ZRL performance ($\beta = -0.205$, $p = 0.021$), indicating that increased competitive pressure is associated with declining organisational performance. Similarly, the correlation analysis (Table 4.40) revealed statistically significant positive associations between Competition from Road Transport and Maintenance Effectiveness ($\rho = 0.470$, $p < 0.001$), Funding Adequacy ($\rho = 0.460$, $p < 0.001$), Leadership Effectiveness ($\rho = 0.359$, $p < 0.001$), and Government Policy Support ($\rho = 0.526$, $p < 0.001$). These relationships suggest that competition does not operate in isolation but interacts closely with organisational, financial, and institutional factors.

However, there was a slight divergence regarding the perceived degree of market threat. While quantitative results presented competition as one among several significant predictors, respondents

regarded it as one of the most immediate threats to ZRL’s survival, particularly due to its long-term effect on freight volumes and customer trust. This gradation adds contextual depth beyond what statistical coefficients alone could reveal.

4.8.3.4.2 Synthesis of Findings

The combined evidence from both data strands paints a clear picture that ZRL’s declining competitiveness is both a cause and a symptom of its broader institutional inefficiencies. The findings converge on three key themes:

- i. Policy and regulatory imbalance - Respondents stressed that national transport policies and infrastructure investments disproportionately favour road transport.
- ii. Operational inefficiency and service unreliability - Clients increasingly choose road alternatives due to delays, inconsistent scheduling, and unreliable rolling stock.
- iii. Market responsiveness and integration gaps - The absence of a seamless multimodal logistics system limits ZRL’s competitiveness in the evolving transport market.

An emergent theme described as “Structural Competitive Disadvantage” best summarizes this situation, where road transport dominance is rooted not in market dynamics alone, but in policy neglect and structural inertia within ZRL and its oversight institutions.

These findings strongly reinforce the need for strategic repositioning of rail transport through targeted investment, modernization, and regulatory reforms. Respondents advocated for public-private partnerships (PPPs) and multimodal logistics hubs that would allow rail to complement, rather than compete with road transport, a strategy echoed in African Development Bank (2021) recommendations on regional transport integration.

In essence, both quantitative and qualitative evidence converge to affirm that competition from road transport is a critical determinant of ZRL’s underperformance. Unless deliberate efforts are made to rebalance the policy environment and enhance operational reliability, ZRL’s market share will continue to decline.

4.8.3.5 Objective 5 - Government Policies and Regulatory Support

All stakeholders consistently emphasized that government policies and regulatory frameworks constitute the institutional environment within which ZRL operates. While respondent acknowledged that successive governments have introduced policies intended to revitalize the railway sector, they agreed that implementation has often been inconsistent, fragmented, and influenced by political considerations.

R16, like others, noted that although statutory instruments have been enacted to promote rail transport, such as Statutory Instrument (SI) No. 7 of 2018, which mandates that at least 30% of bulk cargo be moved by rail, enforcement mechanisms remain weak. *“The regulation now exists only on paper. Without strict monitoring or penalties for non-compliance, companies continue to prefer road transport.”*

R16 acknowledged that while the regulation demonstrates government commitment to promoting rail transport, its practical implementation has been constrained by ZRL's limited operational capacity to absorb the targeted freight volumes. Consequently, both inadequate enforcement and limited institutional capacity have reduced the effectiveness of the policy.

R17 observed that policy volatility and frequent leadership changes within ZRL's governing structures have resulted in poor continuity of long-term initiatives. *“Every new administration wants to restructure or realign the company. This constant interference prevents strategic stability,”* he stated. R18, drawing from an industrial regulation perspective, added that government intervention in staffing and board appointments has sometimes undermined managerial autonomy and accountability, creating what he termed *“a culture of dependency and political patronage.”*

R19 emphasized the lack of a clear railway development master plan to guide infrastructure modernization and intermodal integration. *“Without a coherent policy roadmap and dedicated funding lines, rail will continue to lag behind roads,”* he explained. Supporting this, R18 referenced the 2023 Ministry of Transport and Logistics Annual Review, which admitted that rail investments have been less than 10% of national transport spending over the last decade, leaving ZRL technologically obsolete.

An emergent theme among the respondents was the disconnect between policy formulation and operational implementation. R17 argued that policy drafts often fail to consider the company's technical and financial capacity, resulting in “*ambitious blueprints that are rarely executed.*” R16 added that although the Industrial Development Corporation (IDC) has made efforts to improve corporate governance, its oversight role remains largely reactive rather than strategic.

Generally, the narrative from these interviews suggests that ZRL's underperformance is not merely a managerial or operational issue but a general governance challenge, driven by policy inconsistency, political interference, and insufficient regulatory enforcement.

4.8.3.5.1 Integration with Quantitative Findings

The qualitative findings closely align with the quantitative results presented earlier. Regression analysis (Table 4.41) revealed that Government Policy and Regulatory Support significantly influence ZRL Performance ($\beta = -0.211$, $p = 0.024$), indicating that weaknesses in policy implementation and regulatory support are associated with poorer organisational outcomes.

The Chi-Square Test (Table 4.54) further revealed significant differences in respondents' perceptions regarding government policy effectiveness ($p = 0.000$), reinforcing the qualitative evidence that policy implementation remains inconsistent across the organization.

Similarly, the correlation analysis (Table 4.40) further demonstrated that Government Policy Support exhibited statistically significant positive associations with Leadership Effectiveness ($\rho = 0.421$, $p < 0.001$), Maintenance Effectiveness ($\rho = 0.435$, $p < 0.001$), Funding Adequacy ($\rho = 0.498$, $p < 0.001$), and Competition from Road Transport ($\rho = 0.526$, $p < 0.001$). These relationships suggest that policy support is closely intertwined with broader organisational and institutional processes rather than operating independently.

The qualitative findings deepen this understanding by revealing that although policy frameworks exist, their implementation is often weakened by bureaucratic delays, political interference, and institutional inefficiencies. Thus, the qualitative and quantitative findings are complementary: both confirm that government policy matters, while the qualitative evidence explains why its impact has remained inconsistent in practice.

4.8.3.5.2 Synthesis of Findings

The integrated findings demonstrate strong convergence and complementarity between the qualitative and quantitative strands. Both confirm that government policy and regulatory support are important determinants of ZRL's performance; however, the qualitative findings explain why the statistical significance of policy support has not always translated into tangible operational improvements.

The synthesis revealed three important institutional themes:

- i. **Policy–Implementation Gap** – While policy instruments like SI No. 7 (2018) and the National Transport Sector Policy promote railway development, enforcement remains inconsistent, and institutional capacity is limited.
- ii. **Political Interference and Governance Instability** – Frequent leadership changes, politicized appointments, and overlapping oversight bodies (MoTL, IDC, and the Board) hinder effective decision-making.
- iii. **Institutional Capacity-policy Misalignment** – There is a clear disconnect between government development aspirations and ZRL's operational readiness, resulting in reactive governance rather than long-term political commitment.

The interpretative alignment with quantitative results shows that while the regression model identifies government support as statistically significant, the qualitative data qualify this by showing that the quality and consistency of such support determine its actual impact. This aligns with findings from the African Development Bank (2021) and the World Bank (2023), both of which emphasize that fragmented governance and underfunded regulatory institutions limit the railway sector's contribution to economic growth.

In summary, both datasets indicate that without structural reforms, transparent governance, and sustained political commitment, policy support alone will not improve ZRL's performance. The findings advocate for institutional autonomy, long-term funding mechanisms, and clear accountability frameworks as prerequisites for restoring ZRL's operational viability and strategic relevance in Zambia's transport sector.

4.8.3.6 Section Summary

The preceding qualitative analyses, incorporating perspectives from Zambia Railways Limited employees, clients, and key institutional stakeholders, have provided rich contextual evidence regarding the factors contributing to the organisation's underperformance. Across the five study objectives, the findings consistently highlighted maintenance deficiencies, inadequate funding utilisation, weak leadership and governance, increasing competition from road transport, and inconsistent government policy implementation as the principal challenges affecting organisational performance.

When considered alongside the quantitative findings, the qualitative evidence not only confirmed the statistical relationships identified through the correlation and regression analyses but also explained the institutional and operational mechanisms underlying those relationships. Areas of convergence strengthened confidence in the study's findings, while complementary perspectives provided deeper insights into why some variables, such as funding adequacy, were perceived as highly important despite not emerging as independent predictors in the regression model.

Fundamentally, the qualitative findings reinforce the study's conceptual framework by demonstrating that ZRL's underperformance arises from the interaction of technical, managerial, financial, competitive, and institutional factors rather than from any single determinant in isolation. The next section presents the triangulation of the quantitative and qualitative findings through an integrated synthesis (Table 4.62), illustrating how the two strands of evidence converge, complement, and, where applicable, diverge to provide a comprehensive explanation of the factors influencing Zambia Railways Limited's performance.

4.9 Triangulation of Quantitative and Qualitative Findings Summary

Triangulation was employed to integrate the quantitative and qualitative findings in order to provide a comprehensive understanding of the factors influencing the performance of ZRL. Consistent with the convergent mixed-methods design adopted in this study, quantitative and qualitative data were analysed separately and subsequently integrated during interpretation. This process enabled the validation of findings through convergence, the explanation of statistical relationships through complementary qualitative evidence, and the identification of areas where the two strands provided additional contextual insights (Creswell & Plano Clark, 2018).

Table 4.62 presents a summary of the triangulated findings across the five study variables.

Table 4.62: Triangulation of quantitative and qualitative findings

Variable	Quantitative Evidence	Qualitative evidence	Triangulation Insights
Maintenance Effectiveness	Regression: Significant predictor of ZRL performance ($\beta = -0.176$, $p = 0.044$)	Interviews: Employees, clients, and key stakeholders consistently reported reactive maintenance, obsolete infrastructure, inadequate spare parts, and poor preventive maintenance practices.	Convergence - Both datasets confirm that ineffective maintenance directly undermines operational reliability, safety, and overall organisational performance.
Funding Adequacy	Regression: Not a statistically significant independent predictor of performance ($\beta = 0.003$, $p = 0.977$)	Interviews: Funding inadequacies due to mismanagement, irregular allocations, and limited recapitalisation impact (Sandala, 2020).	Complementarity – The qualitative findings explain why funding was statistically insignificant in the regression model by demonstrating that funding influences performance indirectly through governance, leadership, maintenance, and resource utilisation.
Leadership Effectiveness	Regression: Emerged strongest statistically significant predictor of organizational performance ($\beta = -0.285$, $p = 0.001$)	Interviews: Weak strategic Leadership, lack of strategic vision, political interference, and poor communication were highlighted.	Convergence – Both strands consistently identify leadership and governance as the most influential determinants of organisational performance.
Competition from Road Transport	Regression: Significantly influenced organizational performance ($\beta = -0.205$, $p = 0.021$)	Interviews: Road haulage perceived as more reliable, flexible, and supported by sustained infrastructure investment (MoTC, 2017)	Convergence – Both strands demonstrate that increasing g road competition has reduced ZRL’s competitiveness, market share, and profitability.
Government Policy & Regulatory Support	Regression: Significantly influenced organizational performance ($\beta = -0.211$, $p = 0.024$)	Interviews: Political interference, weak policy enforcement, and inconsistent regulations limiting ZRL autonomy (GRZ, 2017)	Convergence – policy inconsistency and inadequate regulatory support were identified as crosscutting constraints.

Source: Developed by the Author from Quantitative and Qualitative Findings, 2024

The triangulation results presented in Table 4.62 demonstrate a strong degree of alignment between quantitative and qualitative strands. Four variables; maintenance effectiveness, leadership effectiveness, competition from road transport, and government policy and regulatory support, exhibited clear convergence. This implies that both statistical and narrative data point to the same conclusions regarding their influence on ZRL's performance.

In contrast, Funding Adequacy presented a complementary rather than contradictory pattern. Although the regression analysis indicated that funding was not an independent predictor of organisational performance, the qualitative evidence revealed that inadequate financial governance, inefficient resource allocation, and weak accountability mechanisms substantially limit the effectiveness of available financial resources. This finding suggests that funding operates primarily as an enabling factor whose impact depends on effective leadership, sound governance, and efficient maintenance management.

Primarily, the integration of quantitative and qualitative findings therefore strengthens the validity and credibility of the study while providing a robust empirical foundation for the discussion, conclusions, and recommendations presented in Chapter Five.

4.10 Assessment of Validity

The credibility and validity of the study findings were strengthened through methodological triangulation and convergence of evidence obtained from multiple data sources. Quantitative findings generated from the questionnaire survey were compared with qualitative evidence obtained through semi-structured interviews and documentary review. The convergence of these independent sources of evidence enhanced confidence that the findings accurately reflected the organisational realities of Zambia Railways Limited (Creswell & Plano Clark, 2018).

Across the five study variables, considerable consistency was observed between the quantitative and qualitative findings. For example, while the quantitative analysis identified leadership effectiveness and maintenance effectiveness as significant factors associated with organisational performance, qualitative participants similarly emphasized ineffective leadership, delayed maintenance practices, and inadequate decision-making as major contributors to the underperformance of ZRL. Likewise, respondents consistently identified road transport competition and weaknesses in policy implementation as significant operational challenges.

Where differences emerged, particularly regarding funding adequacy, methodological triangulation provided important explanatory insights. Although the quantitative analysis suggested that funding adequacy alone was not a statistically significant predictor of performance, qualitative findings consistently revealed that respondents perceived inadequate funding as a major operational constraint. The integration of these findings indicated that the effectiveness of funding depends largely on governance quality, leadership effectiveness, accountability, and resource utilisation rather than the volume of financial resources alone.

Fundamentally, the convergence of quantitative and qualitative evidence enhanced the construct validity of the study findings and strengthened confidence in the conclusions drawn from the research.

4.11 Assessment of Reliability

The reliability of the findings was supported by the consistency of the quantitative and qualitative evidence generated during the study. As reported in Section 3.11, the questionnaire demonstrated satisfactory internal consistency, with an overall Cronbach's Alpha coefficient of 0.731, while most individual constructs exceeded the recommended threshold of 0.70, confirming the reliability of the research instrument.

In addition to statistical reliability, the consistency of the findings was strengthened through methodological triangulation. Similar patterns emerged across questionnaire responses, interview narratives, and documentary evidence, indicating a high level of agreement regarding the major factors influencing the performance of Zambia Railways Limited. Furthermore, the use of standardised questionnaires, semi-structured interview guides, and systematic thematic analysis enhanced the dependability of the findings by ensuring that comparable procedures were applied throughout the study.

Therefore, the consistency observed across multiple sources of evidence provides reasonable assurance that the findings are reliable and would likely be replicated under similar research conditions.

4.12 Chapter Summary

This chapter presented and analysed the quantitative and qualitative findings on the factors contributing to the underperformance of Zambia Railways Limited (ZRL). Guided by the study objectives and convergent mixed-methods design, the chapter integrated statistical evidence with qualitative insights to provide a comprehensive understanding of the institutional, operational, financial, managerial, competitive, and policy-related factors influencing ZRL performance.

The quantitative analysis demonstrated that Maintenance Effectiveness, Leadership Effectiveness, Competition from Road Transport, and Government Policy and Regulatory Support were statistically significant predictors of ZRL's performance, while Funding Adequacy, although strongly perceived as important by respondents, was not an independent predictor in the regression model. The correlation, regression, and hypothesis testing results further confirmed that ZRL's performance is shaped by the interaction of multiple organisational and institutional factors rather than by any single determinant.

The qualitative analysis complemented these findings by providing deeper explanations for the observed statistical relationships. Through thematic analysis, respondents consistently identified reactive maintenance practices, ineffective utilisation of financial resources, weak leadership and governance, increasing competition from road transport, and inconsistent policy implementation as the principal challenges affecting ZRL's operational performance. The qualitative findings further explained the indirect influence of funding by highlighting the mediating roles of governance, accountability, and resource utilisation.

The triangulation of quantitative and qualitative evidence demonstrated a high degree of convergence across the five study variables. While four variables exhibited clear convergence between the two datasets, Funding Adequacy provided complementary evidence by explaining why financial resources alone do not necessarily translate into improved organisational performance without effective leadership, sound governance, and efficient maintenance systems.

The findings confirm that the underperformance of ZRL results from the interaction of technical, financial, managerial, competitive, and institutional factors. The integrated evidence provides a

robust empirical basis for addressing the study objectives and testing the hypotheses, while offering a strong foundation for the conclusions and recommendations presented in Chapter Five.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter synthesizes the empirical findings presented in Chapter Four, integrating quantitative and qualitative results with insights from literature and theoretical frameworks outlined in Chapter Two. It draws key conclusions on the determinants of ZRL's underperformance, formulates evidence-based recommendations for institutional, operational, and policy reform, and highlights the study's theoretical, methodological, and practical contributions. The conclusion is organized around the five research objectives, and the chapter finally concludes with limitations and areas for further research.

5.1 Conclusions

Zambia Railways Limited remains central to Zambia's economic transformation and regional integration efforts. Efficient railway operations are vital for reducing transport costs, facilitating the movement of bulk cargo, and positioning Zambia as a land-linked hub within Southern Africa. However, the study concludes that ZRL's persistent underperformance stems from a combination of technical, managerial, financial, market, and regulatory deficiencies rather than a lack of strategic importance.

Drawing upon both statistical and thematic evidence, the following conclusions are presented in line with the five research objectives below:

RO 1: To assess the impact of maintenance practices on the performance of ZRL.

RO 2: To examine the role of funding in influencing ZRL performance.

RO 3: To evaluate the effect of leadership practices on the performance of ZRL.

RO 4: To analyze the impact of competition from road transport on the performance of ZRL.

RO 5: To assess the influence of Government policies and regulatory frameworks on the performance of ZRL.

Before presenting the objective-specific conclusions, it is important to note that the dependent variable (ZRL Performance) was coded such that higher scores represented greater organisational underperformance. Consequently, the negative regression coefficients reported throughout this

chapter indicate that improvements in the independent variables are associated with reductions in ZRL underperformance. The negative signs therefore reflect the coding orientation of the dependent variable rather than adverse effects of maintenance, leadership, competition, or government policy support.

5.1.1 Maintenance Practices as a Critical Performance Bottleneck

Maintenance inefficiencies continue to undermine ZRL's operational effectiveness. Regression analysis (Table 4.41) established a statistically significant relationship between maintenance effectiveness and ZRL performance ($\beta = -0.176$, $p = 0.044$), while Spearman's correlation analysis similarly demonstrated a significant association between the two variables. Qualitative findings reinforced this relationship, with respondents consistently identifying frequent equipment failures, ageing locomotives and infrastructure, delayed maintenance schedules, shortages of spare parts, and a predominantly reactive rather than preventive maintenance culture as major contributors to operational inefficiency.

The convergence of quantitative and qualitative evidence demonstrates that maintenance challenges at ZRL are not merely technical in nature but are closely linked to broader organisational factors, including inadequate funding, weak leadership oversight, and inconsistent policy implementation. This finding is consistent with Nakajima (1971) who argued through the Total Productive Maintenance (TPM) framework that preventive and predictive maintenance are essential for improving equipment reliability, reducing operational disruptions, and enhancing organisational performance.

Similarly, Gackowiec (2019) observed that railway organisations adopting proactive maintenance systems experience improved operational efficiency, safety, and asset availability, while Sikazwe et al. (2021) highlighted poor infrastructure maintenance as one of the principal constraints affecting railway performance in Zambia.

The findings also support the Resource-Based View, which recognises physical infrastructure and maintenance capability as strategic organisational resources that contribute to sustained operational performance when effectively managed. However, the present study further demonstrates that maintenance effectiveness does not operate in isolation. Instead, its success depends on complementary organisational capabilities, particularly effective leadership, sound

financial governance, and supportive institutional policies. This extends existing literature by showing that maintenance should be viewed not only as an engineering function but also as an organisational capability requiring coordinated managerial and institutional support.

Therefore, the study concludes that maintenance effectiveness is a necessary operational condition for improving sustainable performance at ZRL. However, meaningful improvements can only be realised when preventive maintenance systems are supported by competent leadership, effective resource utilisation, and a coordinated policy environment.

5.1.2 Funding Adequacy and its Limited Operational Impact

Although respondents widely perceived funding as inadequate, the regression analysis (Table 4.41) revealed that funding adequacy was not a statistically significant independent predictor of ZRL's performance ($\beta = 0.003$, $p = 0.977$). Similarly, the correlation analysis indicated only a weak association between funding adequacy and ZRL performance. However, the qualitative findings provided important contextual insights by revealing that respondents consistently viewed inadequate funding as a major operational challenge, citing delayed disbursements, poor resource allocation, weak financial accountability, and the limited impact of previous recapitalisation initiatives, including the 2013 Government recapitalisation programme.

Rather than contradicting the quantitative findings, the qualitative evidence explains why funding alone did not emerge as a significant predictor of ZRL performance. The interviews demonstrated that financial resources have often been utilised inefficiently because of weak governance structures, poor maintenance planning, inadequate leadership oversight, and limited institutional accountability. Consequently, the study found that the effectiveness of funding depends largely on how financial resources are managed and not on the amount of funding received.

These findings are consistent with the OECD (2021) arguing that sustainable performance in state-owned enterprises depends not only on adequate financial resources but also on effective governance, transparency, and accountability in resource utilisation. Likewise, Sandala (2020) observed that despite government investment in ZRL, operational performance remained below expectation because recapitalisation was not accompanied by effective institutional reforms. Similar conclusions were reached by the World Bank (2022), which emphasised that financial

investment alone is unlikely to improve railway performance unless supported by sound governance, strategic planning, and efficient asset management.

The findings further support Institutional Theory, which argues that organisational performance is influenced not only by the availability of resources but also by the institutional arrangements governing how those resources are allocated, managed, and monitored (Scott, 2014). In the case of ZRL, the study demonstrates that funding functions primarily as an enabling resource whose contribution to performance is mediated by other variables.

The study therefore concludes that funding adequacy, although essential for railway operations, is not by itself sufficient to improve organisational performance. Sustainable improvements in ZRL's performance require that financial resources be supported by effective governance, transparent resource utilisation, competent leadership, and sound maintenance planning to translate financial investment into measurable operational outcomes.

5.1.3 Leadership and Management Practices as the Strongest Predictor

Leadership effectiveness emerged as the strongest predictor of ZRL's performance. The regression analysis in Table 4.41 revealed that leadership effectiveness recorded the largest standardized regression coefficient among all statistically significant predictors ($\beta = -0.285$, $p = 0.001$), indicating that leadership exerts the greatest influence on ZRL performance relative to the other variables examined in this study.

This finding was further supported by the correlation analysis and reinforced through qualitative interviews, where respondents consistently identified weak strategic direction, poor communication, limited accountability, delayed decision-making, and political interference in management appointments as major impediments to ZRL effectiveness.

The qualitative findings further revealed that ineffective leadership has contributed to weak maintenance planning, poor coordination among departments, inadequate monitoring of ZRL performance, and limited responsiveness to changing market conditions. Respondents also observed that frequent changes in management and politically influenced appointments have weakened institutional continuity, reduced employee morale, and constrained long-term strategic

planning. These findings suggest that leadership deficiencies extend beyond individual managerial shortcomings to encompass broader governance and ZRL challenges.

The findings are consistent with the literature reviewed where Kotter (1990) argues that effective leadership provides strategic direction, mobilises organisational change, and enables institutions to respond to dynamic operating environments, while management focuses primarily on planning, organising, and controlling organisational activities.

Similarly, Yukl (2013) & Northouse (2021) contend that effective leadership enhances organisational performance through improved communication, employee motivation, strategic decision-making, and stakeholder engagement. The present findings also support Chongo et al. (2024), who observed that weak corporate governance, bureaucratic decision-making, and political interference continue to constrain the performance of many Zambian SOEs.

Furthermore, the findings provide empirical support for Contingency Theory (Fiedler, 1964), which argues that organisational performance depends on the ability of leaders to adapt their leadership style to changing organisational and environmental conditions. In the case of ZRL, the study found limited evidence of adaptive leadership, with management largely adopting reactive rather than proactive approaches to maintenance planning, resource allocation, and competitive positioning. The findings therefore suggest that ineffective leadership has weakened the organisation's capacity to respond to operational challenges and an increasingly competitive transport environment.

The study therefore concludes that leadership and management effectiveness constitute the most critical determinants of ZRL's performance. Sustainable organisational improvement will require professional, accountable, and adaptive leadership supported by strong corporate governance, merit-based appointments, effective communication, and strategic decision-making capable of responding to the evolving demands of the railway sector and the Fourth Industrial Revolution.

5.1.4 Competition from Road Transport and Market Share Erosion

The study concludes that competition from road transport remains one of the major external factors associated with ZRL's declining operational performance and market competitiveness. The regression analysis in Table 4.41 revealed that competition from road transport was a statistically

significant predictor of ZRL performance ($\beta = -0.205$, $p = 0.021$). This finding was further supported by the correlation analysis, while the qualitative interviews consistently highlighted road transport as the dominant mode of freight transportation due to its flexibility, shorter delivery times, door-to-door service, and comparatively better road infrastructure.

The qualitative findings further demonstrated that ZRL's competitive disadvantage extends beyond the existence of road transport itself. Respondents attributed the railway's declining market share to ageing rolling stock, deteriorating rail infrastructure, unreliable service delivery, frequent delays, inadequate customer responsiveness, and limited investment in modern logistics systems. Stakeholders also observed that the absence of an integrated multimodal transport strategy and the continued imbalance in public investment between road and rail have further weakened ZRL's competitive position.

These findings are consistent with the study by Mwila (2016), which observed that road transport has increasingly dominated Zambia's freight market owing to superior infrastructure development, operational flexibility, and faster service delivery. Similarly, the African Development Bank (2021) and the World Bank (2022) reported that sustained investment in road infrastructure, coupled with limited investment in rail systems, has significantly reduced the competitiveness of railway transport across many Sub-Saharan African countries. The findings also support Sikazwe et al. (2021), who argued that the decline of Zambia's railway sector is closely linked to infrastructure deterioration, inadequate investment, and increasing competition from road transport.

From a theoretical perspective, the findings provide empirical support for Porter's Five Forces Model (Porter, 1980), particularly the force of competitive rivalry. The study demonstrates that ZRL has struggled to respond strategically to increasing competition through service differentiation, operational efficiency, customer-oriented service delivery, and technological innovation. Hence, the railway has gradually lost its competitive advantage in both freight and passenger transport markets.

The study therefore concludes that competition from road transport represents a significant external challenge to ZRL. Nevertheless, the railway's declining market position is largely attributable to its limited strategic response to this competitive environment. Sustainable

improvements in ZRL's competitiveness will require modernisation of railway infrastructure, improved service reliability, greater customer responsiveness, stronger multimodal transport integration, and policy measures that promote a more balanced and complementary relationship between road and rail transport.

5.1.5 Government Policy and Regulatory Frameworks

The study concludes that government policy and regulatory frameworks play a significant role in shaping the operational performance and long-term sustainability of Zambia Railways Limited. The regression analysis in Table 4.41 identified Government Policy and Regulatory Support as a statistically significant predictor of ZRL's performance ($\beta = -0.211$, $p = 0.024$). This finding was reinforced by the correlation analysis and supported by qualitative evidence, which consistently identified inconsistent policy implementation, weak enforcement of statutory instruments, bureaucratic delays, political interference, and limited institutional coordination as major constraints to ZRL performance.

The qualitative findings further revealed that although several policy initiatives have been introduced to revitalise the railway sector, including Statutory Instrument No. 7 of 2018, the National Transport Policy, and the 8NDP, their implementation has been inconsistent and insufficiently coordinated. Respondents observed that weak enforcement mechanisms, overlapping institutional responsibilities, and continued political influence over strategic decisions have reduced ZRL's operational autonomy and limited the effectiveness of these policy interventions. Stakeholders also highlighted the absence of a long-term railway development strategy capable of responding to emerging technological, environmental, and market challenges.

These findings are consistent again with Mwila (2016), who argued that inconsistent policy implementation and weak institutional coordination have constrained the development of Zambia's railway sector for several decades. Similarly, Hope (2016) emphasised that strong governance structures, regulatory consistency, and institutional accountability are essential for improving the performance of SOEs in Africa. The World Bank (2022) further observed that sustainable railway reform requires coherent policy implementation, predictable regulatory environments, and long-term government commitment to infrastructure investment and institutional strengthening.

The findings also provide empirical support for Institutional Theory (DiMaggio & Powell, 1983; Scott, 2014), which argues that organisational performance is shaped by the quality of the institutional environment within which organisations operate. In the case of ZRL, the study demonstrates that the existence of policy frameworks alone is insufficient to improve organisational performance unless they are supported by effective implementation, regulatory enforcement, institutional coordination, and managerial autonomy. The findings therefore reinforce the view that institutional effectiveness depends not only on policy formulation but also on the capacity of ZRL to implement and sustain policy reforms.

Thus, the study concludes that strengthening government policy and regulatory frameworks is fundamental to improving the performance of ZRL. However, sustainable organisational improvement will require more than the introduction of new policies.

5.1.6 Overall Conclusion

The study concludes that the persistent underperformance of ZRL results from the interaction of technical, managerial, financial, competitive, and institutional factors rather than any single organisational weakness. While leadership effectiveness, maintenance effectiveness, competition from road transport, and government policy and regulatory support emerged as statistically significant determinants of performance, the qualitative findings further demonstrated that funding remains an important enabling factor whose effectiveness depends on sound governance, accountability, and efficient resource utilization.

The findings support the complementary application of Total Productive Maintenance Theory, Contingency Theory, Institutional Theory, and Porter's Competitive Forces Model in explaining ZRL's performance challenges. Collectively, the empirical evidence informed the development of an integrated analytical framework that brings together these established theoretical perspectives within the context of ZRL.

The study therefore concludes that sustainable improvements in ZRL's performance require a coordinated reform agenda encompassing maintenance modernisation, professional leadership, strengthened governance, efficient resource utilization, strategic market repositioning, and

consistent policy implementation to restore the railway's competitiveness and strategic contribution to Zambia's economic development.

5.2 Practical/Managerial Implications and Recommendations

The findings of this study have practical implications for ZRL and policymakers. It demonstrates that improving ZRL performance requires coordinated interventions across maintenance management, leadership development, financial governance, market competitiveness, and institutional reforms. The following recommendations are therefore derived directly from the empirical findings presented in Chapter Four.

5.2.1 Maintenance Practices

The study established that maintenance effectiveness is a significant determinant of ZRL performance. Both quantitative and qualitative findings indicate that ineffective maintenance practices, ageing infrastructure and rolling stock, and reactive maintenance systems continue to undermine operational reliability. Accordingly, the following recommendations are proposed:

- i. Institutionalize a Total Productive Maintenance (TPM) framework to promote preventive and predictive maintenance, systematic scheduling, accountability, and cross-departmental participation.
- ii. Invest in predictive maintenance technologies, including condition monitoring, vibration analysis and track-geometry inspection systems, to improve asset reliability and reduce failures before they escalate.
- iii. Establish a ring-fenced maintenance fund dedicated exclusively to infrastructure rehabilitation, rolling stock maintenance, and spare parts procurement.
- iv. Strengthen technical capacity through continuous professional development, specialized railway engineering training, and partnerships with regional and international railway institutions.
- v. Progressively introduce hybridization of diesel-electric locomotives as part of ZRL's fleet modernization strategy on a pilot basis. Given the high cost of full network electrification, hybrid locomotives provide a practical transition technology capable of reducing fuel consumption by 15-30%, improving energy efficiency through regenerative braking, lowering emissions, and enhancing long-term operational sustainability.

5.2.2 Funding Adequacy

Although funding adequacy did not emerge as a statistically significant independent predictor of performance, the qualitative findings demonstrated that weak financial governance, poor resource utilization, and inadequate accountability limited the effectiveness of previous recapitalization initiative. The recommendations therefore focus on improving the management and utilization of financial resources rather than increasing funding alone. The following are highly recommended:

- i. Establish a Railway Infrastructure Fund supported through government allocations, public-private partnerships (PPPs), and other sustainable financing mechanisms to support long-term infrastructure development.
- ii. Implement performance-based budgeting by linking financial disbursement to clearly defined operational and maintenance performance indicators (e.g., kilometres of rehabilitated track, rolling stock availability rates).
- iii. Undertake a comprehensive asset audit aimed at coming up with a commercialization programme to optimize the utilization of underutilized ZRL real estate and ancillary properties, channeling proceeds into capital expenditure.
- iv. Strengthen financial governance frameworks through transparent budgeting, regular independent audits, and enhanced monitoring and evaluation systems to improve accountability in resource utilization.
- v. Diversify long-term financing by pursuing strategic partnerships with local institutions like NAPSA and ZANACO as sustainable alternatives to foreign borrowing, and reduce reliance on government funding while supporting sustainable railway investment

5.2.3 Leadership and Management Practice

The study identified leadership effectiveness as the strongest predictor of ZRL's performance. Quantitative findings showed that leadership had the largest standardized effect among the significant predictors, while qualitative findings revealed weaknesses in strategic direction, communication, accountability, and responsiveness to market changes. Respondents also highlighted deficiencies in planning, resource allocation, and performance monitoring. Based on these findings, the study recommends that ZRL should:

- i. Strengthen strategic leadership by promoting accountability, customer orientation, innovation, and timely decision-making.

- ii. Implement a performance management system with measurable Key Performance Indicators (KPIs) linked to organisational and departmental objectives.
- iii. Institutionalize succession planning and continuous leadership development to strengthen managerial capacity and reduce reliance on politically influenced appointments.
- iv. Strengthen planning, budgeting, monitoring, and evaluation systems to improve operational discipline and accountability.
- v. Promote evidence-based decision-making supported by operational data and performance reviews.
- vi. Enhance stakeholder engagement and internal communication to improve employee commitment and restore customer confidence.

5.2.4 Competition from Road Transport

The findings confirmed that competition from road transport significantly contributes to ZRL's declining market share. Qualitative evidence further showed that road transport benefits from greater flexibility, better infrastructure, and stronger policy support. Accordingly, the study recommends that ZRL should:

- i. Develop integrated multimodal logistics partnerships that combine the strengths of rail and road transport.
- ii. Review freight tariff structures to improve competitiveness while maintaining financial sustainability.
- iii. Prioritize bulk freight markets such as mining, agriculture, fuel, cement, and other heavy commodities where rail has a clear comparative advantage.
- iv. Improve service reliability through infrastructure rehabilitation, rolling stock modernization, and predictable train schedules to rebuild customer confidence.
- v. Introduce a Holiday Special Train operating during peak festive and tourism seasons along the Kitwe-Livingstone corridor to promote domestic tourism, diversify revenue streams, improve public visibility, and optimize underutilized passenger assets.

5.2.5 Government Policies and Regulatory Frameworks

The study established that government policy and regulatory support significantly influence ZRL's performance. However, qualitative findings showed that inconsistent policy implementation,

political interference, and weak enforcement of existing regulations continue to constrain ZRL performance. The study therefore recommends that Government should:

- i. Review and modernize the Railway Act of 1994 to reflect contemporary railway safety, environmental, digital, and operational requirements.
- ii. Strengthen the independence and capacity of railway regulation to improve policy implementation, compliance monitoring, and enforcement.
- iii. Align national transport policies with long-term railway investment programmes to ensure consistency between policy objectives, financing, and infrastructure development.
- iv. Strengthen enforcement of Statutory Instrument No. 7 of 2018 and related multimodal transport policies, taking into account ZRL's operational capacity while progressively increasing rail's share of bulk freight.
- v. Promote regional policy harmonization within SADC to improve cross-border railway operations and regional competitiveness.

5.2.6 Integrative Recommendation

The findings demonstrate that improving ZRL's performance requires coordinated rather than isolated interventions. Maintenance modernization, effective leadership, sound financial governance, competitive positioning, and supportive policy frameworks are mutually reinforcing and should therefore be implemented as an integrated reform programme. Accordingly, the study proposes the Integrated Performance Improvement Framework for Zambia Railways Limited (Figure 5.1) as a practical guide for policymakers, the Industrial Development Corporation (IDC), the Ministry of Transport and Logistics, and ZRL management in planning and coordinating institutional, operational, and strategic reforms.

5.3 Contributions of the Study

The study contributes to knowledge in three interrelated dimensions: theoretical, methodological, and practical. Rather than proposing entirely new theories, it adapts, integrates and contextualizes established theoretical perspectives, demonstrates a rigorous mixed-methods approach, and provides evidence-based recommendations for improving the performance of ZRL and other state-owned railway enterprises operating in similar environments.

5.3.1 Theoretical Contributions

i. Extension of Total Productive Maintenance (TPM) Theory

The study extends the application of Total Productive Maintenance (TPM) from manufacturing to the railway transport sector by demonstrating that preventive and predictive maintenance principles remain relevant within resource-constrained state-owned railway enterprises. The empirical findings confirmed maintenance effectiveness as a significant determinant of ZRL performance, supporting the continued applicability of TPM in railway operations.

ii. Contextualization of Contingency Theory

The findings demonstrate that leadership effectiveness is strongly associated with ZRL performance while highlighting how political interference, bureaucratic structures, and limited managerial autonomy constrain leadership adaptability within state-owned enterprises. The study therefore provides contextual evidence supporting the application of Contingency Theory in public-sector railway organisations.

iii. Application of Institutional Theory

The study demonstrates that weak policy implementation, inconsistent regulatory enforcement, and political interference contribute significantly to ZRL underperformance. These findings reinforce Institutional Theory by illustrating how institutional environments influence operational performance within Zambia's railway sector.

iv. Application of Porter's Competitive Forces Model

The findings confirm that competition from road transport significantly influences ZRL's performance. The study therefore demonstrates the continued relevance of Porter's Competitive Forces Model within the public transport sector by illustrating how competitive pressures interact with institutional and operational constraints in state-owned railways.

v. Integrated Framework for Railway Reform

Rather than introducing a new theory, this study develops an integrated conceptual framework for analysing railway performance by combining insights from Total Productive Maintenance Theory, Contingency Theory, Institutional Theory, and Porter's Competitive Forces Model.

The framework organises the study findings into five interrelated dimensions: Institutional Readiness, Operational Efficiency, Market Responsiveness, Stakeholder Engagement, and

Strategic Transformation, thereby providing a context-specific model for understanding railway reform within resource-constrained SOEs. The inclusion of Market Responsiveness and Stakeholder Engagement is grounded in the study's empirical findings, which consistently highlighted customer orientation and stakeholder confidence as essential prerequisites for ZRL renewal.

Accordingly, the principal theoretical contribution of this study lies in the integration and contextual adaptation of established theories to explain the performance of ZRL. Figure 5.1 below depicts the proposed integrated model for railway reform.

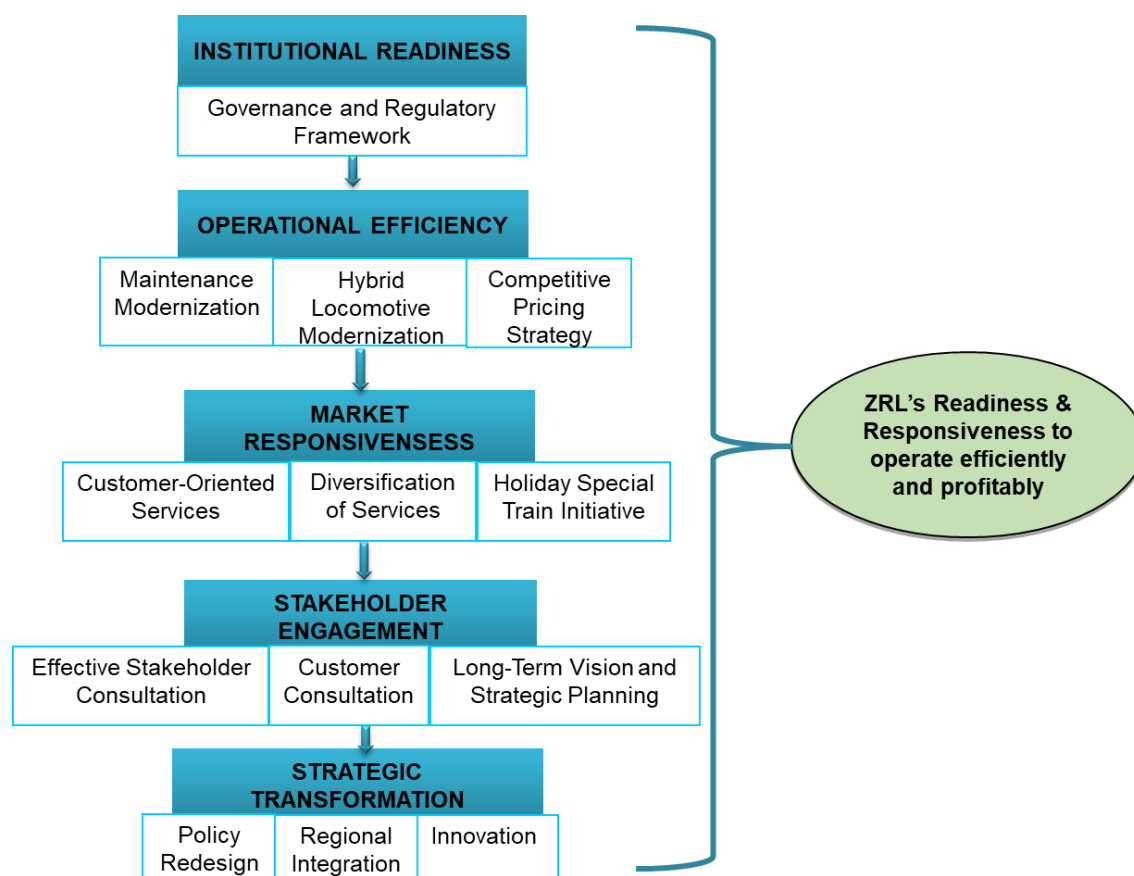


Figure 5.1: Proposed Model for ZRL performance and reform

Source: Proposed model designed by the author, 2025

The proposed integrated model above visualizes a logical flow, from strengthening foundational institutional inputs at the top, through layers of improved efficiency and stakeholder alignment, culminating in a reformed and strategically competitive railway institution. This model offers a

diagnostic and planning tool for decision-makers, built from both empirical findings and contextual understanding of Zambia's SOEs performance dynamics.

5.3.2 Methodological Contributions

i. Demonstration of a convergent mixed-methods design

The study demonstrates the value of a convergent mixed-methods design by integrating quantitative analyses with qualitative interviews. This approach enabled the statistical findings to be complemented by participants' experiences, providing a more comprehensive understanding of the factors influencing ZRL's performance.

ii. Triangulated analysis

The integration of Spearman's rho, multiple regression, and thematic analysis strengthened the credibility of the findings through methodological triangulation. For example, although funding adequacy was not statistically significant in the regression model, qualitative evidence explained this result by highlighting weak financial governance and ineffective utilization of available resources.

iii. Context-sensitive case study approach

The study illustrates how a single-case mixed-methods design can generate detailed contextual evidence for understanding organisational performance within a state-owned enterprise. Although the findings are primarily applicable to ZRL, the methodological approach provides useful guidance for future studies of similar public enterprises.

5.3.3 Practical Contributions

i. Integrated reform framework

The proposed analytical framework provides a practical guide for improving organization performance by integrating established theoretical perspectives within the context of ZRL.

The framework identifies five complementary reform areas as shown in Figure 5.1:

- Institutional Readiness - strengthen corporate governance, reduce political interference, and modernise the regulatory environment.
- Operational Efficiency - institutionalise Total Productive Maintenance (TPM), adopt predictive maintenance technologies, and explore the hybridisation of diesel-electric locomotives to improve energy efficiency and reduce operating costs.

- Market Responsiveness - reposition rail within an integrated multimodal transport system and introduce customer-oriented initiatives, such as the Holiday Special Train, to diversify revenue and promote tourism.
- Stakeholder Engagement - strengthen collaboration among employees, customers, regulators, investors, and surrounding communities.
- Strategic Transformation - align long-term investment, innovation, and sustainability initiatives with Zambia's national development priorities.

Figure 5.2 shows BESS for ZRL hybridization of locomotives proposed as a pilot project.

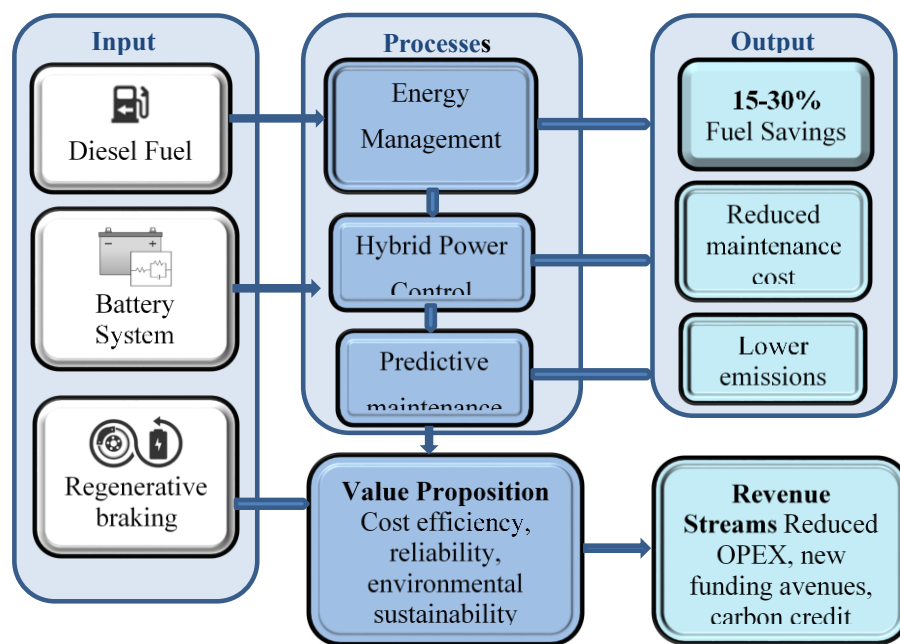


Figure 5.2: Sub-Model – BESS Hybridization for ZRL Locomotives

Source: Developed by the author, 2025

Figure 5.2 illustrates how integrating a Battery Energy Storage System (BESS) into diesel-electric locomotives can improve operational efficiency and environmental sustainability. The model demonstrates how regenerative braking, intelligent energy management, and predictive maintenance can lower maintenance costs, reduce fuel consumption, improve locomotive reliability, and reduce emissions. The framework further identifies the roles of ZRL management, the Ministry of Transport and Logistics, equipment suppliers, and private-sector partners in supporting implementation of a pilot-based solution.

ii. Evidence-based operational recommendations

The study translates its empirical findings into practical recommendations, including institutionalising Total Productive Maintenance, establishing a Railway Infrastructure Fund, exploring locomotive hybridisation, introducing the Holiday Special Train, strengthening intermodal partnerships, and enhancing regulatory governance.

iii. Guidance for policymakers

The findings provide evidence for strengthening railway governance through improved policy implementation, enhanced financial accountability, reduced political interference, and revision of the Railways Act of 1994 to better support commercial railway operations.

iv. Relevance to similar state-owned railway enterprises

Although the findings are specific to ZRL, the integrated framework and recommendations may provide useful insights for other state-owned railway organisations facing comparable challenges relating to maintenance, governance, funding, and regulatory coordination, particularly within the Southern African region.

5.4 Limitations of the Study and Directions for Future Research

Like all empirical research, this research has several limitations that should be considered when interpreting the findings. These limitations also present opportunities for future research.

5.4.1 Case Study Scope

This study focused exclusively on Zambia Railways Limited, providing an in-depth understanding of the institutional and operational factors influencing its performance. While the single-case design allowed detailed contextual analysis, it limits the generalizability of the findings to other State-Owned Enterprises (SOEs) or railway systems. Future studies could undertake comparative analyses involving multiple SOEs or railway operators within the Southern African Development Community (SADC) to validate and extend the findings.

5.4.2 Sample Size and Composition

Although the sample of 109 respondents was statistically adequate for the quantitative analyses conducted and was complemented by qualitative interviews, most respondents were employees of ZRL. This may have placed greater emphasis on internal organisational perspectives. Although objectivity was strengthened through methodological triangulation involving employees, clients,

key stakeholders, and quantitative findings, future studies should include larger and more diverse samples comprising freight customers, policymakers, regulators, and private logistics operators to enhance external validity.

In addition, this study examined five ZRL determinants of performance. Other potentially important variables, such as technological innovation, labour productivity, organisational culture, asset age, and digital transformation, were beyond the scope of this research and should be incorporated into future performance models.

5.4.3 Cross-Sectional Design

The study adopted a cross-sectional design, collecting data at a single point in time. While appropriate for achieving the study objectives, this design limits the ability to examine organisational change over time or establish causal relationships. Future longitudinal studies should evaluate ZRL's performance before and after major institutional reforms, maintenance programmes, or funding interventions to assess their long-term effectiveness.

5.4.4 Methodological Boundaries

The mixed-methods approach strengthened the credibility of the findings through triangulation; however, certain methodological limitations remain. The quantitative analysis relied primarily on Likert-scale data analysed using non-parametric statistical techniques, which measure associations rather than causal relationships. Similarly, qualitative findings were derived from semi-structured interviews and therefore remain subject to participant perceptions and researcher interpretation. Future studies may strengthen causal inference by integrating operational performance indicators, econometric modelling, or observational methods.

5.4.5 Contextual Specificity

The study was undertaken within the institutional and policy environment of Zambia, where SOEs operate under unique governance, regulatory, and political conditions. Therefore, the findings should primarily be interpreted within the context of Zambia Railways Limited. Although some lessons may be applicable to similar railway organisations in developing economies, broader generalisation should be made cautiously. Comparative cross-country studies would help determine whether the relationships identified in this study are unique to Zambia or are common across African railway systems.

5.4.6 Future Research Directions

Based on the foregoing limitations, the following areas are recommended for future research:

- i. Comparative studies of State-Owned Enterprises across the rail, road, and aviation sectors to identify common and sector-specific determinants of organisational performance.
- ii. Longitudinal evaluations of maintenance, governance, and funding reforms to assess their long-term impact on railway performance.
- iii. Policy evaluation studies examining the implementation and effectiveness of railway legislation and regulatory instruments, including Statutory Instrument No. 7 of 2018.
- iv. Investigation of digital transformation, automation, artificial intelligence, and predictive maintenance technologies in improving railway operational efficiency and competitiveness.
- v. Development and validation of governance and leadership frameworks tailored to State-Owned Enterprises operating within politically influenced institutional environments.

5.5 Final Conclusion

This study investigated the factors contributing to the underperformance of Zambia Railways Limited using a convergent mixed-methods approach grounded in the pragmatism research paradigm. The findings demonstrate that ZRL's performance is influenced by the interaction of maintenance effectiveness, funding adequacy, leadership practices, competition from road transport, and government policy and regulatory frameworks. While leadership, maintenance, competition, and government policy were found to have statistically significant relationships with ZRL performance, the qualitative findings further revealed how governance weaknesses, ineffective resource utilisation, and institutional constraints shape these relationships in practice.

The study concludes that sustainable improvement in ZRL's performance requires coordinated reforms rather than isolated interventions. Strengthening maintenance systems, improving governance and leadership, enhancing financial accountability, modernising the regulatory environment, and repositioning rail within Zambia's multimodal transport system are essential for restoring the ZRL's operational efficiency and long-term competitiveness. Although the findings are specific to ZRL, they provide useful insights for policymakers and managers responsible for

the reform of state-owned railway enterprises operating under similar institutional and resource constraints.

5.6 Summary

This chapter presented the conclusions, practical recommendations, and contributions arising from the study. It demonstrated that ZRL's persistent underperformance results from interconnected technical, financial, managerial, competitive, and institutional challenges rather than a single causal factor. The chapter proposed evidence-based recommendations aimed at strengthening maintenance management, improving financial governance, enhancing leadership effectiveness, promoting competitive repositioning, and modernising government policy and regulatory support.

The chapter further highlighted the study's theoretical, methodological, and practical contributions, acknowledged its limitations, and identified areas for future research. Fundamentally, the study provides an integrated evidence base to support the revitalisation of ZRL and contributes to the broader understanding of organisational performance within SOEs in developing economies.

REFERENCES

- Abioye, O. (2022). A Literature Review of Privatization Models, Theoretical Framework for Nigerian Railway Corporation Privatization. *International Journal of Economics and Finance*, 14(8), 1-36.
- Abioye, O. S. (2016). Evaluating the role and impact of railway transport in the Nigerian economy, options and choices: Case of Nigerian Railway Corporation. *AshEse Journal of Economics*, 2(4), 103-13.
- Adom, D., Hussein, E. K., & Agyem, J. A. (2018). Theoretical and conceptual framework: Mandatory ingredients of quality research. *International journal of scientific research*, 7(1), 438-441.
- African Development Bank. (2021). *African Economic Outlook 2021: From Debt Resolution to Growth-The Road Ahead for Africa*. Abidjan: African Development Bank.
- African Development Bank. (2022). *East Africa Regional Integration Strategy Paper 2022-2026*. Abidjan: African Development Bank.
- African Union. (2019). *Agenda 2063: The Africa We Want* (2nd ed.). Addis Ababa: African Union Commission
- Ahuja, I. P. & Khamba, J. S. (2008). Total productive maintenance: literature review and directions. *International journal of quality & reliability management*, 25(7), 709-756.
- Akram, H. W. (2021). An analysis of performance of Indian railways. *International Journal of Logistics Systems and Management*, 40(3), 287-308.
- Al-Douri, Y. K. (2016). Improvement of railway performance: a study of Swedish railway infrastructure. *Journal of Modern Transportation*, 24, 22-37., 22-37.
- AL-Sammk, B. E. (2020). The possibility of Application the Pillars of Total productive maintenance (TPM): an exploratory study of the views of managers in health centers in City of Mosul. *Al-Anbar University Journal of Economic & Administration Sciences*, 12(30).
- Amsden, A. H. (1989). *Asia's Next Giant: South Korea and Late Industrialization*. Oxford University Press.
- Anderson, D. & Anderson, L. A. (2010). *Beyond change management: How to achieve breakthrough results through conscious change leadership* (Vol. 36). John Wiley & Sons.

- Anderson, L. A. & Anderson, D. (2010). *The change leader's roadmap: How to navigate your organization's transformation (Vol. 384)*. John Wiley & Sons.
- Andrews, M. P., Pritchett, L., & Woolcock, M. (2017). *Building State Capability: Evidence, Analysis*, . Oxford University Press.
- Apa. (2020). *Publication Manual of the American Psychological Association*. Washington, DC, USA: American: Psychological Association.
- Appelbaum, S. H., Degbe, M. C., MacDonald, O., & Nguyen-Quang, T. S. (2015). Organizational outcomes of leadership style and resistance to change (Part Two). *Industrial and Commercial Training*, 47(3), 135-144.
- Armstrong, M. & Taylor, S. (2020). *Armstrong's handbook of human resource management practice*. Kogan Page Publishers.
- Armstrong, M., & Taylor, S. (2023). *Armstrong's handbook of human resource management practice: A guide to the theory and practice of people management*. Kogan Page Publishers.
- Armstrong, M. & Taylor, S. (. (2010). *Armstrong's essential human resource management practice: A guide to people management*. Kogan Page Publishers.
- Artal, R. & Rubenfeld, S. (2017). Ethical issues in research. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 43, 107-114.
- Auguste, J. (2013). Applying Kotter's 8-step process for leading change to the digital transformation of an orthopedic surgical practice group in Toronto, Canada. *J Health Med Informat*, 4(3), 129.
- Austin, G. (2013). African Economic Development and Colonial Legacies. *International Development Policy*, 4(1), 43-60.
- Azmy, A., & Perkasa, D. H. (2024). The role of transformational leadership on employee performance through innovative work behavior in a public transportation company. *Journal of Chinese Human Resources Management*, 15(4), 62–78. <https://doi.org/10.47297/wspchrmWSP2040-800504.20241504>
- Babbie, E. R. (2020). *The practice of social research*. Cengage Au.
- Badarai, E., Kotze, M., & Nel, P. (2023). A leadership-organisational performance model for state-owned enterprises in emerging economies. *South African Journal of Business Management*, 54(1), a3148. <https://doi.org/10.4102/sajbm.v54i1.3148>

- Banda, D. (2020). Examining the Contribution of Public Transport on Economic Development in the Urban Suburbs of Lusaka City. *The International Journal of Multi-Disciplinary Research*, 1-24.
- Bank, A. D. (2015). *Rail Infrastructure in Africa Financing Policy Options*. Abidjan, Cote d'Ivoire: African Development Bank.
- Barbour, J. D. (2006). Burns, James M. SAGE, 93, 94
- Bartz, T. C., Cezar Mairesse Siluk, J., & Paula Barth Bartz, A. (2014). Improvement of industrial performance with TPM implementation. *Journal of Quality in Maintenance Engineering*, 20(1), 2-19.
- Basri, E. I.-S. (2017). Preventive maintenance (PM) planning. *a review. Journal of quality in maintenance engineering*, 23(2), , 114-143.
- Bass, B. M., & Bass Bernard, M. (1985). Leadership and performance beyond expectations (Vol. 25, No. 3, pp. 481-484). New York: Free press.
- Bataineh, O. A.-H., Al-Hawari, T., Alshraideh, H., & Dalalah, D (2019). A sequential TPM-based scheme for improving production effectiveness presented with a case study. *Journal of Quality in Maintenance Engineering*, 25(1), 144-161.
- Baum, A. M. (2020). Managing fiscal risks from state-owned enterprises (IMF Working Paper No. 20/213). *International Monetary Fund*.
- Bbenkele, E. C. (1986). *Understanding consumer behaviour in the less developed countries: an empirical investigation of brand loyalty in Zambia*. Stirling Library.
- Bell, E. B. (2022). *Business research methods*. Oxford university press.
- Bengtsson, M. & Lundström, G. (2018). On the importance of combining “the new” with “the old”—One important prerequisite for maintenance in Industry 4.0. *Procedia manufacturing*, 25, 118-125.
- Berrado, A. E.-K. (2010). A framework for risk management in railway sector: application to road-rail level crossings. *Open Transportation Journal*, , 19p.
- Bevilacqua, M. & Braglia, M. (2000). The analytic hierarchy process applied to maintenance strategy selection. *Reliability engineering & system safety*, 70(1), 71-83.
- Bhadury, B. (2012). *Principles and Practice of Total Productive Maintenance*. Allied Publishers.
- Bhatia, V. & Sharma, S. (2021). Expense based performance analysis and resource rationalization: Case of Indian Railways. *Socio-Economic Planning Sciences*, 76, 100975.

- Bhebehe, M. & Zincume, P. N. (2020). Maintenance strategies in the rail environment. *Proceedings of the 31st Southern African Institute of Industrial Engineering Annual Conference (SAIIE31)*, (pp. 1–10). Muldersdrift, South Africa.
- Binder, C. (2018). *Integrating organizational-cultural values with performance management. In Leadership and Cultural Change*. Routledge.
- Blair, J. C. (2014). *Designing surveys: A guide to decisions and procedures*. sage publications.
- Blumenfeld, M. W. (2019). Developing a new technical strategy for rail infrastructure in low-income countries in Sub-Saharan Africa and South Asia. *Sustainability*, 11(16), 4319.
- Bolden, R. (2011). Distributed leadership in organizations: A review of theory and research. *International journal of management reviews*, 13(3), 251-269.
- Boshoff, K. R. (2015). *Investigating the feasibility of braking energy utilisation on diesel electric locomotives for South African Railway Duty Cycles (Doctoral dissertation)*.
- Botswana Railways. (2021). *Annual Report 2020/2021*. Gaborone: Botswana Railways.
- Bouraima, M. B. (2021). Assessing the performance of Sub-Saharan African (SSA) railways based on an integrated Entropy-MARCOS approach. *Operational Research in Engineering Sciences: Theory and Applications*, 4(2), 13-35.
- Bouraima, M. B., Alimo, P. K., Agyeman, S., Sumo, P. D., Lartey-Young, G., Ehebrecht, D., & Qiu, Y. (2023). Africa's railway renaissance and sustainability: Current knowledge, challenges, and prospects. *Journal of Transport Geography*, 106, 103487.
- Boye, L. J., Makhanya, B. B., Pretorius, J. H. C., & Nel, H. (2023). South African Rail Infrastructure Maintenance. *International Conference on Industrial Engineering and Operations Management*. Philippines: Manila.
- Braglia, M. C., Castellano, D., & Gallo, M. (2019). A novel operational approach to equipment maintenance. *TPM and RCM jointly at work. journal of quality in maintenance engineering*, 25(4), 612-634.
- Brannmark, M. & Benn, S. (2017). *A proposed model for evaluating the sustainability of continuous change programmes: In Sustainability and Organizational Change Management*. Routledge.
- Broin, E., & Guivarch, C. (2017). Transport infrastructure costs in low-carbon pathways. *Transportation Research Part D: Transport and Environment*, 55, 389-403.
- Bruijl, D. G. (2018). The relevance of Porter's five forces in today's innovative and changing business environment. *Available at SSRN 3192207*.

- Bryman, A. (2016). *Social research methods*. Oxford university press.
- Budai, G. H. (2006). Scheduling preventive railway maintenance activities. *Journal of the Operational Research Society*, 57, , 1035-1044.
- Butzbach, O. Fuller, D. B., Schnyder, G., & Svystunova, L. (2025). State-Owned Enterprises as Institutional Actors in Contemporary Capitalism and Beyond. *Cambridge University Press*.
- Burns, J. S. (1996). Defining leadership: Can we see the forest for the trees?. *Journal of leadership studies*, 3(2), 148-157.
- Buurman, B. G. (2023). Railway maintenance reservation scheduling considering detouring delays and maintenance demand. *Journal of Rail Transport Planning & Management*, 25, 100359.
- Bwalya, J. M. (2022). A Systematic Literature Review of the Importance of Leadership to the Growth of Small and Medium Enterprises. *Journal of Economics, Finance and Management Studies*, 1727.
- Cacchiani, V. & Toth, P. (2012). Nominal and robust train timetabling problems. *Journal of Operational Research*, 219(3), 727-737.
- Cameron, E. & Green, M. (2019). *Making sense of change management: A complete guide to the models, tools and techniques of organizational change*. Kogan Page Publishers.
- Canton, H. (2021). United nations conference on trade and development—unctad. In *The Europa directory of international organizations 2021* , 172-176.
- Chang, Y. H. (2008). The effectiveness of the total productive maintenance practices in Taiwan's high-speed rail. *International Journal of Production Research*, 46(10), 2625-2645.
- Chaurey, S. K., Kalpande, S. D., Gupta, R. C., & Toke, L. K. (2023). A review on the identification of total productive maintenance critical success factors for effective implementation in the manufacturing sector. *ournal of quality in maintenance engineering*, 29(1), 114-135.
- Chen, Z. & Haynes, K. E. (2016). Transportation infrastructure and economic growth in China: A meta-analysis. In *Socioeconomic Environmental Policies and Evaluations in Regional Science: Essays in Honor of Yoshiro Higano* (pp. 339-357). Singapore: Springer Singapore.
- Chen, Z. X. (2016). The impact of high-speed rail investment on economic and environmental change in China: A dynamic CGE analysis. *Transportation Research Part A: Policy and Practice*, 92, 232-245.

- Chipalo, A. (2011). The Parastatal Sector in Zambia: Prospects and Challenges in the Era of Privatisation. *Journal of Management and Strategy*, 2(4), 68-76.
- Chiseyengi, J. M. (2022). The Nexus between Shepherd Leadership and Modern Leadership Models: A Systematic Literature Review. *Journal of Economics, Finance and Management Studies*, 1692-1694.
- Chongo, A. M., Mandhu, F., Mutono-Mwanza, B. G., & Mwange, A. (2024). Corporate governance practices in a Parastatal: A case study of Zambia Railways Limited. *International Journal of Multidisciplinary Research and Growth Evaluation*, 128-137.
- Christensen, L. B. (2011). *Research methods, design, and analysis*.
- Cipek, M. P. (2021). Comparative analysis of conventional diesel-electric and hypothetical battery-electric heavy haul locomotive operation in terms of fuel savings and emissions reduction potentials. *Energy*, 232, 121097.
- Citaristi, I. (2022). *African Development Bank-AfDB*. In *The Europa Directory of International Organizations 2022*, pp. 417-423. Routledge.
- Citaristi, I. (2022). International energy agency-IEA. In *The Europa directory of international organizations 2022*, 701-702.
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. routledge.
- CO, O. (2022). Zambia's road to economic recovery. Policy.
- Collins, J. C. (1996). Building your company's vision. *Harvard business review*, 74(5), 65.
- Collins, K. M., Onwuegbuzie, A. J., & Jiao, Q. G. (2006). Prevalence of mixed-methods sampling designs in social science research. *Evaluation & Research in Education*, 19(2), 83-101.
- Commission, N. P. (2013). National development plan vision 2030.
- Creswell, J. W. (2017). *Designing and conducting mixed methods research*. Sage publications.
- Creswell, J. W. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Cuervo-Cazurra, A. I. (2014). Governments as owners: State-owned multinational companies. *Journal of international business studies*, 45, 919-942.
- Daiser, P. Y. (2017). Corporate governance of state-owned enterprises: a systematic analysis of empirical literature. *International Journal of Public Sector Management*, 30(5), 447-466.

- David, F. R. (2017). *Strategic management: Concepts and cases: A competitive advantage approach*. Upper SaddleRiver: Pearson.
- Davis, L. E. (2005). The resource curse. *Natural Resources Forum*, 29(3), 233-242.
- Davoodi, M. J., Jafari Kaleybar, H., Brenna, M., & Zaninelli, D. (2023). Energy management systems for smart electric railway networks: A methodological review. *Sustainability*, 15(16), 1223.
- Delbridge, R. G. (2006). *The exceptional manager: Making the difference*. Oxford University Press.
- Deutsche Bahn AG. (2024). *Integrated report 2023*. Deutsche Bahn AG. Deutsche Bahn Integrated Report 2023
- DiMaggio, P. J. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 48(2), 147-160.
- Dixon, M. T., Toman, N., & DeLisi, R. (2013). *The effortless experience: conquering the new battleground for customer loyalty*. Penguin.
- Donaldson, L. (2001). *The contingency theory of organizations*. Sage.
- Dwyer, J. K., Karanikas, N., & Sav, A. (2023). Scoping review of peer-reviewed empirical studies on implementing high reliability organisation theory. *Safety science*, 164, 106178.
- E. Lungomesha and A. Zulu, 2. (2015). *“Assessment of Electrification of Zambia Railways Main Track*. Lusaka: UNZA.
- Esposito, G. C., Cicatiello, L., & Ercolano, S. (2020). Reforming railways in the EU: An empirical assessment of liberalisation policies in the European rail freight market. *Transportation Research Part A: Policy and Practice*, 132, 606-613.
- East Japan Railway Company. (2023). *JR East Group Report 2023 (Integrated Report)*. East Japan Railway Company. JR East Group Report 2023
- Etikan, I. & Bala, K. (2017). Combination of probability random sampling method with non probability random sampling method (sampling versus sampling methods). *Biometrics & biostatistics international Journal*, 5(6), 210-213.
- Etikan, I. & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6), 00149.
- Famurewa, S. M. (2015). Maintenance analysis for continuous improvement of railway infrastructure performance. *Structure and Infrastructure Engineering*, 11(7), 957-969.

- Felicio, J. A. (2012). *Fundamentals of Strategy: Management Decision*.
- Fiedler, F. R. (2015). "Contingency theory of leadership." *Organizational behavior 1. essential theories of motivation and leadership*, 232,, 1-2015.
- Field, A. (2024). *Discovering statistics using IBM SPSS statistics*. Sage publications limited.
- Fourie, C. J. (2017). A modelling framework for railway infrastructure reliability analysis. *South African Journal of Industrial Engineering*, 28(4), , 150-160.
- Fowler Jr, F. J. (2013). *Survey research methods*. Sage publications.
- Franklin, M. (2021). *Agile change management: A practical framework for successful change planning and implementation*. Kogan Page Publishers.
- Fundanga, C. M. (1997). Privatization of public enterprises in Zambia: An evaluation of the policies, procedures and experiences (Vol. 35). *Tunis: African Development Bank*.
- Gabcanova, I. V. (2011). The employees—the most important asset in the organizations. *Human Resources Management & Ergonomics*, 5(1), 30-33.
- Gackowiec, P. (2019). General overview of maintenance strategies—concepts and approaches. *Multidisciplinary Aspects of Production Engineering*, 2.
- Gadiesh, O. & Gilbert, J. L. (2001). Transforming corner-office strategy into frontline action. *Harvard Business Review*, 79(5).
- Gallus, J. & Frey, B. S. (2016). Awards: A strategic management perspective. *Strategic Management Journal*, 37(8), 1699-1714.
- García-Garre, A. & Gabaldón, A. (2019). Analysis, evaluation and simulation of railway diesel-electric and hybrid units as distributed energy resources. *Applied Sciences*, 9(17), 3605.
- George, T. B., Mokoena, R., & Rust, F. C. (2018). A review on the current condition of rail infrastructure in South Africa. *Proceedings of the 37th Southern African Transport Conference* (pp. 1-12). Pretoria: Southern African Transport Conference.
- Gholipour, Y. Z. (2025). Comprehensive Review of Maintenance Strategies: From Reactive to Proactive Approaches. 5349871.
- Gilbert, J. A.-R. (2012). Toxic versus cooperative behaviors at work: the role of organizational culture and leadership in creating community-centered organizations. *International Journal of Leadership Studies*, 7(1), 29-47.
- Gill, P. S. (2008). Methods of data collection in qualitative research: interviews and focus groups. *British dental journal*, 204(6),, 291-295.

- Glendon, A. I. (2016). *Human safety and risk management*. Crc Press.
- Gopalakrishnan, S. (2007). In Search of a Smoother Ride on Narrow Gauge Track. *Railway Gazette International*, 163(4).
- Gravetter, F. J. (2017). *Statistics for the behavioral sciences 10th. Statistic for The Behavioral Science*. Boston.
- Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research*, 26(3), 499–510. https://doi.org/10.1207/S15327906MBR2603_7
- Green, J. & Thorogood, N. (2018). *Qualitative methods for health research*. Sage.
- Güner, S., Taşkın, K., Cebeci, H. İ., & Aydemir, E. (2024). Service quality in rail systems: listen to the voice of social media. *Transportation Research Record*, 2678(6), 824-847
- Habiyaremye, A. (2016). Is Sino-African trade exacerbating resource dependence in Africa? *Structural Change and Economic Dynamics*, 37, 1-12.
- Hamurcu, M. & Eren, T. ((2020). Strategic planning based on sustainability for urban transportation: An application to decision-making. *Sustainability*, 12(9), 3589.
- Hassan, S., Mahsud, R., Yukl, G., & Prussia, G. E. (2013). Ethical and empowering leadership and leader effectiveness. *Journal of Managerial Psychology*, 28(2), 133-146.
- Havenga, J. H., Simpson, Z. P., De Bod, A., & Pienaar, W. J. (2013). Rail benchmarking—new paradigms: a South African position. *Corporate Ownership & Control*, 11(1), 233-242.
- Hayes, J. (2002). *The theory and practice of change management*. Basingstoke: Palgrave.
- Helmold, M. (2021). Corporate Strategic Management. In *Successful Management Strategies and tool*, 11-31.
- Henriot, P. J. (1996). Zambia: a case study of economic reform and the impact on the poor.
- Heracleous, L., & Joehen, W. (2017). Cost-effective service excellence: lessons from Singapore Airlines. In *Strategic Management in Aviation* (pp. 301-306). Routledge.
- Hillbom, E. & Eren, T. (2018). *Botswana—A modern economic history: An African diamond in the rough*. Springer.
- Hope, K. R. (2016). An analytical perspective on police corruption and police reforms in developing societies. *Police corruption and police reforms in developing societies*, 3-31
- Hopkins, A. (2009). The Problem of Defining High Reliability Organisations. CCH Australia Ltd.

- Holstein, M., Kuntz, J., & Näswall, K. (2016). *Examining Change Process Perceptions and Proximal Readiness for Organisational Change: The Moderating Effect of Distal Readiness*.
- Howard, J. M. (2021). Train tweets and the social licence to operate: Exploring stakeholder engagement through the use of Twitter by train operating companies in the United Kingdom. *Doctoral dissertation, University of Westminster*.
- Howell Jr, B. F. (2003). Biographies of interest to earthquake and engineering seismologists. In *International Geophysics* , 1725-1789.
- Hox, J. J. (2005). Data collection, primary versus secondary.
- Huang, F. L. (2018). Bullying involvement, teacher–student relationships, and psychosocial outcomes. *School psychology quarterly*, 33(2), 223.
- Illes, G. D. (2022). *The Europeanisation of EU Railway Policy Hungarian and Polish strategies for adopting the political pillar of the EU's Fourth Railway Package*. EU.
- Indiatsy, C. M. (2014). The application of Porter’s five forces model on organization performance: A case of cooperative bank of Kenya Ltd.
- International Union of Railways. (2023). *Bridging the Rail Finance Gap: What Role for Climate-Specific Instruments?* Paris: UIC.
- Ittmann, H. W. (2017). Private–public partnerships: A mechanism for freight transport infrastructure delivery?. *ournal of Transport and Supply Chain Management*, 11(1), 1-13.
- Ivina, D. & Palmqvist, C. W. (2023). The Downside of Upkeep: Analysing Railway Infrastructure Maintenance Impact on Train Operations in Sweden. *Applied Sciences*, 14(1) , 125.
- Ivina, D. & Palmqvist, C. W. (2023). Railway maintenance windows: Discrepancies between planning and practice in Sweden. *Transportation research interdisciplinary perspectives*, 22, 100927.
- Jain, A. B. (2014). Total productive maintenance (TPM) implementation practice: A literature review and directions. *International Journal of Lean Six Sigma*, 5(3), 293-323.
- Jarasunienė, A. S. (2017). Analysis of application management theories and methods for developing railway transport. *Procedia Engineering*, 187, 173-184.
- Jardine, A. K., & Tsang, A. H. (2005). *Maintenance, replacement, and reliability: theory and applications*. CRC press.
- Johnson, G. S. (2002). *Exploring corporate strategy*. Hoboken: Financial Times Prentice Hall.

- Johnson, G. S. (2015). *Fundamentals of Strategy*. UK: Pearson.
- Johnson, G. W. (2020). *Exploring strategy*. UK: Pearson.
- Juliana, J. P. (2019). Factors influencing competitiveness of small and medium industry of Bali: Porter's five forces analysis. *Russian Journal of Agricultural and Socio-Economic Sciences*, 89(5), 45-54.
- Kamwere, B. M. (2018). *Strategic management practices and performance of kenya railways corporation at the headquarters, Nairobi city county, kenya*. Nairobi: (Doctoral dissertation, Kenyatta university).
- Kasoma, A., & Zulu, B. D. (2019). Analysis of Zambia Railway Sector: Structural Deficiencies and the Way Forward. *Policy Monitoring and Research Centre (PMRC)*, Lusaka, Zambia.
- Kapanda, B. (2017). Zambia railways and the economic development of Zambia, 1967-1991. (Doctoral dissertation, The University of Zambia).
- Kapetanović, M. N. (2021). Reducing fuel consumption and related emissions through optimal sizing of energy storage systems for diesel-electric trains. *Applied Energy*, 294, 117018.
- Kasongo, A. L. (2005). Privatisation in Zambia: A Critique. *Zambia Social Science Journal*, 1(1), 68-85.
- Kaunda, E., Njaya, T., & Kanyenze, G. (2023). Corporate governance and performance of state-owned enterprises in a least developed economy. *South African Journal of Business Management*, 54(1), a3827. <https://doi.org/10.4102/sajbm.v54i1.3827>
- Kaushik, V. & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social sciences*, 8(9), 255.
- Keay, J. (2018). *The Honourable Company: A History of the English East India Company*. HarperCollins.
- Ketokivi, M. & Choi, T. (2014). Renaissance of case research as a scientific method. *Journal of operations management* 32(5), 232-240.
- Kim, W. C. (2014). *Blue ocean strategy, expanded edition: How to create uncontested market space and make the competition irrelevant*. Harvard business review press.
- Kirongo, A. & Odoyo, C. (2020). Research philosophy design and methodologies: A systematic review of research paradigms in information technology. *Global Scientific journals*.
- Kotter, J. P. (2012). *Leading change*. Harvard business press.

- Kotter, J. P. (1996). *Leadership change*. Harvard Business School Press: Boston, MA, USA.
- Kotter, J. P. (2012). *Leadership and leading change*. Harvard Business Review Press.
<https://www.kazmaier-translations.com/human-resource-management/leadership-and-leading-change>.
- Kouamé, S., & Langley, A. (2018). Relating microprocesses to macro-outcomes in qualitative strategy process and practice research. *Strategic Management Journal*, 39(3), 559-581.
- Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners*. Los Angeles: Sage.
- Kuye, J. O. (2003). Responsibility, accountability and ethics: The case for public service leadership. *Journal of public administration*, 38(4), 421-437.
- Kyriakidis, M. H., Hirsch, R., & Majumdar, A. (2012). Metro railway safety: An analysis of accident precursors. *Safety science*, 50(7), 1535-1548.
- Larina, I. V. (2021). Green logistics-modern transportation process technology. *Production Engineering Archives*, 27(3), 184-190.
- Laurent, J. & Leicht, R. M. (2019). Practices for designing cross-functional teams for integrated project delivery. *Journal of Construction Engineering and Management*, 145(3), 05019001.
- Lawrence, M. B. (2019). China's high-speed rail development. *World Bank Publications*.
- Lee Marks, M. (2007). A framework for facilitating adaptation to organizational transition. *Journal of Organizational Change Management*, 20(5), 721-739.
- Lekka, C. (2011). High reliability organisations: A review of the literature. *Health and Safety Executive*, 1-34.
- Lekhoromo J Boye, B. B.-H. (2023). South African Rail Infrastructure Maintenance Optimization. *International Conference on Industrial Engineering and Operations Management*. Johannesburg.
- Leonard, E. & Macha, L. (2021). The effects of the Tanzanian railway network in the performance of the rail freight operations. A Case of Dar es Salaam to Isaka. *International Journal for Innovation Education and Research*, 9(4), 91-109.
- Les MacLeod EdD, M. P. (2012). Making SMART goals smarter. *Physician executive* 38(2), 68.
- Liden, T. (2015). Railway infrastructure maintenance-a survey of planning problems and conducted research. *Transportation Research Procedia*, 10, 574-583.

- Liker, J. K. (2021). *Toyota way: 14 management principles from the world's greatest manufacturer*. McGraw-Hill Education.
- Lungomesha, E. D. (2018). Environmental and economic benefits of railway electrification of Southern African countries. . *Transport and the City*, 135.
- Madlock, P. E. (2018). Managing the Implementation of New Computer Systems in Small Businesses: Building Attitudes and Perceptions. *American Journal of Management*, 18(2).
- Manasan, R. G. (2010). Government Business Enterprises and State-Owned and Controlled Corporations in the Philippines. *International Journal of Public* , 488-496.
- Manda, R. M. (2022). Redefining Leadership Roles in Managing Crises in Organisations: A Systematic Literature Review. *Journal of Economic, Finance and Management studies*, 1646.
- Mankins, M. C. (2005). Turning great strategy into great performance. *Harvard business review*, 2607.
- Marinov, M. P. (2024). *Sustainable Rail Transport* 5.
- Mark W. Johnson, C. M. (2008). Reinventing your business model. *Harvard business review*, 86(12), 57-68.
- Marshall, G. (2010). Kee, JE and Newcomer, KE (2008). Transforming Public and Non-Profit Organizations: Stewardship for Leading Change: Alexandria, VA: Management Concepts, Inc., 301 pages, Paperback, US \$39.00, ISBN 978-1-56726-227-8.
- Marson, M. M. (2021). Financing African infrastructure: The role of China in African railways. *Research in Transportation Economics*, 88, 101111.
- Mashiri, G. M. (2022). A Systematic Literature Review of E-Leadership. *Journal of Economics, Finance and Management Studies*, 1702.
- Meca Vital, J. C., & Camello Lima, C. R. (2020). Total Productive Maintenance and the Impact of Each Implemented Pillar in the Overall Equipment Effectiveness. *International Journal of Engineering and Management Research*, 10.
- Meggison, W. L., Nash, R. C., & Van Randenborgh, M.(1994). The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis. *The Journal of Finance*, 49(2), 403-452.

- Memon, A. H., Khahro, S. H., Memon, N. A., Memon, Z. A., & Mustafa, A. (2023). Relationship between job satisfaction and employee performance in the construction industry of Pakistan. *Sustainability*, 15(11), 8699.
- Mento, A. J., Jones, R., & Dirndorfer, W. (2002). A change management process: Grounded in both theory and practice. *Journal of change management*, 3(1), 45-59.
- Mmusi, M. (2010). Improving customer satisfaction, loyalty and retention through relationship marketing. *the case of Botswana railways (Doctoral dissertation)*.
- Mokoena, W. T., & Sharp, K. L. (2020). Customer experience management at Transnet freight rail in Gauteng: an employee perspective. *International journal of business and management studies*, 12(2), 561-576.
- Momoh, J. I., & Itohan, I. (2013). THE EFFECT OF STRATEGIC MANAGEMENT PRACTICES ON ORGANIZATIONAL COMPETITIVENESS. *EPRA International Journal of Research and Development (IJRD)*, 8(5), 142-153.
- Mongird, K. V., Viswanathan, V. V., Balducci, P. J., Alam, M. J. E., Fotedar, V., Koritarov, V. S., & Hadjerioua, B. (2019). *Energy storage technology and cost characterization report (No. PNNL-28866)*. Richland, WA (United States): Pacific Northwest National Laboratory (PNNL).
- Morlin-Yron, S. (2017). *All aboard! The Chinese-funded railways linking East Africa*. CNN, January, 17.
- Motshegwa, B. M., Mooketsane, K., & Bodilenyane, K. (2017). The slip-ups of corporate governance in Botswana Public Enterprises. *International Conference on Public Administration and Development Alternatives (IPADA)*.
- Mubila, M. & Yepes, T. (2017). Regional integration and infrastructure connectivity in Africa. *In Infrastructure in Africa*, 521-542.
- Mugo, P. (2020). Porter's five forces influence on competitive advantage in telecommunication industry in Kenya. *European Journal of Business and Strategic Management*, 5(2), 30-49.
- Mulenga, C. P. (2024). Effect of corporate governance on the performance of state-owned enterprises in Zambia. *African Journal of Commercial Studies*, 4(2), 138-153.
- Mulenga, R. M. (2018). Establishing common leadership practices and their influence on providers and service delivery in selected hospitals in Lusaka province, Zambia. *Journal of public health in Africa*, 9(3), 823.

- Mutambo, L. N. (2022). The Management of a Business Strategic Plan. *Journal of Economics, Finance and Management studies*, 1776-1784.
- Mwanaumo, E. B. (2022). The Performance Assessment of Zambia Railways Transport Service Quality. *Applied Research Conference in Africa* (pp. 327-338). Cham: Springer International Publishing.
- Mwansa, S. S. (2020). Special economic zones: An evaluation of Lusaka south-multi facility economic zone. *Journal of Social and Political Sciences*, , 3(2).
- Mweemba, B. (2022). *The Effectiveness of the Promotional Strategies used to Support the Implementation of the Proudly Zambian Campaign*. Lusaka: (Doctoral dissertation, ZCAS University).
- Mwila, F. & Mwanaumo E. (2020). Framework for Attracting Traffic Back to the Railways in Zambia. In *Supporting Inclusive Growth and Sustainable Development in Africa-Volume II*, 185-202.
- Mwila, F. (2016). *A comparative study of access to railways in Zambia relative to road transport* (Doctoral dissertation, University of Zambia). Lusaka.
- Nagy, E. & Csiszár, C. (2015). Analysis of delay causes in railway passenger transportation. *Periodica Polytechnica: Transportation Engineering*, 43(2), 73-80.
- Nakajima, S. (1988). Introduction to TPM: total productive maintenance.(Translation). *Productivity Press, Inc.*, 1988,, 129.
- Nash, C. B., Benedetto, V., & Smith, A. (2017). Rail regulation. In *The Routledge Handbook of Transport Economics*. In *The Routledge Handbook of Transport Economics* (pp. 108-120). Routledge.
- Nash, C. S., Smith, A., Crozet, Y., Link, H., & Nilsson, J. E. (2019). How to liberalise rail passenger services? Lessons from European experience. *Transport Policy*, 79, 11-20.
- Nazeri, A. & Naderikia, R. (2017). A new fuzzy approach to identify the critical risk factors in maintenance management. *The International Journal of Advanced Manufacturing Technology*, 92(9), , 3749-3783.
- Neilson, G. L. (2008). The secrets to successful strategy execution. *Harvard Business Review*, 86(6).
- Nem Singh, J. & Chen, G. C. (2018). State-owned enterprises and the political economy of state-state relations in the developing world. *Third World Quarterly*, 39(6), 1077-1097.

- Ng'andu, M. M. (2007). The Dynamics of Social Policy and Planning in Zambia: The Role of the Social Welfare Department in the Post-Independence Period (1964–2000). *Journal of Social Development in Africa*, 22(1), 119-148.
- Ngarachu, A. W.-M. (2018). *Border economies: Linkages to the development of trade corridors and regional value chains in SADC*.
- North, D. C. (1990). Institutions, institutional change and economic performance. *Cambridge university press*.
- Northouse, P. G. (2025). *Leadership: Theory and practice*. Sage publications.
- Norton, R. S. (2006). *Alignment: Using the balanced scorecard to create corporate synergies*. Harvard Business Press.
- Nsengiyera, D. A. (2019). The Contribution of Public Transport Services to the Economic Development of Kigali City: A Case Study of Rwandan Federation Transport Cooperative (RFTC). *Journal of Economics and Trade*, 3(2), 98-106.
- Network Rail. (2023). *Annual report and accounts 2022/23*. Network Rail. Network Rail Annual Report and Accounts 2022/23
- Ooi, S. K., & Memon, K. R. (2025). Responsible innovation, circular economy and organisational resilience: investigating multiple pathways towards sustainability performance. *Business Strategy and the Environment*, 34(7), 8966-8982.
- OECD. (2015). *OECD guidelines on corporate governance of state-owned enterprises (2015 ed.)*. Organisation for Economic Co-operation and Development.
- OECD. (2020). *Transparency and disclosure practices of state-owned enterprises and their owners*. Organisation for Economic Co-operation and Development.
- Ogden, J. & Cornwell, D. (2010). The role of topic, interviewee and question in predicting rich interview data in the field of health research. *Sociology of health & illness*, 32(7), 1059-1071.
- Oh, S., Moon, H. C., & Zhong, Y. (2020). Contingency management and supply chain performance in Korea: A covid-19 pandemic approach. *Sustainability*, 12(23), 9823.
- Okey, I. F. (2022). Supervision of Science Teaching in Secondary Schools in Rivers State—A Rethink and Application of Scientific Supervision Model (Stoner, Freeman & Gilbert 2007). *Asian Journal of Education and Social Studies*, 35(1), 62-67.
- Olievschi, V. N. (2013). Rail transport: Framework for improving railway sector performance in Sub-Saharan Africa.

- Organisation for Economic Co-operation and Development. (2022). *Financing Transportation Infrastructure through Land Value Capture: Concepts, Tools and Case Studies*. OECD Regional Development Papers. Paris: OECD Publishing
- Organisation for Economic Co-operation and Development. (2024). *OECD Guidelines on Corporate Governance of State-Owned Enterprises 2024*. OECD Publishing. Paris, France. <https://doi.org/10.1787/18a24f43-en>
- Osborne, S. & Hammoud, M. S. (2017). Effective employee engagement in the workplace. *International Journal of Applied Management and Technology*, 16(1), 4.
- Otoo, B. K. (2020). Declaring My Ontological and Epistemological Stance. *The Journal of Educational Thought (JET)* 53(1), 67-88.
- Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. Routledge.
- Palmer, R. D. (2016). *Maintenance planning and scheduling handbook*. McGraw-Hill Education.
- Pamulu, M. S. (2010). *Strategic management practices in the construction industry: a study of Indonesian enterprises* (Doctoral dissertation, Queensland University of Technology).
- Parliament of Zambia. (2024). *Report of the Committee on Transport, Works and Supply on the review of the rail transport sector in Zambia*. National Assembly of Zambia.
- Paul, R. & Marcia, B. (2011). Who Has the D?: How Clear Decision Roles Enhance.
- Phipps, L. (2009). Technical Report: Review of the Effectiveness of Rail Concessions in the SADC Region.
- Pieters, G. R. (2017). *The ever changing organization: Creating the capacity for continuous change, learning, and improvement*. Routledge.
- Plavec, Matthias, Martha Lawrence, & Jyoti Bisbey. (2024). *Mobilizing Climate Finance for Railways*. Washington, DC: World Bank. <https://doi.org/10.1596/41321>
- Popovich, N. D. (2021). Economic, environmental and grid-resilience benefits of converting diesel trains to battery-electric. *Nature Energy*, 6(11), 1017-1025.
- Porter, M. E. (2011). *Competitive advantage of nations: creating and sustaining superior performance*. Simon and Schuster.
- Powell, T. C. (2017). Strategy as diligence: Putting behavioral strategy into practice. *California Management Review*, 59(3), 162-190.

- Praticò, F. G., & Fedele, R. (2025). Exploring the paradigm of railway predictive maintenance. *Structure and Infrastructure Engineering*, 1-12.
<https://doi.org/10.1080/15732479.2025.2596714>
- Prion, S., & Haerling, K. A. (2014). Making sense of methods and measurement: Spearman-rho ranked-order correlation coefficient. *Clinical Simulation in Nursing*, 10(10), 535–536.
- Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences*, 6(2), 1-5.
- Rajavuori, M. (2018). Governing the Good State Shareholder: The Case of the OECD Guidelines on Corporate Governance of State-Owned Enterprises. *European Business Law Review*, 29(1).
- Regier, P. S. (2015). Contingency management and deliberative decision-making processes. *Frontiers in Psychiatry*, 76.
- Regulation (EU) 2016/796 on the European Union Agency for Railways and repealing Regulation (EC) n° 881/2004
- REGION, A. &. (2022). *World Bank Group*. Washington, DC.
- Roberts, K. H. (1990). Some characteristics of one type of high reliability organization. *Organization science*, 1(2), 160-176.
- Robson, C. (2011). *Real World Research: A Resource for Users of Social Research Methods in Applied Settings (3rd edn)*. Chichester: John Wiley.
- Ruth sandala, R. U. (2020). A study to assess the current state of railway infrastructure system as a means for economic activities in zambia. *A case of zambia railways (Doctoral dissertation)*.
- Sakai, H., & Li, P. (2021). Original paper productivity improvement with equipment owner TPM management at Toyota Manufacturing USA: Highly reliable production system for expanding global production. *Sustainability in Environment*, 6(2), 78-91.
- Salawu, E. Y. (2023). Impact of maintenance on machine reliability: A review. *E3S Web of Conferences Vol. 430* (p. 01226). Nigeria: ICMPC .
- Sapsford, R. & Jupp, V. (1996). *Data collection and analysis*. Sage.
- Saunders, M. L. (2012). *Research Methods for Business Students” 6th edition*. Pearson Education Limited.

- Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: appropriate use and interpretation. *Anesthesia & analgesia*, 126(5), 1763-1768.
- Schwab, K. (2017). The fourth industrial revolution. Crown Currency.
- Sedghi, M. K. (2021). A taxonomy of railway track maintenance planning and scheduling: A review and research trends. *Reliability Engineering & System Safety*, 215, , 107827.
- Sergeant, B. (2013). Nationalization: an analysis of the competing interests of capital, labour, and government. *Journal of the Southern African Institute of Mining and Metallurgy*, 113(1), 21-30.
- Shah, G. M., Memon, N. A., Tunio, G., & Joyo, A. S. (2023). Revamping higher education: unleashing the power of john kotter's eight-step change model for enhanced performance. *Russian Law Journal*, 11(5).
- Shala, B. P., Prebreza, A., & Ramosaj, B. (2021). The contingency theory of management as a factor of acknowledging the leaders-managers of our time study case: The practice of the contingency theory in the company Avrios. *Open Access Library Journal*, 8(9), 1-20.
- Sherry, P. (2025). Leadership style and safety culture in commuter railroads. *Safety*, 11(4), 99. <https://doi.org/10.3390/safety11040099>
- Shirley, M. M. (2007). Government ownership of corporations in the Americas. *The World Bank Research Observer*, 22(2) , 205-241.
- Siddiqui, S. (2019). Research paradigms: Their assumptions and relevance. *International Journal of Research in Social Sciences*, 9(5), 254-265.
- Sikazwe, C. M. (2020). A situational analysis of transport usage in Zambia: a modal perspective of railway freight services from 1960's to 2018. In *Proc. 2nd African Int. Conf. on Industrial Engineering and Operations Management Harare* , 1347-58.
- Sikazwe, C. M. (2021). A Scenario Analysis of Transport Futures in Developing Countries: A Case Study of Zambia Railway Freight Future—a Long-term Framework for 2050. *Strategies for the Global Economic System for 2030*, 6, 51.
- Sileyew, K. J. (2019). *Research design and methodology*. Rijeka: IntechOpen.
- Singh, A. S. (2017). Common procedures for development, validity and reliability of a questionnaire. *International Journal of Economics, Commerce and Management*, 5(5), 790-801.

- Singh, D. (2019). Understanding philosophical underpinnings of research with respect to various paradigms: Perspective of a research scholar. In *ANVESH-2019 Doctoral Research Conference in Management*, 1-26.
- Singh, R. G. Gohil, A. M., Shah, D. B., & Desai, S. (2013). Total productive maintenance (TPM) implementation in a machine shop: A case study. *Procedia Engineering*, 51, 592-599.
- Singh, R. K. & Gurtu, A. (2022). Prioritizing success factors for implementing total productive maintenance (TPM). *Journal of Quality in Maintenance Engineering*, 28(4), 810-830.
- Singh, U. & Ahuja, I. S. (2015). Evaluating the contributions of total productive maintenance on manufacturing performance. *International Journal of Process Management and Benchmarking*, 5(4), 425-455.
- Sivalai, T. & Rojniruttikul, N. (2018). Determinants of the state railway of Thailand's (SRT) total quality management process: SEM analysis. *Journal of International Studies*, 11(2).
- Smith, W. K. (2016). Both/and" leadership. *Harvard Business Review*, 94(5), 62-70.
- Snyder, H. (2019). Literature review as a research methodology. *An overview and guidelines*, 104, 333-339.
- Softech Rail. (2024, September 4). Connecting tracks: The role of telecoms in modern railway communication. Softech Rail. <https://www.softtechrail.com/telecoms-in-modern-railway/>
- Stamatis, D. H. (2017). *The OEE primer: understanding overall equipment effectiveness, reliability, and maintainability*. CRC Press.
- Stenström, C. P., Parida, A., & Kumar, U. (2016). Measuring and monitoring operational availability of rail infrastructure. *Proceedings of the Institution of Mechanical Engineers, Part F: Journal of rail & rapid transit*, 230(5), 1457-1468.
- Stojadinovic, N. B. (2019). Train path congestion management: Using hybrid auctions for decentralized railway capacity allocation. *Transportation Research Part A: Policy and Practice*, 129, 123-139.
- Strickland, O. J. (2001). Managing time: The effects of personal goal setting on resource allocation strategy and task performance. *The Journal of Psychology* 135, no. 4, 357-367.
- Sutton, J. & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian journal of hospital pharmacy*, 68(3), 226.
- Szarzec, K. T., Totleben, B., & Piątek, D. (2022). How do politicians capture a state? Evidence from state-owned enterprises. *East European Politics and Societies*, 36(1), 141-172.

- Taherdoost, H. (2016). Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in a research. *International Journal of Academic Research in Management (IJARM)*, 5.
- Tambi, M. D. (2015). Economic growth, crisis, and recovery in Cameroon: A literature review. *The Journal of Industrial Distribution & Business*, 6(1), 5-15.
- Taneja, N. (2016). *Designing future-oriented airline businesses*. Routledge.
- Tang, K. N. (2019). Change management. *Leadership and change management*. 47-55.
- Taylor, I. (2020). Kenya's new lunatic express: The Standard Gauge Railway. *African Studies Quarterly*, 19(3-4), 25-45.
- Team, T. P. (2013). *African Development Bank Group*. . Kenya Bank Group.
- Thomas, O. O. (2014). Change management and its effects on organizational performance of Nigerian telecoms industries: Empirical Insight from Airtel Nigeria. *International Journal of Humanities Social Sciences and Education*, 1(11), 170-179.
- Toninelli, P. M. (Ed.). (2000). *The rise and fall of state-owned enterprise in the western world* (Vol. 1). Cambridge university press.
- Trevena, L. J.-F. (2012). Presenting quantitative information about decision outcomes: a risk communication primer for patient decision aid developers. *BMC medical informatics and decision making*, 13(Suppl 2), S7.
- Transnet SOC Ltd. (2023). *Integrated report 2023*. Transnet SOC Ltd. Transnet Integrated Report 2023
- Tsushima, E. (2022). Interpreting results from statistical hypothesis testing: understanding the appropriate P-value. . *Physical therapy research*, 25(2), 49-55.
- Tzortzaki, A. M., & Mihiotis, A. (2014). A review of knowledge management theory and future directions. *Knowledge and Process Management*, 21(1), 29-41.
- Ulmer, R. R., Sellnow, T. L., & Seeger, M. W. (2022). *Effective crisis communication: Moving from crisis to opportunity*. Sage Publications.
- Union, A. (2015). *Agenda 2063 Report of the Commission on the African Union Agenda 2063 The Africa We Want in 2063*.
- van Riel, A. C., Andreassen, T. W., Lervik-Olsen, L., Zhang, L., Mithas, S., & Heinonen, K. (2021). A customer-centric five actor model for sustainability and service innovation. *Journal of Business Research*, 136, 389-401.

- Van Lierop, D., Badami, M. G., & El-Geneidy, A. M. (2018). What influences satisfaction and loyalty in public transport? A review of the literature. *Transport Reviews*, 38(1), 52-72.
- Vardhan, S. G., Gupta, P., & Gangwar, V. (2015). The impact of Quality Maintenance Pillar of TPM on manufacturing performance. In *2015 International Conference on Industrial Engineering and Operations Management (IEOM)* , 1-6.
- ViaRail. (2019). *Annual Report*. Canada: Via Rail.
- Wang, G. C. (2013). High-speed Railway and Green Total Factor Productivity: Taking Industrial Structure as a Mediator. *Journal of the Knowledge Economy*, 1-29.
- Wang, Z. & Wang, Y. (2023). A model of evaluating state-owned railway companies' reforms by using euclidean distance and data envelopment analysis. *Transportation Journal*, 62(3), 311-330.
- Weick, K. E., & Sutcliffe, K. M. (2015). *Managing the unexpected: Sustained performance in a complex world*. John Wiley & Sons.
- Werle Lee, K. P. (2010). Planning for success: setting SMART goals for study. *British Journal of Midwifery* 18, no. 11, 744-746.
- Williams, C. (2007). Research methods. *Journal of Business & Economics Research (JBER)*, 5(3).
- Wilson, S. B. (2008). *Goal setting: How to create an action plan and achieve your goals*. New York: AMACOM Div American Mgmt Assn.
- Wirtz, J., Heracleous, L., & Pangarkar, N. (2008). Managing human resources for service excellence and cost effectiveness at Singapore Airlines. *Managing Service Quality: An International Journal*, 18(1), 4-19.
- Wu, X. & Zhao, N. (2010). China's state-owned enterprises. *Nature, performance and reform. China & World Economy*, 18(2), 1-15.
- Xie, J. H. (2020). Systematic literature review on data-driven models for predictive maintenance of railway track: Implications in geotechnical engineering. *Geosciences*, 10(11), 425.
- Xue, L. & Zhao, S. (2021). Evaluating and analyzing the operation efficiency of urban rail transit systems in china using an integrated approach of DEA model, Malmquist productivity index, and tobit regression model. *Journal of Transportation Engineering, Part A: Systems*, 147(10), 04021061.

- Xue, Y. X. (2020). Risk assessment of high-speed rail projects: a risk coupling model based on system dynamics. *International journal of environmental research and public health*, 17(15), 5307.
- Yin, R. K. (2013). Validity and generalization in future case study evaluations. *Evaluation*, 19(3), 321-332.
- Yukl, G., Mahsud, R., Hassan, S., & Prussia, G. E. (2013). An improved measure of ethical leadership. *Journal of leadership & organizational studies*, 20(1), 38-48.
- Zhang, W. S. (2013). Study on dynamics of coupled systems in high-speed trains. *Vehicle System Dynamics*, 51(7), 966-1016.
- Zulu, A. K. (2019). *Analysis of Zambia Railways Sector-Structural deficiencies & the way forward*. Lusaka: Policy Monitoring and Research Centre.
- Zuschlag, M. R. (2016). Evaluation of a safety culture intervention for Union Pacific shows improved safety and safety culture. *Safety science*, 83, 59-73.
- Zambia National Assembly. (n.d.). Railways Act. Parliament of Zambia.
<https://www.parliament.gov.zm/node/1479>
- <https://www.zambiamonitor.com/zambia-railways-reportedly-operating-at-a-loss-seeks-248-million-recapitalisation>
- <https://pmrczambia.com/wp-content/uploads/2019/08/Analysis-of-the-Zambia-Railway-Sector-Structural-Deficiencies-and-Way-Forward-Infographic.pdf>
- <https://zambianbusinesstimes.com/delay-to-recapitalize-zambia-railways-leads-to-k4-million-losses>
- <https://zrl.com.zm/parliamentary-committee-concerned-about-high-levels-of-vandalism-and-encroachment-on-railway-infrastructure/>
- <https://www.zambiamonitor.com/zambia-railways-reportedly-operating-at-a-loss-seeks-248-million-recapitalisation>
- <https://pmrczambia.com/wp-content/uploads/2019/08/Analysis-of-the-Zambia-Railway-Sector-Structural-Deficiencies-and-Way-Forward-Infographic.pdf>
- <https://zambianbusinesstimes.com/delay-to-recapitalize-zambia-railways-leads-to-k4-million-losses>
- <https://zrl.com.zm/parliamentary-committee-concerned-about-high-levels-of-vandalism-and-encroachment-on-railway-infrastructure/>

<https://state-owned-enterprises.worldbank.org/report/state-your-business-evaluation-world-bank-group-support-reform-state-owned-enterprises>

https://www.afdb.org/fileadmin/uploads/afdb/Documents/Events/ATFforum/Rail_Infrastructure_in_Africa_-_Financing_Policy_Options_-_AfDB.pdf

Passenger Rail Agency of South Africa. (2020). Annual Report 2019/20. PRASA.
<https://www.prasa.com/publications>

https://www.afdb.org/sites/default/files/documents/strategy-documents/sepa_-_action_plan_2022-2025.pdf

https://www.afdb.org/sites/default/files/documents/strategy-documents/sepa_-_action_plan_2022-2025.pdf

Transportation Review. (2025, March 19). How railway maintenance workshops keep rail operations on track. Transportation Review.
<https://www.transportationreview.com/news/how-railway-maintenance-workshops-keep-rail-operations-on-track-nwid-643.html>

<https://rovos.com/>

International Union of Railways (UIC). (2024). Rail Infrastructure & Asset Management: Key Performance Indicators 2024. Retrieved from <https://uic.org/media>

International Union of Railways (UIC). (2024). Rail Infrastructure & Asset Management: Key Performance Indicators 2024. Retrieved from <https://uic.org/publications>

[List all sources cited in the thesis using the referencing style prescribed by ZCAS University (e.g. APA 7th Edition or Harvard), arranged alphabetically by author surname.]

APPENDICES

Appendix A: Descriptive Statistics on ZRL Engagement with Government Bodoes to Influence Policy Implementation

Active participation in policy forums					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.8	1.8	1.8
	Disagree	4	3.7	3.7	5.5
	Not Sure	7	6.4	6.4	11.9
	Agree	30	27.5	27.5	39.4
	Strongly Agree	66	60.6	60.6	100.0
	Total	109	100.0	100.0	
Building strong relationships with key stakeholders					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.9	.9	.9
	Disagree	1	.9	.9	1.8
	Not Sure	12	11.0	11.0	12.8
	Agree	27	24.8	24.8	37.6
	Strongly Agree	68	62.4	62.4	100.0
	Total	109	100.0	100.0	
Policy advocacy and lobbying					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.9	.9	.9
	Disagree	5	4.6	4.6	5.6
	Not Sure	11	10.1	10.2	15.7
	Agree	26	23.9	24.1	39.8
	Strongly Agree	65	59.6	60.2	100.0
	Total	108	99.1	100.0	
Missing	System	1	.9		
Total		109	100.0		

Submission of Policy proposals					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	2.8	2.8	2.8
	Disagree	4	3.7	3.7	6.4
	Not Sure	10	9.2	9.2	15.6
	Agree	30	27.5	27.5	43.1
	Strongly Agree	62	56.9	56.9	100.0
	Total	109	100.0	100.0	

Stakeholder workshops and seminars					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.8	1.8	1.8
	Disagree	5	4.6	4.6	6.4
	Not Sure	15	13.8	13.8	20.2
	Agree	32	29.4	29.4	49.5
	Strongly Agree	55	50.5	50.5	100.0
	Total	109	100.0	100.0	

Monitoring and feedback mechanisms					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	2.8	2.8	2.8
	Disagree	5	4.6	4.6	7.3
	Not Sure	7	6.4	6.4	13.8
	Agree	28	25.7	25.7	39.4
	Strongly Agree	66	60.6	60.6	100.0
	Total	109	100.0	100.0	

To what extent are employees at various levels involved in the decision making process at ZRL					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	34	31.2	31.2	31.2
	Ineffective	56	51.4	51.4	82.6
	Neutral	11	10.1	10.1	92.7
	Effective	7	6.4	6.4	99.1
	Very Effective	1	.9	.9	100.0
	Total	109	100.0	100.0	

Rate effectiveness of ZRL responding to operational challenges and crises like derailments and unavailability of rolling stock					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	15	13.8	13.8	13.8
	Ineffective	47	43.1	43.1	56.9
	Neutral	17	15.6	15.6	72.5
	Effective	23	21.1	21.1	93.6
	Very Effective	7	6.4	6.4	100.0
	Total	109	100.0	100.0	

Appendix B: Cross-Tabulation between Leadership Practices and Funding Adequacy

Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management. * Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders Cross-tabulation

			Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders				Total
			No Funding	Inadequate	Moderate	Very adequate	
Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	Very Ineffective	Expected Count	.9	3.9	.2	.1	5.0
		% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	40.0%	60.0%	0.0%	0.0%	100.0%

	% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	10.5%	3.6%	0.0%	0.0%	4.6%
	Expected Count	8.0	35.4	1.7	.8	46.0
	% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	13.0%	84.8%	2.2%	0.0%	100.0%
Ineffective	% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	31.6%	46.4%	25.0%	0.0%	42.2%
	Expected Count	6.6	29.3	1.4	.7	38.0
Neutral						

Effective	% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	13.2%	81.6%	2.6%	2.6%	100.0%
	% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	26.3%	36.9%	25.0%	50.0%	34.9%
	Expected Count	3.3	14.6	.7	.3	19.0
	% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	31.6%	57.9%	5.3%	5.3%	100.0%
	% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	31.6%	13.1%	25.0%	50.0%	17.4%

Total	Very Effective	Expected Count	.2	.8	.0	.0	1.0
		% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	0.0%	0.0%	100.0%	0.0%	100.0%
		% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	0.0%	0.0%	25.0%	0.0%	0.9%
		Expected Count	19.0	84.0	4.0	2.0	109.0
		% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.	17.4%	77.1%	3.7%	1.8%	100.0%

% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	100.0%	100.0%	100.0%	100.0%	100.0%
--	--------	--------	--------	--------	--------

Appendix C: Chi-Square Test-Leadership Practices and Funding Adequacy

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.341 ^a	12	.000
Likelihood Ratio	15.790	12	.201
Linear-by-Linear Association	1.288	1	.256
N of Valid Cases	109		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .02.

Appendix D: Cross-Tabulation between Maintenance Practice and Funding Adequacy

How would you rate the effectiveness of the current maintenance practices at ZRL, especially towards the rolling stock and railway infrastructure? * Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders Cross-tabulation

	Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders				Total
	No Funding	Inadequate	Moderate	Very adequate	
Expected Count	3.5	15.4	.7	.4	20.0

How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	Very Ineffective	% within How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	20.0%	80.0%	0.0%	0.0%	100.0%
		% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	21.1%	19.0%	0.0%	0.0%	18.3%
		Expected Count	9.8	43.2	2.1	1.0	56.0
		% within How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	10.7%	85.7%	1.8%	1.8%	100.0%
	Ineffective	% within How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?					
		% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	31.6%	57.1%	25.0%	50.0%	51.4%

	Moderate	Expected Count	4.4	19.3	.9	.5	25.0
		% within How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	28.0%	68.0%	4.0%	0.0%	100.0%
		% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	36.8%	20.2%	25.0%	0.0%	22.9%
		Expected Count	1.2	5.4	.3	.1	7.0
		% within How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	28.6%	28.6%	28.6%	14.3%	100.0%
	Effective						

	Very Effective	% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	10.5%	2.4%	50.0%	50.0%	6.4%
		Expected Count	.2	.8	.0	.0	1.0
		% within How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	0.0%	100.0%	0.0%	0.0%	100.0%
		% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	0.0%	1.2%	0.0%	0.0%	0.9%
		Expected Count	19.0	84.0	4.0	2.0	109.0
Total							

% within How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?	17.4%	77.1%	3.7%	1.8%	100.0%
% within Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix E: Chi-Square Test – Maintenance Practices and Funding Adequacy

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.744 ^a	12	.008
Likelihood Ratio	18.569	12	.099
Linear-by-Linear Association	1.170	1	.279
N of Valid Cases	109		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .02.

Appendix F: Cross-Tabulation between Leadership Practices and Government Policies and Regulatory Frameworks

Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management. * How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making? Cross-tabulation

		How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?					Total
		Very Unsupportive	Unsupportive	Moderately	Supportive	Very Supportive	
Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management	Expected Count	1.1	1.8	1.4	.5	.2	5.0
	% within	40.0%	0.0%	20.0%	20.0%	20.0%	100.0%
Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management	Very Ineffective						
	% within How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?	8.0%	0.0%	3.3%	10.0%	25.0%	4.6%

		Expected Count	10.6	16.9	12.7	4.2	1.7	46.0
		% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management	30.4%	56.5%	10.9%	2.2%	0.0%	100.0%
Ineffective		% within How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?	56.0%	65.0%	16.7%	10.0%	0.0%	42.2%
	Neutral	Expected Count	8.7	13.9	10.5	3.5	1.4	38.0

	% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management .	21.1%	28.9%	31.6%	10.5%	7.9%	100.0 %
	% within How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?	32.0%	27.5%	40.0%	40.0%	75.0%	34.9%
Effective	Expected Count	4.4	7.0	5.2	1.7	.7	19.0

	% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management .	5.3%	15.8%	57.9%	21.1%	0.0%	100.0%
	% within How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?	4.0%	7.5%	36.7%	40.0%	0.0%	17.4%
Very Effective	Expected Count	.2	.4	.3	.1	.0	1.0

	% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management .	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
	% within How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?	0.0%	0.0%	3.3%	0.0%	0.0%	0.9%
Total	Expected Count	25.0	40.0	30.0	10.0	4.0	109.0

% within Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management .	22.9%	36.7%	27.5%	9.2%	3.7%	100.0%
% within How supportive are the current government policies and and operational efficiency of ZRL without interference in decision making?	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix G: Chi-square Test – Leadership Practices and Government Policies and Regulatory Frsmeworks.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.982 ^a	16	.000
Likelihood Ratio	44.733	16	.000
Linear-by-Linear Association	11.182	1	.001
N of Valid Cases	109		

a. 17 cells (68.0%) have expected count less than 5. The minimum expected count is .04.

Appendix G: One-sample Chi-Square Test Statistics for the five Independent variables

Test Statistics

	How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?
Chi-Square	84.165 ^a
df	4
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 21.8.

	Rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management.
Chi-Square	72.055 ^a
df	4
Asymp. Sig.	.000

Test Statistics

	Current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders
Chi-Square	163.917 ^a
df	3
Asymp. Sig.	.000

Test Statistics

	How would you compare the market share of ZRL to that of road transport for both passenger and freight trains?
Chi-Square	172.505 ^a
df	3
Asymp. Sig.	.000

Test Statistics

	How have government policies and regulations affected the budget and financial performance of ZRL?
Chi-Square	53.523 ^a
df	4
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 21.8.

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 27.3.

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 27.3.

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 21.8.

Appendix H: Work Schedule

The researcher possible time frame for the study is about six months. The schedule of activities will be as follows:

Phase	Key Tasks	Duration	Start	Finish	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Status
		6Months	01/2024	06/2024	3-31	1-28	1-29	1-29	1-31	3-28				
1	Planning and Preparation (2 weeks): - Define the research objectives and scope of the study - Develop research questions and hypotheses - Review relevant literature on the railway industry and the Zambian economy. - Identify potential sources of data and methods of data collection - Develop a timeline and budget for the study - Questionnaire (20th May 2024)													Done
2	Data Collection (8 weeks): - Collect primary data through Observation and interviews with key stakeholders (e.g. employees, customers, suppliers, government officials etc.) - Collect secondary data from existing reports, publications, and databases - Ensure the quality and validity of the data collected													Done
3	Data Analysis (8 weeks):													Done

Phase	Key Tasks	Duration	Start	Finish	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Status
	- Organize and prepare the collected data for analysis - Apply statistical and analytical techniques to identify factors contributing to the underperformance of the ZRL. - Conduct thematic and content analysis, among others as appropriate. - Interpret and summarize the findings.													
4	Reporting and Presentation (6 weeks): - Editing (3 weeks) - Thesis sent to examiners (1 Month) - Viva Voce (after external) - Corrections (2 weeks) - Submission to Senate (???) - Present the report to the school and other relevant stakeholders, like management of ZRL and Government entities. - Publish the report in relevant academic and industry publications.													
5	Implementation and Follow-up (Ongoing) Use the research findings to develop strategies and interventions to improve the performance of Zambia Railways Limited.													

Phase	Key Tasks	Duration	Start	Finish	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Status
	- Monitor and evaluate the effectiveness of the strategies and interventions - Update and revise the research findings and conclusions as necessary.													

Table 1.0: Schedule of activities

Appendix I: Budget for the research

BUDGET PLAN		
No	Activity Description	Amount
1	Consultancy	K14,000
2	Travel Transport Costs	K8,000
3	Meals & Lodging	K30,000
4	Special Equipment and accessories	K7,000
4	Research Material and Supplies	K3,000
5	Incidental	K7,000
TOTAL		K71,000

Appendix J: Questionnaire for ZRL Employees



ZCAS UNIVERSITY SCHOOL OF BUSINESS

Questionnaire for ZRL staff

INVESTIGATING FACTORS CONTRIBUTING TO UNDERPERFORMANCE OF PARASTATALS: A CASE OF ZAMBIA RAILWAYS LIMITED

Dear Participant,

Reference is made to the above-mentioned title. I'm a student at ZCAS University pursuing a DBA program and working on my final year thesis.

The purpose of this research study is to explore the multifaceted issues affecting the performance of ZRL from various perspectives, including but not limited to management practices, government policies, funding constraints, maintenance practices, and competition from other transportation modes. By examining these factors comprehensively, the researcher aims to generate insights that can inform strategies for enhancing the performance and sustainability of ZRL and similar State-Owned Enterprises in Zambia and beyond.

Therefore, your participation in this study is invaluable, as your expertise and insights can provide critical perspectives on the challenges and opportunities facing ZRL. Your input will help enrich our understanding of the complex dynamics at play and contribute to the development of evidence-based recommendations for addressing the identified issues.

Participation in this research study will involve completing a questionnaire. Would you please be prepared to participate in this study and spare about 45 minutes of your time to complete this

questionnaire? Rest assured that all the information you will provided will be treated with utmost confidentiality. Please answer the following questions honestly and to the best of your knowledge.

Instructions: Kindly tick the appropriate answer in the boxes provided.

Demographic Information:

1. What is your name (Optional)?
2. What is your age?

Ranges

- | | | |
|------|---------|--------------------------|
| I. | 20 – 30 | ☐ |
| II. | 30 – 40 | ☐ |
| III. | 40 – 50 | ☐ |
| IV. | 50 – 60 | ☐ |
| V. | 60 – 70 | ☐ |

3. What is your position at Zambia Railways?

- | | | |
|------|-------------------|--------------------------|
| I. | Director | ☐ |
| II. | Manager | ☐ |
| III. | Middle Management | ☐ |
| IV. | Senior Officer | ☐ |
| V. | Junior Officer | ☐ |

4. How many years of Work Experience do you have in the Railway Industry?

- | | | |
|------|--------------|--------------------------|
| I. | 1 – 5 | ☐ |
| II. | 5- 10 | ☐ |
| III. | 10 – 15 | ☐ |
| IV. | 15 – 20 | ☐ |
| V. | 20 and above | ☐ |

5. Which department do you belong too?

- | | | |
|------|-----------------------------------|--------------------------|
| I. | Commercial | ☐ |
| II. | Operations | ☐ |
| III. | Finance | ☐ |
| IV. | Technical | ☐ |
| V. | Human Resource and Administration | ☐ |
| VI. | Corporate Planning | ☐ |

VII. Legal ☐

6. What is your contact number (Option)?

A. Organizational Factors:

1. How would you describe the organizational culture at Zambia Railways Limited?

- I. Collaborative ☐
- II. Hierarchical ☐
- III. Innovative ☐
- IV. Traditional ☐
- V. None of the above ☐

2. How do you rate the performance of ZRL for the last ten years? (Kindly Tick)

- I. Excellent ☐
- II. Good ☐
- III. Fair ☐
- IV. Poor ☐
- V. Very Poor ☐

3. On a five point Likert scale of 1= strongly disagree, 2= Disagree, 3= Not sure, 4= Agree and 5 = Strongly Agree. How would you rate the following statements about ZRL?

No	Statement	1	2	3	4	5
1.	Railway transport is important for the growth of the Zambian economy.					
2.	ZRL is well positioned in the Zambian transport sector					
3.	ZRL is extensively used in Zambia					
4.	ZRL is very expensive to use in Zambia					
5.	The service delivery by ZRL is very poor.					
6.	Clients only use ZRL as a last resort					
7.	ZRL is easily accessible					

4. In your opinion, what are the key strengths of Zambia Railways Limited as an organization? (Kindly tick apriority ones)

- I. Bulk Haulage capacity ☐
- II. Affordability ☐
- III. Quick Delivery of goods ☐
- IV. Reliability ☐
- V. Very Secure mode ☐
- VI. Strategic Geographic location ☐
- VII. Government Support ☐
- VIII. Multimodal Integration Potential ☐

5. What challenges do you think ZRL faces in terms of management, communication, or internal collaboration?

- I. Poor Management Practices ☐
- II. Poor Internal Communication Skills ☐
- III. Lack of internal collaboration ☐
- IV. Change Management resistance ☐
- V. Lack of Interdepartmental Coordination ☐

B. Leadership and Management Effectiveness Assessment:

1. How would you rate the effectiveness of the current leadership at ZRL in terms of addressing organizational challenges, strategic decision making and overall management? (Kindly tick in the box)

1.Very Ineffective		2.Ineffective		3.Neutral		4.Effective		5.Very Effective	
--------------------	--	---------------	--	-----------	--	-------------	--	------------------	--

2. How clear and effective is the communication between management and employees at ZRL in terms of upholding strategic vision and planning, operational improvements, safety compliance and workforce development?

1.Very Ineffective		2.Ineffective		3.moderate		4.Effective		5.Very Effective	
--------------------	--	---------------	--	------------	--	-------------	--	------------------	--

3. To what extent are employees at various levels involved in the decision making process at ZRL so as to promote team work and effective communication?

1.Not at all Involved		2.Partially Involved		3.Neutral		4.Involved		5.Highly Involved	
--------------------------	--	-------------------------	--	-----------	--	------------	--	----------------------	--

4. How sufficient are the training and development programs provided by management for enhancing employee skills and performance?

1.Very Insufficient		2.Insufficient		3.Neutral		4.Sufficient		5.Very Sufficient	
------------------------	--	----------------	--	-----------	--	--------------	--	----------------------	--

5. Kindly rate effectiveness of ZRL responding to operational challenges and crises like derailments and unavailability of rolling stock when urgently needed to move the cargo.

1.Very Ineffective		2.Ineffective		3.Neutral		4.Effective		5.Very Effective	
-----------------------	--	---------------	--	-----------	--	-------------	--	---------------------	--

6. How are employees' performance and contributions recognized and rewarded at ZRL?
Tick those that are applicable

No	Rewarding Method	Tick
1	Performance based bonuses	
2	Employee of the Month/Year Programs	
3	Career advancement opportunities	
4	Public Recognition	
5	Spot Awards	
6	Team based rewards	
7	Safety awards	
8	Years of service awards	
9	Peer recognition programs	

10	Employee feedback and involvement	
11	Professional development Opportunities	
12	Special projects and assignments	
13	Thank you notes and personal recognition	

C. Funding Adequacy:

- How would you rate the current funding received by ZRL for its operations and maintenance needs from the shareholder (Government) and other stakeholders? If any.

1.No Funding		2.Inadequate		3.Moderate		4.Adequate		5.Very Adequate	
-----------------	--	--------------	--	------------	--	------------	--	--------------------	--

- How has the level of funding affected the maintenance and upgrading of the railway infrastructure and the rolling stock at ZRL that reliability can be attained?

1.Very Negatively		2.Negatively		3.Neutral		4.Positive		5.Very Positive	
----------------------	--	--------------	--	-----------	--	------------	--	--------------------	--

- How effectively do you think ZRL allocates its available funds to different operational areas like maintaining the railway infrastructure, spares for locomotives, signals and telecoms, ICT, training etc.?

1.Very Ineffectively		2.Ineffectively		3.Moderate		4.Effectively		5.Very Effectivel y	
-------------------------	--	-----------------	--	------------	--	---------------	--	---------------------------	--

- How has the presence or absence of external financial support like government subsidies, loans and grants influenced the performance of ZRL?

1.Very Negatively		2.Negatively		3.Moderate		4.Posivel y		5.Very Positively	
----------------------	--	--------------	--	------------	--	----------------	--	----------------------	--

5. Do you agree improved funding to rehabilitate the railway infrastructure and acquire new rolling stock could positively influence ZRL's overall performance and customer satisfaction?

1.Strongly Agree		2.Agree		3.Neutral		4.Disagree		5.Strongly Disagree	
------------------	--	---------	--	-----------	--	------------	--	---------------------	--

D. Maintenance Practices:

1. How would you rate the effectiveness of the current maintenance practices at ZRL especially towards the rolling stock and railway infrastructure?

1.Very Ineffective		2.Ineffective		3. Moderately		4.Effective		5.Very effective	
--------------------	--	---------------	--	---------------	--	-------------	--	------------------	--

2. How frequently are routine maintenance activities carried out on ZRL's railway infrastructure and rolling stock?

1.Very Infrequently		2.Infrequently		3.Partially Frequently		4.Frequently		5.Very Frequently	
---------------------	--	----------------	--	------------------------	--	--------------	--	-------------------	--

3. How adequate are financial resources allocated to the maintenance activities to execute the scheduled maintenance plan promptly and efficiently at ZRL?

1.Very Inadequate		2.Inadequate		3. Moderately		4.Adequate		5.Very Adequate	
-------------------	--	--------------	--	---------------	--	------------	--	-----------------	--

4. To what extent do lack of planned maintenance activities on the railway infrastructure and rolling stock contribute to service disruptions at ZRL?

1.Not at All		2.Insignificantly		3.Moderate		4.Significantly		5.Very Significantly	
--------------	--	-------------------	--	------------	--	-----------------	--	----------------------	--

5. To what extent does ZRL prioritize preventive maintenance over reactive maintenance; that is fixing rolling stock and railway truck faults as they occur?

1.Not at All		2.Not Much		3.Moderate		4.Often		5.Very Much	
--------------	--	------------	--	------------	--	---------	--	-------------	--

6. Do you agree that a robust maintenance plan in place at ZRL can help reduce derailments, increase motive power reliability and ultimately reduce transit time for the trains?

1.Stronly Disagree		2.Disagree		3.Not Sure		4.Agree		5.Stronly Agree	
-----------------------	--	------------	--	------------	--	---------	--	--------------------	--

E. Competition:

1. How would you compare the market share of ZRL to that of road transport for both passenger and freight trains?

1.ZRL has much less		2.ZRL has less		3.About the same		4.ZRL has more		5.ZRL has much more	
------------------------	--	-------------------	--	---------------------	--	-------------------	--	------------------------	--

2. What factors do customers consider most when choosing between ZRL and road transport?

- I. Cost ☐
- II. Reliability ☐
- III. Speed ☐
- IV. Safety ☐
- V. Convenience ☐

3. To what extent has competition from road transport has affected ZRL's revenue in the past five years?

1.Very negatively		2.Negatively		3.No Impact		4.Positively		5.Very positively	
----------------------	--	--------------	--	----------------	--	--------------	--	----------------------	--

4. How does the quality of service provided by ZRL compare to that of road transport in terms of timeliness, reliability and customer satisfaction?

1.Much worse		2.Worse		3.Same		4.Better		5.Much Better	
--------------	--	---------	--	--------	--	----------	--	---------------	--

5. What strategies has ZRL implemented to mitigate the impact of competition from road transport? (Tick appropriate ones)

- I. Pricing Strategies ☐
- II. Partnerships ☐
- III. Service Improvement ☐
- IV. Increased Haulage capacity ☐
- V. Reduced transit time ☐

VI. Increased Safety ☐

6. How optimistic are you about ZRL's ability to improve its performance despite competition from road transport?

1. Very Unoptimistic		2. Unoptimistic		3. Neutral		4. Optimistic		5. Very Optimistic	
----------------------	--	-----------------	--	------------	--	---------------	--	--------------------	--

7. How do you perceive the impact of external factors such as economic conditions, government policies or market competition on the performance of Zambia Railways Limited?

1. Very High		2. High		3. Moderate		4. Low		5. Very Low	
--------------	--	---------	--	-------------	--	--------	--	-------------	--

F. Government Policies and Regulations:

1. How familiar are you with the government policies and regulations that affect the operations of ZRL?

1. Very unfamiliar		2. Unfamiliar		3. Moderately Familiar		4. Familiar		5. Very Familiar	
--------------------	--	---------------	--	------------------------	--	-------------	--	------------------	--

2. How have government policies and regulations affected the budget and financial performance of ZRL?

1. Very Negatively		2. Negatively		3. No Impact		4. Positively		5. Very Positively	
--------------------	--	---------------	--	--------------	--	---------------	--	--------------------	--

3. How supportive are the current government policies and regulations in fostering the development and operational efficiency of ZRL without interference in decision making?

1. Very unsupportive		2. Unsupportive		3. Moderately		4. Supportive		5. Very Supportive	
----------------------	--	-----------------	--	---------------	--	---------------	--	--------------------	--

4. How challenging is it for ZRL to combat vandalism and encroachments in relation to current government policies and regulations so as to promote safety and preserve land for future expansion of the railway infrastructure?

1.Very challenging		2.Challenging		3.Neutral		4.Unchallenging		5.Very Unchallenging	
-----------------------	--	---------------	--	-----------	--	-----------------	--	-------------------------	--

5. Do government policies and regulations shape the competitive landscape for ZRL in relation to other transport modes (e.g., road transport) so as to protect its market share?

1.Strongly Disagree		2.Disagree		3.Not Sure		4.Agree		5.Strongly agree	
------------------------	--	------------	--	------------	--	---------	--	------------------	--

6. On a five point Likert scale of 1= strongly disagree, 2= Disagree, 3= Not sure, 4= Agree and 5 = strongly Agree. How can ZRL better engage with government bodies to influence policy improvement or development in its favor?

No	Statement	1	2	3	4	5
1	Active participation in policy forums					
2	Regular communication and reporting					
3	Building strong relationships with key stakeholders					
4	Policy advocacy and lobbying					
5	Public private partnerships (PPPs)					
6	Submission of Policy proposals					
7	Stakeholder workshops and seminars					
8	Collaborative research and development projects					
9	Monitoring and feedback mechanisms					

G. Suggestions for Improvement:

1. What suggestions or recommendations do you have for improving the performance of Zambia Railways Limited?

- I.
- II.
- III.
- IV.
- V.

Thank you for your participation. Your input is invaluable to this research. If you have any additional comments or insights, please feel free to share them below.

Additional Comments:

.....

.....

.....

.....

Appendix K: Interview Guide



ZCAS UNIVERSITY
SCHOOL OF BUSINESS

Interview guide

**INVESTIGATING FACTORS CONTRIBUTING TO UNDERPERFORMANCE OF
PARASTATALS: A CASE OF ZAMBIA RAILWAYS LIMITED**

Dear Participant,

I believe you are doing well. I'm a student at ZCAS University pursuing DBA program and working on my final year thesis.

The purpose of this research study is to explore the multifaceted issues affecting the performance of ZRL from various perspectives, including but not limited to management practices, government policies, funding constraints, maintenance practices, and competition from other transportation modes. By examining these factors comprehensively, the researcher aims to generate insights that can inform strategies for enhancing the performance and sustainability of ZRL and similar State-Owned Enterprises in Zambia and beyond.

Therefore, your participation in this study is invaluable, as your expertise and insights can provide critical perspectives on the challenges and opportunities facing ZRL. Your input will help enrich

our understanding of the complex dynamics at play and contribute to the development of evidence-based recommendations for addressing the identified issues.

Participation in this research study will involve responding to interview open-ended questions. Would you please be prepared to participate in this study and spare about 45 minutes of your time to respond to the interview? In addition, kindly give consent to record this interview as well as take notes. Rest assured that all the information you will provide will be treated with the utmost confidentiality. Please respond to the questions honestly and to the best of your knowledge.

Demographic Information:

1. What is your age range?
2. Can you please describe your role at Zambia Railways and under which department?
3. How long have you been working with Zambia Railways LTD?
4. Can you provide a brief overview of Zambia Railways' operations and services?

Objective one – Maintenance practices

- i. To what extent does the impact of maintenance practices have on the performance of ZRL?

1. Kindly mention the current maintenance practices at Zambia Railways.

.....
.....
.....

2. How frequencies are maintenance activities carried out on the railway infrastructure and rolling stock?

.....
.....

3. What challenges does ZRL face in maintaining its rail infrastructure and rolling stock?

.....
.....
.....

4. Can you provide examples of how maintenance issues have affected railway operations and performance?

.....
.....
.....

5. Kindly share on how best maintenance practices could be improved to enhance performance of ZRL?

.....

.....

.....

Objective Two - Funding

- ii. How has funding contributed to the underperformance of ZRL?

1. Kindly share the primary sources of funding for Zambia Railways Limited.

.....

.....

2. Has ZRL experienced any significant changes in funding over recent years? If so, how have these changes impacted operations?

.....

.....

3. Kindly share any specific instances where lack of funding has led to operational challenges or failures?

.....

.....

4. How does the current level of funding affect the ability to implement necessary improvements or expansions of the company?

.....

.....

.....

5. What strategies do you think could be implemented to secure more stable and adequate funding for ZRL?

.....

.....

.....

Objective Three – Management practices

- iii. How have management practices affected the performance of ZRL?

1. Kindly share the management structure of Zambia Railways Limited.

-
-
-
2. Please share your take over the effectiveness of the current management team in achieving organizational goals?

-
-
3. Are there any specific management practices or policies that you believe hinder performance within the company?

-
-
-
4. Kindly provide examples if possible where management decisions have directly impacted operational success or failure.

-
-
-
5. What changes in management practices do you think would most improve ZRL's performance?

.....

Objective Four - Competition

- iv. To what extent has competition from road transport impacted the performance of ZRL?
1. How significant is the competition from road transport in Zambia's transportation sector?
-
-
2. Kindly share the impact of the rise of road transport has affected the market share and revenue for Zambia Railways.

.....
.....
.....
3. Kindly share some of the challenges ZRL faces in competing with road transport.

.....
.....
.....
4. Kindly share some of the advantages and disadvantages of rail transport compared to road transport from ZRL's perspective?

.....
.....
.....
5. How can ZRL improve its competitive position against road transport?

.....
Objective Five – Government policies

v. What influence do Government policies and regulations have on the performance of ZRL?

1. Kindly share some of the key government policies and regulations affecting the performance of ZRL.

.....
.....
.....
.....
2. Are there any specific regulations that you find particularly beneficial or detrimental to ZRL?

.....
.....
.....
3. Can you provide examples of how government intervention has influenced ZRL's strategic decisions?

-
-
4. What changes in government policies or regulations do you believe could enhance ZRL's performance?

.....

.....

Conclusion

1. Is there anything else you would like to add or think is important for understanding the performance issues at Zambia Railways?
-
-
-
2. Would you be open to a follow-up interview if we need further clarification?
-

INTERVIEW GUIDE

ZRLCLIENTS

Demographic Information:

1. Can you please describe your role at your institution?
2. How long have you been working with the Institution?
3. Can you provide a brief overview of your institution's operations and services?

Research Question 1: To what extent do maintenance practices impact the performance of ZRL?

1. How would you describe your experience with the maintenance of ZRL's rolling stock and infrastructure?
2. Have you encountered any issues with train delays or cancellations due to maintenance problems?
3. How do you think ZRL's maintenance practices affect the quality of the services you receive?
4. Can you provide specific examples where maintenance issues have impacted your business operations?

5. Are you satisfied with the current maintenance standards of ZRL's rolling stock and infrastructure?
6. What improvements would you suggest to enhance the maintenance practices at ZRL?

Research Question 2: How has funding contributed to the underperformance of ZRL?

1. How do you perceive the adequacy of funding for ZRL's operations and infrastructure maintenance?
2. Do you believe that funding issues have impacted the quality of services provided by ZRL?
3. In what ways have funding shortfalls at ZRL affected your experience as a client?
4. Can you provide examples where a lack of funding has directly impacted the services you receive?
5. Are you aware of any specific areas within ZRL that have been underfunded?
6. How do you think better funding could improve ZRL's performance and service delivery?

Research Question 3: How have management practices affected the performance of ZRL?

1. How would you assess the management practices at ZRL based on your interactions with the staff?
2. Have you experienced any issues with communication or service delivery that you believe are related to management practices?
3. How do you think management practices at ZRL have affected your relationship with the company?
4. Possibly kindly provide examples of positive or negative experiences related to ZRL's management
5. Kindly suggest changes in management practices you think could enhance ZRL's performance and your overall experience as a client?
6. How do you think better management practices could improve service delivery at ZRL?

Research Question 4: To what extent has competition from road transport impacted the performance of ZRL?

1. How would you compare your experience with ZRL's rail services to road transport services?
2. What factors influence your decision to choose rail transport over road transport or vice versa?
3. How has the competition from road transport affected the quality of services provided by ZRL?
4. Can you provide specific examples where road transport has been a more attractive option than ZRL's services?
5. What improvements would make you more likely to choose ZRL's services over road transport?

6. How do you think ZRL can better compete with road transport providers?

Research Question 5: What influence do Government policies and regulations have on the performance of ZRL?

1. Are you aware of any government policies and regulations that affect ZRL's operations?
2. How do you think these policies and regulations impact the services you receive from ZRL?
3. In what ways have government policies and regulations influenced your experience with ZRL?
4. Can you provide examples of how regulatory challenges have affected ZRL's performance?
5. What changes or improvements to government policies and regulations do you think could enhance ZRL's performance?
6. How do you think the government can better support ZRL to improve its service delivery?

General Questions

1. How satisfied are you with the overall services provided by ZRL?
2. What are the key strengths and weaknesses you have observed in ZRL's operations?

Strengths

.....

.....

.....

.....

.....

.....

3. What are your expectations for ZRL's services in the future?

.....

.....

4. How can ZRL better meet your needs and expectations as a client?

.....

.....

5. Is there any other feedback or suggestions you would like to provide regarding ZRL's performance and services?

.....

6. Are there any specific areas you think the study should focus on to better understand the factors contributing to ZRL's underperformance?

.....

Appendix L: Ethical Clearance Letter



ZCAS University

Office of the Director
Research and Innovation
P.O Box 35243, Lusaka.
Email: ethics@zcasu.edu.zm
Website: www.zcasu.edu.zm
Phone: +260 979 024363

Serial no: 2026/3/058

ETHICAL APPROVAL

Researcher's name: Lawrence Nizah Mutambo ID:
CSC11003

Title of research: Investigating Factors Contributing to Non-performance of Parastatal Companies: A Case of Zambia Railway Limited

Dear Sir/Madam,

Thank you for applying for research ethics clearance by ZCAS University Ethics Review Committee for the above-mentioned research title.

Your application has been approved. You should ensure that the research project adheres to the ZCAS University Ethics Policy and applicable national legislation (NRHA), the professional code of conduct relevant to your specific field of study and adhere to the professional ethics of the institution. Uphold ethics in data collection, processing and ensure that the participants are protected.

This ethics approval is granted for the period of **One Year** from 16th April 2026 and on condition that the researcher will conduct the study according to the methods and procedures set out in the approved proposal. No field work activities may continue after the expiry date, unless this approval is renewed.

Regards,

A handwritten signature in blue ink, likely belonging to Prof. Dewin Sikalumbi.

Prof. Dewin Sikalumbi
Director - Research and Innovation

Producing Future Fit Leaders

Appendix M: Research Introductory letter - ZCASU



12th April, 2024

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

RE: INTRODUCTORY LETTER FOR MR. NIZAH LAWRENCE MUTAMBO
(CSC11003)

This serves to confirm that Mr. Nizah Lawrence Mutambo of student number CSC11003 is a student at ZCAS University. He is enrolled on the **Doctor of Business Administration** programme.

Mr. Nizah Lawrence Mutambo is currently working on his assignment and your organization has been chosen as the main organization for reference. The assignment topic is
"INVESTIGATING POSSIBLE FACTORS CONTRIBUTING TO NON-PERFORMANCE OF PARASTATAL COMPANIES: A CASE OF ZAMBIA RAILWAYS LIMITED."

Kindly assist him with any information that maybe relevant to him in this regard. Should you need more information about the student, please do not hesitate to get in touch with undersigned on the numbers below.

Yours faithfully,

ZCAS University

Mukula Jonathan (Mr.)

ACADEMIC AFFAIRS MANAGER



ZCAS University

Dedan Kimathi Road, P.O Box 35243 LUSAKA - ZAMBIA. T: +260 211 232 093/5, +260 211 222542, E: infozcasu@zcas.edu.zm.

Registered with the Higher Education Authority - HEA/039

Appendix N: Permission to conduct Research survey letter



ZCAS UNIVERSITY SCHOOL OF BUSINESS

The Director of Human Resources and Administration,
Zambia Railways Limited,
Kabwe, Zambia.

Dear Sir,

REF: PERMISSION TO CONDUCT A RESEARCH SURVEY AT ZRL

I'm a Zambia Railway LTD employee with employee number 200581 working as Engineering Superintendent Signals & Telecommunication under Technical department, currently pursuing business administration course with ZCAS University. Through your reputable office Sir, I write to request your permission to conduct a research survey at Zambia Railways Limited as part of a study **“Investigating possible factors contributing to the underperformance of State-Owned Enterprises, with a specific focus on Zambia Railways Limited”**.

As an esteemed member of the leadership team responsible for human resources and administration at Zambia Railways Limited, your support and approval are crucial to the success of this research endeavor. The insights gathered through this study will not only contribute to academic knowledge but also provide valuable information that can inform strategic decision-making within the organization.

The research survey aims to gather data from employees across various departments and levels within ZRL. The survey will focus on exploring factors such as management practices, resource allocation, operational challenges, funding, government policies, competition from other modes of transport and other pertinent issues that may be affecting the performance of the company. By

understanding these factors in depth, we hope to provide actionable recommendations for addressing challenges and improving overall performance.

Sir, I assure you that all information collected through the research survey will be treated with the utmost confidentiality and used solely for research purposes. Measures will be taken to ensure the anonymity of respondents, and findings will be reported in aggregate form to protect the privacy of individual participants.

Your permission to conduct this research survey would involve the following:

- i. Approval to distribute the research questionnaires to Zambia Railways Limited employees through official communication channels, such as email, WhatsApp or physical copy delivery and conduct interviews.
- ii. Endorsement and encouragement of employee participation in the survey to ensure a representative sample and comprehensive data collection.

I am committed to adhering to all ethical guidelines and organizational protocols throughout the research process. If you have any questions or require further information about the study, please do not hesitate to contact me on the undersigned below.

Thank you for considering this request Sir. Your support in facilitating this research survey would be greatly appreciated and instrumental in advancing our understanding of the factors influencing the performance of Zambia Railways Limited.

Sincerely Yours,



Nizah L. Mutambo

DBA Research Student

+260968195099

nizahlm@gmail.com

Appendix O: Response to Conduct a Research Survey - ZRL



ZAMBIA RAILWAYS LIMITED

(A member of the IDC Group of Companies)

Office of the Director Human Resources and Administration

Corporate Office

Shitima House, Kafue River Avenue

P.O Box 80935, Kabwe, Zambia

Tel: 260 215 227005;

Fax: 260 215 224411

Email: hr@zrl.com.zm

17th May, 2024

Mr. Nizah L. Mutambo
C/O ZCAS University
P.O Box 50497,
LUSAKA

Dear Mr. Mutambo,

RE : RESPONSE TO YOUR REQUEST TO CONDUCT A RESEARCH

Reference is made to your letter dated 12th April, 2024 regarding the above subject.

I am pleased to inform you that your application to carry out a research with Zambia Railways Limited on a need to collect data on the Topic titled "Investigating Possible factors contributing to non- performance of parastatal companies: a case of Zambia Railways Limited," has been accepted.

You will be attached to Human Resource Department (**Training Section**) from 27th May, 2024 to 30th June, 2024 at Zambia Railways.

Upon completion of your research, you will be expected to submit a copy of your research project to the Human Resources Department (Training Section). In this regard, the terms of reference or details relating to the research will be as guided by our Human Resource Department.

I wish you the best in your study.

Yours sincerely,

ZAMBIA RAILWAYS LIMITED

Mupelesi Siame H. C. M.

ASSISTANT MANAGER –TRAINING & DEVELOPMENT

Cc: Acting Director Human Resource & Administration
Master file