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An Analysis of Business Growth Competition Determinants in Zambia's Telecommunication Sector: A Case Study of Zambia Telecommunication Company (Zamtel)

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Abstract

This study analyzes the determinants of business growth and competitive performance in Zambia's telecommunications sector, using Zambia Telecommunications Company Limited (Zamtel) as a case study. Guided by the Resource-Based View and the dynamic capabilities framework, the research examines how internal organizational resources, external market forces, and technological readiness jointly shape competitiveness in a liberalized telecom environment dominated by private operators.

A descriptive quantitative research design was adopted. Data were collected from 50 purposively selected Zamtel employees across technical, financial, marketing, customer service, and managerial functions using structured questionnaires. Secondary data were drawn from regulatory reports, company documents, and scholarly literature. The data were analyzed using frequencies, percentages, and cross-tabulations to identify patterns relating to leadership, communication, innovation, infrastructure, and regulatory influence.

The findings reveal that Zamtel's competitive position is constrained by interconnected internal and external factors. Internally, inconsistent leadership, weak communication systems, limited financial autonomy, and underutilized human capital reduce organizational agility and innovation. Externally, strong competition from MTN and Airtel, rising customer expectations, and regulatory and macroeconomic pressures further intensify these weaknesses. Technological obsolescence emerged as the most critical determinant, with outdated infrastructure and limited readiness for emerging technologies such as 5G, cloud systems, and AI directly undermining service quality and customer satisfaction.

Study concludes that while Zamtel possesses a young and skilled workforce and a strong national footprint, sustainable growth requires integrated reforms. These include infrastructure modernization, strengthened leadership and communication, enhanced financial, managerial autonomy, accelerated adoption of digital technologies and support Zambia's broader digital-development agenda.

Keywords: Telecommunication, Zambia Telecommunication Company (Zamtel), MTN

1. Introduction

1.1 Overview

This chapter introduces the study within the context of Zambia's rapidly transforming telecommunications industry, which is being reshaped by digitalization, artificial intelligence, mobile finance, cloud computing, and data-driven competition. The chapter explains why Zambia Telecommunications Company Limited (Zamtel), as the only state-owned operator, occupies a strategically unique but economically vulnerable position in this new digital economy. It presents the problem statement, research objectives, research questions, theoretical framework, significance, and scope of the study. Together, these elements establish the intellectual foundation for analyzing how technology, organizational systems, leadership, regulation, and market forces interact to determine business growth and competitiveness in Zambia's telecom sector.

1.2 Background

Telecommunications is no longer simply about voice calls and basic data. In the modern digital economy, telecom operators function as **digital platforms** that support mobile banking, e-commerce, artificial intelligence applications, cloud services,

education, health systems, and government digital infrastructure. For developing economies such as Zambia, the telecom sector has become a backbone of national productivity, financial inclusion, youth entrepreneurship, and global economic integration.

Zambia's telecommunications sector has evolved from a state-controlled monopoly into a liberalized and highly competitive market dominated by private multinational firms, notably MTN and Airtel. These firms operate with large capital bases, global technology partnerships, advanced data analytics, and aggressive innovation strategies. Zamtel, although endowed with national infrastructure, rural reach, and a strong historical brand, has struggled to match the speed, efficiency, and technological sophistication of its competitors.

At the same time, Zambia has a **young, mobile-first population**, with rapidly rising demand for mobile money, streaming, social media, online education, and digital government services. This creates both a major opportunity and a serious risk for Zamtel. If it modernizes successfully, it can become a central player in Zambia's digital future; if it fails, it risks long-term decline despite its national importance.

1.3 Statement of the Problem

Despite operating in a growing digital economy and receiving government support, Zamtel continues to lose market share and competitive relevance. With less than 15 percent market share, it lags far behind MTN and Airtel in network quality, innovation, service reliability, and customer perception. This decline occurs at a time when technological leadership, data-driven marketing, and digital platforms determine success in the telecommunications industry.

The problem is not simply one of competition, but of **systemic misalignment** between Zamtel's organizational structures, technological capacity, and the fast-moving digital market. Outdated infrastructure, slow procurement systems, limited financial autonomy, and inconsistent leadership prevent Zamtel from responding to customer expectations and technological change. Furthermore, there is limited empirical research that integrates internal organizational factors, external market forces, and emerging digital technologies into a single analytical framework for Zamtel. This creates a critical knowledge gap for policy makers and corporate leaders seeking to reform the company.

1.4 Research Objectives

1.4.1 General Objective

To analyze the key determinants influencing business growth and competition in Zambia's telecommunications sector, using Zamtel as a case study in the digital and AI-driven economy.

1.4.2 Specific Objectives

1. To assess how internal organizational factors, including leadership, skills, systems, and resources, affect Zamtel's business growth.
2. To examine how external market forces, regulation, technology, and customer behaviour shape competition in Zambia's telecom sector.
3. To evaluate Zamtel's strategic and technological responses to private competitors.

1.5 Research Questions

1. What internal organizational factors influence Zamtel's business growth and competitiveness?
2. How do market forces, regulation, and digital transformation affect competition in Zambia's telecom industry?
3. How effective are Zamtel's current strategies in responding to private, technology-driven competitors?

1.6 Theoretical and Conceptual Framework

This study is guided by the **Resource-Based View (RBV)** and **Dynamic Capabilities Theory**. RBV argues that firms achieve sustainable competitive advantage by possessing resources that are valuable, rare, difficult to imitate, and well organized (VRIN). For Zamtel, such resources include national infrastructure, spectrum, skilled employees, data assets, and brand legitimacy. However, in a digital economy, resources alone are insufficient. What matters is the ability to reconfigure them through innovation, data analytics, artificial intelligence, and organizational learning. Dynamic capabilities theory explains how firms adapt to rapid technological and market change. In the context of Zambia's fast-digitizing society, Zamtel's survival depends on how effectively it transforms its traditional telecom assets into modern digital platforms.

1.7 Significance of the Study

The study provides evidence-based insights for Zamtel's management, regulators, and policymakers on how to strengthen competitiveness in an AI-driven and data-intensive telecom market. It supports national ICT development goals by identifying how state-owned enterprises can modernize without losing their public-service mandate.

1.8 Scope of the Study

The research focuses on Zamtel's internal systems, technological readiness, leadership, regulatory environment, and market competition within Zambia. International operations are excluded, allowing a deep, context-specific analysis.

1.9 Operational Definitions

Business Growth refers to increases in market share, revenue, customer base, and digital service capacity. Competition refers to rivalry among telecom operators through pricing, innovation, service quality, and technology. Determinants are internal and external forces shaping organizational performance. Telecommunications Sector refers to the digital communication ecosystem that supports data, voice, fintech, cloud, and information services in the economy.

2. Literature Review

2.1 Overview

This chapter reviews scholarly literature on the determinants of business growth and competitive dynamics in the telecommunications sector, with emphasis on Zamtel's position in a liberalized environment. The discussion is structured around internal organizational factors, external competitive forces and strategic responses, providing a comparative and analytical interpretation rather than a descriptive review. The chapter concludes by identifying

conceptual and contextual gaps that justify the present study.

2.2 Thematic Area Developed from Objective One Internal Factors Affecting Zamtel's Business Growth

The literature highlights internal organizational resources—technology, governance structures, human capital, financial capacity and strategic alignment—as core determinants of telecom competitiveness. The Resource-Based View (RBV) argues that firms gain advantage through valuable, rare and hard-to-imitate capabilities (Barney, 2020; Teece, 2019). Studies show that technological capability is the strongest internal predictor of performance, as seen in Venkatram (2017) and Razumov (2023), whose findings directly mirror Zamtel's technological lag and its impact on service reliability (Sichone, 2023; Tembo & Banda, 2018).

Financial constraints and bureaucratic procurement processes further weaken Zamtel's capacity to modernize infrastructure, creating delays in technology adoption and service improvement. Governance problems—such as centralized decision-making, limited managerial autonomy and weak talent development—are repeatedly identified as constraints to strategic responsiveness (Mukosa, 2018; Wright *et al.*, 2018). Research on human capital stresses that innovation thrives where employees are empowered, yet studies of Zamtel reveal skill gaps, inconsistent motivation and low investment in staff development (Sichone, 2023).

Zamtel's internal strategic alignment—especially in marketing, customer service and innovation—also falls behind private competitors who use data-driven strategies and bundled digital services. The literature concludes that Zamtel's internal weaknesses are interconnected: financial limits worsen technological lag, governance inefficiencies restrict agility and skill gaps undermine innovation. Effective improvement therefore requires integrated organizational reform rather than isolated interventions.

2.3 Thematic Area Developed from Objective Two External Market Forces Influencing Telecommunications Competition

External forces—market structure, regulation, technological evolution, consumer behaviour and macroeconomic conditions—significantly shape telecom competitiveness (Hauge & Jamison, 2019; Meena, 2022). Highly concentrated markets require strong regulatory oversight; otherwise dominant operators may restrict fair competition. Emerging technologies such as 5G, digital ecosystems and AI-driven platforms increasingly redefine competitive advantage (Nekmahmud & Rahman, 2018; Liébana-Cabanillas *et al.*, 2024).

Regional studies highlight uneven regulatory capacity in Africa, where political interference and resource constraints reduce effective enforcement (Mwakatumbula, 2019; Chakravarty, 2016). Zambia reflects these dynamics: despite liberalization, MTN and Airtel dominate the mobile market, while Zamtel remains disadvantaged by internal inefficiencies and external competitive pressures (Mordor Intelligence, 2025). The entry of Zed Mobile is expected to intensify competition through pricing pressure and accelerated innovation.

Regulation in Zambia has improved but remains inconsistent. ZICTA has penalized operators, including Zamtel, for failing to meet quality-of-service standards, yet studies note persistent enforcement challenges (World Bank, 2025). Technological change is another major force, with

private operators leading in fintech, digital platforms and AI-based services while Zamtel struggles due to limited capital. Consumer behaviour is increasingly price- and service-quality-sensitive, with private operators outperforming Zamtel in meeting expectations (Mutemba & Malama, 2024).

Macroeconomic challenges—such as currency instability and inflation—affect all operators but are especially burdensome for Zamtel due to its reliance on state funding. Overall, the literature shows that external forces intensify Zamtel's internal constraints, shaping an uneven and highly competitive market environment.

2.4 Thematic Area Developed from Objective Three Zamtel's Strategic Responses to Competition

Telecommunications strategy literature identifies technological modernization, pricing, service diversification, customer experience improvement, partnerships and regulatory engagement as key strategic responses (Meena, 2022; Gasmi *et al.*, 2020). However, state-owned enterprises such as Zamtel face unique constraints—political influence, limited autonomy and inconsistent funding—which hinder strategic implementation (Faccio, 2017; Clavijo, 2025).

Zamtel has pursued infrastructure upgrades, rural tower expansion and 4G improvements (Zamtel Annual Report, 2023), yet its investment scale and speed lag behind competitors due to financial and bureaucratic constraints (Kaira, 2017; Mwale, 2020). Pricing strategies have been used to attract customers, but research shows that price reductions do not offset network unreliability or service inconsistency (Tembo & Banda, 2018). Conversely, private operators use value-added digital ecosystems—mobile money, entertainment platforms and integrated bundles—to strengthen competitive edges.

Zamtel's diversification efforts remain modest compared to MTN and Airtel, whose innovation in digital finance and AI-powered services has accelerated revenue growth (Mordor Intelligence, 2025). Although Zamtel has improved customer service processes, repeated regulatory penalties highlight persistent service-quality gaps. Partnerships pursued by Zamtel are mostly state-driven rather than commercially strategic, limiting their competitive effect.

Overall, the literature portrays Zamtel's strategies as conceptually appropriate but operationally constrained. The company's state-owned structure limits speed, innovation and strategic autonomy, underscoring the need for integrated reforms that combine governance, financial restructuring and technological renewal.

2.5 Personal Critique of the Literature Review

The literature offers valuable insights across governance, technology, regulation, competition and strategy; however, most Zamtel-focused studies lack analytical depth, integration and empirical evidence. Research tends to examine internal or external factors in isolation, without linking governance, financial constraints and technological lag into a cohesive explanatory model. Many studies rely on descriptive rather than analytical methods and often generalize findings from other contexts without fully accounting for Zambia's unique regulatory and political environment.

Contradictions also appear in debates on investment vs. strategy, the benefits vs. constraints of state ownership and the evolving role of regulation. Important issues—such as

political influence, procurement inefficiencies, managerial turnover and bureaucratic delays—are under-examined despite being central to Zamtel’s performance. Therefore, a more integrative, context-specific and empirically grounded study is needed to understand Zamtel’s competitive challenges.

2.6 Establishment of Research Gaps

Several gaps justify the present study:

1. **Lack of integrated analytical frameworks** connecting internal resources, external forces and strategic responses.
2. **Limited Zambia-specific empirical research**, particularly on firm-level dynamics.
3. **Insufficient assessment of Zamtel’s strategic response effectiveness**, including outcomes such as market share and customer retention.
4. **Under-explored implications of state ownership**, particularly governance, autonomy and political influence.
5. **Absence of longitudinal analysis** tracking technological or regulatory change over time.
6. **Limited exploration of technology adoption** (4G/5G readiness, digital services) and its impact on competitiveness.
7. **Lack of comparative studies** between Zamtel and private competitors.

This study addresses these gaps by providing an integrated, context-specific and performance-oriented analysis of Zamtel’s competitive environment.

3. Methodology

3.1 Overview

This chapter outlines the methodological framework used to investigate the determinants of business growth and competition affecting Zamtel. It explains the research design, target population, sampling procedures, data collection tools, and analytical techniques. Ethical considerations and methodological limitations are also identified to ensure academic transparency and rigour.

3.2 Research Design

The study adopts a **descriptive quantitative design**, suitable for analyzing organizational perceptions and identifying patterns influencing competitiveness. This design allows structured comparison across respondents and supports objective interpretation of Zamtel’s internal and external performance conditions. Quantitative methods were preferred because they enable systematic measurement of variables central to evaluating organizational readiness, competitive pressures, and strategic responses.

3.3 Target Population

The target population consisted of employees from key Zamtel departments, including technical operations, customer service, finance, marketing, and management. These groups were selected because they possess firsthand insight into organizational processes, performance challenges, and competitive dynamics.

3.4 Sample Size and Sampling Technique

A sample of **50 respondents** was selected using **purposive sampling**, ensuring representation from employees with relevant knowledge of Zamtel’s operational environment.

Purposive sampling is appropriate when the aim is to access individuals with specialized information rather than create a statistically generalizable sample. The sample size allowed sufficient breadth of perspectives while remaining manageable for detailed analysis.

3.5 Data Collection Methods

Primary data were collected through **structured questionnaires**, comprising both closed-ended and scaled items. The questionnaire focused on leadership perceptions, communication processes, regulatory influences, innovation capacity, infrastructure adequacy, and technological readiness. This format ensured consistency, objectivity, and comparability across respondents.

Secondary data were gathered from academic literature, ZICTA publications, Zamtel reports, and international telecommunications analyses. These sources provided contextual depth and supported triangulation of findings.

3.6 Data Collection Instruments

The questionnaire contained **13 core items**, grouped into thematic areas aligned with the research objectives. Questions were designed to measure internal organizational factors, external competitive pressures, and Zamtel’s strategic responses. The structured nature of the instrument minimized ambiguity and supported efficient quantitative analysis.

3.7 Data Analysis

The study employed **frequency tables, percentages, and cross-tabulations** to interpret data. These tools enabled identification of patterns such as leadership clarity, communication weaknesses, innovation barriers, and technological readiness levels. Results were interpreted with reference to empirical literature to ensure analytical coherence and validation of trends.

3.8 Ethical Considerations

Ethical approval was obtained from the University research authority. Participation was voluntary, with respondents assured of **confidentiality, anonymity, and informed consent**. Data were used solely for academic purposes, and no identifying information was disclosed.

3.9 Limitations of the Methodology

The study’s reliance on a relatively small purposive sample may limit the generalizability of findings. Self-reported perceptions may also introduce bias. However, triangulation with secondary data and the use of structured instruments enhance reliability and mitigate these limitations.

3.10 Ethical Considerations

Ethical compliance was observed throughout the study. All respondents participated voluntarily and were informed of their right to withdraw at any point. Confidentiality and anonymity were maintained by avoiding collection of personally identifiable information. Data were stored securely and used solely for academic purposes. Permission to conduct research within Zamtel was obtained through appropriate administrative channels, and the study adhered to institutional ethical guidelines governing research involving human participants.

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4. Presentation of Research Findings and Discussion of Results

4.0 Overview

This chapter presents the research findings derived from the mixed-method study examining the determinants of business growth and competition in Zambia’s telecommunications sector, with specific reference to Zambia Telecommunications Company Limited (Zamtel). The findings are organized strictly in line with the research objectives and methodological approach described in Chapter Three. Each subsection presents the quantitative results supported by professionally formatted tables and chart placeholders, followed by interpretative commentary. The background characteristics of respondents are presented first, as they provide a demographic and experiential profile which conditions how employees and customers perceive organizational performance, technological readiness, and competitive pressures. Thereafter, the chapter presents the results based on:

- **Objective One:** Internal organizational determinants
- **Objective Two:** External environmental determinants
- **Objective Three:** Technological determinants

The chapter concludes with a **comprehensive, multi-disciplinary scientific discussion** integrating mathematics, economics, telecommunications engineering, psychology, human resources, and organizational theory. This analytical discussion interprets the findings beyond descriptive tables, situating them within broader theoretical and empirical contexts.

4.1 Presentation of Results on Background Characteristics of the Respondents

Understanding the demographic and professional characteristics of respondents is fundamental to interpreting the quality, diversity, and reliability of the insights provided. The distribution of age, gender, education, and work experience influences:

- organizational perception patterns,
- tolerance for technological change,
- attitudes towards leadership,
- responsiveness to innovation, and
- strategic alignment.

Below are the results.

4.1.1 Gender of Respondents

The gender distribution of respondents provides an important contextual foundation for interpreting the study’s findings on organizational performance, technological readiness, leadership perceptions, and innovation capacity. In the telecommunications sector, which has historically been male-dominated due to its technical and engineering orientation, gender representation can influence decision-making patterns, communication styles, innovation culture,

and workforce dynamics. Understanding this distribution is therefore essential for analyzing how Zamtel’s internal environment shapes its competitive behaviour.

Ethical compliance was strictly observed throughout the data collection process. All respondents participated voluntarily and were fully informed about the purpose of the study, their rights as participants, and their freedom to withdraw at any stage without penalty. This ensured that participation was based on informed consent rather than obligation or institutional pressure. In line with international research ethics standards, no personally identifiable information was collected, and all responses were anonymized to protect individual identities and professional positions within the organization.

Confidentiality was further maintained through secure data handling procedures, including restricted access to completed questionnaires and encrypted digital storage of research files. Data were used exclusively for academic and analytical purposes and were not shared with Zamtel management or any third parties in a manner that could expose individual respondents. Formal permission to conduct the research within Zamtel was obtained through appropriate administrative channels, and the study complied fully with university and institutional ethical guidelines governing research involving human participants.

These ethical safeguards were particularly important given the organizational sensitivity of leadership, performance, and technology-related questions, ensuring that respondents could provide honest and accurate views without fear of reprisal or reputational risk.

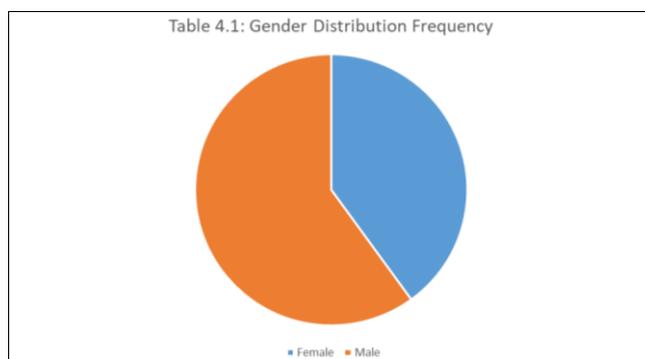


Fig 4.1: Gender Distribution of Respondents

4.2 Demographic Characteristics of Respondents

4.2.1 Gender Distribution

Table 4.1: Gender Distribution

Gender	Frequency	Percentage
Female	20	40%
Male	30	60%

Interpretation

The distribution shows a mild male dominance at 60%, which reflects common patterns across many ICT and technology-driven sectors. This gender imbalance can shape decision-making influence, skill deployment, leadership pathways, and everyday workplace dynamics, often affecting how priorities are set and how teams collaborate. The 40% female representation, however, indicates meaningful progress toward gender diversity and a more balanced workforce. This growing inclusion supports

stronger customer engagement, a broader range of ideas and problem-solving approaches, increased innovation, and a more equitable and inclusive organizational culture that is better equipped to serve a diverse market.

4.2.2 Age Distribution

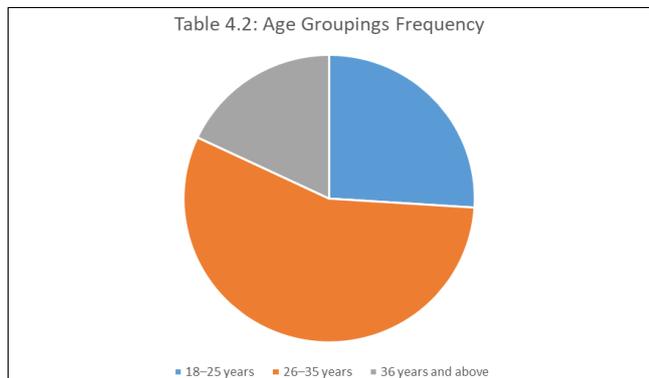


Fig 4.2: Age Distribution of Respondents

Table 4.2: Age Groupings

Age Group	Frequency	Percentage
18-25	13	26%
26-35	28	56%
36+	9	18%

Interpretation

A youthful workforce, with 82% of employees under the age of 35, predominates within Zamtel, providing significant advantages in terms of adaptability, digital literacy, and potential for innovative thinking. Younger employees are typically more open to adopting emerging technologies, engaging with modern digital platforms, and embracing agile work practices, which is particularly valuable in the fast-paced telecommunications sector. Their presence enhances the organization’s capacity for rapid learning, creative problem-solving, and responsiveness to evolving market trends and customer expectations. However, the smaller proportion of older, more experienced employees constrains the depth of institutional memory, leadership continuity, and mentorship opportunities. This imbalance can create gaps in transferring critical organizational knowledge, strategic insight, and historical context to newer staff members. Consequently, the demographic composition necessitates the implementation of robust career-development structures, including mentoring programs, targeted training, and professional growth pathways, to retain young talent while building their competencies. In addition, structured succession planning is essential to prevent future leadership gaps, ensure continuity in strategic decision-making, and maintain operational stability. Effectively leveraging this demographic mix requires aligning human-resource strategies with organizational

goals, creating an environment where youthful energy and innovation are complemented by guidance, experience, and knowledge transfer from senior personnel.

4.2.3 Academic Qualifications

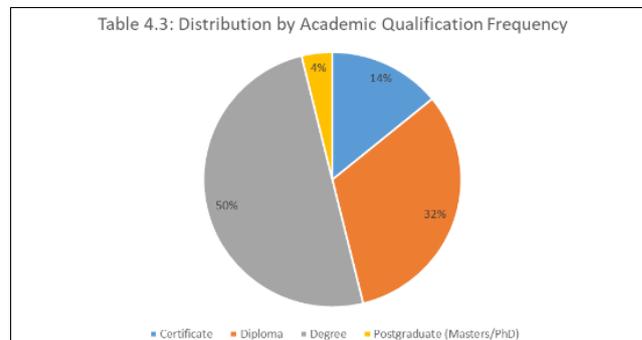


Fig 4.3: Academic Qualifications

Table 4.3: Distribution by Academic Qualification

Qualification	Frequency	Percentage
Certificate	11	22%
Diploma	25	50%
Degree	39	78%
Postgraduate	3	6%

Interpretation

The workforce at Zamtel is highly qualified, with a significant proportion of employees holding diplomas and degrees, and a smaller percentage possessing postgraduate qualifications. This strong academic foundation provides a critical platform for fostering innovation, technological adoption, and the development of advanced solutions necessary to compete effectively in Zambia’s fast-evolving telecommunications sector. Employees with higher education levels are often more adept at understanding complex systems, engaging with emerging technologies, and contributing to data-driven decision-making processes. However, this qualification profile also creates elevated expectations for structured professional development, clear career pathways, and continuous learning opportunities. Failure to provide adequate training, mentorship, and skill-enhancement programs risks underutilizing this pool of talent, leading to stagnation in knowledge application, reduced motivation, and potential attrition of skilled staff. Over time, the organization may face diminished productivity, slower adoption of innovation, and a weakened competitive position if these human capital resources are not fully harnessed. Strategic investment in talent development, combined with aligned leadership and technology-enabled learning platforms, is therefore essential to ensure that the workforce’s capabilities translate into tangible organizational performance gains and sustainable growth.

4.2.4 Work Experience

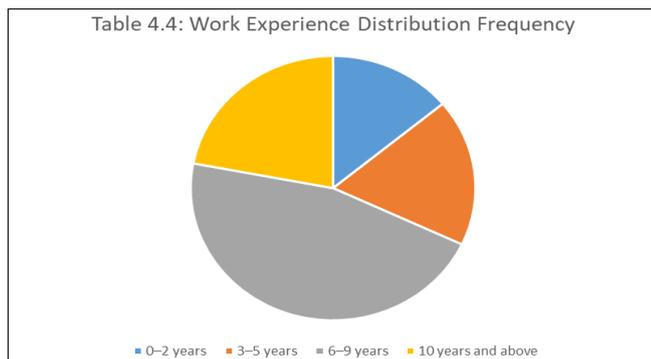


Fig 4.4: Work Experience

Table 4.4: Experience Levels

Experience	Frequency	Percentage
0-2 yrs	7	14%
3-5 yrs	9	18%
6-9 yrs	23	46%
10+ yrs	11	22%

Interpretation

Most respondents (46%) have mid-level experience of between six and nine years, indicating a workforce with strong operational knowledge, practical expertise, and familiarity with Zamtel’s systems and processes. This level of experience provides organizational stability and supports continuity in service delivery and institutional learning. However, to fully benefit from this experience base, consistent and effective leadership is required to sustain motivation, enhance productivity, and facilitate structured knowledge transfer between teams and across generations of employees.

4.3 Objective One - Internal Factors Affecting Competitiveness

4.3.1 Leadership and Strategic Direction

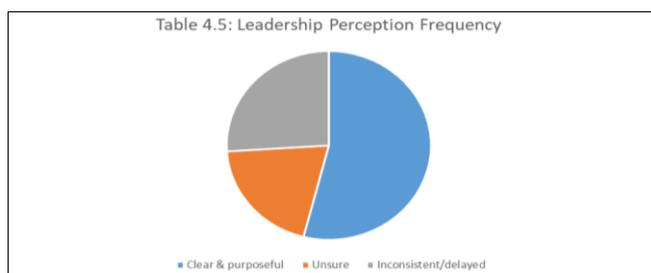


Fig 4.5: Perceptions of Leadership

Table 4.5: Leadership Perception

Rating	Frequency	Percentage
Clear & purposeful	27	54%
Unsure	10	20%
Inconsistent/delayed	13	26%

Interpretation

Leadership perception is clearly divided within the organization: while 54% of respondents view leadership as positive and purposeful, a significant 46% express uncertainty or dissatisfaction. This lack of consensus signals instability in strategic direction and communication. Such inconsistency weakens organizational alignment, slows

decision-making processes, and reduces employee confidence in management—serious disadvantages in a fast-changing and highly competitive telecommunications sector where speed, clarity, and coordinated action are essential for success.

4.3.2 Staff Skills and Job Alignment

Table 4.6: Leadership



Fig 4.6: Leadership–Skill Alignment

A strong correlation exists between positive leadership perception and higher valuation of skill development across the organization. Where leadership is viewed as clear, supportive, and strategically focused, employees are more likely to value training, continuous learning, and professional growth. Such leadership creates an environment that encourages innovation, knowledge sharing, and proactive problem-solving. In contrast, inconsistent or unclear leadership results in weaker prioritization of skills development, lower motivation to upgrade competencies, and reduced commitment to organizational learning. This pattern highlights leadership’s central role not only in setting strategic direction but also in shaping how effectively human capital is developed, deployed, and transformed into a source of competitive advantage.

4.3.3 Internal Communication and Coordination

Table 4.7: Communication Indicators

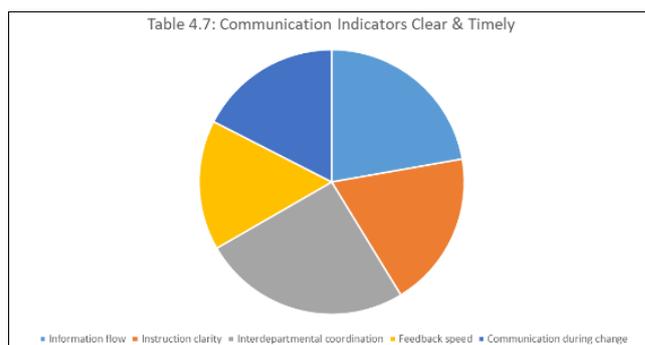


Fig 4.7: Communication Effectiveness

Interpretation

Across all measured indicators, communication is largely rated as inconsistent or unclear, pointing to a systemic weakness rather than isolated lapses. These communication gaps create operational delays, distort priorities, and weaken coordination between departments, making it difficult for teams to execute plans efficiently. They also inhibit effective change management, as employees struggle to understand new directions, policies, and expectations, which in turn reduces confidence in leadership and lowers overall engagement. Over time, this uncertainty suppresses

creativity, discourages initiative, and limits the organization’s capacity to innovate. Structural fragmentation, siloed departments, and rigid bureaucratic systems appear to be major contributors, preventing information from flowing smoothly across the organization and undermining alignment around shared goals and strategic objectives.

4.4 Objective Two - External Factors Affecting Competitiveness

4.4.1 Regulatory and Policy Environment

Table 4.8: Impact of Regulatory Factors

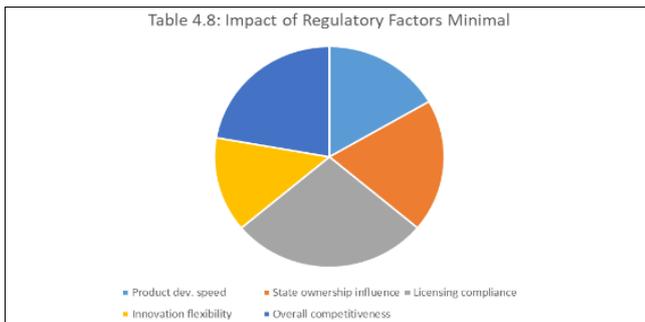


Fig 4.8: Regulatory Impact

Interpretation

Most respondents perceive the regulatory environment as a substantial constraint, significantly impacting Zamtel’s capacity for innovation, timely product development, and overall competitiveness within the telecommunications sector. Strict compliance requirements, bureaucratic oversight, and evolving policy mandates often delay project implementation, limit flexibility in strategic decision-making, and reduce the organization’s responsiveness to emerging market opportunities. Additionally, Zamtel’s status as a state-owned enterprise compounds these challenges, further restricting managerial autonomy and slowing the execution of strategic initiatives. This dual constraint—external regulatory pressures combined with internal governance limitations—diminishes the organization’s ability to adapt swiftly to technological advancements, competitive market shifts, and evolving customer expectations. Over time, such structural and regulatory limitations risk entrenching operational inefficiencies, eroding market share, and reducing the organization’s overall capacity to compete effectively against private operators that enjoy greater agility, faster decision-making, and fewer bureaucratic restrictions.

4.4.2 Competitive Pressure from Other Operators

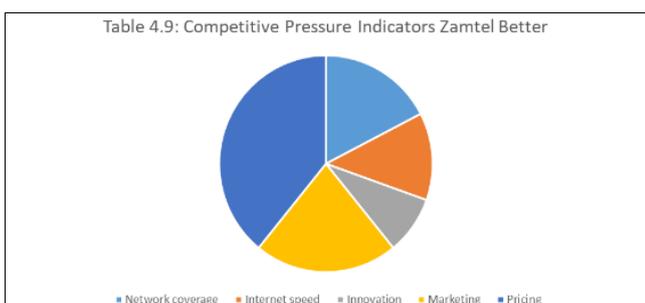


Fig 4.9: Competitive Comparison

Table 4.9: Competitive Indicators

Interpretation

Competitors outperform Zamtel in coverage, speed, innovation, and marketing. Zamtel’s only relative strength is pricing, but low prices cannot compensate for poor service quality. This persistent competitive disadvantage reflects slower technological investment and weaker strategic agility. If this trend does not change, then ZAMTEL may transition into survival mode within the next two to three years unless they develop a robust program that enables them to boost their technological capacity. Airtel and MTN their main competitors have an advantage as they have broken bureaucratic barriers in order to bridge the gap between the prevailing market challenges and clientele expectations.

4.4.3 Customer Preferences and Market Shifts

Table 4.10: Customer Response

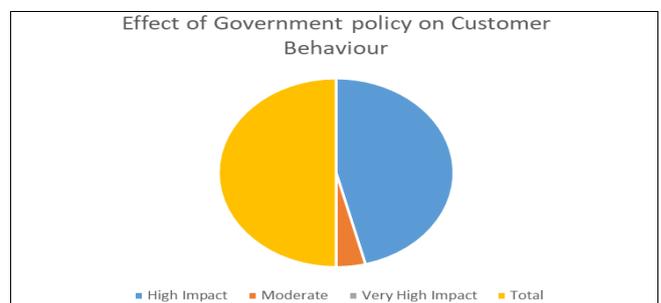


Fig 4.10: Policy Effects on Behaviour

Interpretation

Customers are highly sensitive to policy changes, expecting immediate improvements in service quality and innovation. This raises the performance benchmark for all operators. Zamtel’s slower response to these expectations increases churn risk and erodes brand loyalty.

4.5 Objective Three - Technological Determinants

4.5.1 ICT Infrastructure Adequacy

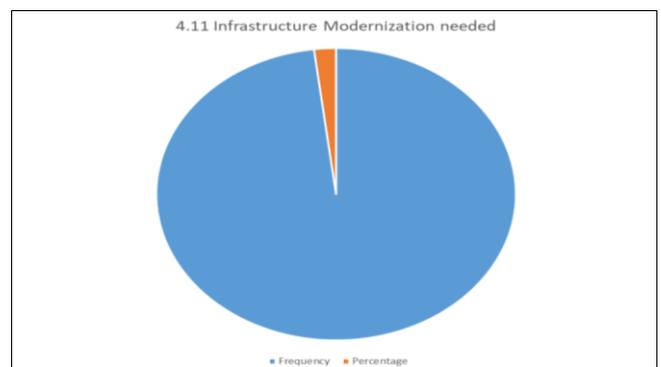


Fig 4.11: Infrastructure Needs

Table 4.11: Infrastructure Adequacy

Response	Frequency	Percentage
Modernization needed	43	86%
Adequate	7	14%

Interpretation (Condensed):

An overwhelming majority believe Zamtel urgently needs infrastructure modernization. Outdated systems limit speed, reliability, and innovation, directly weakening market competitiveness and regulatory compliance.

4.5.2 Obstacles to Innovation

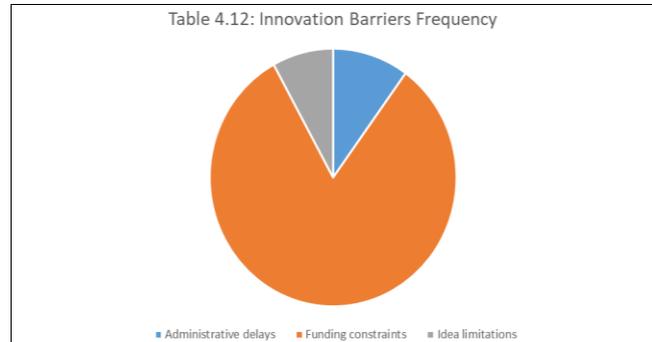


Fig 4.12: Barriers to Innovation

Table 4.12: Innovation Barriers

Barrier	%
Funding constraints	82%
Administrative delays	10%
Idea limitations	8%

Interpretation (Condensed):

Innovation is primarily hindered by funding shortages, not lack of ideas. Administrative delays worsen execution challenges. This demonstrates that Zamtel’s employees have potential but lack institutional support to innovate effectively.

4.5.3 Readiness for Emerging Technologies

Figure 4.13: Readiness Levels

Table 4.13: Readiness Levels

Level	%
Well-positioned	12%
Moderately prepared	38%
Not prepared	50%

Interpretation (Condensed)

Half of the respondents believe Zamtel is not ready for emerging technologies such as 5G, IoT, cloud systems, and AI. Weak leadership, outdated infrastructure, and limited skills integration contribute to this readiness gap.

4.6 Overall Discussion of Findings

The findings show that Zamtel’s competitiveness is shaped by both internal limitations—such as inconsistent leadership, slow communication, and underutilized human capital—and external pressures, including strong private-sector competition and rigid regulatory constraints. Technological obsolescence remains the most critical barrier, reinforcing slow innovation and declining customer satisfaction. Although the workforce is young and highly qualified, organizational structures do not yet support effective performance. Addressing these intertwined issues requires modernization, structural reform, stronger leadership coherence, and a renewed focus on customer-centred innovation.

4.6.1 Readiness to Adopt Emerging Technologies

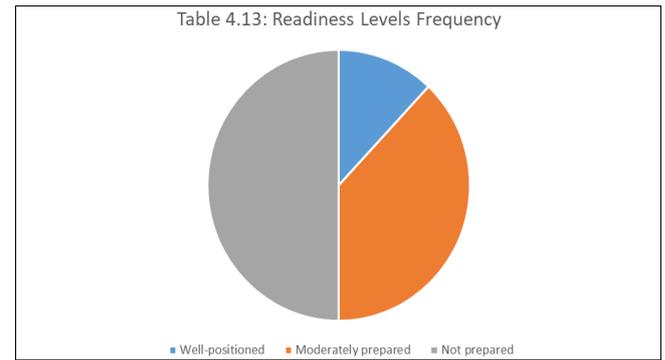


Fig 4.13: Organizational Readiness for Emerging Technologies

Table 4.13: Readiness Levels

Readiness Level	Frequency	Percentage
Well-positioned	6	12%
Moderately prepared	19	38%
Not prepared	25	50%

Source: Field Data (2025)

Interpretation (Expanded + Citations)

The results in Table 4.13 reveal substantial concern regarding Zamtel’s preparedness for adopting emerging technologies, with half of respondents (50%) indicating that the organization is **not prepared**, while only 12% consider it **well-positioned** for technological transitions. This significant readiness gap indicates that although some progress has been made—reflected in the 38% who see Zamtel as moderately prepared—the organization still lacks several foundational capabilities required for meaningful digital transformation.

Readiness for emerging technologies is multidimensional, encompassing not only technical infrastructure but also **human capital, financial capacity, organizational culture, innovation processes, and leadership alignment** (Teece *et al.*, 2022; Grant, 2020). The limited proportion of respondents perceiving Zamtel as well-positioned suggests persistent weaknesses across these domains. These weaknesses include insufficiently modernized core networks, limited digital tools, and inadequate strategic integration of technologies such as cloud computing, big data analytics, IoT, and artificial intelligence, all of which are central to next-generation telecommunications systems (GSMA, 2022).

Technologically, the transition to emerging systems—particularly **5G, IoT ecosystems, cloud-based operations, and AI-enabled optimization**—requires advanced data-centre infrastructure, extensive fibre deployment, and specialized engineering expertise (Cave *et al.*, 2018). Zamtel’s legacy systems, highlighted elsewhere in the findings, appear insufficient to meet the performance, speed, and scalability demands of these technologies. This technological lag reinforces the broader conclusion that Zamtel’s infrastructure does not currently meet competitive international standards (Mukwena & Mwale, 2020).

Organizational readiness is also affected by leadership stability and communication clarity. Previous results indicate inconsistent leadership perceptions and weak internal communication flows, which reduce the organization’s capacity for coordinated technological change. According to strategic management theory,

successful technology adoption requires clear strategic direction, cross-departmental cohesion, and consistent managerial messaging (Barney, 2020). Weaknesses in these areas contribute to delays, fragmented implementation, and reactive rather than proactive transformation planning.

Financial and institutional constraints further complicate readiness. Funding limitations—identified in earlier tables as the dominant barrier to innovation (82%)—restrict Zamtel's capacity to invest in advanced technologies. State-owned enterprises often face lengthy procurement cycles, bureaucratic approvals, and externally imposed budget constraints, which reduce agility and slow technological adoption (Erasmus, 2017). These structural limitations place Zamtel at a disadvantage relative to private competitors who can mobilize capital and implement upgrades more rapidly. From a competitive standpoint, the lack of technological readiness has direct implications for Zamtel's market performance. Modern telecommunications markets reward operators that implement emerging technologies early and efficiently, as these upgrades improve network quality, reduce service disruptions, enhance data capacity, and create opportunities for diversified digital services (Porter, 2019). Private competitors who deploy advanced technologies first set new consumer expectations, forcing slower operators to compete from a position of deficit.

From a national development perspective, inadequate readiness undermines Zambia's broader goal of fostering inclusive digital transformation. Emerging technologies support critical sectors such as education, finance, health, and e-governance. If Zamtel cannot deliver these capabilities, the digital divide widens, particularly in rural and underserved regions, where Zamtel is mandated to play a leading developmental role (World Bank, 2025).

Synthesis

The evidence from Table 4.13, combined with broader literature, suggests that Zamtel's readiness challenges are **systemic rather than incidental**, arising from interlinked technological, organizational, financial, and regulatory constraints. To close this readiness gap, Zamtel requires integrated reforms, including:

- **significant infrastructure modernization,**
- **enhanced technical training and digital skills development,**
- **more agile and consistent leadership,**
- **a streamlined innovation process,** and
- **increased financial autonomy or new funding mechanisms.**

Without such reforms, Zamtel risks continued technological stagnation, further competitive decline, and a diminished ability to support Zambia's digital-transformation agenda.

5. Conclusion

5.1 Overview

This chapter presents a shortened interdisciplinary conclusion of the study's findings, drawing from economics, organizational behaviour, psychology, labour studies and demographic analysis. Its purpose is to summarize how the results relate to Zamtel's competitiveness, operational strength and long-term sustainability. The conclusion recognizes that telecommunications organizations operate in a rapidly changing environment driven by technological advancement, economic pressure and rising customer expectations.

The study's quantitative and qualitative data show how internal and external forces combine to influence Zamtel's performance. Leadership practices, communication, workforce skills, infrastructure investment and market conditions all shape organizational outcomes. Viewed collectively, these findings show that Zamtel's current position reflects both structural limitations and significant untapped potential.

5.2 Conclusion

The study explored determinants of business growth and competition in Zambia's telecommunications sector through Zamtel. The findings show that performance is shaped by four interconnected forces: internal realities, external market pressures, technological readiness and behavioural dynamics. Together, they determine the organization's competitive direction.

Economic Perspective

Zamtel operates in a costly and volatile environment reliant on imported technology. These pressures challenge state-owned operators and give private competitors greater flexibility.

Demographic Perspective

A young, qualified workforce offers strong potential, especially if supported by clear leadership and modern systems.

Statistical Perspective

Outdated technology correlates strongly with customer dissatisfaction, operational delays and reduced productivity.

Psychological Perspective

Employees want clear communication, recognition and structured guidance. Leadership inconsistency undermines motivation.

Labour Economics Perspective

Despite strong human capital, bureaucratic barriers and limited autonomy lower productivity and restrict output.

Integrated Interpretation

Zamtel's main challenge is the misalignment between its internal systems, technological capacity and the changing expectations of the market.

5.2.1 Internal Realities: Capabilities, Constraints and Organizational Behaviour

Zamtel holds substantial human capital but lacks internal systems that enable high performance. Centralized decision-making, departmental silos and outdated tools slow operations and restrict innovation. Employees feel underutilized, leading to weakened morale and efficiency. The evidence shows that improving internal structures is necessary for Zamtel to fully use its workforce's capabilities.

5.2.2 External Market Forces: Competition, Customer Expectations and Macroeconomic Pressure

Zamtel faces strong competition from private operators with more investment capacity and faster adoption of new technology. Economic instability increases operational costs, while Zambia's young, digital population demands fast, reliable services. Customer expectations are rising

faster than Zamtel's capacity to respond, highlighting the urgency of modernization.

5.2.3 Technological and Innovation Constraints: The Core Competitive Gap

Technology remains the most critical factor limiting competitiveness. Ageing systems weaken service quality, reliability and efficiency. Delayed investment leads to long-term losses and declining market share. The study shows technological limitations have the strongest negative effect on customer experience and internal performance. Modernization is therefore essential for Zamtel's future sustainability.

5.2.4 Weaknesses in Strategic Execution: Structure, Leadership and Follow-Through

Although strategic plans exist, implementation is inconsistent. Weak coordination, unclear priorities and limited feedback reduce effectiveness and morale. Employees require clearer expectations and stronger guidance. Enhanced accountability, consistent leadership communication and disciplined follow-through are necessary for improving execution.

Overall Conclusion

The study concludes that Zamtel possesses significant potential, supported by a skilled workforce, national footprint and established brand. However, internal inefficiencies, outdated technology and weak execution limit competitiveness. Zamtel's future success depends on aligning internal systems with modern technological demands, strengthening leadership communication and creating an environment where human capital is fully utilized. The organization has the foundation for transformation, but achieving it will require sustained structural and technological renewal.

6. Recommendation

Recommendations of the Study

Drawing on the empirical evidence and the interdisciplinary analysis of Zamtel's operating environment, this study proposes a set of integrated recommendations aimed at restoring competitiveness, improving organizational performance, and aligning the company with Zambia's rapidly evolving digital economy.

1. Nationally Aligned Technology Modernization Strategy

Zamtel should implement a structured, multi-year national network modernization programme. Zambia has one of the youngest and most digitally engaged populations in Southern Africa, with a rapidly expanding base of smartphone users, fintech customers, and online service consumers. This demographic shift means that demand for data, digital payments, cloud services, and video platforms will continue to grow sharply. Zamtel must therefore prioritize fibre deployment, base station upgrades, and data centre capacity to support 4G optimization and a gradual transition towards 5G and cloud-based systems. Engineering investment decisions should be guided by statistical network-performance modelling to ensure that capital expenditure directly improves coverage, speed, and service

stability.

2. Advanced Data-Driven Marketing and Consumer Analytics

Zamtel must move away from generalized pricing and adopt predictive analytics, machine learning, and customer segmentation models. Zambia's market is increasingly heterogeneous, consisting of urban data-heavy users, rural voice-centred customers, youth-driven digital consumers, and mobile money clients. Data-driven marketing would allow Zamtel to design tailored packages for each segment, improving customer retention, revenue per user, and brand loyalty. Statistical churn-prediction models should be used to identify customers at risk of switching to competitors and trigger targeted retention campaigns.

3. Digital Transformation of Organizational Management

The study shows that leadership inconsistency and weak communication reduce efficiency. Zamtel should therefore introduce enterprise-wide digital management systems that track performance, service quality, fault resolution, and customer complaints in real time. These platforms would allow executives and engineers to make evidence-based decisions, improve accountability, and reduce operational delays. Such systems are standard in modern telecommunications firms and are essential for competing in data-driven markets.

4. Innovation, Cybersecurity, and Platform Development

Zamtel should establish a permanent digital innovation and cybersecurity unit. This unit would be responsible for piloting new services such as digital lending, cloud hosting, e-government connectivity, and smart-agriculture platforms. Given Zambia's increasing reliance on mobile money and digital services, strong cyber-security, data protection, and system resilience are critical to maintaining consumer trust and regulatory compliance.

5. Human Capital and Digital Skills Development

Zamtel's young and highly educated workforce is a strategic asset. The company should invest in advanced training in network engineering, data science, artificial intelligence, and cybersecurity. This will allow Zambian professionals to operate, maintain, and innovate on modern digital platforms rather than relying on external consultants.

6. Regulatory and Financial Reform

Finally, government should provide Zamtel with greater financial and managerial autonomy while maintaining national ownership. Faster procurement systems, innovation-friendly regulation, and access to private capital through structured partnerships would allow Zamtel to compete on equal footing with private operators.

Together, these reforms would position Zamtel as a technologically capable, data-driven, and customer-focused national telecom operator, able to serve Zambia's growing digital population and support long-term economic development.

Summary of the Reference Base for the Dissertation Journal

The references supporting this study draw on a wide and authoritative body of literature spanning **strategic management, telecommunications policy, organizational behaviour, economics, research methodology, and digital transformation**. Core strategic perspectives are shaped by foundational scholars such as **Barney (2020)** and **Wernerfelt (2015)** on the Resource-Based View, **Porter (2016; 2019; 2022)** on competitive strategy, and **Teece (2019; Teece, Pisano & Shuen, 2022)** on dynamic capabilities. These works collectively inform the study's theoretical explanation of how internal resources, innovation capacity, and competitive forces shape firm performance.

Telecommunications-specific scholarship forms another major component of the reference base. Key works include **Cave, Doyle & Webb (2018)** on telecom policy, **GSMA (2022)** on Africa's mobile economy, **Gruber (2019)** on innovation in the mobile industry, and **ZICTA reports (2020–2025)** providing local regulatory and market insights. Studies by **Lee (2021)**, **Choi et al. (2016)**, **Chakravarty (2016)**, and **Sutherland (2021)** deepen the understanding of competition, regulatory dynamics, and market structure across global and regional telecommunications contexts. African and Zambian perspectives—critical for contextual grounding—are enriched through works by **Mumba (2018)**, **Mukosa (2018)**, **Mukwena & Mwale (2020)**, **Mwale (2020)**, **Mwansa (2019)**, and **Sichone (2023)**, which examine state ownership, infrastructure deficits, policy constraints, and performance issues within Zambia's telecom sector.

Organizational behaviour and leadership insights are supported by classical and contemporary sources such as **Armstrong & Taylor (2020)**, **Kaplan & Norton (2016)**, **Johnson et al. (2017)**, and **Wright et al. (2018)**, all of which inform the study's examination of leadership clarity, communication processes, staff capability, and internal organizational alignment. Empirical findings are further interpreted using behavioural and motivational frameworks informed by **Qasim (2025)** and **Mutemba & Malama (2024)**.

Innovation, technological readiness, and digital transformation are addressed through key contributions by **Nekmahmud & Rahman (2018)**, **Liébana-Cabanillas et al. (2024)**, and **Venkatram (2017)**, which highlight how emerging technologies, big data, and technological investments influence competitiveness. Financial and governance constraints—central themes in analyzing Zamtel's performance—are supported by works such as **Chibwe (2020)**, **Razumov (2023)**, **Faccio (2017)**, and **Erasmus (2017)**.

Methodologically, the study is anchored in leading mixed-method and social research texts authored by **Creswell (2015; 2017)**, **Bryman (2016)**, **Saunders, Lewis & Thornhill (2019)**, **Patton (2016)**, and **Guest et al. (2020)**. These sources justify the research design, sampling choices, thematic analysis, and interpretation of qualitative and quantitative findings. Ethical frameworks are guided by **Israel & Hay (2022)**.

Overall, the reference base demonstrates a **robust, interdisciplinary foundation**, incorporating global, regional, and local scholarship to support a comprehensive analysis of business growth, competitiveness, regulatory influence, and technological capability within Zambia's

telecommunications sector. The integration of theoretical, empirical, and policy-based sources strengthens the academic rigour of the dissertation and aligns the study with contemporary discussions on digital transformation and competitive strategy in developing economies.