EXPLORING DUAL DIVERGENT BENEFITS OF TECHNOLOGICAL INTEGRATION AND HUMAN-CENTREDNESS IN INSURANCE CLIENT SERVICES

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ABSTRACT

The accelerating digitalisation of business, driven by artificial intelligence (AI), big data analytics (BDA), the Internet of Things (IoT), blockchain and rising customer expectations, is transforming insurance operations and client engagement. This study examined the dual benefits of technological integration and human-centredness in insurance client services. Paradox Theory was applied to frame tensions between interdependent opposites, while dual process theory contextualised integration mechanisms.

A qualitative design was employed, involving semi-structured interviews with 21 experts across the South African insurance value chain. Thematic analysis revealed nine themes. AI, BDA and blockchain were found to enhance operational efficiency by enabling automation, predictive insights, secure transactions and personalised services. Challenges emerged in the form of high costs, legacy systems, resistance to change, cultural barriers and workforce skill gaps, which hinder seamless digital integration and client-service delivery. The study highlighted that digital transformation has significantly improved operational performance within South Africa's insurance industry, though uneven adoption and sectoral constraints continue to shape outcomes. Findings emphasised the capabilities required to balance

technology and human touch, including reskilling, empathy, adaptability and hybrid service models, which are essential for sustaining client trust and personalisation in digitally mediated interactions.

The study advances dual process theory and aligns with the principles of the Fifth Industrial Revolution by demonstrating how intelligent technologies and human-centred values can be integrated to improve client services. Managerially, it underscores investing in workforce readiness, empathy-driven digital interfaces and adaptable organisational strategies to remain competitive in a rapidly evolving industry.

Keywords: Digital transformation, human-centredness, insurance industry, dual process theory, divergent benefits, insurance client services

DECLARATION

I declare that the dissertation/Thesis entitled, *Exploring Dual Divergent Benefits of Technological Integration and Human-Centredness in Insurance Client Services*, which I hereby submit for the degree at Rhodes University, is my own work. I also declare that this thesis/dissertation has not previously been submitted for a degree at this or any other tertiary institution and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Lavhelesani Netshiswinzhe_____

Name Surname (signed)

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ACRONYMS AND ABBREVIATIONS

AI	Artificial intelligence
AR	Augmented reality
BDA	Big data analytics
CRM	Customer relationship management
GDPR	General Data Protection Regulation
ILO	International Labour Organisation
IoT	Internet of Things
KYC	Know Your Customer
POPIA	Protection of Personal Information Act
ROI	Return on investment
RPA	Robotic process automation
SME	Small and medium enterprises
SOARA	Satisfying, optimum, achievable results ahead
TA	Thematic analysis
VR	Virtual reality

CHAPTER 1: INTRODUCTION AND RESEARCH OVERVIEW

1.1 INTRODUCTION

Digital transformation is revolutionising the global insurance industry, changing how businesses run operations, communicate with customers and deliver value. In South Africa, this transformation is particularly visible in Gauteng Province, the nation's financial hub and home to the majority of insurance headquarters, policyholders, and client service innovations (Statistics South Africa, 2022). The integration of technologies such as AI, BDA, blockchain and the IoT promises greater speed, efficiency, and data-driven decision-making (Arner et al., 2020); (Manyika, 2021). Yet, the shift also raises pressing questions about workforce displacement, ethical considerations, client trust, and how human-centric values can be preserved in increasingly automated service environments (Brock & von Wangenheim, 2019.

Despite increased momentum, research on digital transformation in South Africa has been focused on the banking and fintech sectors, leaving the insurance business underserved (Moodley, 2019). Where studies exist, they frequently focus exclusively on technological adoption rather than the simultaneous problem of preserving operational efficiency while safeguarding client experience and workforce wellbeing. This disparity is significant because, unlike many other financial services, insurance is heavily reliant on long-term trust, client relationships and personalised service factors that can be jeopardised by excessive automation or poor change management.

The study primarily focuses on insurance businesses operating in Gauteng, where digitisation plans are most advanced and where the regulatory, corporate and client-service environments are most dynamic. Situating the investigation within this context, the study captures insights from experts at the heart of South Africa's insurance transition. Importantly, the study narrows its scope to two critical domains: operational performance and client services, excluding actuarial modelling, cybersecurity risks or product pricing, which are beyond its focus.

The central issue driving this research is the paradox that insurers face: how to use technological innovation for efficiency and competitiveness while maintaining empathy, trust and human expertise in service delivery. To address this issue, the study employs paradox theory, which explains how organisations navigate long-term tensions between competing goals (Lewis, 2000; Smith & Lewis, 2011), and integrative which emphasises the ability to hold opposing ideas in tension and creatively resolve them (Martin, 2009). This study contributes to both academic and

practical knowledge by addressing these questions. It provides empirical insights into the underexplored context of the South African insurance sector, helping to fill knowledge gaps on how digital tools influence operations and client services. It also provides actionable advice to insurance executives and policymakers on how to create digital transformation strategies that balance efficiency, client trust and employee engagement. Figure 1.1 provides a diagrammatic overview of the Insurance Value Chain that underpins the study.

Figure 1.1: Insurance Value Chain

1.2 BACKGROUND AND CONTEXT

This research is located at the intersection of digital transformation and operational employment dynamics (Wang, 2024) within the insurance industry in South Africa (Moodley et al., 2019; Molloy & Ronnie, 2021). As an integral component of South Africa's financial services, the insurance sector provides essential risk management and financial security services to individual consumers and businesses, significantly contributing to job creation, economic growth, and social stability (Lee et al., 2022). Over the past 10 years, the world has experienced the advent of the Fourth Industrial Revolution (4IR), driven by technology integration (Xu et al., 2018). These include AI, the IoT, BDA, blockchain, augmented reality (AR), virtual reality (VR), Cloud Computing, 5G networks, autonomous systems and Robotics, Additive Manufacturing (3D printing), and quantum computing (Meindl & Mendonça, 2021; Suleimani & Islam, 2022; Vrana, 2020; Wan et al., 2022). According to Schwab (2016), this revolution is marked by its speed, scope and the systems-wide impact on industries and societies. Today, the world is on the brink of the Fifth Industrial Revolution (5IR), which is expected to emphasise the collaboration between humans and machines (Noble et al., 2022). Introducing cutting-edge technologies is transforming the insurance industry, enabling more efficient processes, accurate risk assessment and tailor-made customer experiences. Within insurance, 4IR technologies are instrumental in predictive modelling, risk assessment, customer segmentation, and customising insurance products (Ellili et al., 2023). The leading 4IR technologies for these functions are AI, BDA, IoT and blockchain in the financial sector operations.

AI is making computer systems that can perform tasks that used to require human intelligence. In insurance, AI can support chatbots in customer service, automating claims processing,

detecting fraud, and helping underwriting processes (Erem Ceylan, 2022; Fung et al., 2021; Han et al., 2023). Similarly, BDA involves handling massive volumes of structured and unstructured data to uncover patterns and insights (Arora, 2019; Malviya & Malmgren, 2018). Blockchain technology is a secure and unalterable distributed ledger spread over multiple sites. For insurers, the blockchain can streamline transactions, authenticate records, prevent fraud, and accelerate claims processing, enhancing overall reliability and efficiency. Collectively, these technologies are reshaping the insurance sector, providing opportunities for enhanced operational efficiency, precise risk management, and more personalised services to customers (Shasha, 2023). These technological advances bring great potential, yet they pose significant challenges, particularly within a developing economy such as South Africa.

There is significant concern over the future of employment in the sector, as jobs that traditionally relied on human skills are being transformed or displaced by automation (Filippi et al., 2023). At the same time, countries, especially developing ones, face a skills gap in these emerging technologies, potentially exacerbating socioeconomic inequalities, while the national high unemployment rate adds urgency to these issues (Kayode, 2023) The push toward digitalisation within the insurance industry has been extensively documented in the literature. (Vermeulen & et al, 2018) explore the potential for automation to transform existing job profiles within the sector radically. Ng and Wakenshaw (2017) expand on this, suggesting that digital platforms and automated processes are prevalent forces shaping the future of work, necessitating a balance between technological advancement and workforce management. Eckert and Osterrieder (2020) also outline how blockchain and AI are redefining the framework with implications for efficiency and creating new business models. The insurance industry is seen to be proactive in adopting this digital shift; for example, OUTsurance has developed more digitally-friendly customer interfaces, underscoring the significance of such digital adoption in staying competitive.

As advances in technology continue to revolutionise the insurance industry, the dynamics of client services are undergoing significant transformation. Historically, insurance client services have been characterised by traditional communication channels and manual processes. However, with the rise of AI, BDA, IoT and blockchain, insurers are now able to personalise services, streamline claims-processing and enhance risk assessments. The shift towards digitalisation has not only improved operational efficiency but has also raised new challenges concerning data security, privacy, the need for upskilling the workforce to adapt to these technological changes, and the significant cost of implementing these advanced technologies.

High investment costs often act as a barrier for organisations, particularly small and medium enterprises (SMEs), to fully adopt digital transformation initiatives (Schwab, 2017; Vial, 2021). Additionally, the relationship between insurance companies and clients has been evolving to meet the changing expectations of policyholders. Clients now demand more transparency, accessibility and personalised interactions from their insurers. This shift in client expectations has propelled insurance firms to rethink their service delivery models and prioritise customer-centric strategies (Maier et al., 2020). Understanding the background of insurance client services is crucial in navigating these evolving dynamics and ensuring that operational performance aligns with customer needs and preferences. Incorporating technology while preserving the intrinsic human touch in client service is a delicate balance that requires a refined approach. Additionally, the traditional role of insurance agents as intermediaries between clients and insurers is being redefined in the digital era. While technology enables self-service options and direct online interactions, the human element remains crucial in building trust, empathy, and understanding in client relationships (Lee & Yi, 2022).

Insurance firms must seamlessly integrate technology into their client services while ensuring that the essential human touch is not lost. The background context of insurance client services encompasses a blend of traditional practices and innovative technologies, highlighting the importance of creating an integrative framework that optimises operational performance while nurturing enduring client relationships. Through this holistic approach, insurers can adapt to the changing dynamics of client services and forge stronger connections with their policyholders.

1.3 PROBLEM STATEMENT

Digital transformation is reshaping the global insurance industry, creating opportunities for increased efficiency while also exposing significant operational and human resource challenges. In South Africa, particularly in Gauteng, where the financial sector is highly concentrated, insurers are under increasing pressure to adopt AI, big data analytics (BDA), blockchain, and other digital innovations in order to remain competitive (Rane et al., 2024). At the same time, the industry continues to rely on trust, personalised service, and the ability to respond empathetically to client needs (Guiso, 2012). This dual demand creates a strategic dilemma: how to leverage automation and digital tools without eroding the human-centric qualities that define insurance services.

Current evidence emphasises the significance of this dilemma. Digitalisation is expected to increase the demand for 1.7 million more highly educated workers in South Africa by 2030, yet

the insurance sector continues to face a widening skills gap (Magwentshu et al., 2019). A report by Deloitte (2024) highlights that South African insurers view digital transformation as essential for long-term competitiveness, yet many cite workforce capability, client trust and legacy systems as major barriers to successful implementation. A report by PwC (2022) highlights that while digital transformation has accelerated across South African insurers, clients continue to express frustration with automated claims processes and call for more transparent, empathetic and personalised service experiences

Despite extensive global research on digitalisation in finance and banking, there is limited literature on how South African insurance companies are balancing efficiency and human touch. Most studies concentrate solely on the benefits of digital technologies, overlooking the socioeconomic realities of labour reskilling, client-service expectations and ethical concerns in the South African context. This lack of integrative frameworks leaves insurers without sufficient guidance on how to harmonise technological advancements with human capabilities (Asmal et al., 2023; Gama et al., 2025; Modise, 2019).

This study fills a vital vacuum by investigating how South African insurance businesses, with a focus on Gauteng, may strike a balance between the efficiency of digital transformation and the requirement to maintain human-centred service delivery. The aim of this study is to explore the impact of digital transformation on operational performance and client services within the South African insurance industry, with a focus on its implications for workforce capacity, client trust and industry sustainability.

The South African insurance industry faces the strategic imperative of adopting **digital** technologies and automation while preserving the human-centric qualities that underpin the sector (Van Dyk & Van Belle, 2019). In Gauteng, the country's financial hub, insurers are under mounting pressure to adopt AI, big data analytics (BDA), blockchain, and other digital innovations to sustain competitiveness in a rapidly evolving market (Rane et al., 2024). Insurance is intrinsically dependent on trust, personal relationships, and a deep understanding of client needs (Guiso, 2012). The study examines how to synergise the efficiency of automation with the necessary human touch in insurance, optimising operations and personalising customer experience. It explores how technology can augment human capabilities, maintain client trust and loyalty, and effectively integrate human and machine roles within the industry. In addition, the study addresses the critical aspects of privacy and data security, ensuring that the adoption

of digital technologies does not compromise the confidentiality and integrity of client information.

Prioritising these elements, the industry can build a robust framework that supports both technological advancement and the protection of sensitive data. Additionally, the integration of AR/VR technologies can play an important role in the upskilling of employees, providing immersive training experiences that enhance their ability to navigate and use new digital tools effectively. This approach not only improves operational efficiency but also ensures that the workforce is well equipped to meet the evolving demands of the industry. The value added of this research lies in addressing the current gap in understanding how digital transformation can be integrated with the essential human aspects of the insurance industry. There is a recognised need for strategies that take advantage of the efficiency and analytical power of automation and ensure that the 'human connection' remains a strong focus, preserving empathy, personal service, and trust (Sundari & Gangalapudi, 2025) While numerous studies, such as those of Ziatdinov et al. (2024) and Nel-Sanders (2023), have explored the effects of digitalisation and automation in various sectors, little is known about their integration in industries where trust and personalised service are paramount, such as insurance. This research seeks to understand how South African insurance companies navigate workforce management amid digital transformation, addressing the country's socioeconomic context. It aims to develop integrative frameworks that allow for the adoption of efficiency-boosting technologies without reducing the value of the human workforce. Recommendations will be proposed to help stakeholders balance technological and workforce needs and mitigate risks of digital transformation. Research highlights the importance of cultivating a culture that appreciates both technological advancements and human aspects, focusing on skills that align with technological advancements and providing guidance on ethical and sustainable transitions for future stability in the insurance sector.

InsurTech, or insurance technology, is a rapidly growing sector that uses new technologies to innovate and customise insurance products (Sosa & Montes, 2022). This sphere is crucial to the continued recovery and advancement of the insurance industry, both globally and in the South African context. The adoption of InsurTech solutions, driven by consumer demand for digital offerings and their operational efficiencies, is revolutionising how insurance is understood and consumed. (Nhlapo, 2024). This aligns with trends anticipating significant growth in the InsurTech market, which is expected to expand at a compound annual growth rate of 34.4% by 2027 (Koovi et al., 2023). Research within the sector must not overlook the ethical and social

implications of digital transformation. To effectively analyse operational efficiency during the digital era, this study will investigate technological efficiency and its impact on workplace transformation (Zhang et al., 2022). This includes AI, BDA, IoT and blockchain in client services (Paramesha & Rane, 2024). It will analyse how technology enhances efficiency and the degree to which employees are prepared and skilled to capitalise on digital advances. Digitalisation is projected to raise the demand for 1.7 million more highly educated workers by 2030 in South Africa, signalling a significant skills gap as the workforce evolves to meet new technological demands (Magwentshu et al., 2019). The insurance industry faces the challenge of reskilling its workforce to adequately cover this gap. The literature frequently stresses the importance of agile reskilling and strategic workforce planning in the face of these changes (Johansson & Vogelgesang, 2015).

In addition, the review of the literature examines the difficulties of depending exclusively on technology without human involvement and identifies the essential elements for the successful integration of human and technological aspects to promote effective operational efficiency in the digital age. Ashiagbor et al. (2023) found that a decline in productivity results from changes in efficiency. The analysis of technical advancements also indicates that the life insurance business did not experience any advantages in terms of pure-scale efficiency.

1.4 RESEARCH QUESTIONS

The research questions of the study:

- What role do artificial intelligence, BDA, and blockchain play in enhancing operational efficiencies within client services in the South African insurance industry?
- What challenges do technological advancements present in meeting client-service expectations, and what underlying factors drive these challenges?
- What is the current landscape of digital transformation in the South African insurance industry, and what implications does it have for operations management?
- What capabilities are required for insurance companies to seamlessly integrate and balance technology with human-centric interaction?

1.5 GOAL AND OBJECTIVES

The research explores how South African insurance companies can effectively address the dual divergent benefits of integrating technology while maintaining and empowering a human workforce. This will be investigated with the following objectives:

- Investigate the role and benefits of artificial intelligence, BDA, and blockchain in enhancing operational efficiencies within client services.
- Explore the nature and underlying factors of challenges posed by technological advancements in meeting client-service expectations.
- Understand the current landscape of digital transformation and its implications for operations management within the South African insurance industry.
- Explore capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.

1.6 RESEARCH GAP

Research on digital transformation in South Africa has expanded over the past decade, but it has been unevenly distributed across financial services. Studies have largely centred on the banking sector and fintech ecosystems, highlighting themes such as digital payment systems, mobile banking adoption, and the regulatory challenges of innovation (Arner et al., 2020; Moodley, 2019). These studies show that South African banks have leveraged technology to expand financial inclusion, improve transaction speed, and lower operating costs. For example, Moodley (2019) found that banks in South Africa achieved significant efficiency gains through mobile and internet platforms, while Manyika (2021) demonstrated how fintechs were reshaping client expectations by offering seamless, user-friendly digital services.

By contrast, insurance remains comparatively under-researched. Limited studies, such as those by Brock and von Wangenheim (2019), point to the role of automation and AI in claims processing and underwriting, but these analyses are often global in scope and rarely contextualised to South Africa. The few insurance-focused papers that exist tend to prioritise the technological adoption process, for instance, the implementation of customer-facing apps or back-office digitisation, rather than the more complex question of how digital tools influence operational performance and client experience simultaneously. This creates a gap, as the insurance industry depends heavily on long-term trust, personalised advice, and empathy in client interactions, factors that can be strained under rapid automation.

What remains insufficiently understood, therefore, is how South African insurers are navigating this dual challenge: improving efficiency through digitisation while ensuring that client trust, employee wellbeing, and service quality are not compromised (Gama et al., 2025; Hlahatsi, 2020). In particular, there is little empirical evidence from within the insurance sector itself, especially from the perspective of professionals who are directly managing or experiencing

digital transformation. Furthermore, while studies in other financial services suggest that digital technologies can increase operational agility, the unique structure of the insurance industry, characterised by long policy lifecycles, complex claims processes, and regulatory oversight, demands sector-specific investigation.

This study addresses these knowledge gaps by focusing on insurance organisations in South Africa. It seeks to uncover how digital transformation is reshaping operational performance and client services within this context, drawing insights from professionals who are directly involved in these transitions. By doing so, the study not only contributes to the sparse literature on insurance digitalisation in South Africa but also provides practical lessons for balancing efficiency with human-centric service delivery in an industry built on trust.

1.7 SIGNIFICANCE OF THE STUDY

The South African insurance industry is at a crossroads. While digital transformation is vital for competitiveness, it risks compromising the human qualities such as empathy, trust and personalised service that are central to client relationships. This study is important because it addresses a critical gap in understanding how insurers can integrate modern technologies while preserving the human-centric values that define the industry.

From an academic standpoint, the study contributes to the limited body of literature on the intersection of digital transformation and human-centred service delivery in insurance (Musaigwa & Netswera, 2025). While existing research highlights the operational benefits of technologies such as AI, BDA, blockchain and the IoT, there is limited insight into how these tools can be adopted without diminishing personalised service and trust (Moodley, 2019; Gama, Phahlane, & Malungana, 2025).

Practically, the study is especially relevant for insurers in Gauteng, South Africa's financial hub, where digital transformation pressures are most intense. The findings will offer evidence-based strategies to improve operational performance while maintaining client confidence and loyalty. This is crucial in a socioeconomic context where insurers must meet rising expectations for digital convenience and reskill employees for the future of work.

Ultimately, the study equips stakeholders with tools to navigate digital transformation responsibly, ensuring that technological efficiency is achieved without compromising the human qualities essential to long-term industry stability and growth.

1.7.1 Importance of the Body of Knowledge

This research advances the academic discourse by exploring how digital transformation intersects with the human dimensions of service delivery in the insurance sector. While digitalisation has been widely studied in sectors such as banking and retail, there remains a lack of empirical research on how it is integrated in industries where trust, empathy and personalisation are central to client relationships. Studies by Ziatdinov et al. (2024) and Nel-Sanders (2023) have examined automation and digital tools in various contexts, but few have addressed how these technologies can be harmonised with human-centric service models in insurance.

The South African insurance industry presents a particularly compelling case due to its unique socioeconomic landscape, regulatory environment and workforce dynamics. This study contributes to filling the knowledge gap by examining how insurers in South Africa are adapting their operational models and workforce strategies in response to digital transformation. It offers insights into how companies can develop integrative frameworks that support both technological advancement and the preservation of human value in service delivery.

Focusing on the interplay between digital tools and human capabilities, the research provides a foundation for developing strategies that align workforce competencies with emerging technologies. It also highlights the importance of cultivating organisational cultures that embrace innovation while safeguarding the relational aspects of client engagement. These insights are intended to inform future research and guide academic inquiry into the evolving nature of service industries in the digital age.

1.7.2 Significance for the Insurance Industry

The findings of this study are particularly relevant to the South African insurance industry, which is undergoing rapid transformation driven by global technological trends, shifting consumer expectations, and evolving regulatory pressures (Buyana, 2022). As insurers adopt digital platforms and tools, the nature of client service is being redefined – moving from traditional, face-to-face interactions to more automated, data-driven engagements.

This research identifies key areas where digital transformation is reshaping client-service management, including customer engagement, service personalisation and operational efficiency. For instance, the adoption of customer relationship management (CRM) systems, mobile applications, and AI-powered chatbots has enabled insurers to streamline communication

and provide more responsive service (Bacile, 2020). These tools enhance accessibility and convenience, but also raise concerns about the potential erosion of personal connection.

The study also explores how data analytics is being used to tailor services to individual client needs. By leveraging behavioural and transactional data, insurers can offer more relevant products and proactive support, thereby strengthening client loyalty. However, this shift requires careful management to ensure that personalisation does not come at the expense of privacy or ethical considerations.

Operationally, digital tools are improving efficiency by automating routine tasks such as claims processing and policy administration. This not only reduces turnaround times but also minimises human error, contributing to a more reliable service experience (Eling & Lehmann, 2018). Yet, the transition also introduces new risks, including cybersecurity threats and the depersonalisation of service.

This research provides practical recommendations for insurers seeking to navigate these complexities. It emphasises the need for balanced strategies that integrate digital innovation with human-centred values. By doing so, insurers can enhance service quality, build trust and maintain competitive advantage in a rapidly evolving market.

1.8 OVERVIEW OF THE METHODOLOGICAL APPROACH

This study employs a qualitative research methodology informed by the interpretative paradigm and directed by Strauss and Corbin's (1998) systematic method of data gathering and analysis. This strategy is well-suited to research that tries to uncover developing trends and get insights directly from participants' actual experiences. This methodology integrates both inductive and deductive reasoning, enabling the development of theoretical insights from empirical data while drawing on pre-existing concepts and frameworks (Mohajan & Mohajan, 2022). Given the exploratory nature of this study, which looks into the impact of digital transformation on client services and operational performance in the South African insurance industry, a qualitative thematic analysis offers a flexible yet systematic approach to identifying key themes, developing categories and exploring relationships within the data. This strategy provides deep, contextual insights while allowing for the creation of patterns based on participants' experiences. When considering the level of abstraction in research, it is critical to grasp the contrasts between theory, model, and rich text, and why a theoretical model is frequently the best middle ground (McKenney & Reeves, 2018).

Theory represents a high level of abstraction. It involves a set of principles and propositions that explain phenomena and predict outcomes. Theoretical theories are broad and general, providing a comprehensive framework for understanding complex concepts. However, they can sometimes be too abstract and detached from practical application, making them less accessible for immediate use in specific contexts.

Rich text, on the other hand, is at the lower end of the abstraction spectrum. It includes detailed descriptions, narratives and qualitative data that provide a deep, comprehensive understanding of specific instances or cases. While rich text offers valuable insights and context, it can be overwhelming and difficult to generalise, as it focuses on the particular rather than the general.

Theoretical models strike a balance between these two extremes. A theoretical model is a simplified representation of reality that captures the essential elements of a phenomenon while remaining grounded in empirical data. Integrate theoretical concepts with practical observations, making it accessible and applicable. Theoretical models provide a structured way to understand and analyse specific aspects of a phenomenon, offering a clear framework for interpreting data and drawing conclusions.

By adopting a theoretical model, this study can effectively bridge the gap between abstract theory and rich, detailed text. The model allows for the identification of key themes and relationships, providing a coherent structure to understand the impact of digital transformation on client services and operational performance within the South African insurance industry. It ensures that the findings are both theoretically informed and practically relevant, making them useful for industry practitioners and future researchers alike.

The research was carried out within South African insurance companies, including both large and small firms, to capture a variety of perspectives. To ensure this diversity, nonprobability purposive sampling was used together with snowball sampling. These methods helped identify professionals with expertise in technological adoption and its impact on operational efficiency and client services. The target participants included executives, HR managers, operations managers, and employees, ensuring a mix of points of view. Although the study aimed to include between 30 and 50 participants, theoretical saturation determined the final sample size, which is the point at which no new insights emerge from further data collection (Hennink & Kaiser, 2022).

Data was gathered using semi-structured interviews that followed a developing interview schedule. The interviews began with broad exploratory questions, which narrowed as repeating themes and patterns emerged. This is consistent with the funnel approach to qualitative investigation. The interview subjects covered the integration of technologies such as AI, BDA, IoT and blockchain, as well as their impact on client services and operational performance. Interviews were conducted either in person or remotely based on availability and preferences.

The data was analysed using the six-phase thematic analysis process established by Braun and Clarke (2006). This includes becoming acquainted with the data, creating initial codes, looking for themes, reviewing themes, defining and identifying themes and completing the final report. The coding procedure entailed recognising patterns of significance within the dataset and grouping them into cohesive themes. This iterative method guaranteed that the conclusions were data-driven and accurately represented the participants' experiences and viewpoints.

Multiple strategies were used to ensure the validity and reliability of the research, including triangulation, member checking and the maintenance of a comprehensive audit trail. Triangulation involved comparing data from multiple sources to confirm consistency, while member verification allowed participants to verify the accuracy of data interpretation. Throughout the analysis, constant comparison was used to refine the emerging theory and ensure coherence. Ethical considerations are a key part of this study, and the research process was conducted in full compliance with ethical standards. Informed consent was obtained from all participants and data was managed in accordance with South Africa's Protection of Personal Information Act (POPIA). An ethics application was submitted at a low-risk level, ensuring that all data collection and participant interactions adhered to the highest ethical standards.

1.9 DELIMITATION OF THE SCOPE OF STUDY AND ASSUMPTIONS

To ensure the focus and feasibility of the research, it is necessary to define the boundaries and assumptions within which this study was conducted. These delimitations and assumptions establish the scope of the investigation and clarify its limitations, which provide a context for the interpretation of the findings.

1.9.1 Delimitation of the Scope of Study

This study acknowledges the existence of various technologies associated with the Fourth and Fifth Industrial Revolutions, which are transforming industries globally, including insurance. Technologies such as IoT, AI, 3D printing (additive manufacturing), blockchain, quantum

computing, robotic process automation (RPA), cloud computing and BDA have revolutionised operations, decision-making processes, and customer interactions across industries (Xu et al., 2018). However, for the purpose of this research, the scope was limited to the technologies that have the most significant and direct impact on client-service management in the insurance sector. Specifically, this study focused on four key technologies: AI, the IoT, blockchain and BDA. These technologies have been identified as having the most immediate and measurable effects on enhancing client services within the insurance industry.

AI transforms customer service by enabling personalised experiences, chatbots, and predictive analytics (Huang & Rust, 2018). IoT allows for more dynamic and personalised interactions, such as real-time monitoring and assessment of client needs. Blockchain is revolutionising security, transparency and trust in transactions, directly impacting the customer experience by reducing fraud and enhancing service reliability. BDA enables insurers to process vast amounts of structured and unstructured data to gain insights into customer preferences, behaviours and needs, ultimately facilitating more targeted and efficient service delivery. Limiting the study to these technologies is justified because they align with the research objectives and offer practical insights into the future of digital transformation in client-service management in the insurance sector.

Furthermore, while other business units within insurance could benefit from digital transformation (for example, claims processing, risk management, or underwriting), this study is explicitly focused on customer-facing functions. This decision is based on the increasing importance of customer experience as a competitive differentiator in the insurance industry (PWC, 2019). Furthermore, the scope of this study is limited due to time and resource constraints, and focusing on client service provides a practical lens through which to explore the immediate impacts of digital transformation.

1.9.2 Assumptions of the Study

Several assumptions underlie this research. First, if the selected insurance companies represent the broader South African insurance industry in their use of digital transformation technologies. This assumption is necessary to transfer the findings to other contexts and settings (Leedy & Ormrod, 2023). Second, assume that the participants involved in the interviews will provide honest and accurate responses based on their experiences with digital transformation and client services. Honesty is critical in qualitative research to ensure the validity of the data (Creswell & Poth, 2016). Lastly, the study assumes that the technologies studied, AI, IoT, BDA and

blockchain, will continue to shape the future of client service in the insurance industry. These technologies have shown significant potential to influence operational efficiencies and customer interactions, making this assumption relevant for projecting future trends.

1.10 THE OUTLINE OF THE REPORT

This thesis is structured into six chapters, each designed to systematically explore the impact of digital transformation on operational performance and client-service management within the South African insurance industry.

Chapter 1: Introduction

The first chapter introduces the research problem, objectives and significance of the study. It provides the context for the investigation, detailing how digital transformation is reshaping the insurance industry. Key concepts such as digital technologies and client-service management are defined, and the scope of the research is outlined.

Chapter 2: Literature review

Chapter 2 reviews academic literature on digital transformation, operational performance and client services in the insurance sector. It also discusses relevant theoretical frameworks and identifies gaps in the current literature, which this research aims to address.

Chapter 3: Research Methodology

The third chapter explains the research design and methodology and outlines why a qualitative approach was selected. It describes the methods used to collect data, including interviews and discourse analysis, and explains how the researcher ensured validity and reliability in the research process. It also discusses how ethical considerations were addressed.

Chapter 4: Findings

This chapter presents the results of the interviews and data analysis. Key themes and patterns are discussed, focusing on how digital technologies like AI, IoT, BDA and blockchain have impacted client services in the selected South African insurance companies.

Chapter 5: Discussion

Chapter 5 interprets the findings in relation to the existing literature, linking the results back to the theoretical framework. It discusses the implications of the findings for both academic

research and practical application in the insurance industry. This chapter also proposes a theoretical model to explain the relationship between digital transformation and client-service management.

Chapter 6: Conclusions and recommendations

The final chapter summarises the research findings, evaluates whether the research objectives were met, and offers recommendations for future practice and research. It concludes by reflecting on the contribution of research to the insurance industry, especially in enhancing client service through digital transformation.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents a review of literature relevant to the dual pressures of technological integration and human-centredness in South African insurance firms. It begins by introducing the theoretical frameworks that guide the study paradox theory and dual process theory which help explain the persistent tensions and cognitive dynamics organisations face during digital transformation.

Following the theoretical foundation, the chapter explores key concepts and definitions, the origins and development of the selected theories, and their empirical applications within the insurance sector. It then examines the role of underwriting in client-service delivery and reviews the impact of emerging technologies such as AI, BDA, Blockchain and IoT on operational models.

The chapter also presents case studies from leading insurers including OUTsurance, Santam and Discovery Insure, highlighting best practices and strategic responses. It further discusses the challenges of integration such as privacy concerns, regulatory dilemmas and technological literacy and introduces integrative thinking as a framework for balancing innovation with empathy.

Finally, the chapter evaluates key metrics for assessing operational performance and concludes by identifying gaps in existing literature that this study aims to address.

2.2 INTEGRATIVE THEORETICAL FRAMEWORK FOR DIGITAL TRANSFORMATION

This chapter gives the theoretical underpinning for the study. A theoretical framework is a structure that guides research by establishing foundational theories and concepts. It offers a lens through which the research problem is examined, ensuring that the study is not based on speculation but is supported by recognised scholarly perspectives (Eisenhart, 1991; Simon & Goes, 2013). The framework guides both the design and interpretation of the research, helping to clarify relationships between concepts and offering an explanation of the phenomena under investigation.

In this paper, the theoretical framework explains how digital transformation affects operational performance and client services in the South African insurance business. Drawing on established

theories, it lays the groundwork for investigating the complexities, tensions and opportunities that arise when organisations adopt digital technologies.

2.2.1 Paradox Theory

Paradox Theory examines how organisations confront and manage persistent tensions between competing yet interdependent demands (Lewis, 2000; Smith & Lewis, 2011). A paradox arises when contradictory elements such as efficiency and empathy are both valid and necessary, yet create friction when prioritised unequally. In the insurance industry, such paradoxes are evident in the push for automation through AI, BDA, and other technologies, which promise speed and cost reduction, while clients continue to expect personalised, empathetic service.

This theory is particularly relevant in the South African context, where insurers must balance workforce reskilling with cost pressures, and digital convenience with client trust. Paradox Theory promotes a "both/and" mindset, encouraging organisations to embrace and integrate opposing forces rather than choosing between them. It helps explain why human-centric values such as empathy, transparency, and personalised service remain essential even as insurers adopt advanced technologies (Braun & Jia, 2025).

2.2.2 Integrative Thinking

Integrative Thinking, conceptualised by Martin (2007), complements paradox theory by offering a decision-making approach that moves beyond "either/or" choices. It encourages leaders to construct innovative solutions that combine seemingly opposing ideas. In the context of insurance, this means designing models that leverage both technological efficiency and human relational strengths.

This framework is especially useful in South Africa, where insurers face socioeconomic challenges such as unemployment and digital skills shortages, alongside the need to remain globally competitive. Integrative Thinking supports sustainable decision-making by helping organisations synthesise competing demands into creative, context-sensitive strategies. Table 2.1 provides a comparison of the theoretical frameworks.

Table 2.1: Comparison of Theoretical Frameworks

Framework	Strengths	Limitations
Paradox Theory	- Highlights the complexity of organisational tensions.	- Primarily diagnostic; it does not prescribe specific solutions.

Framework	Strengths	Limitations
	- Encourages a balanced, non-binary approach to decision-making.	- Can be difficult to operationalise in fast-paced environments.
	- Useful for analysing persistent contradictions in strategic contexts.	- May overemphasise tension without offering practical resolution strategies.
Integrative Thinking	- Promotes creativity and innovation in problem-solving.	- Requires strong leadership and organisational culture to implement.
	- Encourages leaders to synthesise rather than choose between options.	- Can be resource-intensive and time-consuming.
	- Supports sustainable decision-making in uncertain environments.	- Risk of overly idealistic solutions if not grounded in context.

Paradox theory and dual process theory together offer a powerful lens through which to examine the tensions and cognitive demands that organisations navigate during digital transformation.. Paradox theory highlights the persistent and interdependent contradictions that organisations must navigate, such as the need to embrace innovation through advanced technologies while preserving a human-centred approach to service delivery (Smith & Lewis, 2011; Lewis, 2000). These paradoxes are not problems to be solved once but tensions to be managed continuously. In the insurance industry, such tensions manifest as the need to balance automation with human judgement, efficiency with empathy and standardisation with personalisation. Paradox theory has gained prominence in organisational studies for its ability to explain how firms navigate persistent and interdependent tensions. Smith and Lewis (2011) argue that paradoxes such as stability vs. change, control vs. empowerment, and exploration vs. exploitation are inherent in complex organisational environments. Rather than resolving these tensions, effective organisations learn to embrace and manage them simultaneously.

Together, these theories suggest that successful digital transformation in insurance is not about choosing between technology and humanity, but about consciously integrating both. While technologies such as AI, data analytics and automation offer increased accuracy and operational efficiency, they also risk depersonalising services and weakening client trust (Braun & Jia, 2025). By applying both paradox theory and dual process theory, insurance firms can develop strategies that honour cognitive diversity, embrace competing demands and foster a culture where innovation and empathy coexist. This dual-theoretical lens supports a both/and mindset, ensuring that technological advancement enhances rather than erodes the human dimensions of client-service delivery.

2.2.3 Empirical Applications of the Theories

Several studies have applied paradox theory and integrative thinking in organisational and service contexts, though their use in the insurance sector remains limited highlighting the relevance of this study.

Paradox theory has been used in research on digital transformation in healthcare (Schad et al., 2016), innovation management (Smith & Lewis, 2011), and leadership in complex environments (Raisch & Birkinshaw, 2008). These studies show that embracing paradoxes can lead to more adaptive and resilient organisations.

Integrative thinking has been applied in strategic leadership (Martin, 2007), education reform (Barton & Mehta, 2015), and public sector innovation (Mintzberg, 2013). These contexts demonstrate how synthesising opposing ideas can lead to more inclusive and effective solutions.

2.2.4 Application of Paradox Theory in Digital Transformation

Digital transformation in the insurance sector presents a complex landscape of competing demands. Organisations must navigate tensions between technological efficiency and human-centric service delivery, particularly in contexts like South Africa where socioeconomic factors intensify these challenges. To explore these dynamics, this study draws on paradox theory and integrative thinking as guiding frameworks.

To support the conceptual foundation of this framework, the following section presents definitions of the key concepts used throughout the study.

2.3 DEFINITION OF KEY CONCEPTS

Table 2.2 presents definitions of the key concepts that underpin the research. These terms are essential for understanding how digital transformation affects operational performance and client service in the South African insurance industry.

Table 2.3: Definition of Key Concepts in the Theories

Key Concept	Definition (with citation)
Paradox Theory	Explains how organisations manage persistent tensions between competing yet interdependent demands. These tensions are not problems to be solved but realities to be continuously balanced *(Lewis, 2000; Smith & Lewis, 2011)*.
Efficiency vs. Empathy	Refers to the tension between streamlining operations for productivity and maintaining compassionate, client-focused service *(Braun & Jia, 2025)*.

Key Concept	Definition (with citation)
Standardisation vs. Personalisation	Standardisation ensures consistency and scalability, while personalisation tailors services to individual client needs *(Gama, Phahlane, & Malungana, 2025)*.
Automation vs. Human Discretion	Automation uses technology to perform tasks efficiently, while human discretion involves judgement and empathy in complex situations *(Moloi, 2024)*.
Both/And Thinking	A mindset that encourages integrating opposing ideas into innovative solutions, rather than choosing one over the other *(Martin, 2007)*.
Strategic Integration	The alignment of technological, human, and operational strategies to achieve cohesive transformation outcomes *(Hanelt et al., 2021)*.
Technological Advancement	The adoption of emerging technologies such as AI, big data, blockchain, and IoT to improve business performance *(Toscano-Jara et al., 2024)*.
Human-Centric Service	A service model that prioritises client needs, preferences and emotional engagement, especially in trust-based industries like insurance *(Musaigwa & Netswera, 2025)*.

2.4 ORIGINS AND DEVELOPMENT OF THEORETICAL FRAMEWORKS

This study is guided by two key theoretical frameworks: Paradox Theory and Integrative Thinking (also referred to as dual process theory in some contexts). Understanding the origins and logic behind these theories is essential for applying them meaningfully.

Paradox theory was first conceptualised by Lewis (2000) and later expanded by Smith and Lewis (2011). It emerged from organisational studies that observed how firms often face persistent tensions between competing demands – such as innovation vs. efficiency or stability vs. change. Rather than resolving these tensions, paradox theory encourages organisations to embrace them as ongoing realities that must be managed simultaneously. The theory is rooted in the idea that contradictions are not only inevitable but also potentially generative when approached with a "both/and" mindset.

Paradox theory has significant merit in its recognition that organisational tensions – such as innovation versus efficiency or human-centredness versus technological adoption – are not temporary problems to be solved but persistent dynamics that can fuel creativity and adaptability (Lewis, 2000; Smith & Lewis, 2011). By advocating a "both/and" mindset, the theory encourages managers to embrace contradictions as generative rather than destructive, which is particularly valuable in complex and rapidly changing industries such as insurance. Furthermore, Jarzabkowski and Lê (2017) emphasise that paradoxical approaches can enhance resilience by enabling organisations to hold competing logics in balance over time. However,

the weaknesses of paradox theory lie in its abstraction and limited operational guidance. Critics such as Clegg et al. (2002) argue that its broad application risks turning it into a catch-all concept that lacks precision. Similarly, Poole and Van de Ven (1989) caution that not all tensions are genuinely paradoxical, and the indiscriminate application of paradox language can obscure more pragmatic "either/or" trade-offs required in real-world decision-making. Thus, while paradox theory is conceptually rich, it can struggle to provide actionable strategies for managers constrained by finite resources, entrenched power dynamics and immediate performance pressures.

Integrative thinking, introduced by Martin (2007), builds on cognitive and strategic decision-making literature. It was developed to help leaders move beyond binary choices and instead synthesise opposing ideas into innovative solutions. While not a traditional "dual process" theory in the psychological sense, it reflects a dual approach to problem-solving – balancing analytical reasoning with creative synthesis. This framework is particularly relevant in complex environments where trade-offs between technology and human values must be reconciled.

Integrative thinking is different from conventional thinking because it deals with problems in a more flexible way. Conventional thinking usually follows a step-by-step process and focuses on making clear choices between two options, often using an "either/or" approach to reduce complexity. In contrast, integrative thinking accepts opposing ideas and tries to combine them into a new solution that is better than the original options (Martin, 2007). Conventional thinking often values efficiency, stability and reducing risk, while integrative thinking values creativity, adaptability and learning from contradictions. This makes integrative thinking more suitable for complex and changing environments, where conventional approaches may not provide effective answers.

Scholars highlight several key and distinctive aspects of integrative thinking that set it apart from more conventional approaches. First, it is dialectical in nature, requiring decision-makers to hold opposing ideas in tension rather than rejecting one in favour of the other (Martin, 2007). Second, it involves actively seeking out alternative perspectives and contradictory evidence, which broadens the scope of analysis and avoids premature closure (Liedtka, 2011). Third, integrative thinking recognises that causal relationships are often multidirectional, circular and complex, rather than linear and predictable (Nickerson, 2014). This allows for a more realistic understanding of dynamic systems. Fourth, the approach to problems is exploratory rather than reductive: instead of narrowing choices, integrative thinkers expand the problem space to

uncover novel associations (Moldoveanu & Martin, 2008). Finally, the hallmark of integrative thinking is the creative resolution of tensions, producing solutions that transcend simple trade-offs and deliver outcomes superior to either of the original options. Together, these aspects make integrative thinking a robust cognitive framework for addressing the complexity, uncertainty and paradoxes that characterise contemporary organisational environments.

Integrative thinking is not a singular step but a cognitive framework composed of several interrelated components that guide leaders through complex decision-making. Martin (2007) outlines four primary stages: (1) Salience, where the thinker identifies which features of a problem are most relevant; (2) Causality, which involves understanding the relationships and dynamics between these features; (3) Architecture, where alternative models or solutions are constructed by juxtaposing competing ideas; and (4) Resolution, where a superior, synthesised solution emerges that contains elements of the original models but is not limited to either. This approach is complemented by earlier conceptualisations such as Douglas's (1986) model, which emphasises the blending of intuition, reason and imagination into a continuum that spans strategy formulation, tactical design, operational action, review and evaluation. The key to the framework lies in its recursive nature: rather than being linear, integrative thinking involves iterating between analysis and synthesis, allowing for continuous refinement of ideas. Importantly, the framework requires a tolerance for ambiguity, openness to contradictions and the capacity to seek creative resolutions beyond conventional trade-offs.

Graham Douglas (1986) contributed to the conceptual foundations of integrative thinking by framing it as the integration of intuition, reason and imagination within the human mind to produce a holistic continuum of strategy, tactics, action, review and evaluation. His model suggests that effective decision-making is not achieved by privileging one cognitive mode over another, but rather by balancing analytical logic with imaginative creativity and intuitive insight. Central to his contribution is the SOARA process (Satisfying, Optimum, Achievable Results Ahead), which provides a structured method for problem-solving. SOARA encourages decision-makers to identify solutions that are not only optimal in theory but also satisfying in practice and achievable within the given constraints. By fostering connections between seemingly unrelated aspects of a problem, the SOARA process highlights associations and patterns that conventional linear thinking may overlook. This reinforces the integrative thinking principle of seeking creative resolutions that transcend binary choices. In doing so, Douglas positioned integrative thinking as both a cognitive mindset and a practical methodology for dealing with

complexity and uncertainty, laying the groundwork for later theorists such as Martin (2007) who extended its application to strategy and leadership contexts.

Dual process theory, as applied through the lens of integrative thinking (Martin, 2007), offers the merit of moving beyond binary logic by combining analytical reasoning with creative synthesis. This dual approach enables leaders to generate innovative solutions that reconcile seemingly opposing demands, which is particularly relevant for balancing technological integration with human-centred service delivery. Moldoveanu and Martin (2008) highlight that integrative thinking allows decision-makers to reframe problems and construct superior models that integrate insights from multiple perspectives. Moreover, the framework aligns with cognitive psychology research on dual processing, where intuitive and analytical thinking can be complementary (Kahneman, 2011). Nonetheless, the theory has notable weaknesses. Liedtka (2011) critiques integrative thinking for lacking empirical validation, relying heavily on illustrative case studies rather than systematic evidence. Nickerson (2014) further argues that it risks idealism, assuming that opposing ideas can always be reconciled into a better solution, which may not hold in contexts with entrenched conflicts or resource scarcity. In addition, the high cognitive demands of integrative thinking limit its accessibility, as not all managers possess the ability or resources to consistently apply it (Moldoveanu & Martin, 2008). As such, while dual process theory provides a powerful mindset for navigating complex, paradoxical challenges, it requires adaptation, training and supportive organisational contexts to translate into practical outcomes.

Both theories were developed in response to the limitations of linear, either/or thinking in dynamic organisational contexts. They offer complementary perspectives for understanding how insurance firms can navigate digital transformation while maintaining human-centric service.

2.5 A BRIEF CRITIQUE OF THE THEORIES

While both Paradox Theory and Integrative Thinking offer useful perspectives for navigating tensions in complex organisational contexts, they share important strengths and limitations. Paradox Theory, as advanced by Lewis (2000) and Smith and Lewis (2011), is valuable in highlighting that contradictions such as efficiency versus innovation or human versus technological priorities are enduring and generative rather than problems to be eliminated. However, as Clegg, Cunha, and Cunha (2002) and Jarzabkowski, Lê and Van de Ven (2013) point out, its high-level abstraction makes it difficult to translate into concrete managerial practices, particularly in contexts constrained by politics, power and limited resources.

Similarly, integrative thinking (Martin, 2007) encourages leaders to transcend binary choices and synthesise competing ideas into superior solutions, but critics such as Liedtka (2011) and Nickerson (2014) argue that it risks idealism, often lacking empirical grounding and underestimating situations where trade-offs are unavoidable. Moreover, the cognitive demands highlighted by Moldoveanu and Martin (2008) suggest that integrative thinking is not easily replicable across all decision-makers. Taken together, both theories promote a "both/and" mindset that aligns well with the dual demands of digital transformation in insurance client services, yet they require contextual adaptation to overcome their shared weaknesses – namely abstraction, idealism and limited practical guidance. Their complementary use provides a richer framework for balancing technological integration with human-centred values, but their critiques caution against over-reliance without grounding in empirical realities and sector-specific constraints.

2.6 APPLICATION OF THE THEORIES IN THE INSURANCE INDUSTRY

Figure 2.3 below illustrates how paradoxes such as efficiency vs. empathy, standardisation vs. personalisation, and automation vs. human discretion interact within the digital transformation journey. These tensions are mediated through strategic concepts like both/and thinking, strategic integration, technological advancement and human-centric service.

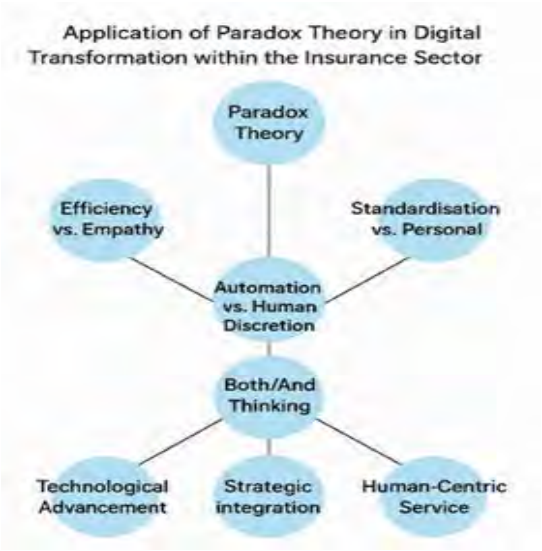

Figure 2.1: Application of Paradox Theory in Digital Transformation within the Insurance Sector

Source: Researcher's own

By drawing on these empirical applications, this study contributes to the literature by applying both theories to the South African insurance industry – a sector facing unique socioeconomic and technological pressures. The findings will help illuminate how insurers can balance digital transformation with human-centric service delivery.

2.7 THE ROLE OF UNDERWRITING IN CLIENT SERVICES

Risk assessment has long been a foundational element of the insurance industry, shaping how policies are priced and conditions are set. Historically, these practices were manual and heavily reliant on individual judgement and limited data (Macedo, 2009).

The formalisation of risk assessment began in the 17th century with the rise of maritime trade. Lloyd's of London emerged as a central marketplace where risks related to sea voyages were assessed and distributed. The term "underwriting" originates from the practice of signing beneath the risks one was willing to assume.

In the 19th century, actuarial science introduced statistical models that enabled more objective risk evaluations. Life insurance companies began using mortality tables to calculate premiums, marking a shift toward data-driven decision-making (Blier-Wong, 2023).

Despite these advances, traditional risk assessment remained labour-intensive and prone to bias. Manual processes led to delays and inconsistencies, affecting customer service and pricing accuracy. Early automation in the mid-20th century introduced rule-based systems, which improved productivity but struggled with complex cases.

2.8 DIGITAL TRANSFORMATION IN INSURANCE

The insurance industry is undergoing a profound digital transformation, driven by advancements in data analytics, AI, and real-time technologies. These innovations are reshaping how insurers assess risk, interact with clients and deliver services.

Modern insurers leverage diverse data streams – including telematics, social media and IoT devices – to build predictive models. These models enable accurate pricing strategies and help identify high-risk clients, improving both efficiency and customer experience (Larzelere, 2021).

Real-time analytics allow insurers to adjust policies dynamically, offering personalised products that align with individual behaviours. This responsiveness enhances client satisfaction and supports agile risk management.

AI systems now replicate the decision-making processes of experienced professionals, handling complex cases with greater precision. This shift underscores the strategic role of data-driven risk assessment in delivering customer-centric services.

As digital tools continue to evolve, their integration into insurance operations is not only improving operational efficiency but also enabling insurers to meet rising consumer expectations and regulatory demands. The transformation is redefining the relationship between insurers and clients, placing data and technology at the heart of service delivery.

2.9 4TH AND 5TH INDUSTRIAL REVOLUTION TECHNOLOGY IN THE INSURANCE INDUSTRY

The Fourth and Fifth Industrial Revolutions have introduced transformative technologies that are reshaping underwriting and risk assessment in the insurance sector. Innovations such as AI, BDA, the IoT, and blockchain are enabling insurers to move beyond traditional actuarial models and embrace dynamic, data-driven decision-making.

These technologies allow for real-time risk evaluation, personalised product offerings and enhanced operational efficiency. For example, predictive analytics enables underwriters to discern patterns and trends that were once imperceptible, while machine learning algorithms can examine extensive datasets to forecast future claims and evaluate risk with greater precision (Larzelere, 2021). Real-time data streams facilitate dynamic policy adjustments, allowing coverage to be modified according to current information, which supports agile and adaptable risk management. In South Africa, insurers are increasingly adopting these technologies to improve accuracy and customer experience. The integration of AI and BDA allows insurers to analyse behavioural data, credit scores, and telematics to tailor products to individual risk profiles (Asmal et al., 2023). IoT devices such as vehicle trackers and smart home sensors provide continuous data that enhances risk modelling and claims processing (Buyana, 2022). Blockchain technology ensures secure, transparent transactions and reduces fraud, particularly in claims verification and policy issuance (Molloy & Ronnie, 2019).

These innovations are not only enhancing operational efficiency but also enabling insurers to deliver customer-centric services that align with evolving expectations in the digital age. The shift from static, historical data to dynamic, real-time analytics marks a significant evolution in how insurers assess and manage risk, positioning them to respond more effectively to market demands and regulatory pressures (Molloy & Ronnie, 2021).

2.9.1 The Use of BDA in the Insurance Industry

Big Data is transforming the insurance sector by providing innovative opportunities for enhancing operational efficiency, improving risk assessment and personalising customer experiences. Big Data encompasses vast quantities of organised and unstructured data from various sources, including customer interactions, social media, transaction records and sensor data. Through the application of BDA, insurance companies can uncover patterns, correlations and insights that were previously inaccessible, leading to improved decision-making (Ellili et al., 2023).

A primary application of BDA within the insurance sector is predictive analytics. By analysing historical data, insurers can predict future trends, such as claim frequency and severity, consumer behaviour and potential fraud incidents. Predictive models aid insurers in developing accurate pricing strategies, help identify high-risk clients and contribute to loss reduction and profitability. Telematics data from connected vehicles provides real-time insights into driving behaviour, allowing insurers to offer usage-based insurance policies that promote safe driving and improve road safety.

Business data analytics (BDA) is essential for client segmentation and personalisation. Insurers can classify their clientele into several groups by analysing customer data based on behaviour, interests and risk profiles. This enables insurers to tailor their products, services and marketing tactics to meet the specific needs of each segment, thereby enhancing customer satisfaction and loyalty. Tailored marketing efforts can captivate potential customers with relevant offers, improving conversion rates and client loyalty. Health insurers can leverage data from wearable devices to offer customised wellness programmes and incentives for healthy habits, thereby improving consumer engagement and health outcomes.

Risk management is an area significantly affected by BDA. Insurers can analyse and reduce risks more effectively using data from various sources, including meteorological forecasts, geological evaluations and social media feeds. This is particularly advantageous for disaster modelling and disaster response planning. Insurers can improve their capacity to predict the impacts of natural disasters, optimise resource distribution and expedite claims processing for affected clients. BDA can improve fraud detection by identifying anomalous patterns and behaviours that can indicate fraudulent activity. This helps insurers mitigate financial losses and maintain the integrity of the claims process (Ngai et al., 2011).

However, the implementation of BDA in the insurance sector presents various challenges. Data privacy and security are essential concerns, as insurers are required to handle large amounts of sensitive consumer data. Complying with data protection regulations and implementing rigorous cybersecurity measures are crucial to maintaining client trust and avoiding legal repercussions (Folorunso et al., 2024). Furthermore, integrating BDA into existing systems and processes requires significant investment in technology infrastructure and skilled personnel. The insurance industry faces a skills gap, particularly in data science and analytics, which must be addressed to properly capitalise on the potential of BDA.

BDA offers solutions to address certain challenges within the South African industry. The incidence of insurance fraud can be mitigated by sophisticated analytics that identify suspicious trends and flag potentially fraudulent claims for additional examination (Ngai et al., 2011). BDA can help insurers formulate policies tailored to the diverse needs of the South Africa's population, thus improving access to insurance services for underprivileged communities. By analysing demographic and socioeconomic data, insurers may create cost-efficient and relevant insurance products that cater to the specific risks faced by different population segments.

BDA is transforming the insurance sector by improving operational efficiency, improving risk assessment, and personalising consumer experiences (van Eck & Huneberg, 2023). Big Data encompasses extensive volumes of organised and unstructured data received from various origins, including consumer interactions, social media, transaction records and sensor data. Through the application of BDA, insurance companies can uncover patterns, correlations and insights that were previously inaccessible, leading to improved decision-making (Rana et al., 2022).

Predictive analytics represents a fundamental use of BDA within the insurance sector. By analysing historical data, insurers can predict future trends, such as claim frequency and severity, consumer behaviour and potential fraud incidents. Predictive models enable insurers to develop more accurate pricing strategies and identify high-risk clients, thereby minimising losses and increasing profits. Telematics data from connected vehicles provides real-time insights into driving behaviour, allowing insurers to offer usage-based policies that promote safe driving and enhance road safety.

BDA is essential for client segmentation and customisation. Insurers can classify their clientele into several categories based on behaviour, interests and risk profiles using consumer data analysis (Rana et al., 2022). This enables insurers to tailor their products, services and marketing

tactics to meet the specific needs of each segment, thereby enhancing customer satisfaction and loyalty. Tailored marketing efforts can captivate potential customers with relevant offers, improving conversion rates and client loyalty. Health insurers can leverage data from wearable devices to offer customised wellness programmes and incentives for healthy habits, thereby improving consumer engagement and health outcomes.

Risk management is an area significantly affected by BDA. Insurers can analyse and alleviate risks more effectively by using data from many sources, including meteorological forecasts, geological evaluations and social media feeds. This is particularly advantageous for catastrophe modelling and disaster response strategising. Insurers can improve their capacity to predict the impacts of natural disasters, optimise resource distribution and expedite claims processing for affected clients. BDA can improve fraud detection by identifying anomalous patterns and behaviours that can indicate fraudulent activity. This helps insurers mitigate financial losses and maintaining the integrity of the claims process (Udeh et al., 2024).

However, the implementation of BDA in the insurance sector presents various challenges. Data privacy and security are significant concerns, as insurers must handle substantial volumes of sensitive consumer data (van Eck & Huneberg, 2023). Complying with data protection regulations and implementing rigorous cybersecurity measures are crucial to maintaining customer trust and avoiding legal consequences. Additionally, the integration of BDA into existing systems and processes requires significant investment in the technology infrastructure and skilled personnel. The insurance industry faces a skill gap, particularly in data science and analytics, which must be addressed to properly exploit the capabilities of BDA.

BDA offers the potential to address challenges within the South African sector. The incidence of insurance fraud can be mitigated by advanced analytics that identify dubious patterns and highlight potentially fraudulent claims for further examination. BDA can help insurers develop solutions tailored to the diverse needs of South Africa's population, thus improving access to insurance services for marginalised communities (Ogochukwu, 2022). Through the analysis of demographic and socioeconomic data, insurers may create cost-effective insurance plans customised to the specific risks faced by different population segments.

2.9.2 Blockchain to Improve Operational Efficiency within Client Services

Blockchain, a decentralised and irreversible digital ledger technology, is rapidly acknowledged for its potential to transform several sectors, including insurance (Bodemer, 2023). The ability

to securely document and authenticate transactions across a decentralised network has considerable implications for improving operational efficiencies, especially in client services. Blockchain can optimise procedures, augment transparency, bolster security and ultimately enhance the client experience in the insurance sector. Claim processing represents a key domain in which blockchain technology can significantly improve operational efficiency (Bodemer, 2023). Conventional claims processing is frequently sluggish, unwieldy and susceptible to inaccuracies, resulting in consumer discontent. Blockchain technology can address these concerns by automating the entire process using smart contracts. Smart contracts are autonomous contracts that have the terms of the agreement encoded directly into the software. They can autonomously validate claims, assess policy stipulations and execute payouts without human involvement. For example, when a policyholder files a claim, the blockchain can autonomously authenticate the claim information against the policy conditions recorded on the blockchain. Upon the completion of the conditions, the smart contract initiates the payment procedure, markedly decreasing the time needed for claims resolution. This accelerates the process, diminishes administrative expenses and mitigates the risk of human error, yielding a more efficient and customer-centric service.

Improved fraud identification and prevention is a critical concern in the insurance sector (Gangani, 2024), resulting in considerable financial losses and elevated client rates. Blockchain technology can improve fraud detection and prevention due to its transparent and immutable characteristics. Each transaction documented on the blockchain is time-stamped and immutable, facilitating the tracking and verification of claims and other transactions. The blockchain facilitates the rapid identification of fraudulent operations by establishing a tamper-proof record of all transactions for insurers. For example, if numerous claims are submitted under the same policy, the blockchain can efficiently track these claims and identify any anomalous patterns. This degree of transparency and traceability can markedly diminish fraudulent claims, resulting in cost savings for insurers and more precise premium pricing for clients.

Data security and privacy are critical issues in the insurance sector due to the sensitive nature of the managed information. Blockchain technology improves data security through sophisticated cryptographic methods and decentralised data storage (Rawat et al., 2020). In contrast to conventional centralised databases, blockchain disseminates data throughout a decentralised network of nodes, improving its resilience against hacking and data breaches. Each data element is encrypted and connected to the preceding entry, establishing a secure and immutable information chain. Access to the data is restricted to permitted entities with the required

cryptographic keys, thereby safeguarding the confidentiality of sensitive information. This improved security can build more trust among clients, as they can be confident that their personal and financial information is protected (Javaid et al., 2022).

The customer onboarding and Know Your Customer (KYC) processes are crucial yet labour-intensive components of insurance operations. These processes require the verification of client identities, which typically involves the collection and validation of many documents. Blockchain can optimise these processes by offering a secure and verifiable digital identity platform. Storing KYC information on a blockchain enables insurers to quickly and securely access confirmed customer data, hence minimising the need for redundant data collection. Upon verification and documentation of a client's identity on the blockchain, this information can be disseminated to other financial institutions and service providers, depending on the client's approval, thereby minimising redundancy and improving the overall customer experience. This accelerates the onboarding process and ensures adherence to regulatory requirements. Transparency is an essential element in building trust between insurers and clients. The intrinsic transparency of the blockchain enables all participants in a transaction to have a clear and immediate understanding of the transaction status. This results in enhanced visibility for clients on their claims and policy status, promoting greater trust and satisfaction. Policyholders can monitor the status of their claims in real time, from submission to settlement, on a blockchain platform. This transparency eliminates the ambiguity and exasperation frequently linked to the conventional claim procedure. Furthermore, by offering a transparent audit trail, the blockchain facilitates the resolution of disputes more effectively, as all parties may access the identical unmodified transaction history. The automation and transparency offered by blockchain can result in substantial cost savings and enhanced operational efficiency. By automating procedures such as claims processing, policy administration, and fraud detection, insurers can diminish the need for manual intervention and administrative duties. This reduces operational expenses and allows insurers to allocate resources more efficiently. The capacity to mitigate fraud and inaccuracies can result in improved risk evaluations and pricing frameworks. This may lead to more equitable client premiums and enhanced financial outcomes for insurers. Cost savings generated by blockchain integration can be transferred to clients via reduced premiums and improved services. Notomoro (2024) offers a more equitable view by examining the advantages and obstacles of blockchain integration within the insurance sector. Notomoro recognises the possibility of operational efficiency and improved security but emphasises the necessity of addressing data privacy issues and maintaining adherence to regulatory norms. MacKinnon

(2010) contributes to the discourse by examining the human element in technological integration. Prager et al. (2021) say that although blockchain can improve operational processes, it is imperative to evaluate its effects on the workforce and the necessity for ongoing training and upskilling to align with technological progress.

An analysis of these varied points of view reveals that although blockchain technology has considerable potential to revolutionise the insurance sector, it is crucial to address its issues with caution. A deliberate and balanced strategy is essential for successful implementation, taking into account both technological and human elements. Okoampah et al. (2023) assert that blockchain technology transforms the insurance sector by improving transparency, mitigating fraud and optimising claims-processing. They emphasise that smart contracts can automate policy issuance and claim resolution, hence enhancing efficiency and diminishing operational expenses. Pilkington (2016) endorses this perspective, highlighting the security and immutability of blockchain, which ensures data integrity and safeguards against unauthorised modifications. Pilkington observes that the decentralised nature of blockchain mitigates the possibility of a single point of failure, hence improving the system's robustness and reliability of the system, while Khan et al. (2021) recognise the fundamental virtues of blockchain while expressing concerns about scalability and energy consumption. Khan indicates that the processing power necessary to run the network escalates with the expansion of the blockchain, potentially leading to sustainability challenges. Ellili et al. (2023) warn against excessive dependence on blockchain, highlighting possible integration difficulties with current legacy systems. They contend that the shift to blockchain-based systems can be complex and expensive, necessitating substantial infrastructure investment and training for both personnel and clients.

2.9.3 The AI in the Insurance Industry

AI in the insurance sector pertains to the application of sophisticated algorithms and computational capabilities to perform tasks traditionally needing human cognition. This encompasses various technologies, including machine learning, deep learning, natural language processing and computer vision. AI empowers insurers to automate and optimise several procedures, ranging from risk assessment to claims administration. AI is a crucial element of digital transformation within the insurance sector (Subburathinam et al., 2023), transforming conventional methods and bringing enhanced efficiencies and capacities. AI comprises several technologies, such as machine learning, natural language processing and computer vision (Eling et al., 2022), capable of executing tasks that conventionally necessitate human intelligence. In

the insurance sector, AI applications encompass claims-processing, customer service,, fraud detection, predictive analytics, risk management and personalised marketing. AI-driven technologies can streamline claims processing, reducing the duration needed to evaluate and resolve claims. AI-powered chatbots and virtual assistants can handle client enquiries, deliver policy information, and facilitate claims submission, providing round-the-clock service and improving customer satisfaction. Furthermore, AI can evaluate extensive datasets from diverse sources to assess risk and make insurance judgements with greater accuracy and speed than conventional approaches.

Incorporating AI into the insurance sector presents numerous substantial advantages. Automating repetitive jobs and optimising processes through AI can substantially lower operating expenses and improve efficiency. This enables human employees to concentrate on more complex and value-enhancing tasks. AI improves customer experience by delivering prompt and precise responses to inquiries, tailored recommendations and expedited claims processing. Enhanced customer service can result in increased client satisfaction and retention. Furthermore, AI can evaluate large amounts of information to provide more precise risk evaluations, resulting in better decisions and pricing strategies. This accuracy helps insurers in reducing losses and improve profitability. The capacity of AI to identify and avert fraud protects insurers from significant financial losses and maintains the integrity of the insurance process. The adoption of AI allows insurers to innovate and maintain competitiveness in a rapidly changing industry. Insights derived from AI can facilitate the creation of innovative products and services that address evolving client demands (Manduva, 2022).

The integration of AI into the insurance sector poses several hurdles despite its considerable advantages. The use of AI involves the management of enormous amounts of sensitive client information. The protection of data privacy and security is essential, and insurers must adhere to strict laws to secure client information. Implementing and maintaining AI technology requires specialist expertise. The insurance sector has a skill deficiency, especially in areas such as South Africa, where there is a lack of individuals proficient in AI and data analytics (Marwala, 2022). The regulatory framework for AI in the insurance sector is still in development. Insurers must navigate detailed laws and ensure compliance while using AI technologies. AI systems can unintentionally perpetuate biases, resulting in inequitable treatment of particular client demographics. Insurers must face ethical considerations and ensure that AI applications are transparent and equitable. Many insurance companies continue to rely on legacy systems,

complicating the integration of AI technologies. Ensuring compatibility and easy interaction with existing infrastructure is crucial for effective AI implementation (Gupta et al., 2022).

2.10 CASE STUDIES AND BEST PRACTICES: LEADING THE WAY IN ARTIFICIAL INTELLIGENCE, BIG DATA, AND BLOCKCHAIN IN SOUTH AFRICAN INSURANCE COMPANIES

Analysing case studies of insurance firms that have effectively integrated technology with human interaction yields significant insights into best practices for digital transformation. While global examples such as Zurich Insurance Group demonstrate how AI can enhance claims processing while maintaining personalised customer service (Okesanya et al., 2025), this study focuses on three leading South African insurers OUTsurance, Santam and Discovery Insure due to their strategic relevance, technological innovation and market resilience.

These companies were selected because they represent diverse approaches to balancing operational efficiency with client-centric service delivery. Each has adopted advanced technologies such as AI, BDA, IoT, and blockchain, while maintaining a strong emphasis on customer trust, personalised engagement and strategic agility.

2.10.1 OUTsurance

OUTsurance was founded in 1998 and has since become a disruptive force in South Africa's short-term insurance market. The company pioneered the OUTbonus model, rewarding claim-free clients with cash payouts, and has paid out over R6 billion in bonuses by 2024 (OUTsurance, 2024). Its direct-to-consumer strategy and early adoption of AI, BDA and blockchain have transformed client engagement processes. Machine learning algorithms are used to assess historical data and forecast risk, while blockchain enhances transaction security and fraud mitigation.

OUTsurance's expansion into Ireland and Australia demonstrates its strategic agility and global relevance. Despite initial startup losses in Ireland, the group remains committed to disciplined international growth (BusinessTech, 2025). The company's simplified product and distribution strategy has driven strong organic growth and cost efficiencies, with operating profit margins exceeding 18% and return on equity reaching 30.8% (Goldman & McCoy, 2020) OUTsurance exemplifies how digital innovation can drive operational efficiency, customer satisfaction and competitive advantage in a dynamic insurance environment.

2.10.2 Santam

Founded in 1918, Santam is South Africa's largest general insurer, with a market share exceeding 22% and over 3.8 million policyholders (Santam, 2025). Its century-long resilience and ability to adapt to changing market conditions make it a benchmark for stability and innovation. Santam has consistently invested in AI and BDA to enhance claims processing and risk assessment, while blockchain ensures document integrity and fraud prevention.

Santam's FutureFit 2030 strategy focuses on digitising the customer journey and leveraging data to improve pricing (Santam, 2025) . The company has received approval to launch a Lloyd's syndicate in the UK, enabling access to over 75 insurance and 200 reinsurance territories globally (BusinessTech, 2025). This expansion reflects Santam's commitment to international diversification and specialist capability development. Santam's historical depth and technological evolution provide a rich context for understanding how legacy insurers adapt to digital transformation while maintaining market leadership.

2.10.3 Discovery Insure

Discovery Insure, launched in 2011 as a division of Discovery Limited, is known for its shared-value insurance model and behavioural innovation. The company uses telematics, AI and IoT to monitor driving behaviour and tailor premiums accordingly. Its Vitality Drive programme incentivises safe driving, resulting in improved road safety and reduced claims (Discovery Insure, 2021). Discovery Insure has expanded its model globally, partnering with firms such as Avis and Tawuniya to export its behavioural insurance framework. The company's use of real-time analytics and customer segmentation supports its strategy of personalised, data-driven insurance offerings. Discovery's Vitality model remains a key differentiator, enhancing customer retention and operational strength (BusinessTech, 2025). Discovery Insure offers a unique lens into how behavioural science and digital tools can reshape client engagement, risk management and trust-building in insurance.

2.11 CHALLENGES OF INTEGRATION TECHNOLOGY IN INSURANCE

The integration of technology in the insurance sector provides various advantages, including increased operating efficiencies, superior customer service and novel product offerings. This transformation is laden with obstacles arising from both the intrinsic characteristics of technology and the particular environment of the insurance industry. These complex hurdles include data privacy and security issues, integration difficulties with current systems, and

technological proficiency among employees and clients (Nicoletti, 2020). Technological developments frequently require substantial alterations in company procedures, which can be disruptive and encounter opposition. The intricacy of emerging technologies such as AI, BDA, IoT and blockchain may hinder their adoption. Insurance businesses must traverse these complexities to ensure effective implementation and integration, frequently requiring considerable financial investments, time and resources. The stringent regulations require that any technological integration adheres to strict compliance standards, which further complicates the process.

2.11.1 Privacy and Security Concerns

A primary problem in using technology in the insurance sector is protecting data privacy and security. Insurance firms manage vast quantities of sensitive personal information, including health records, financial data and personal identifying details. The emergence of BDA and AI has led to an exponential increase in the volume and variety of acquired data, hence increasing substantial privacy concerns. Data breaches and cyberattacks pose significant risks to the integrity and confidentiality of this information. The insurance sector has become a primary target for cybercriminals due to the significant value of the data it holds. Safeguarding this data from illegal access and breaches is paramount. Organisations must establish comprehensive cybersecurity protocols, including encryption, multifactor authentication and ongoing IT infrastructure surveillance. Despite these efforts, the dynamic nature of cyber threats renders the maintenance of security a constant problem. Furthermore, adherence to data protection requirements, such as the General Data Protection Regulation (GDPR) in Europe and POPIA in South Africa, introduces an additional layer of complexity. These regulations impose stringent requirements on the collection, storage and processing of personal data, requiring insurers to routinely update their policies and practices to ensure compliance (Zenda et al., 2020).

2.11.2 Integration of New Technologies with Existing Systems

A notable problem is the integration of new technology with existing legacy systems. Many insurance firms operate on antiquated IT infrastructure that is not suitable for contemporary technologies. Integrating new technologies with legacy systems can be technically challenging and expensive. Legacy systems frequently exhibit insufficient flexibility and scalability to accommodate advanced technologies such as AI and blockchain. This may lead to compatibility challenges, data isolation and inefficiencies. To address these challenges, insurers may require significant system upgrades or comprehensive overhauls, which can be resource-intensive and

disruptive to operations. Additionally, transfer to new systems must be meticulously monitored to ensure business continuity. Any interruptions or disturbances during the integration process can adversely affect customer service and operational efficiency. Insurers must establish thorough integration strategies including risk assessments, staged implementation plans and ongoing monitoring to prevent disruptions and facilitate a seamless transition.

2.11.3 Regulatory and Ethical Dilemmas in the Insurance Industry

The incorporation of modern technologies like AI, BDA, IoT and blockchain into the insurance industry entails a complicated array of hurdles, including regulatory compliance, ethical issues and operational difficulties. The rapid progression of technological innovation sometimes exceeds the establishment of regulatory frameworks, resulting in a complex environment for insurers to traverse (Maple et al., 2023; Murphy & Mueller, 2018). Insurers must ensure that their implementation of new technologies adheres to current regulations, including GDPR in Europe and South Africa, while also anticipating forthcoming legislative modifications as governments aim to regulate emerging technologies more efficiently.

Adherence to data protection legislation complicates data management processes. Regulations such as GDPR and POPIA impose rigorous data governance requirements, obligating insurers to ensure the security of personal data collection, storage and processing. This work becomes progressively more difficult due to the extensive volume and diverse kind of data associated with BDA (Chen & Zhang, 2014). The fundamental decentralisation to blockchain technology, although advantageous for transparency and security, presents distinct regulatory challenges. To ensure that blockchain networks adhere to data protection and anti money laundering regulations, insurers must establish stringent compliance measures within decentralised systems (PWC, 2023).

A notable difficulty is ensuring that AI systems do not unintentionally contravene antidiscrimination laws by rendering biased conclusions. AI systems, frequently trained in historical data, might mirror and exacerbate existing prejudices, leading to inequitable treatment of specific demographic groups. This concern is particularly relevant in claims processing, where algorithmic bias can result in discriminatory consequences, such as elevated premiums for some groups based on previous claims data (Obermeyer et al., 2019). Mitigating these biases requires ongoing monitoring and auditing of AI models to ensure fairness and reduce biases in decision-making processes (Katell et al., 2020).

In addition to regulatory issues, insurers face ethical dilemmas concerning staff dynamics and consumer experience. As technology transforms processes, the financial outlay required for the adoption of new technologies is considerable, necessitating that organisations exhibit a definitive return on investment (ROI) to validate these costs. However, reaching an equilibrium between immediate expenses and enduring advantages is difficult, as the advantages of technological integration, including enhanced efficiency and customer satisfaction, may not be readily observable (Erk et al., 2020).

The implementation of automation and AI can influence employment in the insurance industry. Although these technologies can improve operational efficiencies, they can also result in job displacement. Insurers must reconcile the advantages of automation with the need to maintain and retraining their workforce, thereby providing opportunities for employees to acquire new skills relevant to a technology-driven environment (Dziembaa et al., 2023; International Labour Organisation, 2019). Establishing a robust and flexible workforce is crucial to address the challenges of digital transformation while preserving employee welfare and industry knowledge.

Another ethical consideration pertains to the preservation of customer trust and pleasure in the context of increasing dependence on technology. Clients may express fears about data privacy, the precision of AI-generated conclusions, and the potentially impersonal characteristics of automated services. Although digital technologies provide greater ease, clients continue to prioritise individual encounters, particularly for complicated inquiries and claims. Consequently, insurers must formulate strategies that integrate digital innovation with superior customer service to cultivate trust and ensure a favourable client experience (Accenture, 2017).

Incorporating technology into the insurance sector necessitates a proactive and thorough strategy for regulatory adherence, ethical considerations and operational challenges. Insurers are urged to:

- Develop comprehensive compliance frameworks: Establish data governance and compliance structures that conform to existing rules and are flexible for future modifications.
- Interact with regulatory authorities: Engage proactively in regulatory dialogues to influence future regulations and acquire knowledge about impending legislative changes.
- Ensure transparency and accountability in artificial intelligence: Establish AI governance frameworks to ensure equity and transparency while alleviating biases in decision-making processes.

- Align workforce adaptation with client expectations: Allocate resources to personnel reskilling initiatives while maintaining exceptional client-service standards to address the difficulties of digital transformation.

2.11.4 Technological Literacy among Workforce and Clients

The effective incorporation of technology in the insurance sector depends on the technological proficiency of both employees and clients (Kassim et al., 2021). Implementing advanced technology in the workforce requires the acquisition of new skills and competencies. Employees must receive training to comprehend and proficiently use new tools and systems, which can be substantial, especially for organisations with a large and diversified workforce (Kalfsbeek, 2007). The rapidity of technology advancement often exceeds the ability of employees to adapt, resulting in a skills gap (Gorham, 2020). Training and development programmes must provide employees with essential skills and information. This may encompass instruction in AI and machine learning, data analytics, cybersecurity methodologies and digital instruments for customer service and claims management. Clients must also adapt to emerging technologies. As insurers provide an increasing array of digital services, clients must engage with these platforms in a proficient way. This may pose difficulties, particularly for elderly consumers or people with restricted access to digital devices. Insurance businesses are required to offer intuitive interfaces and support services to help clients in using new digital tools. This may involve developing extensive instructions, providing customer help through several channels, and ensuring that digital platforms are accessible and inclusive.

The South African insurance sector is undergoing a significant shift due to the incorporation of sophisticated technologies, including AI, BDA, IoT and blockchain. These technologies offer substantial improvements in operational efficiency, risk evaluation and customer service customisation. This digital transition poses significant hurdles, especially with data privacy, system integration and the necessity for technological proficiency among staff and clients. This thesis seeks to investigate the twin forces, analysing both the possible advantages and the constraints presented by technological improvements in the South African insurance business.

2.11.5 Benefits of Technology in Operational Efficiencies

AI has emerged as a powerful tool to improve operational efficiencies within the insurance industry. Erem(2022) highlights that AI automates routine tasks, improves risk assessment accuracy, and enables personalised customer interactions through chatbots and virtual assistants

(Gupta, 2024). AI streamlines claim processing, resulting in faster turnaround times and reduced operational costs. However, Dwivedi et al. (2021) caution that AI systems require continuous monitoring and updating to remain effective and unbiased, emphasising the need for ongoing investment in AI infrastructure. BDA plays a crucial role in modern insurance practices. Ellili et al. (2023) emphasise that BDA enables insurers to gain deeper insights into customer behaviour, predict future risks and tailor products to individual needs. This technology also improves fraud detection by identifying patterns and anomalies that human analysts might miss. Wilson et al. (2024) support this view, noting that BDA facilitates customer segmentation and personalisation, allowing insurers to develop more precise pricing models and enhance customer satisfaction.

Blockchain technology offers a transparent, tamper-proof transaction ledger, significantly reducing the risk of fraud and simplifying the verification of claims and policyholder information. Notomoro (2024) argues that blockchain improves operational efficiencies by providing a secure platform for managing transactions, thereby reducing costs and increasing transaction speed. Pilkington (2016) supports this claim, noting that the decentralised nature of blockchain eliminates intermediaries, further cutting costs and improving efficiency. However, (Brophy, 2020) points out that blockchain implementation has challenges, including regulatory clarity and interoperability with existing systems.

Integrating advanced technologies in the insurance sector is accompanied by several challenges, such as high implementation costs, significant changes to existing workflows, and employee resistance. Seacord et al. (2003) highlight the complexities of integrating new technologies with legacy systems, which can lead to compatibility issues and require extensive customisation and testing. Data privacy and security are paramount concerns in the insurance industry. Sharma and Barua (2023) stress that integrating technologies like AI and BDA involves collecting and processing large volumes of sensitive customer information, raising the risk of data breaches and cyberattacks. Sharma (2024) emphasises the importance of robust cybersecurity measures and compliance with data protection regulations such as GDPR and POPIA in South Africa.

Integration problems with existing systems present another significant challenge. Alnahari and Ariaratnam (2022) highlight that the adoption of blockchain and other advanced technologies often requires the re-upholstering of existing IT infrastructure, which can be costly and time-consuming. A phased approach to technology implementation, starting with pilot projects and gradually scaling up is essential. They recommend working with technology vendors and investing in employee training to ensure a smooth transition. Technological literacy among the

workforce and clients is crucial for successfully adopting new technologies. Morandini et al. (2023) note that employees must be trained to use new systems effectively, while clients must be educated about the benefits and functionalities of digital tools. Erem (2022) emphasises the importance of user-friendly interfaces and ongoing support to help clients navigate new technologies, especially in markets like South Africa, where digital literacy levels may vary.

To address the challenges posed by technological advances, South African insurers must develop strategies for seamless technology integration that ensure synergy between digital innovation and human-centric interaction. This involves investing in employee training, improving technological literacy among clients, and adopting a phased approach to technology implementation (Trenerry et al., 2021).

While there is substantial literature on the benefits of AI, BDA, IoT and blockchain in the insurance sector, there is comparatively less focus on strategies that maintain a balance between digital innovation and human-centric service delivery (Bach et al., 2023; Hlahatsi, 2020; Moodley, 2019). These strategies include initiatives like personalised advisory services, hybrid customer support models (which combine AI and human agents), and digital empathy training for employees who interact with clients via technology platforms. However, such approaches are frequently under-represented in transformation frameworks, which tend to focus on automation, cost reduction and data-driven efficiency.

In the South African context, traditional insurers have been slow to fully integrate these human-centric strategies alongside technological upgrades (Moodley, 2019). The industry continues to experience a major skills gap in both technical and interpersonal competencies (Kuswanto, 2023). Moreover, recent transformation surveys reveal that technology budgets significantly outpace investments in human capability development, leaving the human side of innovation under-prioritised. This imbalance suggests that while digital tools are advancing rapidly, the strategic integration of human-centric service principles remains limited and insufficiently addressed in both practice and literature.

While there is substantial literature on the benefits of AI, BDA, IoT and blockchain, there is less focus on strategies for maintaining a balance between digital innovation and human-centric service delivery.

2.11.6 Technological Integration and Job Dynamics

Digital transformation is significantly reshaping employment dynamics in the insurance industry. The integration of advanced technologies such as AI, automation, blockchain, BDA, and the IoT offers the potential for increased efficiency, cost savings and enhanced service delivery. However, this technological shift brings with it complex challenges related to workforce displacement, evolving job roles and the urgent need for upskilling.

Incorporation of sophisticated technologies such as AI and automation in the insurance sector significantly affects employment and labour dynamics (Wright & Schultz, 2018). These technologies provide considerable operational savings and productivity enhancements; nevertheless, they also present significant problems with respect to job displacement and the need for workforce change. Technological improvements exert a dual influence on the labour market. Although AI and automation can improve productivity and generate new employment opportunities, they pose a significant risk of job displacement, especially for positions that involve routine and repetitive labour (Lakshmi et al., 2024). The research of the International Labour Organisation (ILO) underscores the imperative of reskilling and upskilling programmes to equip the workforce for emerging jobs and alleviate the negative impacts of displacement.

McKinsey (2021) highlights the importance of strategic workforce planning during digital transformation. Their findings indicate potential job displacement while also presenting opportunities for employment creation through continuous learning and development. McKinsey advocates for organisational investment in training and reskilling initiatives to transition employees into new roles, thereby sustaining competitive advantage and building a capable, adaptable workforce.

Choi et al. (2020) further contribute to this discourse, asserting that global job markets are being transformed by technological innovation. Their research emphasises the critical role of broad-based training programmes to prepare workers for evolving job demands. This is especially pertinent in the insurance sector, where technologies like AI and BDA are becoming increasingly embedded in operational functions. Basole (2021) echoes this view, advocating for a balance between automation and human-centred strategies to preserve workforce resilience and maintain high service standards.

Professor Karim R. Lakhani, in his influential talk “Competing in the Age of AI,” encapsulates this paradigm shift by asserting, "you won’t lose your job to AI – you’ll lose it to someone using

AI" (Lakhani, 2024). His statement reinforces the principle that human-AI augmentation, rather than outright displacement, will define the future of work. Lakhani's perspective aligns with this literature, suggesting that knowledge workers who can effectively integrate AI into their workflows will outperform those who cannot. This view is consistent with participant insights from this study, which emphasise the need for ongoing upskilling and the integration of human judgement in technology-driven service roles.

The issue of employment displacement remains central in debates surrounding AI and automation. As routine tasks become increasingly automated, workers in these roles are vulnerable to job loss. However, the emergence of new roles requiring advanced digital capabilities offers a counterbalance. The key challenge lies in addressing the skills gap between current workforce capabilities and the requirements of these new positions. Continuous learning, digital literacy and soft skills such as critical thinking and adaptability are increasingly essential for navigating this transition.

Strategic workforce planning entails anticipating future skill requirements and tailoring training programmes accordingly. This proactive approach enables organisations to align human capital with evolving technological demands. In the insurance sector, this involves not only integrating AI and other digital tools but also embedding human oversight and cultivating a culture that values both technological competence and interpersonal skills.

Ultimately, the literature suggests that a hybrid model leveraging AI for routine tasks while preserving human involvement for complex, nuanced interactions offers the most sustainable path forward. Companies that prioritise employee development and foster a culture of continuous learning and adaptability are better equipped to navigate technological change, maintain customer confidence and achieve sustained success in the digital era.

2.11.7 Balance between Technology and Human Interaction

Using digital tools and automated procedures within the insurance sector poses considerable difficulties in preserving consumer trust and satisfaction. Customers appreciate the efficiency and convenience of digital services but expect individual assistance for more detailed inquiries and support. The Basole (2021) survey indicates that although customers value digital advancements, the human element is essential to establish and sustain confidence, particularly in scenarios that require empathy and comprehensive explanations. Data privacy and security are key concerns for consumers in the digital age. Since insurance companies gather and manage

enormous amounts of personal data, safeguarding it is essential. Data breaches can profoundly undermine customer trust and result in substantial financial losses (Aswathy & Tyagi, 2022). Customers are more inclined to trust companies with strong data protection protocols and transparency in their data management methods. Consequently, insurers must prioritise cybersecurity and data protection to maintain customer trust.

AI-driven choices can improve efficiency and accuracy in underwriting and claims processing while raising concerns around fairness and transparency (Sontakke, 2022). Customers may be sceptical about AI judgements if they perceive them as opaque or biased. Ensuring transparency in AI systems and explaining decisions helps to develop confidence. Insurers must ensure that AI models are transparent, equitable and subjected to regular audits to reduce biases and mistakes.

Although automation improves many procedures, clients continue to expect personalised service, especially for complicated or emotionally significant events. A study by Rane (2023) revealed that customers value personalised advice and interactions, which can markedly improve their satisfaction and loyalty. Insurers must achieve an equilibrium between automated services for regular tasks and customised human contacts for more detailed requirements. Formulating strategies that merge digital innovation with superior customer service is crucial to maintain client trust and contentment and to implement hybrid models that use AI and human assistance to provide optimal solutions. Insurers may employ AI to manage routine inquiries and transactions, reserving human agents for more sophisticated and sensitive matters (Davenport & Miller, 2022). This method ensures efficiency while maintaining the individualised service that customers appreciate.

2.12 INTEGRATIVE THINKING FRAMEWORK IN INSURANCE CLIENT SERVICES

Roger Martin, a Canadian business expert and former Rotman School of business Dean, established the notion of integrative thinking. While the idea was first articulated in the early 1990s, it was formally introduced and popularised in Martin's seminal book The Opposable Mind: How Successful Leaders Win Through Integrative Thinking (2007). The original scholarly view emphasises that effective leaders are able to hold opposing ideas in tension and, rather than choosing one over the other, create a new, superior solution that transcends the limitations of each perspective. This approach to problem-solving is especially powerful in contexts characterised by complexity, uncertainty and competing demands.

In the insurance sector, the integrative thinking paradigm is essential for negotiating the intricacies of modern customer services. The framework provides a strategic methodology that reconciles diverse perspectives, including technological advancements and human-centred qualities. Fusing technologies such as AI, BDA, the IoT, and blockchain necessitates a sophisticated approach that balances operational efficiency with personalised client services. By applying integrative thinking, insurance firms can proactively address the challenges posed by digital transformation while maintaining a focus on client-centric service delivery.

This framework also enables a holistic understanding of industry dynamics by encouraging the integration of insights from diverse stakeholders, including executives and employees. Such integration makes it easier to identify skills shortages and workforce planning demands as a result of technological disruptions (Mullahy 1998). Importantly, the framework promotes the idea that technology should complement rather than replace human expertise. Adopting this balanced perspective, insurance companies can enhance operational efficiency while preserving the human touch in client interactions. This synergy between technological advancement and human-centred values is crucial for building trust and fostering long-term client relationships.

Furthermore, integrative thinking contributes greatly to strategic decision-making within insurance businesses. It aligns organisational goals with changing customer expectations and industry trends. By encouraging collaboration and interdisciplinary dialogue, the framework provides firms with the tools they need to adapt proactively to changing market conditions. Actionable insights to inform strategic initiatives will be uncovered through qualitative interviews with industry experts, as outlined in the research design of this study. Ultimately, adopting the integrative thinking framework positions insurance companies for sustainable growth and competitive advantage in a digitised environment, where both innovation and client-centricity are essential.

2.12.1 Overview of Integrative Thinking

Navigating the complexities present in modern insurance client services requires the application of the integrative thinking framework. This framework offers a strategic approach to bringing together disparate viewpoints, such as technological innovations and human-centric attributes. The insurance sector requires a sophisticated strategy that balances operational effectiveness and individualised customer service when integrating technologies like blockchain, AI and BDA. Insurance companies can proactively address the difficulties presented by digital transformation

while focusing on client-centric service delivery using the integrative thinking framework. This method emphasises the value of incorporating the insights of various stakeholders, including executives and employees and promotes a comprehensive understanding of the industry dynamics.

Furthermore, rather than replacing human expertise, the framework supports the notion that technology should enhance it. By adopting this well-rounded strategy, insurance companies can improve service delivery by using technology to increase operational effectiveness without sacrificing the crucial human element in customer interactions. To establish trust and cultivate lasting client relationships, technological advancements and human-centred values must work in harmony. The integrative thinking framework in insurance companies is also essential for strategic decision-making. It synchronises company objectives with changing customer demands and market trends. The framework gives businesses the means to proactively adjust to changing market conditions by promoting an attitude that values teamwork and interdisciplinary discussions.

As stated in the research proposal, this study aims to uncover practical insights that can guide strategic initiatives through qualitative interviews with industry experts. Insurance companies can create frameworks and strategies specific to their needs in the face of continuous digital transformation by using the integrative thinking framework. Insurance companies that use this integrative approach are ultimately better positioned for long-term growth and a competitive edge in a world that is becoming more digitalised and where client-centricity and innovation are critical.

2.12.2 Application of Integrative Thinking in Insurance Operations

In insurance operations, integrative thinking becomes a fundamental paradigm for negotiating the challenging terrain of changing technologies and human contacts. Insurance companies are driven towards a harmonious mix of technical innovations, customer-centric initiatives and workforce empowerment by integrated thinking. Insurance firms can develop creative ideas that satisfy the ever-changing needs of clients and staff by combining many points of view and knowledge. By encouraging cooperation, flexibility and ongoing development inside the company, this all-inclusive strategy eventually helps to boost operational performance and client satisfaction. While stressing the need for human intelligence and empathy in client contacts, integrated thinking in insurance operations ensures the smooth integration of technological

tools. Integrative thinking aims to strike a delicate compromise between the personalised touch of human connection and the efficiency of automated procedures (Levit, 2018).

Furthermore, integrative thinking in insurance processes accelerates organisational change, promotes strategic decision-making, and helps create an innovative and flexible culture. By integrating diverse perspectives and recognising the interconnected elements within the insurance ecosystem, companies can take proactive steps to tackle challenges such as skill gaps and workforce planning**.** Integrative thinking helps insurance firms predict industry changes, prioritise long-term sustainability and react quickly to shifting market dynamics. This all-inclusive strategy improves operational effectiveness and creates a strong and dynamic organisational structure, orienting insurance companies for continuous development and competitiveness in a constantly changing environment (Skaf et al., 2024).

2.12.3 Benefits of Integrative Thinking in Enhancing Client Services

Improving client services in the insurance sector is dependent on integrated thinking, particularly given the rapid development of technical achievements. Integrative thinking helps insurance companies mix technical efficiency with crucial human-centred traits required for excellent customer service. This strategy lets insurance companies strike a mix between the interpersonal elements essential for developing trust, providing tailored services, and implementing creative technology, including AI, BDA, IoT and blockchain. Integrative thinking ensures that customer encounters remain tailored and thrive despite the digital revolution, bridging the distance between technology and the human touch. In the midst of technological upheavals, an integrated thinking framework also helps insurance firms handle the complexity of staff planning and skills development. This method promotes matching human talents with the needs of a tech-driven sector, since technology integration sometimes results in skill shortages within the workforce. Insurers can use integrative thinking to maximise operational performance and customer satisfaction by encouraging a culture that prioritises human knowledge and technical development. Furthermore, integrated thinking helps insurance firms to aggressively control the social and ethical consequences. This all-inclusive strategy helps insurance companies handle ethical conundrums from technological developments such as responsibility in AI-driven choices and openness. Insurers provide a framework that enhances operational efficiency, promotes ethical decision-making, and supports social responsibility by carefully blending technology and human-centred ideals. Figure 2.2 shows how integrative thinking links the realms of technology efficiency and human-centric traits. Figure 2.2 visually

illustrates how improving client services, workforce skill development and ethical decision-making relate to each other. This model underscores the need to combine digital innovation with excellent customer service to ensure that technology advantages align with values that build confidence and encourage sustained client relationships in the insurance sector.

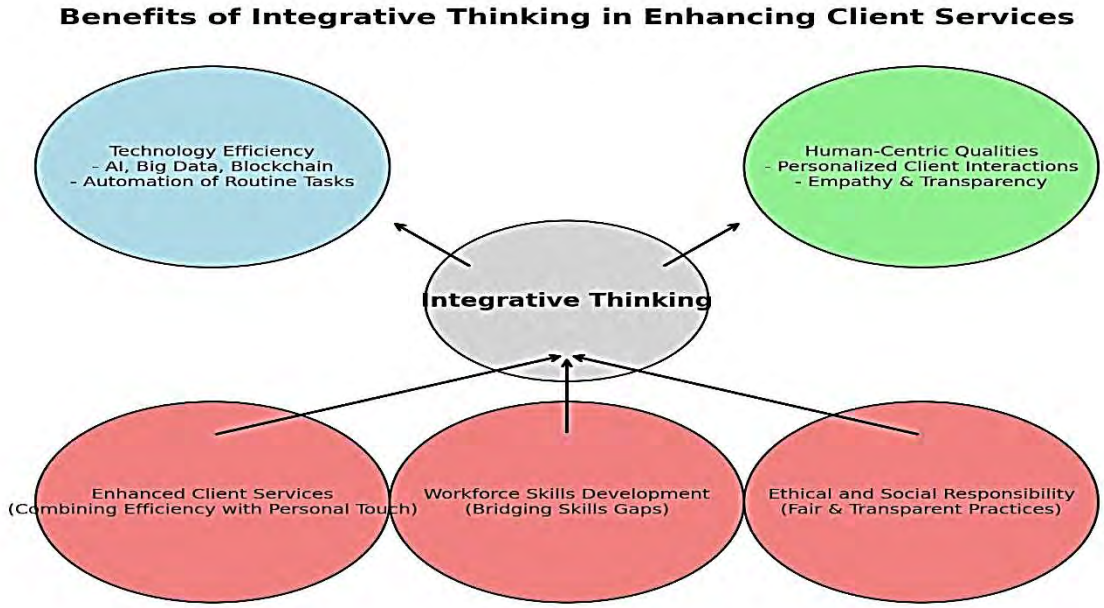

Figure 2.2: Benefits of Integrative Thinking in Enhancing Client Services

Source: Researcher's own

2.13 UNDERSTANDING THE CURRENT DYNAMICS OF DIGITAL TRANSFORMATION AND ITS IMPLICATIONS FOR EMPLOYMENT WITHIN THE SOUTH AFRICAN INSURANCE INDUSTRY

The fast integration of digital technologies is causing significant change in the South African insurance sector, as in its international counterparts. These developments redefine conventional business structures, operational procedures, and the character of industry activity (Chiguvi et al., 2023). This section investigates the state of the current digital transition in the South African insurance sector and examines how this can affect employment.

2.13.1 Drivers of Digital Transformation

Using cutting-edge technology including AI, blockchain, IoT and BDA propels digital transformation in the South African insurance industry. From underwriting and claims processing to customer service and fraud detection, these technologies are transforming many

facets of insurance activities. The digital transformation of the insurance sector now revolves mainly around AI (Eling et al., 2022). Through extensive data analysis, AI helps insurers forecast future trends and behaviours, enhancing risk assessment accuracy. By fast and effective responses to questions, AI-driven chatbots and virtual assistants improve consumer relations. At the same time, by evaluating several data sources, AI models evaluate risks more precisely, thereby improving pricing policies and lowering underwriting losses.

2.13.2 Role of Big Data Analysis

Another crucial technology that is changing the sector is BDA. It clarifies the insurer's customer behaviour, preferences and risk profiles. Using BDA would help insurance companies provide customised policies and pricing, thus improving client happiness. By spotting trends suggesting dishonest behaviour, BDA also improves fraud detection and prevention.

2.13.3 Benefits of Blockchain Technology

With regard to security and openness, blockchain technology presents significant benefits. Blockchain's immutable and distributed character ensures open and safe transaction records, lowering fraud and mistakes. Self-executing contracts with terms directly encoded into code, smart contracts simplify procedures, including policy issuing and claim settlement, thus enhancing efficiency. The blockchain ensures the accuracy and integrity of data exchanged across the insurance ecosystem, building trust among all engaged.

2.13.4 Impact of IoT Devices

IoT devices provide dynamic risk assessment and use-based insurance models by offering real-time data on covered assets, such as homes and cars. IoT sensors allow companies to offer preventive solutions and lower claims by identifying and reporting threats. Including IoT technology improves operational effectiveness and fits the industry's general objective of increasing customer satisfaction and service quality.

2.13.5 Employment Opportunities and Challenges

Including these technologies in the insurance sector offers both job possibilities and drawbacks. Positively, it generates new employment opportunities and requires a specific set of skills. For example, the increasing value of data analytics has raised the demand for data analysts and scientist's adept in data interpretation and the derivation of actionable insights. Likewise, AI and machine learning developers are increasingly needed to create, deploy and manage systems to

improve different insurance procedures. The design and management of blockchain solutions especially demand blockchain developers.

However, digital change does also cause job displacement, especially in roles that require repetitive work. AI and RPA pose the danger of automating routine tasks, including data entry (Vuohelainen, 2024). Automated customer service systems affect employment in this field by lowering the need for human customer service personnel. This displacement calls for reskilling and learning programmes to ensure that the workforce can learn new technology and grow the required competencies.

2.13.6 Reskilling and Upskilling Initiatives

Employees must be constantly relevant in a technologically changing sector using reskilling and upskilling. Employees who want to properly use new tools must be digitally literate. Programmes of ongoing education and development are required to enable staff members to pick up specific knowledge in blockchain, BDA and AI. Emerging hybrid positions combine technical knowledge with domain experience. Hence, people must adjust to the responsibilities that have been improved by technology. For instance, CRM roles are changing as technology answers common questions, lets human staff members concentrate on complex instances, and creates closer client interactions (Chen & Popovich, 2003).

2.13.7 Opportunities and Challenges of Digital Transformation

The digital transformation offers both possibilities and problems for the South African insurance sector. Some of the prospects presented by digital transformation are enhanced efficiency, better customer experience and the possibility to enter new market sectors. Faster service delivery, cost cutting, and operation simplification made possible by automation and advanced analytics allow data-driven insights to allow insurance companies to provide tailored goods and services, hence improving consumer loyalty and happiness. By allowing insurers to launch creative ideas such as microinsurance, digital tools help them increase their market share.

However, the adaptation of the worker to new technologies presents a great difficulty. Effective change management techniques (Cappiello et al., 2018) help employees acquire the required skills for new responsibilities. Negotiating legal terrain, particularly concerning data security and privacy, is challenging and requires constant attention. The first outlay for new technology may be significant, and hence a balance between expenses and expected advantages is necessary.

Furthermore, operational difficulties, including the integration of new technology with current systems, require careful design and implementation to prevent disturbances.

2.14 KEY METRICS FOR ASSESSING OPERATIONAL PERFORMANCE

In the insurance sector, operational success depends on important measures that provide understanding of client-service efficiency and efficacy. Customer satisfaction levels are an important indicator of operational performance, as they indicate the quality of contacts between consumers and insurance companies. High customer satisfaction points to a well-run service delivery system. It promotes long-term client loyalty and favourable word of mouth referrals, qualities vital to a company's steady development.

A helpful indicator directly related to service quality is also client retention rates. Tracking client retention rates over time helps insurance companies evaluate their operating plans and pinpoint areas for development. Claim processing speed and accuracy are still other important indicators of operational performance. The processing of claims indicates the operational efficiency of an insurance company, which directly influences the customer experience. Accurate and timely processing reduces conflicts, increases customer happiness and streamlines operations. Furthermore, tracking claims settlement rates helps to understand the insurer's capacity to meet its obligations properly and quickly, which is essential for credibility and trust in the market. Maintaining high standards for claim processing metrics helps insurers show dependability and professionalism in their client-service operations (Sunder & Kunnath, 2020).

The application of technology and automation in client-service operations is a crucial performance metric to evaluate operational efficiency. As the insurance sector undergoes a digital revolution, cutting-edge technologies such as AI and BDA have improved operational performance. Tracking indicators of technological adoption rates, such as using digital platforms for customer contacts and running automated claims-processing systems, allows one to evaluate the cost-effectiveness and efficiency improvements attained using technologically driven tactics. Maintaining personal touch and trust in client connections depends on balancing human-centric traits and technological developments reflecting efficiency.

2.14.1 Challenges in Achieving Optimal Operational Performance

The achievement of ideal operational performance presents significant difficulties for insurance companies negotiating the complexity of including innovative technologies into their operations. The need to close the talent gap resulting from the sector's digital revolution presents one main

challenge. Adopting AI, BDA, IoT and blockchain calls for particularised knowledge and experience that might not be easily accessible in conventional insurance teams; Morandini et al. (2023) emphasise that businesses have to make investments in programmes for upskilling and reskilling to fill this gap and provide their staff with the required skills to make good use of new technologies.

Furthermore, the speed of technical developments presents another challenge in achieving best operational performance in insurance client services. The terrain of digital tools and platforms is constantly changing, forcing organisations to be always adaptable and learnable. If not properly controlled, these changing surroundings may cause operational inefficiencies. Insurance companies must participate in proactive workforce planning to project future skill needs and match their technical expenditures with long-term strategic goals. Companies can better position themselves to address growing problems and take advantage of new opportunities in the digital age by encouraging an innovative and agile culture. In addition to technical and personnel-related difficulties, the ethical and social consequences of digital transformation pose a significant threat to insurance firms trying to maximise operational performance. Growing dependence on AI and BDA begs questions about justice in decision-making, openness and privacy. Insurance companies have to carefully negotiate these moral conundrums so that their technical developments do not erode the confidence and personal service that customers respect. Including ethical issues in their digital plans can help companies reduce risks and enhance closer customer interactions grounded in integrity and openness.

2.15 CHAPTER SUMMARY

In this study of the literature, the multifarious effects of technology integration within the South African insurance sector have been investigated, exposing significant benefits and major obstacles in digital transformation. Using cutting-edge technology, including blockchain, AI and BDA, will help transform insurance processes. AI improves important areas such as risk assessment, client segmentation and fraud detection, therefore enabling more informed and effective decision-making. BDA enables companies to use large databases for tailored client experiences and more precise underwriting. Meanwhile, blockchain technology presents unmatched transaction security and openness, simplifying claims processing and lowering fraud incidence.

However, integration of these technologies does not come without difficulties. Data privacy and security, which require strict protection of private data, are paramount. The difficulties of

combining modern technologies with current processes can require significant changes and outlays of funds. Furthermore, different degrees of technological knowledge between employees and customers can impede the efficient acceptance of these developments. Ethical problems further complicate the application of modern technologies, especially in relation to AI-induced prejudices and the possibility of employment displacement. Navigating legal and compliance rules, such as following data security laws and ensuring non-discriminatory practices in AI, adds levels of complexity that insurers have to handle.

Successful integration of technology depends on knowing and considering the viewpoints of many stakeholders. Customers value human engagement, especially for complicated problems, even if they value the efficiency of digital technologies, which emphasises the need for a mixed approach. Through reskilling and upskilling programmes, employees should get help to fit new roles created by technology development. Leading the company through this digital revolution and ensuring regulatory compliance while preserving ethical behaviour depend mostly on management.

Technology has a significant effect on employment in the insurance sector; While AI and automation could improve operational efficiencies, they also run the risk of causing job displacement. Insurers must concentrate on giving staff members the opportunity to learn new skills pertinent to a technologically advanced environment and funding comprehensive training initiatives to enable them to move into new employment. Furthermore, the financial outlay connected to the application of technology must be justified by well-defined ROI measures. It is essential to use a strategic approach and give top priority to technological projects with the best chances for value generation. Crucially important is also developing a strong IT infrastructure to protect against cyberattacks and ensure company continuity.

Getting to know the regulatory terrain is somewhat tricky. It is imperative to follow data protection regulations, including GDPR and the POPIA. South African insurers also have to constantly monitor AI algorithms to stop the continuation of prejudices, which calls for constant assessment and system modification.

The next chapter presents the research methodology used to achieve the objectives of the study.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter outlines the philosophical and methodological foundations of the study, detailing the research design, strategy and sampling approach used to explore digital transformation within the South African insurance sector. It describes the rationale for the chosen qualitative methods, including interviews and thematic analysis, and explains how data was managed, analysed and validated. Ethical considerations, trustworthiness criteria and the researcher's positionality are also addressed to ensure transparency and rigour throughout the research process.

3.1 INTRODUCTION

This chapter employs the research onion model, as illustrated in Figure 3.1, to systematically outline the research methodology adopted in this study. Research methodology is the structured approach to solving a research problem and includes the reasoning and strategies guiding data collection, analysis, and interpretation (Kothari, 2004). The research onion provides a layered framework that comprehensively addresses the key stages necessary to develop a sound research methodology (Melnikovas, 2018). As Sinha et al. (2018) explain, the analogy of onion represents the complexity of research, where each layer must be peeled back to reveal the core understanding of the phenomenon under investigation. In line with this framework, this chapter covers each layer of the research onion, detailing the research philosophy, research approach, research design, data collection and analysis methods, sampling strategy and ethical considerations for the study. These methodological decisions have been carefully aligned with the study's objectives, ensuring a robust and credible examination of digital transformation within the South African insurance industry.

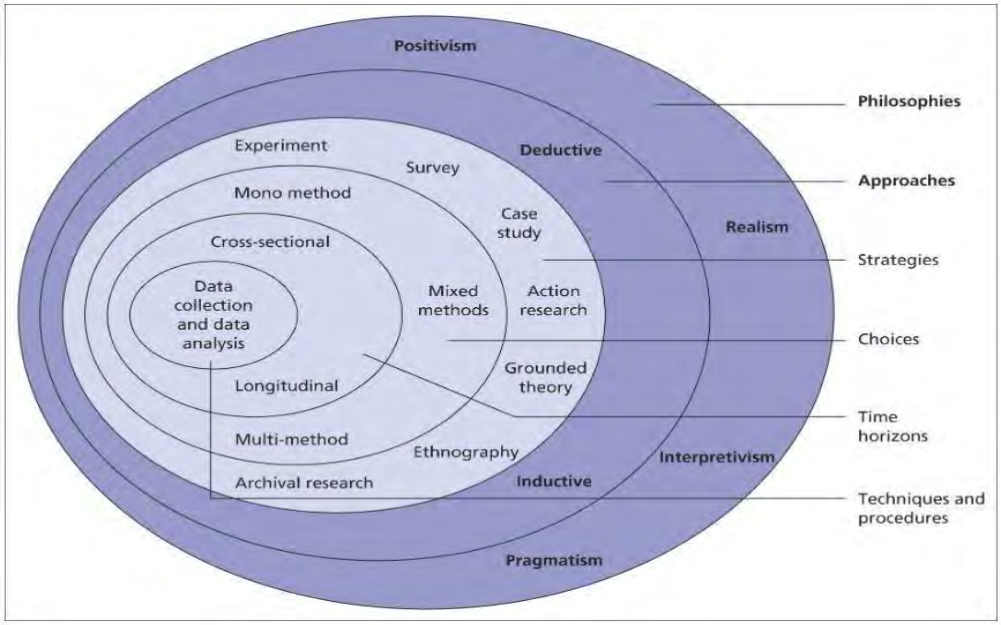

Figure 3.1: The Research Onion

Source: Saunders et al. (2018)

3.2 RESEARCH PHILOSOPHY

A research philosophy embodies the foundational beliefs and assumptions that guide the research process, including the methods of data collection, interpretation, and analysis (Al Zefeiti & Mohammad, 2015). This study employs an interpretivist philosophy, suitable for examining complex, context-dependent phenomena such as digital transformation, where understanding the subjective experiences is crucial to understanding the substance of the topic (Goldkuhl, 2012).

Ontology and epistemology constitute the fundamental branches of this philosophy. Ontology, concerning the essence of reality, recognises that the insurance sector encompasses various viewpoints and interpretations of digital transformation (Grix, 2002). Epistemology, the examination of knowledge, underscores that knowledge is subjective and socially produced (Crotty, 1998). This study adopts an interpretive thinking framework, which is grounded in the belief that reality is socially constructed and shaped by individual experiences, relationships, and contexts (Savin-Baden & Howell, 2012). Interpretive thinking varies from conventional thinking in that it does not seek objective, generalisable answers. Instead, it aims to understand how people make meaning of their experiences within specific environments.

In contrast, conventional thinking often associated with positivist paradigms assumes that reality is fixed and measurable, and typically relies on quantitative methods to uncover universal patterns (Levitt, 2019). Interpretive thinking, by comparison, embraces subjectivity, multiple perspectives and contextual depth, making it particularly suitable for exploring complex human phenomena (Parks & Tasca, 2021).

This framework supports the study's aim to investigate how industry professionals perceive and experience digital change, acknowledging that these experiences are influenced by their organisational settings and interpersonal relationships. Rather than imposing predefined categories or metrics, the study uses qualitative methods such as interviews and thematic analysis to capture participants' nuanced, lived experiences (Hechtlinger & Gati, 2019). The interpretive approach also aligns with the study's focus on meaning-making, allowing for a more in-depth understanding of how insurance professionals perceive and navigate digital transformation. This alignment between thinking framework, methodology, and research objectives ensures coherence and depth in both data collection and analysis (Levitt, 2019; Hill & Knox, 2021).

3.3 RESEARCH APPROACH

The research methodology outlines the ideas and logic that underlie the method of investigation. This study employs an inductive methodology, allowing theory to arise from the data rather than testing pre-existing assumptions. This method is consistent with theme analysis, which is especially appropriate for exploratory research in circumstances where known theoretical models are inadequate or insufficient in expressing the complexity of the phenomenon under inquiry (Braun & Clarke, 2006). Starting with data collection and iterative analysis, the inductive method allows themes and patterns to develop naturally. This approach is especially useful when investigating digital transformation in the South African insurance sector since it allows for the production of insights based on participants' real-life experiences and viewpoints.

3.3.1 Research Design

The study blueprint is the research plan, which outlines how data will be collected, reviewed, and interpreted to achieve the study's objectives. A qualitative research design was chosen because it allows for the investigation of complex, context-dependent phenomena that are difficult to quantify.

3.3.2 Philosophical Underpinnings (Research Paradigm)

Within the philosophical layer of the research onion, this study bases itself on the interpretive paradigm, guiding the research design, data collection and analysis. Rooted in a relativist ontology that maintains that reality is socially created and context-dependent rather than objective or singular, the interpretive paradigm examines complicated events like digital transformation in the insurance sector, where personal experiences and interpretations vary greatly depending on social and organisational settings. This point of view is well-suited (Alharah Sheh & Pius, 2020). In keeping with a subjectivist epistemology, this paradigm underlines that interactions between the researcher and the subjects co-create knowledge. This aligns with the goal of this study, which aims to know how South African insurance industry see and negotiate the changes brought about by digital transformation. This method enables a thorough investigation of participants' experiences, as it acknowledges that different personal, organisational and social elements impact their impressions.

Furthermore, reflexivity is required to adopt the interpretative paradigm. As a researcher, I always consider how my interactions with subjects and points of view could affect the course of the study and the results. This reflexive process ensures that the results are accurate and based on the reality of the participants. To help this, I kept a reflexive diary, recording my ideas, presumptions and prejudices throughout the research process. The selection of interpretive paradigms also promotes the use of qualitative techniques, such as semi-structured interviews, which are appropriate to capture a person's complex and context-specific experiences. The emphasis of this paradigm on subjective meaning-making fits the study's goal, knowing how experts create and view their experiences of digital transformation within the insurance industry. Placed within the interpretive paradigm, this study provides a sophisticated understanding of the digital revolution grounded in the social and cultural settings of the South African insurance sector. This philosophical basis ensures that the results are contextually meaningful and reflect the lived reality, supporting methodological and analytical approaches (Dudovskiy, 2018).

3.3.3 Research Strategy

The research strategy is the methodological framework that guides the investigation. Thematic analysis was chosen as the approach for this study because it allows participants to explore and articulate their experiences in a flexible yet structured manner, resulting in a more in-depth knowledge of how digital transformation affects operational performance and client services. In contrast to case studies or ethnography, thematic analysis does not require a pre-existing

theoretical framework, allowing patterns, themes and linkages to emerge spontaneously through an iterative data collection and analysis process. This technique is particularly suited to capturing the changing nature of digital change in the insurance industry.

3.3.4 Methodological Choice: Mono-Method Qualitative Approach

The methodological decision is a mono-method qualitative approach, meaning only qualitative techniques will be used to collect and analyse data. The ability of this method to record rich and in-depth insights into subjective experiences and perceptions of participants led to its selection (Basias & Pollalis, 2018). The impact of digital transformation on operational performance and client services in the South African insurance industry is one example of a complex, context-dependent phenomenon that is best explored through qualitative research. The mono-method approach ensures consistency in the philosophical alignment of the research design. Since the interpretive paradigm used in this study has a subjectivist epistemology and a relativist ontology, qualitative methods are best suited to comprehending how participants navigate their experiences and create meaning. A mono-method qualitative approach offers the depth and adaptability required to reveal the complex viewpoints of people in their particular organisational and social contexts, in contrast to mixed methods or quantitative approaches.

This strategy also allows semi-structured interviews as the primary technique to collect data, which permits conversational, open-ended conversational exchanges tailored to each participant's particular experiences of each participant (Roulston & Choi, 2018). Semi-structured interviews combine structure and flexibility, allowing participants to freely express themselves and share insights that may not have been seen during the design while still ensuring that important research topics are covered. The research objectives of this study, which include comprehending how digital transformation affects operational performance and client services, as well as its implications for the workforce in the insurance industry, are also well-suited to the mono-method qualitative approach. This method allows a thorough grasp of the phenomenon being studied by examining the social, cultural and organisational factors that influence the experiences of the participants. This study, which uses a mono-method qualitative approach, emphasises the depth and richness of data rather than its breadth, allowing for a targeted and in-depth analysis consistent with the interpretive paradigm. This methodological decision ensures that the conclusions are firmly based on the real-world experiences and offer practical advice based on the facts of the South African insurance market.

3.4 RESEARCH POPULATION AND SAMPLING STRATEGY

The research population is "the entire group of people, events, or objects of interest that the researcher wants to investigate" (El-Gohary, 2010, pp. 214–244). For this study, the research population comprised professionals within the South African insurance industry who were directly involved in or affected by digital transformation initiatives. A total of 21 participants were selected from ten insurance companies across the country: six large, well-established insurers and four smaller, niche providers. The participants represented diverse functions, including IT, operations, client services, digital strategy, and business analysis, ensuring a broad perspective on both technological and operational dimensions of transformation.

3.4.1 Units of analysis

The units of analysis were individual professionals working within the South African insurance industry who were engaged in or impacted by digital transformation. This included senior managers, IT specialists, operations staff and client-service representatives. The inclusion criteria required participants to have direct involvement in digital transformation projects or to be in roles significantly influenced by these changes. Exclusion criteria ruled out employees without exposure to digital transformation initiatives. Participation was voluntary and subject to informed consent, with participants required to review and sign consent forms outlining the purpose, procedures and ethical commitments of the study.

3.4.2 Sampling strategy

This study employed a multi-pronged nonprobability sampling approach, purposive, snowball and convenience sampling, to balance depth, diversity and practicality in participant recruitment. Each method played a complementary role rather than functioning in isolation.

- Purposive sampling was the primary technique. Participants were deliberately chosen based on their direct knowledge, experience, and involvement in digital transformation (Akkaş & Meydan, 2024). The inclusion criteria focused on professionals occupying roles in IT, operations, client services or strategy who could provide first-hand insights. Exclusion criteria eliminated participants without substantive exposure to transformation projects. Of the 21 participants, 15 were identified through purposive sampling, representing a deliberate cross-section across the ten organisations.

- Snowball sampling supplemented this process. Initial participants were encouraged to refer colleagues or industry contacts with specialised expertise in digital transformation. This technique was not organisation-specific but instead industry-oriented, enabling the researcher to access professionals across firms who were otherwise difficult to identify. Three participants were recruited through snowball referrals. This approach aligns with Noy's (2008) view of snowball sampling as a useful method for accessing hidden or hard-to-reach populations in qualitative research.
- Convenience sampling was applied in parallel to address practical considerations of accessibility, availability, and willingness to participate (Etikan et al., 2016). This method was particularly useful when scheduling constraints or geographic proximity determined feasibility. Three participants were selected via convenience sampling, ensuring representation from regions or organisational sites that were more easily accessible within the research timeframe.

The distribution of participants across the ten organisations was as follows: Organisation A (4), Organisation B (3), Organisation C (2), Organisation D (3), Organisation E (2), Organisation F (2), Organisation G (1), Organisation H (1), Organisation I (2), and Organisation J (1). This breakdown allows for replication of the study by other researchers while maintaining the confidentiality of individual identities.

The rationale for using three complementary techniques lies in the qualitative nature of the study. Purposive sampling ensured that only those with the most relevant expertise were included. Snowball sampling expanded the pool by leveraging professional networks to reach additional experts with unique insights. Convenience sampling ensured that practical barriers such as scheduling, and distance did not prevent the inclusion of otherwise valuable participants. Relying on a single method would have risked either narrowing the diversity of voices or excluding participants due to accessibility constraints. By combining the three, the study achieved both depth and breadth of perspectives, ultimately enriching the credibility and transferability of findings.

In qualitative research, the final sample size is guided by theoretical saturation, reached when no new themes emerge from additional data. While an initial estimate projected 30–50 participants might be required, saturation was achieved with 21 participants due to the richness and diversity of insights.

3.4.1 Units of Analysis

The units of analysis in this study are the individual professionals working within the South African insurance industry who are involved in or impacted by digital transformation initiatives. This includes senior managers, IT professionals, operations staff and client-service representatives, whose experiences and perspectives provide valuable insights into the research questions.

The final sample comprised professionals who met the purpose criteria of the study, focusing on direct experience with digital transformation. Participation required providing informed consent and engaging meaningfully with interview questions. Consent forms were distributed before data collection, providing a clear overview of the purpose, procedures and ethical commitments of the study. These forms served as proof of consent to participate and an assurance that all responses were gathered with full consent.

3.4.2 Sampling Strategy

This study adopted a nonprobability purposive sampling strategy, deliberately targeting individuals directly engaged in digital transformation activities within their organisations (Akkaş & Meydan, 2024). Focusing on participants with specific knowledge and experience, the objective sampling ensured the selection of those who were uniquely positioned to provide relevant information aligned with the objectives of the study. Additionally, snowball sampling allowed initial participants to refer colleagues or contacts with specialised knowledge in digital transformation. This approach broadened the participant pool by leveraging industry networks, helping to identify individuals with varied experiences and perspectives.

In qualitative research, sample size is guided by the principle of theoretical saturation, which is reached when additional data no longer yield new themes or insights, indicating that further collection would not enhance the study's value. Due to the complexity of the topic, it was initially estimated that reaching saturation might require a sample size of 30 to 50 participants. However, adjustments were made based on the richness of the data collected and the emerging themes. In parallel, convenience sampling was used to ensure practical accessibility to participants, considering factors such as availability, geographic proximity, and willingness to participate (Etikan et al., 2016). This method was selected as a cost-effective approach that allowed the researcher to work with respondents who were both accessible and met specific inclusion criteria.

Convenience sampling was deemed appropriate, though not probabilistic, as it was assumed that the target population shared homogeneous characteristics relevant to the study focus on digital transformation. Etikan et al. (2016) emphasise that convenience sampling assumes homogeneity within the target population. This study applied this assumption due to the shared professional context of participants within the South African insurance industry.

3.5 RESEARCH INSTRUMENT

A semi-structured interview guide was employed as the major data gathering tool for this study. This approach was chosen to strike a compromise between consistency and adaptability, allowing the researcher to meet the study's objectives while also giving participants the freedom to express their experiences, thoughts and perceptions in their own words.

The interview guide included open-ended questions designed to elicit participants' experiences with digital transformation and its implications for operational efficiency, client-service delivery, workforce adaptability and the adoption of emerging technologies such as AI, BDA, and blockchain. The questions were meant to be wide enough to accommodate a variety of professional contexts while being closely related to the study's research topic.

The design of the interview guide was directly informed by the research objectives, ensuring a clear relationship between the data obtained and the study's aim. Certain questions were designed to elicit feedback on the role and benefits of digital technology in increasing operational efficiency and client services, while others focused on the obstacles involved with digital transformation, notably in terms of human resources and workforce planning.

To promote transparency and traceability, Appendix E contains a thorough table that maps each interview question to its related research objective(s). This connection illustrates the instrument's relevance and contribution to meeting the study's core objectives.

3.5.1 Data Collection

Semi-structured interviews were used to gather qualitative data on digital transformation experiences in the South African insurance business (Adeoye-Olatunde & Olenik, 2021). This method was particularly well-suited for in-depth exploration of individual viewpoints while adhering to a flexible yet directed structure, as supplied by the interview guide. To suit participants' availability and interests, interviews were conducted both in person and online using platforms such as Microsoft Teams. This adaptable strategy ensured participants'

accessibility and comfort, adding to the authenticity and depth of their responses. All interviews were done in accordance with ethical research guidelines, which included getting informed consent and honouring individuals' wishes for audio recording and confidentiality.

The conversational style of the semi-structured interviews allowed participants to freely express themselves while also guiding the discussion toward crucial study topics. This permitted the investigation of operational changes, client-service modifications and workforce consequences related to digital transformation in their particular organisations. In terms of participant preferences, the interviews were conducted in person and online using Microsoft Teams or Zoom. According to Vogl (2013), in-person interaction was advocated where possible to improve observational insights. The freedom to select digital platforms enabled participants to choose the technique that best suited their schedules, which enhanced overall participation.

3.5.2 Justification for Using Interviews

The interviews were selected as the primary data collection method in this study due to their effectiveness in capturing the subtle experiences and perspectives of professionals in the South African insurance industry. Semi-structured interviews were particularly suitable, providing a structured yet flexible format that allows participants to elaborate on topics and share insights in their own words. This approach aligns with the interpretivist paradigm, which aims to understand phenomena through individuals' perspectives and supports the study's qualitative methodology. (Brinkmann, 2022). The semi-structured interview method allowed the researcher to explore specific themes in depth as they arose, reflecting the complexity and diversity inherent in the experiences with digital transformation. The interviews facilitated an examination of the effects of these changes on client services and operational performance, illuminating organisational and individual reactions to technological progress. The study used open-ended questions to allow participants to articulate their perspectives freely, thus cultivating substantial and significant discourse that improved the results.

This approach was further validated by the dynamic nature of digital transformation, characterised by the ongoing emergence of new technologies and issues. Semi-structured interviews provide the necessary flexibility to obtain the most up-to-date information, ensuring the research remained relevant to ongoing advancements in the insurance sector. Additionally, interviews facilitated a personal and participatory data collection approach, building confidence

with participants and enriching the depth of information obtained. (DeJonckheere & Vaughn, 2019).

3.5.3 Pilot Study

A pilot study is a small-scale feasibility test conducted to assess various aspects of the methodology before embarking on a more extensive investigation (Hruby, 2024). In the context of this study, the pilot was designed to verify the clarity, relevance and overall effectiveness of the interview questions developed to explore digital transformation in the insurance industry. Before finalising the research instrument, it was critical to ensure that the questions were understandable and engaging for participants, especially given the technical nature of some topics, such as AI, BDA, IoT and blockchain.

Following the recommendation of Fourches et al. (2010) to validate primary data sources for accuracy and reliability, the researcher conducted a pilot study to refine the instrument. Four participants, selected for their relevant experience within the insurance sector, provided feedback on each interview question. They were asked to evaluate the clarity of each question, the ease with which they could engage with the topics, and the perceived relevance of the questions to their industry roles.

The primary objective of this pilot study was to leverage the insights to enhance the research instrument, ensuring that all necessary adjustments were made before the main study. Feedback from pilot participants was invaluable, and some participants suggesting that terminology and phrasing be adjusted to improve accessibility for those with varying backgrounds, especially those less familiar with technical language. This step helped ensure that respondents from technical and nontechnical roles in the insurance industry could fully understand and engage with the questions.

Malmqvist et al. (2019) state that pilot studies are essential to identify unforeseen issues, such as ambiguous language or misinterpretations of key concepts. In line with this purpose, the pilot study in this investigation functioned as an internal pilot. They reviewed the questions individually, submitted feedback documents and engaged in follow-up discussions with me to clarify any concerns. Based on their feedback, the final interview guide was refined to ensure clarity, relevance and inclusivity, thus enhancing the reliability and validity of the data collected in the main study.

3.6 DATA MANAGEMENT AND STORAGE

During data collection, interviews were digitally recorded using secure and encrypted equipment to avert illegal access. The recordings were quickly transferred to a password-protected storage system to reduce the hazards associated with temporary device storage. Anonymisation protocols were executed during transcription, eliminating personally identifiable information, including names and job titles. Transcripts were designated with unique codes to enhance organisational and participant confidentiality. Data storage was complied with stringent institutional and international regulations, including the GDPR and the South African POPIA. All digital materials, including transcripts and notes, were housed on encrypted servers with limited access for study personnel. Physical documents, such as signed consent forms, were securely stored in a locked cabinet, providing enhanced protection for participant information. Data retention policies that comply with institutional requirements require secure storage of data for five years, after which it will be irrevocably destroyed. Digital data will be erased from all storage devices, while physical documents will be incinerated. This thorough approach demonstrates the study's dedication to ethical research techniques, protecting participant privacy and managing data according to applicable rules.

3.7 DATA ANALYSIS

Data analysis in this study involved systematically examining data gathered from interviews to identify key patterns and themes related to digital transformation in the South African insurance industry. According to Tracy (2024), data analysis allows researchers to combine information in a meaningful way, leading to interpretations that support accurate conclusions. This process included organising, sifting through and categorising the collected data to ensure that findings were comprehensive and relevant.

Thematic analysis (TA) served as the primary qualitative data analysis method. TA is a flexible, structured approach that enables researchers to detect, analyse, and report patterns or themes within qualitative datasets (Braun & Clarke, 2006). This approach is particularly appropriate for exploring digital transformation because it allows rich, detailed insights to emerge directly from participants' perspectives, reflecting the nuances and complexities of their experiences in the insurance business. Terry et al. (2017) describe various forms of TA, each offering unique insights depending on the research objective. Semantic TA was applied for this study, focusing on explicit meanings conveyed by participants based on their experiences with digital transformation. This method allowed for a straightforward interpretation of the participant

responses, particularly in relation to visible impacts on operational performance and client services.

Atlas.ti software was used to efficiently manage, code and organise the data, facilitating the analytical process. The software enabled the systematic application of codes across transcripts, making it easier to track recurring patterns and organise themes. This tool improved the transparency and traceability of the analytical process, ensuring rigour in the development of insights.

The analysis followed the six-phase framework outlined by Braun and Clarke (2006), providing a structured yet iterative process allowing continuous refinement of codes and themes (Byrne, 2022).

Phase One: Familiarisation with the Data

The first phase involved immersing myself in the interview transcripts by reading them repeatedly. This preliminary immersion adheres to the best practices recommended by Braun and Clarke (2021) and Ishtiaq and Creswell (2014), highlighting the importance of comprehensive engagement with qualitative data to capture significant insights accurately. This familiarisation helped generate a holistic understanding of the experiences and enabled early identification of patterns related to digital transformation. In alignment with Byrne (2022), I took initial notes on segments relevant to the research questions, particularly those concerning operational performance and client services.

Phase Two: Generating Initial Codes

Subsequent to the immersion phase, the researcher methodically produced first codes by recognising and annotating pertinent statements, phrases and concepts directly associated with the four study objectives. According to Maher and Dertadian (2018), the coding process involved segmenting the data into manageable units and assigning clear labels to encapsulate their meanings succinctly. The coding method involved dividing the data into manageable components and assigning precise labels to simply convey their meanings. This coding exercise yielded around 90 unique beginning codes. Examples of these codes include: ‘automation efficiency’, ‘customer personalisation’, ‘skill gap challenges,” “employee resistance,” “predictive analytics,” “older employees struggling’, ‘soft skills such as empathy,” “AI-driven job transformation’, ‘CRM automation, ‘structured change management,” “proactive feedback loops’, and “transparent communication on data usage’. These codes signify several aspects of

digital transformation encountered by industry professionals and provide essential components for theme creation. These codes were developed manually and supported through Atlas.ti, facilitating the categorisation and retrieval of coded excerpts. As recommended by Labra et al. (2020), the coding process emphasised keywords and phrases that represented emerging ideas relevant to the study objectives.

Phase Three: Searching for themes

The preliminary codes were methodically categorised and correlated with particular study enquiries:

- Research Question 1 on the use of AI, BDA, IoT and blockchain generated approximately 35 codes, highlighting operational efficiency, analytical insights, and technological facilitators, including AI-driven chatbots, automated data cleansing and blockchain-based fraud prevention.
- Research Question 2 (challenges in digital integration) yielded more than 30 codes, including budgetary limits, staff opposition, legacy system inertia, technology fatigue and cultural unwillingness to change.
- Research Question 3 (implications of digital transformation for employment) generated more than 30 codes, emphasising adaptation challenges faced by long-tenured employees, deficiencies in digital literacy, the rise of data-centric positions, and the increasing importance of both technical and interpersonal abilities.
- Research Question 4, concerning strategies for human-centric technology integration, produced approximately 25 codes, highlighting hybrid service models, transparent client communication, empathy, customised digital interactions and internal organisational strategies such as structured training and leadership-driven change management.

The similar codes were then clustered to form broader themes. According to Boyatzis (1998), themes should encapsulate essential aspects of the research focus. This phase involved developing potential themes that represented prominent trends in participant experiences, such as technological barriers, hybrid service models, client expectations and organisational readiness.

Phase Four: Reviewing themes

Themes were refined and reevaluated to ensure their internal coherence and relevance to the research questions. This required grouping related codes into coherent sub-themes and

overarching themes, ensuring alignment and logical flow. Braun and Clarke (2021) and Ridder (2014) underscore the recursive and reflective nature of theme development. According to Abdeldayem et al., 2020), some themes may need to be adjusted or consolidated based on their interpretive weight, while others were excluded if they lacked sufficient depth or consistency between participants.

Phase Five: Definition and Naming Themes

Each theme was clearly defined and labelled to reflect its conceptual boundaries and connection to the study objectives. Following the guidance of Xu and Zammit (2020), theme names were concise, distinctive and reflective of the lived realities shared by participants. This phase also involved situating the themes within the broader context of digital transformation in the insurance industry.

Ultimately, nine principal themes emerged from the enhanced inductive analysis (revised from twenty-six, indicating greater granularity).

1. Digital Transformation Impact (Operational Efficiency) Digital transformation has improved process efficiency, reduced errors and enhanced client responsiveness through AI and automation.
2. Technology Adoption Benefits: AI, big data and blockchain enable predictive insights, secure transactions and personalised services, driving service innovation.
3. Challenges in Digital Integration: High costs, legacy systems and employee resistance hinder seamless technology adoption and service improvement.
4. Cultural Barriers: Entrenched mindsets and outdated practices slow digital progress and limit the effective use of new tools.
5. Workforce Readiness and Skill Gaps: Digital skills are lacking, especially among older staff, highlighting the need for upskilling and adaptability.
6. Future of Employment and Roles: Automation is reshaping roles and creating demand for digital and soft skills like data literacy and empathy.
7. Human-Centric Digitalisation: Hybrid models that blend tech and human touch are key, especially in emotionally sensitive customer interactions.
8. Client Trust and Personalisation: Transparent communication and tailored services foster client trust and deepen engagement in digital channels.
9. Organisational Strategies for Digital Adoption: Change management, ongoing training and clear communication support adoption and strengthen human involvement.

To maintain the rigour and reliability of the findings, the researcher consistently examined, reviewed and validated these themes against the original participant data and relevant scholarly literature. This iterative methodology corresponds to Braun and Clarke's (2006) emphasis on TA as reflective and recursive, providing comprehensive and credible information on the impacts of digital transformation on operational performance and client services within the South African insurance industry.

Phase Six: Producing the Report

The final phase synthesised the thematic findings into a coherent narrative that addressed the study's research questions. As Terry et al. (2017) suggest, this stage went beyond a simple description to interpret the implications of the insights of the participants. The resulting report, detailed in Chapter 4, demonstrated how digital transformation has shaped operational performance and client services, highlighting both opportunities and challenges within the industry.

3.8 THEMATIC SATURATION ANALYSIS

To ensure the rigour and sufficiency of the qualitative analysis in this study regarding the effects of digital transformation on operational performance and client services in the South African insurance sector, a saturation analysis was methodically executed according to the methodology established by Guest et al. (2020). Thematic saturation denotes the point at which further data gathering ceases to produce novel material, concepts, or insights, indicating adequate depth and breadth to complete the research objectives.

This study meticulously analysed three primary markers during the saturation process.

1. Identify when existing codes necessitate no additional significant modifications.
2. Assessing the consistency and recurrence of emerging themes during interviews.
3. Identifying instances in which successive interviews did not yield new themes or substantial insights.

The progress towards thematic saturation was consistently evaluated throughout the data collection and coding stages. Codes were constructed inductively from participant responses rather than preconceived theoretical conceptions, facilitating a genuine and richly descriptive analysis. A saturation table monitored the formation and recurrence of themes, highlighting both frequency and data richness. The methodological justification for saturation monitoring and its

role as a critical indication of data sufficiency and thematic comprehensiveness are outlined in Table 3.1:

Table 3.1: Detailed tracking of thematic saturation

Interview	New Codes Introduced	Themes Reinforced	Key Observations
1	14	-	Foundation codes established (e.g., automation, efficiency)
2	11	6	Client responsiveness and initial AI benefits are mentioned
3	8	12	Resistance to change and digital skills gaps highlighted
4	5	14	Emergence of hybrid service models
5	4	15	Cultural inertia and client trust emerged
6–9	3 → 2	16+	No substantial new codes; consistent theme reinforcement
10	1	All major themes	Theme frequency stabilises; saturation achieved
11–13	0	All	Only richer contextual insights; no new themes

This comprehensive research established that the ninth interview definitively achieved thematic saturation. Interviews 11 to 13 offered enhanced contextual detail without introducing new themes, reinforcing the robustness and comprehensiveness of the qualitative findings that underpin the analysis in Chapter 4.

3.9 ETHICAL CONSIDERATIONS

Ethical considerations are critical in any research involving human participants, and this study was designed with a solid commitment to upholding ethical principles throughout the research process. The study obtained ethical clearance from Rhodes University Human Research Ethics Committee (RU-HREC), Reference Number – 2024-7942-9094 (Appendix A).

Participants were informed in detail about the purpose, methods, potential risks and benefits, empowering them to make informed decisions (Appendix B and C). A participant information sheet, written in accessible language, supported this process. Each participant provided their informed consent by signing a consent form confirming their understanding and voluntary participation.

Confidentiality and data protection were prioritised given the sensitive information collected regarding digital transformation in the insurance sector. All data were anonymised during transcription to protect the identities and professional reputations of the participants (Wiles et al., 2008). Data storage was in accordance with the GDPR, ensuring robust ethical research data management. In person interviews were held in private, neutral private locations and virtual interviews were conducted over secure encrypted platforms. Participants were assured of the confidentiality of their data and the security measures in place. Recognising potential power imbalances in interviews, especially with senior industry professionals, a conversational interview style was adopted to minimise hierarchy and encourage open dialogue (Braun & Clarke, 2019). Emphasising the expertise helped create mutual respect and ease, allowing more candid responses. All digital files, transcripts, and notes were securely stored on encrypted devices, and physical documents, such as signed consent forms, were stored away. Data will be retained for five years according to institutional requirements, after which it will be securely destroyed.

Reflexivity was incorporated as an ongoing ethical practice. Reflecting on my role as a researcher, I remained aware of how my positionality and assumptions could influence data collection and analysis (Dodgson, 2019). The search for feedback from colleagues and mentors helped to ensure ethical integrity. The principles of beneficence and nonmaleficence were central to the study, with the aim of contributing positively to understanding digital transformation while minimising participant risks. To avoid any discomfort, participants were offered the option to skip questions or withdraw at any time (Tracy, 2024). Upholding the principle of justice, the participants were chosen on their relevant experience, ensuring fairness in the selection process. All participants contributed voluntarily, with careful consideration, to avoid coercion or exploitation. Confidentiality and privacy will be respected when disseminating findings, with no identifying information revealed in published work. Participants interested in the study's results will receive a summary of findings, ensuring ethical transparency and contributing to knowledge sharing.

3.10 TRUSTWORTHINESS

Establishing credibility in qualitative research ensures that the results authentically reflect participants' experiences and viewpoints. This study's trustworthiness is guided by Lincoln and Guba's (1985) criteria: credibility, confirmability, dependability and transferability. To ensure credibility, triangulation was used by comparing data across multiple sources and roles, and

member checking was conducted to validate interpretations with participants. Confirmability was supported through a transparent audit trail and systematic coding procedures, ensuring findings were grounded in participant data rather than researcher bias. Dependability was achieved by following Braun and Clarke's (2006) six-phase TA process and documenting all methodological decisions. Transferability was enhanced by providing rich, contextual descriptions of participants, settings and organisational environments, allowing readers to assess the applicability of findings to similar contexts.

3.10.1 Credibility

Credibility ensures that the research findings are a true reflection of the views on digital transformation. A process called peer feedback was used to enhance the credibility of this study. The researcher collaborated with a colleague unrelated to the study, who reviewed the data collection process, the findings and the presentation of results to minimise bias and validate the interpretations. According to Barber and Walczak (2009), peer debriefing provides an external review of the research process, increasing credibility by examining early findings against the original data. In addition, member verification was used, allowing participants to review their interview transcripts to ensure that their responses were accurately captured and interpreted. This step allowed for any clarifications, ensuring that the findings authentically reflected the perspectives on the industry's digital transformation.

3.10.2 Dependability and Reliability in Qualitative Research

In qualitative research, dependability and reliability are closely linked, highlighting the importance of a consistent, transparent and trustworthy research process. Dependability refers to the stability of data over time and under varying conditions, while reliability denotes the systematic and replicable nature of the research approach, ensuring that findings are not the result of random or biased procedures (Deterding & Waters, 2021; Rose & Johnson, 2020).

To enhance both dependability and reliability in this study, a rigorous and transparent methodology was employed. Data were collected through face-to-face and video call interviews, offering flexibility and enabling rich, context-specific insights regardless of participants' locations. As Lindsay (2022) notes, video call interviews can yield data richness comparable to in-person interactions, thereby supporting the consistency of the data collection process.

A structured interview guide was consistently applied across all sessions to ensure that each participant discussed the same key topics, providing a uniform basis for data collection. During the analysis phase, a systematic coding technique was applied. This involved iterative evaluations where codes were refined and uniformly applied across data segments, enhancing the reliability of theme identification.

To further strengthen the study's dependability, peer review was integrated into the TA. Two additional researchers reviewed the findings, offering diverse perspectives, reducing potential bias and reinforcing the credibility of the interpretations. Intercoder reliability assessments were also conducted to ensure alignment with research objectives and consistency in coding practices.

Finally, the maintenance of a detailed audit trail documented all research activities, decisions and methodological steps. This transparency not only supports the replicability of the study but also provides a clear roadmap for future researchers, thereby enhancing the overall trustworthiness and reliability of the findings.

3.10.3 Transferability

Transferability illustrates the relevance of the research findings in many situations. This study aimed to ensure transferability by detailing the context, demographics and geographical features within the South African insurance sector. Prominent interviews were used to exemplify critical issues, providing insights that may be pertinent to other regions or sectors experiencing analogous digital revolutions. By meticulously describing the study's background, readers can assess the applicability of the findings in various insurance markets or other sectors that face digital transformation issues.

3.10.4 Confirmability and Reliability

Confirmability refers to the impartiality of the research and the reduction of researcher bias. In this study, participants were requested to evaluate their comments after the interviews, ensuring that the interpretations accurately represented their experiences and perspectives without undue influence by the researcher. For participants who consented to recording, hand transcription was performed, facilitating a meticulous analysis of both content and intent, thus ensuring precision in reflecting their perspectives. To mitigate bias, the interview guide used open-ended questions that prompted participants to articulate their ideas without steering them towards certain responses. This methodology, along with meticulous data classification into themes, facilitated

an impartial and transparent analysis of the data, ensuring that the results accurately reflect the experiences of industry professionals during digital transformation.

3.11 POSITIONALITY STATEMENT

A positionality statement is a crucial element of qualitative research, necessitating the researcher to recognise and contemplate how their background, experiences and viewpoints may impact the research process. This study reflects my positionality, influenced by my academic background, career experience in the insurance sector, and personal interest in digital change. Taking into account my expertise in the field, it was crucial to recognise how my previous knowledge and preconceptions could influence the research. This knowledge informed my methodology for data collection and analysis. The purpose of the study was to deliberately reduce bias by using open-ended questions in interviews and participating in reflexive practices throughout the research. Reflexivity involved consistently documenting my thoughts and comments on the research process and soliciting peer feedback to interrogate my interpretations. This continuous reflexive technique ensured that the researcher maintained critical awareness of their impact on the research, allowing the data to convey its own narrative. The positionality statement was included to ensure transparency in the research process, recognising how their identity and background may intersect with the research and affect the findings.

To ensure the trustworthiness of the findings, the study applied qualitative standards of credibility, confirmability, dependability and transferability. Credibility was supported through triangulation and member checking, ensuring that interpretations accurately reflected participant views. Confirmability was achieved by maintaining a transparent audit trail and grounding themes in participant narratives. Dependability was ensured through consistent application of Braun and Clarke's (2006) six-phase TA. Transferability was enhanced by providing rich contextual descriptions of participants and organisational settings, allowing readers to assess the relevance of findings to similar environments.

3.12 CHAPTER SUMMARY

This chapter delineated the extensive analytical approach used to examine the effects of digital transformation on operational performance and client services in the South African insurance sector. Using the research onion model, the methodological design methodically encompassed all aspects of the research process, from its interpretivist philosophical underpinnings to precise qualitative data collection and analysis methodologies.

The chosen interpretivist philosophy emphasised participants' subjective experiences and perspectives on digital transformation, which aligned with an inductive qualitative technique. To gain full contextual insights, a single-method qualitative approach was used, which included semi-structured interviews and document analysis. The purposive and snowball sampling approaches ensured that participants had relevant expertise, allowing for comprehensive subject coverage and depth of analysis.

The meticulous data analysis procedure included inductive coding (open, axial, and selective), ensuring authenticity and thematic richness in the results. A clear examination of theme saturation, affirming data sufficiency and thematic comprehensiveness, was included. Ethical considerations, including confidentiality, informed consent and adherence to GDPR and POPIA requirements, were rigorously observed. Methodological rigour was improved by pilot testing the study tools, integrating stakeholder feedback and ensuring trustworthiness through credibility, dependability, transferability and confirmability.

The chapter ended with a positionality statement. With this systematic and rigorous methodological framework, the study is now well prepared to deliver credible, significant and contextually relevant findings and interpretations in Chapter 4.

CHAPTER 4: PRESENTATION & DISCUSSION OF FINDINGS

4.1 INTRODUCTION

This chapter delineates the findings of the study, which investigates the influence of digital transformation on operational performance and customer service in the South African insurance sector. Guided by four fundamental research questions, the study explored how technologies such as AI, BDA, and blockchain are transforming internal processes, client interactions and workforce dynamics, while also examining the challenges and human-centred implications of these changes.

Data was gathered through semi-structured interviews with 21 participants, comprising senior managers, technology specialists, business analysts and client-service professionals. Participants were selected using purposive sampling to ensure experience-based insights into digital projects. Their diverse roles and viewpoints provide a comprehensive and multifaceted understanding of digital transformation in the sector.

The study employed an inductive thematic approach, allowing themes to emerge naturally from participant responses and offering a foundational understanding of their lived experiences. Nine themes were derived from over 90 initial codes, each aligned with the four research questions to ensure analytical coherence. Each theme is presented and substantiated using direct quotations from participants, accompanied by interpretive analysis. This structure ensures that participants' perspectives are prioritised while facilitating deeper integration of key topics.

The analysis is structured around the following four central research questions:

1. RQ 1: What role do artificial intelligence, BDA, and blockchain play in enhancing operational efficiencies within client services in the South African insurance industry?
2. RQ 2: What challenges do technological advancements present in meeting client-service expectations, and what underlying factors drive these challenges?
3. RQ 3: What is the current landscape of digital transformation in the South African insurance industry, and what implications does it have for operations management?
4. RQ 4: What capabilities are required for insurance companies to seamlessly integrate and balance technology with human-centric interaction?

4.2 PARTICIPANTS' PROFILES

This research sample consisted of 21 participants chosen using purposive-sampling to ensure the participation of people with substantial expertise in the South African insurance sector. Every participant is directly involved in digital transformation, particularly projects aimed at improving operational efficiency and client services, enabling them to provide comprehensive and practical views. Pseudonyms were assigned to ensure confidentiality, as promised prior to data collection, and these pseudonyms are cited throughout the findings to maintain anonymity. Cataloguing key demographic characteristics (as seen in Table 4.1) facilitates the elucidation of contextual elements, improves transparency and positions the research results within a coherent, comprehensible framework.

Table 4.1: Demographic characteristics of the participants

Participant	Gender	Age Group	Highest Qualification	Position/ Title	Years in Current Position
Participant **1**	Male	25–44	Bachelor's Degree	Senior Business Systems Analyst	>4
Participant **2**	Male	45+	Master's Degree	Digital Design Manager	>4
Participant **3**	Female	25–44	Honour's Degree	Business Analyst	>4
Participant **4**	Female	25–44	Master's Degree	Head of Customer Experience	1–2
Participant **5**	Female	25–44	Master's Degree	Human Capital Business Partner	<1
Participant **6**	Male	25–44	Bachelor's Degree	Wealth Planner	>4
Participant **7**	Male	25–44	Bachelor's Degree	RPA Developer	2–4
Participant **8**	Female	25–44	Honour's Degree	Service Manager	>4
Participant **9**	Male	25–44	Bachelor's Degree	Test Analyst - in Automation Testing	2–4
Participant **10**	Male	45+	Master's Degree	Digital Design Manager	>4
Participant **11**	Female	25–44	Master's Degree	Test Analyst	2–4
Participant **12**	Male	25–44	National Diploma	IT Support	2–4
Participant **13**	Female	25–44	Honour's Degree	Senior Business Analyst	2–4
Participant **14**	Female	25–44	National Diploma	Team Lead	1–2
Participant **15**	Male	25–44	National Diploma	IT Specialist	>4
Participant **16**	Female	25–44	None	Business Integration Specialist	<1
Participant **17**	Male	25–44	National Diploma	Team Leader	2–4

Participant	**Gender**	**Age Group**	**Highest Qualification**	**Position/ Title**	**Years in Current Position**
Participant **18**	Female	25–44	Post Graduate Degree	Senior Business Analyst	>4
Participant **19**	Male	25–44	Honour's Degree	Senior Specialist – Operational Risk Management	>4
Participant **20**	Female	25–44	Honour's Degree	Automation Manager	1–2
Participant **21**	Male	25–44	Master's Degree	BCM Specialist	<1

The participants encompassed a diverse array of professional positions, including senior management roles (e.g., Senior Business Systems Analyst, Digital Transformation Manager, and Head of Customer Experience), technical specialists (e.g., RPA Developer and Test Analyst) and client-service-oriented roles (e.g., Wealth Planner, Banking Lead and Automation Manager). This diversity of titles allowed the researcher to obtain insight from different functional areas within the insurance sector. The study intentionally incorporated individuals with varying tenure levels, from less than one year to over four years in their current roles, to improve the examination of digital transformation. This version presented a synthesis of novel and established perspectives on the use of digital technologies in daily operations, including both emerging and experienced insights.

The participants indicated a variety of educational qualifications, including national diplomas, bachelor's, master's and master's degrees. This combination of academic training illustrates the diverse capabilities propelling digital transformation efforts, including strategic management, analytics and specialised technical skills. This variety improves the dataset, providing diverse perspectives on how participants perceive the adoption and effects of digital technology.

Participants predominantly belonged to the 25 to 44 and 45+ age groups, strengthening an intergenerational perspective on technology adoption and operational transformations in the insurance sector. The sample included both male and female participants, facilitating gender-inclusive conversations regarding employee responses and engagement with technology developments.

The demographic diversity in age, position, education, and tenure facilitated a detailed examination of perceptions and implementations of organisational and technological changes within the South African insurance sector.

4.3 AN OVERVIEW OF THE DATA

The qualitative data offers extensive information on the effects of digital transformation on operational performance and client services in the South African insurance sector. The study, directed by four primary research objectives, examined the incorporation of new technologies and their dual function in improving operational efficiencies while preserving a human-centred approach. Initially, participants generally recognised substantial enhancements in operational efficiency resulting from digital transformation. The automation of regular processes, including claims-processing, data input and customer contact, has been shown to produce quantifiable advantages, such as diminished turnaround times, lowered error rates and improved accuracy. Technologies including AI, BDA, IoT and blockchain have shown to be highly influential, enhancing processes, refining data management and optimising resource distribution. Participants cited tools including AI-driven chatbots, automated data cleansing systems, predictive analytics dashboards and blockchain-based fraud detection mechanisms as revolutionary developments that improve daily operations.

Second, the research examined the problems presented by technological improvements in meeting customer service expectations. Participants highlighted significant challenges, including resistance to technological advancement, concerns about data security and privacy, and the financial investments necessary for new technologies. Resistance among personnel familiar with conventional approaches highlighted the need for effective change management measures. Participants identified age disparities in digital preparedness, employee apprehension around redundancy, cultural stagnation and a tendency among certain personnel to revert to traditional technologies like email and manual claims processing.

The participants emphasised the necessity of harmonising technological integration with human-centred client engagements. Although digital technologies enhanced ease and accessibility, empathy, emotional intelligence and personalised human connections remained essential, particularly in sensitive or difficult client situations. Participant accounts highlighted that although automation enhances efficiency, it cannot replicate emotional depth, build trust or provide compassionate service in contexts such as grief-related claims, policy disagreements or high-anxiety scenarios. Implementing hybrid service models that integrate automation with strategic human supervision is often advised to maintain client satisfaction and confidence.

The research aimed to identify methods for incorporating technology into client services, ensuring a harmonious relationship between digital innovation and human-centred contact.

Participants endorsed ongoing training and specialised skill development initiatives to rectify significant skill deficiencies, especially in digital literacy, AI, cybersecurity and data analytics. Significant focus was placed on inclusive upskilling strategies that address various levels of technological ability, particularly for long-term personnel who frequently encounter difficulties in adapting to new tools. Participants advocated for the establishment of mentorship programmes, centres of excellence and regular internal seminars as proactive strategies to facilitate digital transformation.

Ultimately, digital transformation was widely acknowledged as a beneficial catalyst for competitive advantage, operational improvements and enhanced client experiences. Optimal outcomes necessitate meticulous management of technology integration, ongoing worker training and unwavering commitment to maintaining the vital human element in client interactions. Themes include the evolution of job roles, the rise of data-centric positions (such as data analysts, automation specialists, and prompt engineers), and the increasing demand for soft skills like communication, empathy and critical thinking further underscore the changing dynamics of employment in the industry.

To exemplify the predominant language used by the participants, the researcher created a word cloud from their responses, omitting the research questions. The word cloud visually summarises frequently used terms from the interviews, providing further insight into the inter issues and reoccurring themes.

Terms such as ‘automation’, ‘data’, ‘client’, ‘technology’, ‘efficiency’, ‘training’, ‘empathy’, and “transparency” were extensively included, closely aligned with the primary themes identified in the TA. This visual instrument underscores the notion that digital transformation is closely connected to operational enhancements and the imperative to uphold human-centric principles. The word cloud acts as a supplementary representation of participant dialogue, improving the clarity and accessibility of the data analysis procedure.

A visual representation (Figure 4.1) of the responses of the participants, the terms most frequently used, illustrates the dominant concepts related to digital transformation in the insurance industry.

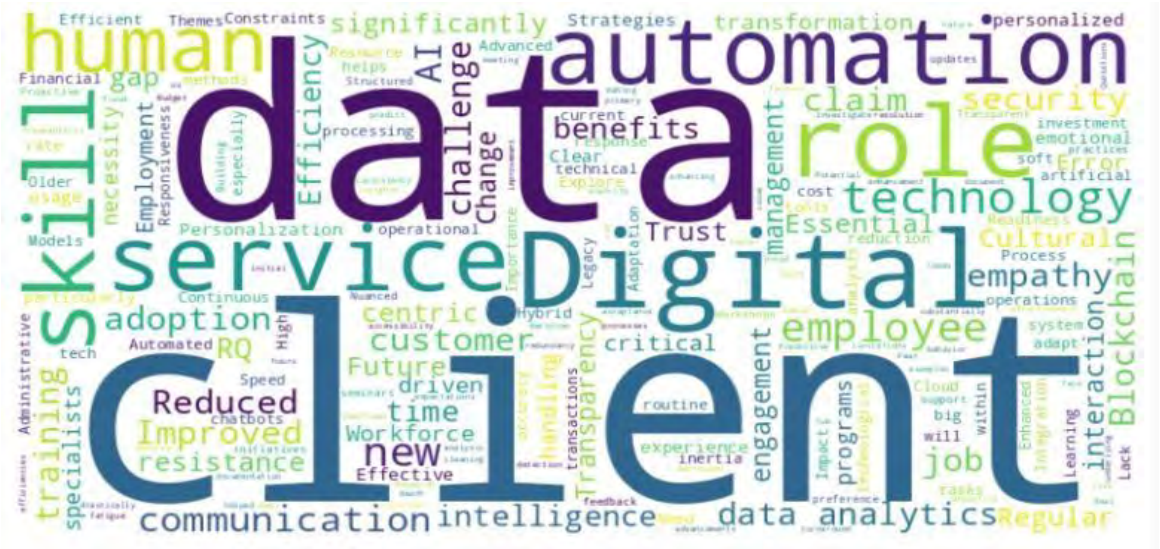

Figure 4.1: Word Cloud of Participant Responses

Source: Researcher's own

4.3.1 Theme 1: Impact of Digital Transformation (Operational Efficiency)

This theme examines the direct impact of digital transformation technologies, including automation, AI, and digitised systems, on operational efficiency in the South African insurance sector. Table 4.2 provides an overview of how Theme 1 is related to Research Question 1.

Table 4.2: Components of Theme 1

Research Question	RQ 1: What role do artificial intelligence, BDA, and blockchain play in enhancing operational efficiencies within client services in the South African insurance industry?
Themes	**Impact (Operational Efficiency)**
Sub-Theme	Process Efficiency Gains
Codes	Automation efficiency, Reduced claim processing time, Digital claims processing, Speed of operations, Efficient document handling, Improved data accessibility

Participant Quotations (examples)	'Automation has significantly improved accuracy and efficiency, particularly in handling death claims.' (Participant 1) 'Processes like claims handling or updating policies now take hours instead of several days.' (Participant 6) 'Automating data cleanup reduced what would have taken approximately 24 years of manual effort to just one year.' (Participant 8) 'Automated claim processing reduced claim settlement times by 30-50%.' (Participant 18) 'Digital transformation has significantly streamlined our processes, reduced manual effort and increased operational speed.' (Participant 14)
Codes	Faster issue resolution, Improved turnaround time
Participant Quotations (examples)	'Automation of repetitive tasks, streamlining processes and reducing human errors have all led to faster and more accurate decision-making.' (Participant 21) 'Everything in our operations is still manual, making processes prone to errors and manipulation, significantly affecting accuracy.' (Participant 12) 'Automation of repetitive, time-consuming tasks significantly reduced errors.' (Participant 7)
	'Digitisation allows immediate responses to client incidents such as vehicle theft, greatly improving service.' (Participant 4) 'Communication with clients is faster and more convenient through platforms such as MS Teams, Zoom, WhatsApp or video calls.' (Participant 19) 'The integration of AI into the claims system significantly improved responsiveness and client satisfaction.' (Participant 10) 'Digital tools like chatbots, WhatsApp buttons and self-service portals have improved the customer experience.' (Participant 14) 'Claim processes reduced drastically from days to a few hours after automation.' (Participant 5)
Codes	Error rate reduction, improved data accuracy, consistency in service quality, Reduced manual tasks
Participant Quotations (examples)	'Since automation, the errors in the documentation have decreased substantially.' (Participant 9)

4.5.1.1 Process efficiency gains

Process efficiency is a key area in which digital transformation has had a visible impact. Participants consistently reported that automation has drastically reduced turnaround times for

routine insurance operations. Thanks to digital workflows, tasks that once required several days, such as claims processing and policy updates, are now completed within hours.

Participant 1 stated, 'Automation has markedly enhanced accuracy and efficiency, especially in processing death claims', reflecting a common perspective that digital tools alleviate the burdens of laborious human work. Participant 6 remarked, 'Processes such as claims handling or policy updates now require hours rather than several days.' These operational enhancements promote internal efficiency and advantage clients by facilitating faster service delivery.

Participant 8 articulated the extent of this transformation, stating: 'Automating data cleanup diminished what would have required roughly 24 years of manual labour to merely one year', underscoring the significant efficiency that automation facilitates.

Participant 18 added, 'Automated claim processing reduced claim settlement times by 30– 50%', offering a quantifiable measure of impact. At the same time, Participant 14 affirmed that "Digital transformation has streamlined our processes, reduced manual effort and increased operational speed significantly".

4.3.1.2 Reduced error rates

Another critical outcome of digital transformation is the reduction of human errors in document processing, claims validation and other administrative functions. Participants described how automation accelerates workflows and ensures consistency and accuracy, which is especially crucial in the highly regulated insurance environment.

Participant 9 observed that 'Since automation, errors in documentation decreased substantially', illustrating a tangible benefit for compliance and service reliability. Participant 21 supported this by stating: "Automating repetitive tasks, streamlining processes and reducing human errors have all led to faster, more accurate decision-making.'

However, not all organisations have adopted automation at the same pace. Participant 12 highlighted this issue: "All aspects of our operations remain manual, rendering processes susceptible to errors and manipulation, which considerably impacts accuracy.' This disparity between manual and automated processes exemplifies the persistent digital divide within the sector. Despite these disparities, Participant 7 said that "Automating repetitive, time-consuming

tasks significantly reduced errors," affirming that error reduction is among the most immediate and consequential advantages of automation.

4.3.1.3 Improved client response

The participants also emphasised the impact of digital technologies on improving responsiveness to client needs. Faster turnaround times, seamless communication and AI-assisted support systems have helped insurers provide more responsive, client-focused service experiences.

Participant 4 explained that 'Digitisation allows immediate responses to client incidents such as vehicle theft, greatly improving service', demonstrating how speed translates into client value. Participant 19 stated, 'Communication with clients is expedited and more convenient via platforms such as MS Teams, Zoom, WhatsApp or video calls," indicating the transition to omnichannel communication models. Participant 10 emphasised the impact of AI on client service, stating 'The incorporation of AI into the claims system markedly improved responsiveness and client satisfaction.' The capacity to engage with clients instantaneously, respond to inquiries swiftly and rectify problems efficiently was always regarded as a competitive edge. Participant 14 stated, 'Digital tools such as chatbots, WhatsApp buttons and self-service portals have improved customer experience," emphasising that technology improves customer journeys when implemented judiciously. Participant 5 stated that "Claim processes diminished significantly from days to mere hours after automation', illustrating the comprehensive effect of digital responsiveness.

4.3.1.4 Alignment with the research question

This theme directly addresses Research Question 1, which examines the impact of AI, big data and blockchain on improving operational efficiencies in client services. Participant reflections illustrate how automation and digitised systems have optimised procedures, minimised human error and enhanced responsiveness to client requirements. The research underscores the importance of integrated communication platforms and AI-driven interfaces in transforming service delivery standards. These technological interventions are not simply technical enhancements but strategic facilitators of agility, precision and service excellence within the insurance sector.

Theme 1, *Impact of digital transformation (operational efficiency)*, demonstrates how AI, BDA and blockchain contribute to enhancing client services in the insurance sector. AI streamlines operational processes by automating routine tasks such as claims assessment, fraud detection and customer queries, thereby reducing errors and turnaround times while improving responsiveness. BDA strengthens decision-making by generating predictive insights from large volumes of structured and unstructured data, enabling insurers to anticipate client needs, personalise services and allocate resources more efficiently. Blockchain technology further enhances operational efficiency by ensuring secure, transparent and tamper-proof transaction records, which not only reduce administrative burdens but also build trust in digital platforms. A practical example is AXA's blockchain-based "Fizzy" flight-delay insurance (Hoffman, 2021) which uses smart contracts to automatically trigger claims payments without the need for client intervention, saving both time and operational costs. Together, these technologies minimise inefficiencies in traditional processes, reduce operational costs and support faster, more reliable service delivery. By integrating AI, BDA and blockchain, insurers are better positioned to provide streamlined, client-focused services that align with rising expectations for accuracy, speed and transparency.

4.3.2 Theme 2: Benefits of Technology Adoption

This theme highlights the concrete advantages after incorporating modern technologies, namely BDA, AI, and blockchain, into operational and customer service operations. Table 4.3 provides an overview of the theme.

Table 4.3: Overview of Theme 2

Research Questions	**RQ 1:** What role do artificial intelligence, BDA, and blockchain play in enhancing operational efficiencies within client services in the South African insurance industry?
Themes	Technology Adoption Benefits
Sub-Theme	Advanced-Data Analytics
Codes	Predictive analytics, Customer insights, real-time data analysis and Improved decision-making

Participant Quotations (examples)	'BDA helps us predict the behaviour and preferences." (Participant 4) 'Big data analytics allows a deep understanding of customer needs, resulting in hyperpersonalised services'. (Participant 3) 'BDA provides insights into customer behaviour, enabling relevant and targeted services.' (Participant 21) 'AI and analytics provide precise insights into customer conduct for proactive solutions.' (Participant 4)
Theme	AI Integration Benefits
Sub-Themes	Process automation through AI, AI chatbots effectiveness, automated data cleaning and Efficient customer engagement
Participant Quotations (examples)	'AI tools improve transparency and accuracy in project tracking and reporting.' (Participant 2) 'AI anticipates customer needs and potential problems, enabling proactive services.' (Participant 18) 'Integrating AI into CRM tools significantly improved handling large volumes of client queries efficiently.' (Participant 9) 'AI-driven chatbots have helped significantly speed up response times.' (Participant 7)
Sub-Theme	Blockchain Potential
Codes	Data security enhancement (Blockchain), traceability of transactions, Enhanced fraud detection, Transparency through blockchain
Participant Quotations (examples)	Blockchain technology offers enhanced security and transparency, ensuring data integrity and significantly reducing fraud risks. ' (Participant 15)
	'The use of voice biometrics has greatly reduced fraud risks, with an error rate of less than 0.5%, making processes safer and more reliable.' (Participant 19) 'The block chain significantly improved security and transparency in transactions'. (Participant 13)

The findings indicate better decision-making, increased client involvement, and fortified data integrity, increasing operational efficiency and trust.

4.3.2.1 Advanced data analytics

The participants emphasised the crucial impact of BDA on improving decision-making and customisation techniques. Real-time client analytics enable insurers to more effectively discern behavioural trends, predict client needs and customise services accordingly.

Participant 4 remarked: 'BDA facilitates the prediction of client behaviour and preferences', highlighting how data supports proactive service approaches. Participant 3 noted that 'BDA facilitates a deep understanding of customer needs, leading to hyperpersonalised services', corresponding with overarching objectives of improving customer satisfaction and retention. Participant 21 stated that 'BDA offers insights into customer behaviour, facilitating targeted and pertinent services', emphasising that analytics serves as a back-office tool and a strategic asset in the delivery of frontline services.

BDA enables insurers to generate predictive insights for risk assessment, improve underwriting accuracy, and design personalised products that align with client needs and behaviours (Sun et al., 2021). For example, BDA allows insurers to identify patterns in large datasets that would be invisible through traditional methods, thereby improving both operational decision-making and customer satisfaction. BDA benefits multiple stakeholders by enabling predictive modelling and personalised services. Employees benefit from better decision-support systems, which improve efficiency and reduce errors. Clients benefit from tailored insurance products, dynamic pricing models and proactive engagement – such as reminders about risk-reducing behaviours – that make services more relevant and valuable (Sun et al., 2021). Insurers gain improved underwriting accuracy and enhanced risk management through data-driven insights, reducing exposure to losses.

Blockchain offers clear benefits through security, transparency and automation of transactions. Insurers benefit from reduced fraud and administrative burden due to immutable records and smart contracts (Tapscott & Tapscott, 2016). Employees benefit from streamlined processes and fewer disputes, allowing for greater efficiency in handling customer claims. Clients benefit directly from faster, tamper-proof claims settlement and enhanced trust in digital platforms. AXA's *Fizzy* flight-delay insurance is a prime example, where smart contracts automatically triggered claims payments, sparing clients the burden of filing paperwork while simultaneously reducing operational costs for the insurer (Hoffmann, 2021).

4.5.2.2 Benefits of AI integration

Integrating AI tools, specifically chatbots, intelligent automation and AI-enhanced analytics, was generally perceived as advantageous for optimising operations and enhancing client service. These tools alleviate the workload of human agents by automating repetitive enquiries, expediting decision-making and enhancing accuracy in processing and reporting.

Participant 4 stated, 'AI and analytics offer accurate insight into customer behaviours for proactive solutions', emphasising the role of AI in advancing strategic initiatives. Participant 2 stated, 'AI tools augment transparency and precision in project tracking and reporting', indicating that internal processes have evolved to be more data-driven and accountable. Proactive service delivery emerged as a consistent theme, with Participant 18 asserting: "AI anticipates customer needs and potential issues, facilitating proactive services." Participant 9 highlighted the capacity to manage substantial data volumes, stating: 'Integrating AI into CRM tools significantly improved the efficient handling of numerous client inquiries'. Participant 7 affirmed the impact on the client's perspective, stating that 'AI-driven chatbots have significantly accelerated response times', illustrating AI's role in improving service availability and responsiveness.

In practice, AI delivers measurable advantages for insurers, employees and clients. Insurers benefit from automation of repetitive tasks, such as claims assessment and fraud detection, which reduces administrative costs and operational inefficiencies (PwC, 2020). Employees benefit because automation frees them from routine work, allowing them to focus on complex, client-facing interactions. Clients benefit through faster claims processing, 24/7 support via AI-powered chatbots, and more accurate detection of fraudulent activities, which protects them from unnecessary delays and costs (Deloitte, 2019).

4.3.2.3 Blockchain potential

Despite being in the nascent stages of adoption among numerous insurance companies, stakeholders recognised the capacity to improve data security, mitigate fraud and increase transaction transparency. Its decentralised architecture provides a secure mechanism for storing sensitive information, particularly concerning claims processing and contract verification.

Participant 15 stated, 'Blockchain technology provides improved security and transparency, protects data integrity and markedly diminishing fraud risks', underscoring blockchain's significance in high-risk data. Participant 19 stated, 'The implementation of voice biometrics has significantly reduced fraud risks, achieving an error rate below 0.5%, thus improving the safety and reliability of processes', indicating that blockchain is integral to a larger initiative for multifaceted digital security. Participant 13 succinctly articulated the advantages: 'Blockchain markedly improved security and transparency in transactions', indicating the increasing interest in using blockchain to improve accountability and regulatory compliance.

These findings align with Kakashvili (2024), who describe blockchain as a revolutionary tool for ensuring trust, transparency and immutability in digital ecosystems, particularly within financial and insurance services.

Blockchain offers clear benefits through security, transparency and automation of transactions. Insurers benefit from reduced fraud and administrative burden due to immutable records and smart contracts (Tapscott & Tapscott, 2016). Employees benefit from streamlined processes and fewer disputes, allowing for greater efficiency in handling customer claims. Clients benefit directly from faster, tamper-proof claims settlement and enhanced trust in digital platforms. AXA's *Fizzy* flight-delay insurance is a prime example, where smart contracts automatically triggered claims payments, sparing clients the burden of filing paperwork while simultaneously reducing operational costs for the insurer (Hoffmann, 2021)

4.3.2.4 Alignment with the research question

This theme closely pertains to Research Question 1, which investigates the role and benefits of AI, BDA, and blockchain in enhancing operational efficiencies within client services.

The data indicates that these technologies facilitate enhanced decision-making, client personalisation, corporate transparency and data protection. Insurers enhance operational efficiency, mitigate risks and provide high-value, responsive services by incorporating these tools into client-facing and back-end systems. The results indicate that technology adoption is not merely a modernisation effort but a crucial facilitator of performance and client happiness.

4.3.3 Theme 3: Challenges in Digital Integration

Despite the considerable operational benefits of digital transformation, stakeholders recognised multiple obstacles that impede its comprehensive execution within the South African insurance sector. These issues largely pertain to financial limitations, personnel opposition and cultural obstacles, all of which influence the rate and efficacy of digital adoption. This theme answers RQ 2: What challenges do technological advancements present in meeting client-service expectations, and what underlying factors drive these challenges? These are encapsulated in Table 4.4.

Table 4.4: Overview of Theme 3

Research Question	RQ 2: What challenges do technological advancements present in meeting client-service expectations, and what underlying factors drive these challenges?
Themes	**Challenges in Digital Integration**
Sub-Themes	Financial Constraints
Codes	High costs of technology, budget limitations, Resource scarcity and financial risk of investment
Participant Quotations (examples)	'The primary challenge we face is the high initial investment cost of advanced tech tools." (Participant 2)
Sub-theme	Resistance to Change
Codes	Employee resistance to technology, Fear of redundancy,
Participant Quotations (examples)	'Older employees are especially resistant to shifting to new technologies.' (Participant 16)
Sub-theme	Employee Resistance and Fatigue
Codes	Low acceptance of new methods, Technology fatigue
Participant Quotations (examples)	'The biggest challenge has been overcoming the fear of change.' – (Participant 21) 'Yes, there has been some resistance and barriers... particularly from employees who are used to traditional processes and methods. ' – (Participant 21) 'Old workers stuck in the old way of working.' – (Participant 20) 'Employees fear that automation and AI will lead to job losses.' – (Participant 18) 'Yes, the resistance came from elderly staff who are not tech-savvy.' – (Participant 17) 'Business users sometimes prefer defaulting back to what they know... You must always remind them not to use the email system. '– (Participant 11) 'There is a bit of resistance there… the moment we talk about automations, people start thinking that automation will take their job.' – (Participant 13) 'People are still not embracing change... There is resistance from those employees who have been here a long time." – (Participant 12)

4.3.3.1 Financial constraints

The substantial expense of implementing modern technologies has become a notable obstacle. Participants articulated that expenditures associated with acquiring digital infrastructure, training personnel and sustaining new systems contend with other operational goals, especially in resource-limited contexts.

Participant 2 stated: 'The main challenge we encounter is the substantial initial investment required for advanced technological tools', highlighting a prevalent issue among organisations, particularly smaller insurers. These financial constraints frequently impede the digital shift or lead to incomplete implementations that fail to realise the full advantages of transformation. Investment reluctance may arise from ambiguity about ROI and the hazards associated with the adoption of untested or rapidly advancing technologies.

4.3.3.2 Resistance to change

A persistent obstacle is the opposition to change, especially among employees familiar with conventional working practices. This reluctance frequently originates from apprehension, apprehension of obsolescence, apprehension of failure or apprehension of interacting with unfamiliar systems. Participant 16 noted that 'Older employees are particularly resistant to adopting new technologies', highlighting the generational dynamics that affect acceptability.

Participant 21 affirmed this, adding that "The primary challenge has been to overcome fear of change," and added, "Indeed, there have been some resistance and obstacles... especially from employees accustomed to conventional processes and methods." These replies indicate that resistance is not inherently malevolent but arises from a deficiency in confidence, training and support. Participant 20 remarked: 'Veteran employees are entrenched in traditional methods', but Participant 13 elaborated, "There exists a degree of resistance'. When automation is mentioned, people often perceive it as a threat to their employment. Although occasionally overstated, these fears are genuine and require resolution via clear communication and smart change management.

4.5.3.3 Employee resistance and fatigue

In addition to general resistance to change, there is evidence of significant employee disengagement, especially among those who perceive themselves as excluded from digital upskilling prospects. Participant 18 remarked, 'Employees are apprehensive that automation and AI will result in job displacement.' Participant 17 stated: 'Indeed, the resistance primarily originated from older staff members who lack technological proficiency.' Participant 11 provided a pertinent example: 'Business users occasionally prefer to revert to familiar practices... one must consistently remind them to refrain from using the email system," underscoring how entrenched habits can impede adoption. Participant 12 noted, 'Individuals

continue to resist change...” There is opposition from long-term employees,” highlighting institutional inertia and the psychological impact of many alterations over time.

These comments suggest that resistance extends beyond mere unfamiliarity with tools and encompasses more profound issues such as digital fatigue, diminished digital confidence and inadequate change communication.

4.3.3.4 Alignment with the research question

This theme directly addresses Research Question 2, which explores the nature and underlying factors of challenges posed by technological advancements in meeting client-service expectations.

The findings emphasise that resistance to change, financial constraints and worker preparedness are not ancillary challenges, but fundamental to comprehending the reasons behind the potential stagnation or success of digital transformation. Overcoming these obstacles requires more than technological investment; it requires deliberate change management, employee participation, and inclusive methods that empower all personnel with the mentality and competencies essential for success in a digital ecosystem.

4.3.4 Theme 4: Cultural Barriers

This theme examines the cultural factors within insurance organisations that obstruct the adoption of digital technologies in answer to **RQ 2:** What challenges do technological advancements present in meeting client-service expectations, and what underlying factors drive these challenges? Table 4.5 provides an overview of the theme.

Table 4.5: Overview of Theme 4

Theme	**Cultural Barriers**
Research Question	RQ 2: What challenges do technological advancements present in meeting client-service expectations, and what underlying factors drive these challenges?
Sub-Themes	Organisational or Legacy Culture
Codes	Cultural resistance, Generation gap in technology use, Legacy system constraints, Cultural inertia

Theme	**Cultural Barriers**
Participant Quotations (examples)	'Cultural inertia and the reliance on legacy systems hinder the pace of digital adoption.' (Participant 18) 'The insurance industry is still doing things the old way... that's what is frustrating me a lot.' (Participant 12) 'They are still holding on to how they have been working all along… it is difficult for them to embrace change.' (Participant 12) 'Some employees are comfortable with existing processes and reluctant to adopt new ones.' (Participant 18) 'Older employees may face challenges in embracing these changes... the age gap can significantly impact technology adoption.' (Participant 21)

Participants highlighted that despite the availability of technology, cultural opposition and established legacy attitudes can hinder or undermine the effectiveness of digital transformation attempts.

4.5.4.1 Organisational inertia and legacy practices

Several participants recognised organisational inertia as a primary factor contributing to the slow rate of digital adoption. Despite the introduction of technologies, antiquated mindsets and obsolete procedures persist in the daily operations of certain organisations. Participant 18 noted that 'Cultural inertia and dependence on legacy systems impede the speed of digital adoption', indicating that a transformation in attitude and organisational culture is necessary alongside technological advancements.

Participant 12 expressed a similar sentiment, stating: 'The insurance industry continues to operate in a traditional way... that's what frustrates me significantly." A subsequent quote from the same participant further exemplified the challenge: "Employees are still clinging to their established work practices... It is difficult for them to accept change." These comments suggest that resistance frequently pertains not to the technology itself, but to the disturbance it introduces to entrenched routines

4.5.4.2 Cultural resistance and generational gaps

The participants emphasised that generational gaps contribute to resistance. Senior staff were frequently characterised as reluctant to interact with new digital systems, which can be regarded as intricate or intimidating. Participant 18 remarked: 'Certain individuals are at ease with established methods and hesitant to embrace new ones', highlighting that a propensity to familiarity can hinder innovation.

Participant 21 stated: "Older employees may encounter difficulties in adapting to these changes... the generational divide can considerably influence technology adoption", highlighting a wider issue of digital literacy and adaptation disparities among age groups. This generational friction frequently leads to disparate adoption, with younger personnel more quickly embracing change, while older staff require more systematic assistance and motivation. 4.5.4.2 Alignment with the research question

The findings highlight that cultural issues, especially resistance arising from traditional behaviours and generational gaps, can be equally significant as technical constraints. To achieve successful digital transformation, companies must face cultural obstacles by promoting a change-oriented culture, offering specialised training and developing leadership that exemplifies adaptation and digital confidence. In the absence of deliberate initiatives, the adoption of technology is likely to remain superficial or stagnate.

4.3.5 Theme 5: Workforce Readiness and Skill Gaps

This theme highlights the concrete advantages participants noted after incorporating sophisticated technologies, particularly BDA, AI, and blockchain, into operational and client-service operations. This theme closely pertains to Research Question 1, which investigates the role and benefits of AI, BDA, and blockchain in enhancing operational efficiencies within client services. Table 4.6 provides an overview of the theme.

Table 4.6: Overview of Theme 5

Theme	**Workforce Readiness and Skill Gaps**
Research Question	RQ 3: What is the current landscape of digital transformation in the South African insurance industry, and what implications does it have for operations management?
Sub-themes	Workforce Adaptation Challenges
Codes	Older employees struggling, Adaptation to automation challenges, Learning curve of new technology.
Participant Quotations (examples)	Long-serving staff struggle significantly to adapt to emerging digital platforms. (Participant 11) 'Older employees struggling with new tools have made some processes slower to transition.' (Participant 12) 'People are still not embracing change... There is resistance from those employees who have been here for a long time.' (Participant 12)
Sub-theme	Digital Skill Deficiencies

Theme	**Workforce Readiness and Skill Gaps**
Codes	Limited technical skills, lack of AI skills, Insufficient data analytics expertise, cloud computing knowledge gap.
Participant Quotations (examples)	'Most current employees lack in-depth skills in data analytics and artificial intelligence.' (Participant 17) 'The lack of technical knowledge, especially in AI and data, makes it difficult to adopt new systems.' (Participant 17)
Sub-theme	Upskilling Requirements
Codes	Need for frequent training, Skill mismatches in employees, Employee readiness variations and continuous learning necessity.
Participant Quotations (examples)	'Continuous training programmes are critical in helping employees adapt to new technology.' (Participant 15) 'The company still needs to invest more in training and adopting new tools.' (Participant 9) 'You need to upgrade... anything to do with data science, data analytics, algorithms, machine learning, which is where we are going.' (Participant 13)

The insights indicate improved decision-making, expanded client interaction and fortified data integrity, all contributing to increased operational efficiency and trust.

4.5.5.1 Advanced data analytics

The participants emphasised the crucial impact of BDA on improving decision-making and customisation techniques. Access to real-time client insights enables insurers to discern behavioural patterns, predict client requirements and customise services accordingly.

Participant 4 stated, 'BDA aids in forecasting client behaviour and preferences', highlighting how data facilitates proactive service approaches. Participant 3 noted that 'BDA facilitates a deep understanding of customer needs, leading to hyperpersonalised services', which corresponds with overarching objectives of enhancing customer satisfaction and retention. Participant 21 stated that 'BDA offers insights into customer behaviour, facilitating targeted and pertinent services', thus highlighting that analytics serves not only as a back-office tool, but as a strategic asset in frontline service delivery.

4.5.5.2 Benefits of AI integration

The use of AI tools, especially chatbots, intelligent automation and AI-enhanced analytics, is generally perceived as advantageous for optimising operations and enhancing client service.

These tools alleviate the workload of human agents by automating repetitive enquiries, expediting decision-making and enhancing accuracy in processing and reporting.

Participant 4 stated, 'AI and analytics offer accurate insight into customer behaviours for proactive solutions', emphasising the role of AI in advancing strategic initiatives. Participant 2 stated, 'AI tools augment transparency and precision in project tracking and reporting', illustrating the transformation of internal operations into a more data-driven and accountable framework.

Proactive service delivery emerged as a consistent theme, with Participant 18 asserting: "AI anticipates customer needs and potential issues, facilitating proactive services." Participant 9 highlighted the AI's capacity to manage substantial data volumes, stating, 'Integrating AI into CRM tools significantly enhanced the efficient handling of large client query volumes.' Participant 7 affirmed the impact on the client's perspective, stating that 'AI-driven chatbots have significantly accelerated response times', illustrating AI's role in improving service availability and responsiveness.

These benefits are reflected in the literature by Wamba (2022), who highlight the potential in improving organisational agility and customer satisfaction through real-time support, predictive capabilities and automation.

4.5.5.3 Blockchain potential

Despite being in the nascent stages of adoption among numerous insurance companies, stakeholders recognised the capacity to improve data security, mitigate fraud and increase transaction transparency. Its decentralised framework provides a secure mechanism for storing sensitive information, particularly pertinent in claims processing and contract verification.

Participant 15 stated, 'Blockchain technology provides improved security and transparency, ensuring data integrity and substantially decreasing fraud risks," thereby confirming thus the importance of the blockchain in a high-risk data context. Participant 19 stated: 'The implementation of voice biometrics has significantly reduced fraud risks, achieving an error rate below 0.5%, thus improving the safety and reliability of processes', indicating that blockchain is integral to a wider initiative for layered digital security. Participant 13 succinctly articulated the advantages: 'Blockchain markedly improved security and transparency in transactions', indicating the increasing interest in using blockchain to improve accountability and regulatory compliance.

4.5.5.4 Alignment with the research question

The data indicate that these technologies facilitate enhanced decision-making, client personalisation, corporate transparency and data protection. Insurers may enhance operational efficiency, mitigate risks and provide high-value, responsive services by incorporating these solutions into both client-facing and back-end systems. Data indicate that technology adoption is not merely a modernisation effort, but a crucial facilitator of performance and client happiness.

4.3.6 Theme 6: Future of Employment and Roles

This theme examines the impact of the digital revolution on the job market in the South African insurance sector. This theme directly addresses Research Question 3, which seeks to understand the current landscape of digital transformation and its implications for operations management within the South African insurance industry. Table 4.7 presents an overview of Theme 6.

Table 4.7: Overview of Theme 6

Themes	**Future of Employment and Roles**
Research Question	RQ 3: What is the current landscape of digital transformation in the South African insurance industry, and what implications does it have for operations management?
Sub-Themes	Job Role Evolution
Codes	Migration of administrative roles, Automation of routine tasks, Reduced call centre roles, AI-driven job transformation
Participant Quotations (examples)	'Routine administrative roles, especially data entry, will largely be automated.' (Participant 21) 'Automation has changed the way death claim processes are handled. We used to do everything manually." (Participant 1) 'AI is getting so good that it will take over a lot of roles like underwriting, contact centres.' (Participant 2) 'Companies are now migrating manual processes online and trying to reduce costs by cutting some of the people.' (Participant 9) 'We automated the ones that could easily be built with logic and left humans to investigate the rest.' (Participant 8)
Sub-Themes	Emergence of New Roles
Codes	New role: data analysts, new role: automation specialists, increased cybersecurity roles, roles in client experience design

Themes	**Future of Employment and Roles**
Participant Quotations (examples)	'Automation specialists and data analysts will be critical future hires.' (Participant 3) Automation is transforming traditional call centre roles, making upskilling essential. (Participant 5) Roles involving routine tasks like claim processing are highly vulnerable to automation. (Participant 6) Soft skills such as empathy, critical thinking and communication are becoming increasingly important. (Participant 16) 'Roles in the data field, like analysts and data engineers, will become vital to insurance.' (Participant 1) 'New roles such as a prompt engineer for AI will be needed." (Participant 2) 'I started as a service specialist and became a business process analyst; that change came because of digital processes.' (Participant 8)
Sub-Theme	Essential Future Skills
Codes	Emphasis on soft skills, Skills in data science, Essential technical literacy, Future job: cloud specialists
Participant Quotations (examples)	'Soft skills such as empathy, critical thinking and communication are becoming increasingly important.' (Participant 16) 'Communication is the most important… You need to engage clients and make them understand the transformation.' (Participant 13) 'Soft skills such as empathy, critical thinking and communication are becoming increasingly important.' (Participant 16) 'Using CRM automation makes communication with clients easy, email, push notifications, everything.' (Participant 20)
Sub-Theme	Employment Impact from Automation
Codes	Job security concerns, reduction of workforce size, uncertainty in employment stability, need for reskilling programmes
Participant Quotations (examples)	'There is noteworthy anxiety about job security due to automation." (Participant 1) 'There will be many changes, manual client services roles will be cut due to automation.' (Participant 9)

The participants considered the displacement of old roles by technology, the emergence of new job categories, and the transformation of the skill environment. Although technology improves efficiency and generates uncertainty about future positions, worker adaptation and strategic planning are crucial.

4.3.6.1 Evolution of the job role

The participants broadly recognised that automation alters the essence of labour, especially in administrative and support positions. Manual and repetitive processes, including data entry, contact centre operations, and claim initiation, are progressively managed by intelligent systems. Participant 21 stated: 'Routine administrative tasks, particularly data entry, will predominantly be automated.' Participant 1 stated, 'Automation has transformed the management of death claim processes; previously, all tasks were performed manually.' Participant 2 affirmed this, asserting that 'AI is advancing significantly and will assume a substantial portion of roles such as contact centres.'

Numerous individuals identified organisational cost-reduction strategies as a primary impetus for automation. Participant 9 observed that 'Organisations are transitioning manual processes to digital platforms and attempting to decrease expenses by eliminating certain positions'. Participant 8 remarked: 'We automated those that could be readily constructed with logic and assigned humans to examine the remainder.' These thoughts highlight a substantial transition from conventional human labour to logic-driven automated processes.

4.3.6.2 Emergence of new roles

Although automation eliminates specific positions, participants saw an increasing need for new roles centred on the management, support and optimisation of digital technologies. Positions like automation specialists, data analysts, AI prompt engineers, client experience designers and cybersecurity experts were commonly referenced.

Participant 3 stated: 'Automation specialists and data analysts will be essential future recruits.' Participant 5 remarked, "Automation is revolutionising conventional call centre positions, rendering upskilling imperative." Others emphasised that positions associated with regular operations, such as claims processing, are especially susceptible unless reformed. Participant 6 stated, 'Positions that entail repetitive tasks, such as claims processing, are particularly susceptible to automation.'

This alteration in role composition shows the industry's increasing dependence on analytical and technical competencies, with a strategy transition to client-focused service models. Participant 2 stated, 'Emerging positions such as prompt engineers for AI will be essential', while Participant 1 remarked, 'Positions in the data sector, including analysts and data engineers, will be crucial for the insurance industry.'

Participant 8 recounted a personal career transition, demonstrating how digital transformation facilitates internal mobility: 'I started as a service specialist and advanced to a business process analyst; that transition occurred due to digital processes.'

4.3.6.3 Essential future skills

Alongside technical proficiency, participants emphasised the growing significance of soft skills, including empathy, communication, adaptability and critical thinking. These skills were crucial to negotiating hybrid work structures, where human connection must improve technology. Participant 16 underscored: "Soft skills such as empathy, critical thinking and communication are becoming progressively vital." Participant 13 articulated: 'Communication is paramount…" It is essential to include clients and ensure that they understand the shift. These responses underscore the need for human-centred service provision in a technology-driven environment.

Participant 20 articulated that CRM automation facilitates client communication: "Utilising CRM automation simplifies communication with client email, push notifications, everything," illustrating the necessity for the coexistence of digital tools and interpersonal abilities.

4.3.6.4 Impact on employment from automation

Despite the opportunities created by technology, participants expressed significant anxiety about job security and employment stability. Automation efficiency gains are often accompanied by role reductions or restructuring, creating uncertainty for workers.

Participant 1 stated, 'There is significant anxiety around job security due to automation', while Participant 9 noted, "There will be many changes; manual client services roles will be cut due to automation'. Furthermore, Participant 1 warned that 'Automation and other technologies are taking over all the mundane tasks', implying that any roles reliant on these functions may be eliminated or greatly reduced.

These concerns suggest that organisations risk alienating their workforce and weakening morale during digital change without supportive transition strategies, such as reskilling, internal mobility pathways and transparent communication.

4.3.6.5 Alignment with the research question

The findings reveal a dual narrative: While automation replaces certain roles, it generates demand for new positions and skillsets. Reflections from participants on shifting roles, job insecurity and the need for technical and soft skills highlight the complexity of workforce

transformation. These insights underscore the importance of proactive workforce strategies, combining upskilling, reskilling and employee support, to ensure that the digital future is efficient but also inclusive and sustainable.

4.3.7 Theme 7: Human-Centric Digitalisation

This theme explores how insurance professionals perceive the importance of maintaining a human-centred approach within increasingly digitised service environments. It answers RQ 4: What capabilities are required for insurance companies to seamlessly integrate and balance technology with human-centric interaction? Table 4.8. provides an overview of the theme.

Table 4.8: Overview of Theme 7

Theme	**Human-Centric Digitalisation**
Research Question	RQ 4: What capabilities are required for insurance companies to seamlessly integrate and balance technology with human-centric interaction?
Sub-Theme	Hybrid Service Models
Codes	Combined human-tech interactions, choice of service methods, Human oversight necessity
Quotations Participant (examples)	'Hybrid models, which combine technology with human interaction, work best to retain customer satisfaction'. (Participant 8) 'Clients prefer options, some want self-service apps, but others still want to talk to someone on the phone.' (Participant 1)
Sub-Theme	Importance of Human Interaction
Codes	Importance of empathy, Customer preference for human service, Human touch in complex scenarios
Quotations Participant (examples)	'Human empathy remains essential, particularly in sensitive cases such as claim handling.' (Participant 10) 'People who are going through emotions... they still need that emotional part of things.' (Participant 13)
Sub-Theme	Empathy in Client Service
Codes	Emotional intelligence is necessary, Service personalisation, Client emotional support, Subtle human responses
Participant Quotations (examples)	'Even with automation, we still need people to verify, explain and handle sensitive cases, empathy matters'. (Participant 13) 'Empathy is the heartbeat of exceptional client service, demanding emotional intelligence, personalised support and profound human connections." (Participant

Theme	**Human-Centric Digitalisation**
	9)

While embracing digital tools like AI and automation, participants emphasised that technology should not replace human empathy, emotional intelligence or personal interaction, especially in emotionally sensitive or complex client situations.

4.5.7.1 The value of hybrid service models

A dominant perspective among the participants was the need for hybrid models that integrate human and technological elements. These models offer clients the convenience and speed of digital tools while providing access to human interaction when needed, mainly when emotional nuance or trust is essential. Participant 8 shared: 'Hybrid models, combining technology with human interaction, work best to retain customer satisfaction', reinforcing the idea that digital tools should enhance, not replace, human connections. This flexible approach allows clients to choose how they engage, improving overall service experience and satisfaction. Participant 1 echoed this sentiment: "Clients prefer options, some want self-service apps, but others still want to talk to someone on the phone." The emphasis here is not to replace traditional support but offering clients the autonomy to engage naturally and reassuringly.

4.5.7.2 The importance of human interaction

Participants emphasised that, notwithstanding the transition to automation, human empathy is vital, particularly in client services addressing sensitive issues such as death claims, policy disputes or financial losses. Digital platforms often fail to provide emotional support and comprehension. Participant 10 said: 'Human empathy is crucial, especially in delicate situations such as claim processing', indicating that digital tools should be used judiciously, with defined limits that maintain the human element where it is most effective. Participant 13 stated, "Individuals experiencing emotions... still require the emotional aspect, highlighting the psychological and relational aspects of customer service that technology alone cannot address. This emphasises the significance of presence, patience and tailored assistance in emotionally intense circumstances.

4.3.7.3 Empathy in client service

The participants emphasised the need for empathy and emotional intelligence as essential qualities in service delivery, beyond mere connection. This entails comprehending implicit client

apprehensions, customising service methodologies and reacting with empathy. As digital procedures gain prominence, the likelihood of impersonal service increases. Participant 9 articulated this thought effectively: 'Empathy is the essence of outstanding client-service, necessitating emotional intelligence, tailored assistance and complicated human connections.' Participant 13 reiterated: 'Despite automation, human oversight is essential for verification, explanation and management of sensitive cases; empathy is crucial.' These answers underscore that emotional resonance cannot be delegated to algorithms. It continues to be an essential human asset and strategic advantage in an industry where trust and client connections are vital.

Participant observations suggest that human-centred values should be central to digital transformation initiatives. Although automation and digital platforms improve efficiency and accessibility, they cannot substitute for the profound understanding, reassurance and emotional connection offered by human service providers. Hybrid service models that integrate digital ease with compassionate human engagement are the most sustainable and client-centric trajectory in the insurance industry. Organisations must prioritise emotional intelligence training, provide adaptable service channels and create digital technologies that augment rather than diminish the human element.

4.5.7.4 Alignment with the research question

This issue closely relates to Research Question 4 by exploring capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.

. The focus on hybrid service models, the indispensable role of empathy, and the strategic significance of emotional intelligence demonstrate a clear understanding of the necessity to reconcile digital transformation with human-centric values. These insights address the research question by providing actionable recommendations for organisations aiming to uphold trust, personalisation and emotional connection in increasingly digital client-service contexts.

4.3.8 Theme 8: Client Trust and Personalisation

This theme focuses on how openness, personalisation and responsiveness establish and sustain trust in digitally transformed insurance services. This theme immediately pertains to Research Question 4 by delineating tactics to cultivate client trust and personalisation amid digital disruption. Table 4.9 presents an overview of the theme.

Table 4.9: Overview of Theme 8

Theme	**Client Trust and Personalisation**
Research Question	RQ 4: What capabilities are required for insurance companies to seamlessly integrate and balance technology with human-centric interaction?
Sub-Theme	Maintaining Client Trust
Codes	Data security assurance, transparent data practices, Clear privacy policies, and building client confidence
Participant Quotations (examples)	'Clear and transparent communication on data usage is essential to build trust.' (Participant 20) 'You need to start communicating...' clients are more interested in what it benefits them. ' (Participant 13) 'You also need to start communicating what steps you are taking to ensure that their information is safe.' (Participant 13)
Sub-Theme	Personalisation of Digital Services
Codes	Personalised client journeys, customised digital experiences, Individualised customer communication
Quotations Participant (examples)	'We prioritise tailoring our digital services to each client.' (Participant 12) 'We use CRM automation to tailor communications, such as push notifications and targeted emails.' (Participant 20)
Sub-Themes	Transparency of Data Usage
Codes	Proactive client engagement, Regular updates to clients, responsiveness to client feedback, Client-centric customisation
Quotations Participant (examples)	'In a client-centric world, transparency in data usage is the foundation that builds trust, enabling proactive engagement, timely updates and truly personalised experiences." (Participant 3) 'In a data-driven environment, transparency is key – clients need to know why you are collecting their information.' (Participant 13)

As organisations implement increasingly automated and data-centric technologies, panellists underscored that maintaining client trust required deliberate actions to ensure transparency, responsiveness and a human-centric approach.

4.5.8.1 Maintaining client trust through transparency

Participants consistently expressed the necessity for explicit and honest information regarding the collection, storage and use of client data. The rise of digitalisation intensifies client

apprehensions regarding privacy, security and data ethics. Participants indicated that insurers should transcend mere compliance and proactively cultivate trust through transparency and honesty regarding digital operations. Participant 20 responded, 'Clear and transparent communication regarding data usage is vital to establish trust," highlighting that transparency is both a regulatory obligation and a strategic imperative for building lasting customer relationships.

Participant 13 emphasised this point, asserting: 'You must begin to convey the measures you are implementing to safeguard their information' and further remarked, "You need to start communicating... clients are primarily concerned with their own benefits. ' These observations suggest that trust arises from safeguarding information and explicitly communicating the advantages clients derive from deployed technology. Participants observed that when clients perceive themselves as educated and in control, they are more inclined to engage with and adopt digital services.

4.5.8.2 Personalisation of digital services

The participants recognised that personalisation is essential to improve client satisfaction in the digital age. Insurers are expected to customise services and communications to align with individual client profiles and preferences, facilitated by data analytics and AI. Participant 12 underscored this methodology: "We prioritise customising our digital services for each client. ' The customised service enhances value and significance, allowing clients to feel acknowledged and understood, especially through interactions with automated systems.

Participant 20 stated: 'We use CRM automation to customise communications, such as push notifications and targeted emails', demonstrating the current application of personalisation in daily operations. Participants emphasised that personalisation must encompass communication tone, product suggestions, service delivery methods, and engagement frequency, ensuring that each client perceives their experience as distinctive and contextually relevant.

4.5.8.3 Transparency of data use and proactive engagement

Trust is further strengthened by continuous, proactive communication that keeps clients informed, engaged and empowered. Participants emphasised the necessity of regular updates, prompt feedback and tailored digital experiences as fundamental to a client-centric strategy. Participant 3 emphasised this principle: 'In a client-centric environment, transparency in data

use is the cornerstone that cultivates trust, facilitating proactive participation, prompt updates and genuinely personalised experiences.'

Participant 13 reiterated this perspective: 'In a data-driven context, openness is essential; clients must understand the rationale behind collecting their information." These responses underscore that transparency and personalisation must function simultaneously: It is insufficient to simply gather data and customise services; clients seek to understand the 'how' and 'why' underlying these processes. This requires insurers to take a proactive stance in their interactions, ensuring transparency not only after issues arise but also from the very beginning of each engagement.

The results indicate that trust and personalisation are essential components of effective digital transformation in the insurance sector. Transparency in data practices, response to feedback and customised digital offerings build more robust, loyal client connections. In a progressively automated environment, insurers must deliberately construct systems and experiences that protect and empower clients, ensuring that digital transformation is perceived as an advantage rather than an obstacle. Organisations that emphasise openness and personalisation will be more adept at gaining client trust and maintaining a competitive edge in a digitally driven marketplace.

4.5.8.5 Alignment with the research question

The focus on transparent data practices, customised digital services and proactive engagement exemplifies a client-centric strategy that integrates digital innovation with human values. These findings illustrate how technology can be incorporated into customer services to enhance rather than diminish trust. The findings emphasise transparency, responsiveness, and personalised experiences, providing practical advice to ensure that digital transformation enhances rather than supplants the relational and ethical aspects of customer contact.

4.3.9 Theme 9: Organisational Strategies for Digital Adoption

This theme illustrates the internal policies and practices of insurance organisations that facilitate effective digital transformation. This theme directly addresses Research Question 4 by elucidating the internal organisational techniques that facilitate the smooth incorporation of technology into client services. Table 4.10 provides an overview of the topic.

Table 4.10: Overview of Theme 9

Theme	**Organisational Strategies for Digital Adoption**
Research Question	RQ 4: What capabilities are required for insurance companies to seamlessly integrate and balance technology with human-centric interaction?
Sub-Theme	Change Management Strategies
Codes	Structured change management, Incremental technology adoption, Leadership-driven initiatives
Participant Quotations (examples)	'We have successfully used structured change management frameworks to drive digital adoption.' (Participant 14) 'There is still some resistance – we need to use change management to help staff understand that technology is there to assist." (Participant 13) 'We just need the change management in place to give people an understanding that AI is not there to do your job." (Participant 13)
Sub-Theme	Training and Development Initiatives
Codes	Regular employee training, workshops and seminars, Digital training resources, Mentorship programmes
Participant Quotations (examples)	'Regular workshops and targeted seminars have been effective in bridge skill gaps." (Participant 19) 'We have had workshops and training programmes for automation tools, AI and data analytics." (Participant 7) 'A centre of excellence helps the team explore and share tool learnings, it encourages experimentation." (Participant 9)
Sub-Theme	Effective Communication Practices
Codes	Effective internal communication, regular feedback mechanisms, Clear technological guidelines, Stakeholder engagement strategies
Participant Quotations (examples)	'Consistent communication about new tools and their benefits helps minimise resistance.' (Participant 6) 'Communication is the most important – take the journey with clients and make them understand the transformation.' (Participant 13) 'We are now more proactive with feedback – clients say what they didn't like, and we improve fast." (Participant 8)

Participants underscored that technology alone is inadequate; it requires the backing of systematic change management, ongoing personnel development and clear communication to ensure successful integration and enduring commitment throughout the organisation.

4.3.9.1 Change management strategies

The participants underscored the necessity of clear and systematic change management strategies to facilitate transformation. Leadership-driven initiatives and gradual adoption of technology were emphasised as essential to alleviate fear and enhancing employee trust in the digital transition. Participant 14 stated: 'We have effectively used structured change management frameworks to facilitate digital adoption,' highlighting the need of leadership to guide the process.

Participant 13 articulated the emotional and psychological aspects of resistance: "There remains some resistance; we must implement change management to help staff understand that technology is intended to help" and further elaborated, "We simply require change management to convey to individuals that AI is not designed to replace their jobs." These assertions demonstrate that change plans must extend beyond logistics to encompass effective communication and reassurance. The results indicate that transformation involves instruments, empathic leadership, ongoing support and transitional structures that engage employees.

4.3.9.2 Training and development initiatives

The participants unanimously recognised that ongoing training was a crucial facilitator of digital preparedness. Organised learning initiatives, including workshops, seminars, digital training resources and mentorship programmes, were deemed sufficient to prepare personnel with the requisite skills and confidence to use new systems. Participant 19 stated: 'Regular workshops and specialised seminars have effectively addressed skill deficiencies', highlighting the necessity for practical and focused educational interventions.

Participant 7 affirmed this, noting that 'We have conducted workshops and training programmes for automation tools, AI and data analytics', indicating that training focused on technology is prioritised. Participant 9 highlighted the importance of collaborative learning environments, stating: 'A centre of excellence facilitates the team's exploration and sharing of tool insights, and it promotes experimentation.' This suggests that informal knowledge-sharing networks and secure environments for exploration are crucial for skill development. The focus on ongoing training, rather than sporadic sessions, underscores the rapid evolution of digital tools and the need for a flexible workforce learning approach.

4.3.9.3 Effective communication practices

Effective and proactive communication was seen as a crucial organisational technique to facilitate transformation. Participants highlighted that the probability of successful adoption rises when employees are informed, engaged and permitted to offer feedback. Participant 6 asserted: 'Consistent communication regarding new tools and their advantages mitigates resistance', highlighting the necessity for clarity and frequent updates.

Participant 13 emphasised the importance of narrative in effecting change: 'Communication is paramount; accompany clients on their journey and facilitate their understanding of the transformation." This view underscores that communication must be compassionate, purposeful and customised to address the problems of employees and clients. Additionally, Participant 8 emphasised the importance of feedback mechanisms: "We are now more proactive with feedback; clients articulate their dislikes, and we enhance our processes rapidly'. This quotation emphasises the cyclical relationship between communication and enhancement, illustrating how attention to both internal and external perspectives aids in the refinement of digital methods.

The data emphasise that digital transformation requires strategic management within the organisation, rather than solely relying on technological expenditure. Structured change management frameworks, continuous training programmes, and effective communication strategies are crucial to ensure personnel are educated, prepared and motivated. These organisational techniques promote a conducive climate for digital adoption, mitigating opposition and enhancing long-term success. Insurers that emphasise these internal facilitators are more likely to achieve significant and lasting transformation.

4.3.9.4 Alignment with the research question

The results underscore that digital transformation requires more than technology; it requires systematic change management, employee empowerment through customised training, and clear, inclusive communication. These tactics facilitate technology change that is helpful rather than disruptive, allowing for a seamless transition while preserving a human-centred orientation. By promoting preparedness and engagement, organisations may cultivate a culture that values innovation while maintaining trust, clarity and coherence at all levels.

4.4 CROSS-THEME ANALYSIS AND EMERGING PATTERNS

The results were organised into nine distinct themes aligned with the research objectives, highlighting recurring patterns and interrelated elements that reflect the complexity and interconnected nature of digital transformation within South Africa's insurance industry.

A significant observation is the interdependence between worker preparation and effective technology adoption. Themes of workforce readiness, skill gaps and organisational strategies for digital adoption constantly emphasised that digital transformation is unattainable without proper employee preparation. Deficiencies in AI, data analytics and digital fluency emerged as operational obstacles, as well as cultural and strategic concerns. These skill deficiencies immediately impact employee resistance (Theme 3) and influence the seamless integration of automation and digital tools (Theme 1).

A second significant interconnectivity associates personalisation, client trust and human-centric digitalisation. Findings from Client Trust and Personalisation and Human-Centric Digitalisation indicate that although technology can improve productivity, its effectiveness in client-service environments depends on upholding transparency, emotional intelligence and substantive communication. Participants frequently articulated that digital technologies should not replace human connection but rather enhance it, facilitating the broader transition towards hybrid service models that prioritise innovation and empathy.

Furthermore, there is a distinct correlation between the advantages and obstacles of technology adoption in digital integration, highlighting a dual narrative of advancement and conflict. Participants recognised the operational enhancements brought about by AI, big data, and blockchain (Theme 2), but identified cost, resistance, and old systems as substantial impediments (Theme 3). This contrast highlights the necessity for balanced implementation strategies that harmonise technical aspirations with organisational capabilities.

Ultimately, across various themes, particularly the Future of Employment and Organisational Strategies, the need for proactive leadership and strategic foresight surfaced as a vital facilitator. Digital transformation constitutes technological enhancement and a comprehensive transition necessitating foresight, strategic planning and cultural evolution. Organisations that invest in training, change management and internal communication are better equipped to manage the complexity identified within the thematic framework.

These overarching findings demonstrate that digital transformation is a complex process influenced by the interplay of individuals, systems, culture and leadership. Comprehending these interdependencies is essential for formulating comprehensive plans that integrate technology, bolster the workforce, build customer trust and ensure sustained innovation.

4.5 CHAPTER SUMMARY

This chapter delineates the findings of 21 qualitative interviews with experts in the South African insurance sector, providing comprehensive insights into the realities of digital transformation across operational and client-service dimensions. The results were systematically categorised thematically according to the study's four principal research inquiries of the study. They identified nine interconnected themes that jointly demonstrate the potential and complexity of incorporating innovative technologies into the insurance industry.

The findings indicate that digital transformation has markedly influenced operational efficiency, mainly through the implementation of automation, AI and data analytics. Participants indicated enhanced processing speed, data precision and responsiveness to client requirements. These technical improvements were also regarded as improving proactive and personalised customer service delivery.

However, the research also underscored other obstacles to successful digital integration. Financial limitations, staff opposition and cultural stagnation were frequently identified as obstacles that impede the pace and extent of reform initiatives. Additionally, worker preparedness surfaced as a significant issue, with participants highlighting considerable deficiencies in data science, AI, and digital literacy skills. Continuous training, skill enhancement and strategic transition planning were highlighted as crucial for equipping employees for developing roles influenced by automation.

The research emphasised the importance of maintaining human-centric values in the digital age. Participants emphatically supported hybrid service models that integrate technical efficiency with empathy, emotional intelligence and significant human interaction. Trust and personalisation are essential to maintain robust client relationships, especially in a digital ecosystem where transparency and communication are paramount.

The findings underscored the importance of organisational strategy in facilitating effective digital adoption. Systematic change management, focused training initiatives, and efficient

internal communication were frequently identified as essential approaches to mitigating resistance, enhancing workforce competence and assuring enduring transformation.

The next chapter presents a discussion of the findings and a proposed framework for implementation.

CHAPTER 5: DISCUSSION AND FRAMEWORK

5.1 INTRODUCTION

This chapter offers a critical analysis of the data in Chapter 4 about the research objectives established at the start of the study. The emphasis is on analysing how the insights obtained from the participants relate to the primary objective: to examine the effects of digital transformation on operational performance and client services in the South African insurance sector.

Each section revisits a distinct purpose of the study and presents the principal findings associated with that objective, supported by participant quotations and pertinent literature. The chapter emphasises the revolutionary potential and associated obstacles of incorporating technologies like AI, BDA, IoT and blockchain into client-facing processes. It also examines employment consequences, skill deficiencies, cultural obstacles and the significance of human-centric methodologies in a digital environment.

This chapter functions as a transition between the empirical findings and the broader implications addressed in Chapter 6, rather than serving as a conclusion to the study. Establish a foundation for pragmatic recommendations and theoretical contributions by rigorously analysing the significance and pertinence of the study's findings within the contemporary industry and academic context. The discourse begins with reevaluating each research objective to encapsulate how the study results correspond to them.

5.2 CONCLUSIONS REACHED ABOUT RESEARCH OBJECTIVES

This section offers a concise overview of how each research objective was fulfilled, derived from the findings presented in Chapter 4.

Research Objective 1: Investigate the role and benefits of artificial intelligence, BDA, and blockchain in enhancing operational efficiencies within client services.

The research confirmed that AI, BDA, IoT, and blockchain significantly enhance operational efficiency. AI facilitates automation and predictive analytics; big data enables informed decision-making and tailored services; blockchain improves security and transparency. These findings align with current industry literature (Seun et al., 2023), which emphasises how these technologies enhance efficiency, reduce errors and improve service responsiveness. Participants extensively noted that these technologies streamline internal processes, reduce manual

workloads and strengthen decision-making, resulting in more agile and personalised client interactions.

- AI: Participants highlighted AI's role in automating routine tasks, enabling predictive analytics and improving real-time customer interactions. Participant 7 stated, "AI-driven chatbots have considerably accelerated response times," echoing literature recognising AI-driven CRM systems as catalysts for efficiency and quality improvements (Penubelli, 2024).

- BDA: Big data analytics empowers insurers to leverage large datasets for behavioural insights and targeted service delivery. Participant 3 remarked, "BDA allows a deep understanding of customer needs, resulting in hyperpersonalised services." Industry sources also underline big data's role in enhancing risk modelling and operational decision-making (Araz et al., 2020).

- Blockchain: Though still emerging, blockchain is valued for enhancing data integrity and transactional transparency. Participant 15 explained, "Blockchain technology offers enhanced security and transparency, ensuring data integrity and significantly reducing fraud risks." This is supported by studies highlighting blockchain's potential to create tamper-proof systems (Thilakavathy et al., 2023).

The integration of AI, BDA, IoT and blockchain markedly improves operational effectiveness in client services. These findings corroborate industry discourse, confirming that digital technologies enhance internal efficiencies and facilitate more secure, flexible and client-centric insurance operations.

Research Objective 2: Explore the nature and underlying factors of challenges posed by technological advancements in meeting client-service expectations.

This objective identified primary obstacles to digital transformation, including financial constraints, employee resistance and entrenched legacy systems. These factors impede adoption and negatively impact client-service quality. The findings support previous research indicating that organisational and cultural barriers often hinder technological progress (Rahman et al., 2024). Although digital transformation promises significant efficiency and service gains, it also presents hurdles that disrupt seamless integration within the South African insurance industry.

- Financial constraints: Participants frequently cited the substantial initial investment required for new technology as a major challenge. Participant 2 noted, "The principal challenge we encounter is the substantial initial investment required for advanced technological tools," highlighting resource pressures. Literature confirms that cost remains a persistent barrier to digital innovation, especially in resource-constrained environments (Kyratsis et al., 2014).

- Employee resistance and fatigue: Resistance to change, especially among older or long-serving employees, was a recurring theme. Participant 16 stated, "Older employees are especially resistant to adopting new technologies," while Participant 13 added, "There is a bit of resistance… people fear automation will take their jobs." These reflect fears of job displacement and low digital confidence, consistent with research on transformation fatigue and employee anxiety (Uygungil-Erdogan et al., 2025).

- Cultural barriers: Organisational culture and legacy practices emerged as deep-rooted obstacles. Even where technologies were introduced, they were often underutilised due to entrenched mindsets and institutional inertia. Participant 18 observed, "Cultural inertia and reliance on legacy systems hinder the pace of digital adoption," echoing Doppelt's (2017) argument that cultural change is essential for sustainable transformation.

These findings highlight that successful digital transformation requires more than technology deployment; financial readiness, change management and cultural shifts are critical. Ignoring these may result in technological advances that create service gaps and exacerbate resistance.

Research Objective 3: Understand the current landscape of digital transformation and its implications for operations management within the South African insurance industry.

Participants reported that automation is reshaping job roles and increasing demand for digital skills, alongside concerns about job security and workforce preparedness. At the same time, opportunities for internal mobility and career progression were noted. This aligns with de Bustillo Llorente (2021), who notes rising workforce uncertainty from digitalisation, and Chaker & Damak (2024), who advocate upskilling as a strategic response.

- Evolution of job roles: Automation is transforming previously manual roles. Participant 21 said, "Routine administrative functions, particularly data entry, will predominantly be automated," while Participant 2 added, "AI is advancing and will assume many roles

such as underwriting and contact centres." This supports literature predicting growth in repetitive task automation in financial services (Morandini et al., 2023).

- Emergence of new roles: New positions such as data analysts, automation specialists and AI engineers are emerging. Participant 3 stated, "Automation specialists and data analysts will be essential future recruits." This reflects growing demand in digital-first business domains including cybersecurity, data analytics and user experience design.

- Essential skills: Beyond technical expertise, soft skills like empathy, adaptability and communication were emphasised. Participant 16 remarked, "Soft skills such as empathy, critical thinking, and communication are increasingly essential," reflecting widespread recognition that human-centric skills remain vital in hybrid service models (Slavic et al., 2024).

- Upskilling imperative: Many participants stressed the need for ongoing training. Participant 15 asserted, "Continuing training programmes are essential for employees to adapt to new technology," while Participant 13 added, "It is imperative to improve skills, especially in data science, analytics, algorithms and machine learning." These findings endorse calls for continuous learning cultures during digital transformation (Baporikar, 2022).

The report concludes that digital transformation presents both risks and opportunities for employment, contingent on proactive investment in reskilling and inclusive change management to mitigate disruption and secure sustainable employment.

Research Objective 4: Explore capabilities required to deliver the dual value of seamlessly integrating and balancing technology with human-centric interaction.

The findings reveal that effective digital transformation in the insurance sector requires not only technological deployment but also strategies that preserve empathy, transparency and personalisation in client services. Participants highlighted the need to combine technology with a strong human experience.

- Hybrid service models: Many participants supported hybrid models blending technical efficiency with human support. Participant 8 remarked, "Hybrid models integrating technology with human interaction are most effective in maintaining customer

satisfaction," reflecting a broader trend in service sectors towards omnichannel approaches.

- Empathy and emotional intelligence: Participants stressed the importance of human empathy, especially in sensitive contexts. Participant 10 said, "Human empathy is crucial, especially in delicate situations such as claim processing," while Participant 9 added, "Empathy is the essence of outstanding client-service." These views align with research showing emotional intelligence as a key differentiator in trust-based client interactions despite technological advances (Cavaletti et al., 2021).

- Client trust and personalisation: Transparent communication and customised services were deemed essential for trust in digital environments. Participant 20 noted, "Clear and transparent communication about data usage is crucial for trust," and Participant 12 stated, "We prioritise tailoring digital services for each client." This supports studies linking personalisation to client satisfaction in digital settings.

- Organisational enablers: Participants emphasised structured change management, employee training and proactive communication as vital. Participant 14 remarked, "We have effectively used structured change management frameworks to facilitate digital adoption," and Participant 15 stressed, "Ongoing training is essential for helping employees adapt." These insights support literature advocating leadership, reskilling, and engagement as core to successful transformation (Lakshmi et al., 2024).

The study indicates that hybrid service models, clear communication and empathy-driven service design are crucial for sustaining client trust in digital contexts. Emotional intelligence training, customised digital experiences and continuous feedback are effective enablers. These results align with Deliu and Olariu (2024), who argue that digital success depends heavily on human-centric integration.

5.3 FRAMEWORK COMPONENT DIAGRAM

The following diagram presents a visual synthesis of the conceptual framework developed in this study. It illustrates how four key components Client-Centred Care, Operational Efficiency, Workforce Adaptation, and Privacy & Data Security are informed by Paradox Theory and Integrative Thinking. These components emerged from the data and reflect the tensions and strategic responses observed in the South African insurance sector during digital transformation.

The diagram demonstrates how theoretical insights and empirical findings converge to explain the balancing act between technological advancement and human-centric service delivery.

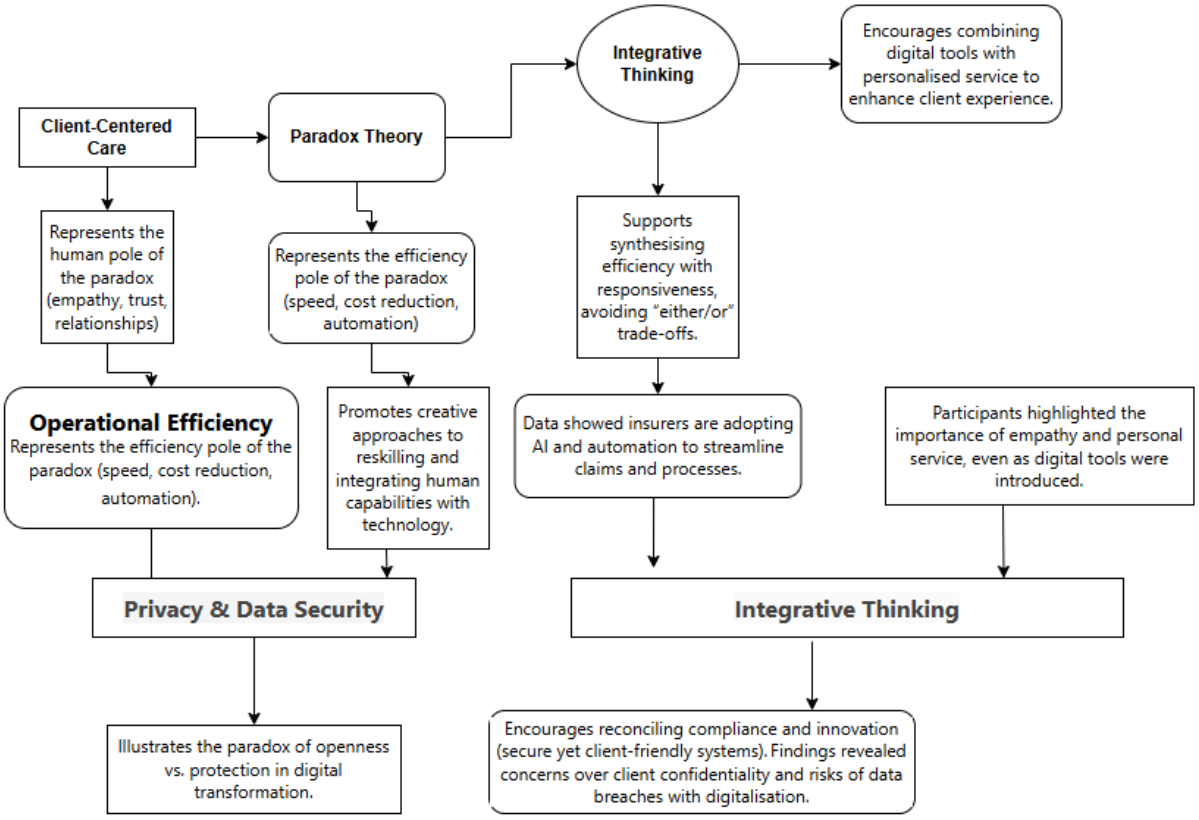

Figure 5.1: Framework Component Diagram

Source: Researcher's own

This diagram maps the relationship between key components of digital transformation in the insurance sector and their theoretical grounding in paradox theory and integrative thinking. It also highlights how each component connects to findings from the study.

Figure 5.1 reinforces the study's theoretical foundation by showing how each component of the framework is not only conceptually grounded but also empirically supported. The tensions between efficiency and empathy, standardisation and personalisation and automation and human discretion are central to the digital transformation journey. Paradox theory helps frame these contradictions, while integrative thinking offers a pathway for synthesising them into practical strategies. The inclusion of workforce adaptation and data security further reflects the evolving demands of the insurance industry. Together, these elements provide a comprehensive lens for

understanding how insurers can navigate digital transformation without compromising the human values that underpin client trust and service quality.

5.3.1 Paradox Theory and the Integration of Dual Values

This section examines how the study's findings align with the theoretical foundation that shaped the research: Paradox Theory, supported by the principles of integrative thinking. The tensions seen in the digital transformation of the South African insurance industry were framed by this conceptual framework, which was created based on paradox theory. These conflicts result from the requirement to maintain human-centred service quality while still pursuing technical innovation. According to Smith and Lewis' (2011) discussion of paradox theory, organisations frequently deal with interconnected, enduring contradictions that need to be managed rather than overcome. The contradiction in this study's context is the dual need to increase efficiency through data technologies (AI, BDA, IoT, blockchain) and automation. while also safeguarding empathy, trust and, personalisation in client-service delivery.

The fast adoption of digital tools and the ongoing desire for emotionally intelligent, transparent, and individualised client connections are two demands that insurance businesses face, and this framework places them in context. The results demonstrate that South African insurers are trying to incorporate all sides of the conundrum rather than seeing these conflicts as binary trade-offs. Themes like the Reskilled, Empathy-Driven Workforce, Hybrid Service Models and Trust in Digital Platforms, for example, demonstrate a strategic perspective that recognises and welcomes these tensions as a source of innovation and competitive benefit.

Participants in the Future of Employment and positions survey predicted that automation would result in both job displacement and the creation of new positions, further highlighting this contradiction. Numerous businesses were found to implement proactive tactics like digital literacy campaigns, change management and upskilling rather than opposing change. This is in line with the conflicting demands of investing in people to uphold ethical standards and client trust while simultaneously lowering operating expenses through automation. These forward-looking tactics demonstrate what paradox theorists refer to as "both/and" thinking – holding contradictory concepts at the same time and trying to integrate them in a way that improves overall organisational capacity even though they are not predictive in the conventional sense.

The use of integrative thinking, as put out by Martin (2009), which promotes the synthesis of conflicting ideas into creative solutions, further improved this integration. This study

emphasises how insurance companies are using technology and human-centred care to co-create value rather than portraying them as mutually exclusive. Automated consumer interfaces with sympathetic support professionals, data-driven decision-making with ethical supervision, and organised change management with customised staff training programmes are a few examples.

This theoretical framework, which is based on paradox theory and enhanced by integrative thinking, provides a sophisticated understanding of the dynamic interaction between client-centred care and operational efficiency. It demonstrates how the digital transformation of the insurance industry in South Africa is a complicated balancing act rather than a linear shift, where advancement is made by resolving conflicts between the two poles through inclusive, flexible and conscientious approaches.

5.4 CHAPTER SUMMARY

This chapter addressed the study's four research objectives by examining the impact of digital transformation on client services in the South African insurance sector. It found that technologies such as AI, BDA, IoT, and blockchain improve operational efficiency by automating routine processes, enabling predictive insights, and enhancing security and transparency in transactions, thereby creating more responsive and personalised client services. However, challenges remain, including high costs, employee resistance, cultural inertia, and legacy systems, which hinder seamless adoption and can negatively affect client expectations. The current landscape shows that automation is reshaping job roles, creating demand for new technical and soft skills, and necessitating ongoing workforce reskilling to secure sustainable employment. To balance efficiency with empathy, insurers require capabilities such as hybrid service models, emotional intelligence, transparent communication, and structured change management. These findings were synthesised into a conceptual framework informed by paradox theory and integrative thinking, showing that the tensions between efficiency and human-centredness can be creatively managed to deliver both technological advancement and trust-based client care. The chapter concludes that successful digital transformation in the South African insurance industry depends not only on technological innovation but also on maintaining client trust, reskilling employees, and embedding human values into service delivery. The next chapter presents the contributions, conclusions and recommendations of the study.

CHAPTER 6: CONTRIBUTIONS, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter brings together the key insights of the study by presenting a summary of the research, justification of the proposed framework, and the limitations that shape the interpretation of the findings. It highlights the contributions made to both theory and practice, particularly in advancing understanding of digital transformation in the insurance sector and developing economies. The chapter further outlines the practical and managerial implications of the study, focusing on leadership, digital skills development, hybrid service delivery, trust-building and preparing for the future of work. Drawing from these insights, it proposes recommendations for future-proofing the insurance workforce through collaboration, agile learning, ethical responsibility and human-AI integration. Together, these sections consolidate the study's value, acknowledge its boundaries, and provide actionable guidance for researchers, practitioners and policymakers navigating the complexities of digital transformation.

6.2 SUMMARY OF THE STUDY

This thesis was structured into six chapters, each examining the impact of digital transformation on operational performance and client-service management within the South African insurance industry. Chapter 1 introduced the research problem, objectives and significance, defining digital transformation within the insurance context. Chapter 2 reviewed the relevant literature and theoretical frameworks, identifying the gaps that the study was aiming to fill. Chapter 3 outlined the qualitative methodology, including interviews and discourse analysis, while addressing validity, reliability and ethical considerations. Chapter 4 presented key findings, highlighting the influence of technologies such as AI, IoT, BDA and blockchain on client services. Chapter 5 linked these findings to the literature and proposed a theoretical model, discussing both academic and practical implications. Chapter 6 concludes the study by evaluating its results, offering recommendations and reflecting on its contribution to improving client-service through digital innovation.

All four study objectives were achieved by meticulous analysis of participant views, corroborated by contemporary academic and industrial literature. The findings illustrate the revolutionary capacity of digital technology within the South African insurance sector, while emphasising the significance of cultural, strategic and human-centric factors for successful implementation.

6.3 ANSWERS TO THE RESEARCH QUESTIONS

This section shows how the research questions were answered in the thesis.

6.3.1 Role of AI, BDA, and Blockchain in Enhancing Operational Efficiencies within Client Services

Artificial intelligence (AI), big data analytics (BDA), and blockchain play a central role in improving the efficiency and reliability of client services in the South African insurance industry. AI automates routine tasks such as claims processing and fraud detection, reducing human error and speeding up service delivery. BDA enables insurers to use predictive modelling and real-time insights to personalise services, improve underwriting, and anticipate client needs. Blockchain enhances trust and efficiency by providing secure, transparent, and tamper-proof records, which reduce disputes and administrative delays. Together, these technologies strengthen operational performance by lowering costs, improving responsiveness, and enhancing the quality of service provided to policyholders.

6.3.2 Challenges of Technological Advancements and their Underlying Drivers

Despite these benefits, technological advancements introduce several challenges in meeting client-service expectations. High implementation costs, outdated legacy systems, and organisational resistance often delay seamless adoption. Cultural barriers and entrenched practices also make employees hesitant to embrace new systems, while skill shortages and uneven digital literacy create further gaps in effective usage. These challenges are driven by factors such as the rapid pace of technological change, inadequate training, and fears of job displacement. As a result, insurers face a tension between adopting advanced tools and maintaining the trust, empathy and personalisation that clients value most in service interactions.

6.3.3. Current Landscape of Digital Transformation and Implications for Operations Management

The digital transformation of South Africa's insurance industry is uneven but accelerating, particularly in Gauteng, where major insurers are investing heavily in digital platforms and automation. The sector is shifting toward hybrid service models that combine technological efficiency with human oversight, reflecting both competitive pressures and client demands. For operations management, this means moving from traditional, paper-based processes to data-driven decision-making, streamlined workflows, and more flexible service delivery. However,

it also requires managers to address digital divides, lead cultural change, and ensure that operational gains do not come at the expense of client trust or workforce wellbeing.

6.3.4 Capabilities Required for Balancing Technology with Human-Centric Interaction

To successfully integrate technology and preserve human-centred service, insurers need a set of technical, organisational, and interpersonal capabilities. Technically, employees require digital skills in AI, data analytics, and blockchain applications to use new tools effectively. Organisationally, companies must adopt agile learning systems, change management practices, and cross-functional collaboration to adapt to rapid innovation. Interpersonally, capabilities such as empathy, emotional intelligence, and ethical awareness are vital for maintaining trust in digital environments. Balancing these capabilities ensures that technology strengthens rather than weakens client relationships, enabling insurers to provide efficient yet personalised services in an increasingly digital industry.

6.4 FRAMEWORK JUSTIFICATION

Significant changes are occurring in how work is organised and how services are delivered as the South African insurance sector adopts technologies such as AI, BDA, IoT, and blockchain. While these developments create opportunities to improve efficiency and client responsiveness, they also raise concerns about the erosion of the human element in service delivery, job displacement, and skills mismatches. This tension reflects the central insights of paradox theory, which holds that organisations must manage competing demands – such as innovation versus tradition, efficiency versus empathy – rather than resolve them in favour of one side (Lewis, 2000; Smith & Lewis, 2011). Study participants highlighted this paradox by stressing both the need to maintain trusted client relationships and the urgency of embracing innovation to remain competitive. Integrative thinking provides a way forward by encouraging leaders to synthesise these competing demands into creative solutions, rather than seeing them as mutually exclusive (Martin, 2009). Instead of viewing technology and human values as opposing forces, an integrative approach enables the development of hybrid models that use automation for routine tasks while preserving personalised, empathetic client interactions.

The proposed framework (Figure 5.1) illustrates how drivers of change (AI, BDA, IoT, and Blockchain) create paradoxical tensions between efficiency and human-centredness. By applying integrative thinking, these tensions can be transformed into hybrid service models that

deliver improved operational efficiency, enhanced client responsiveness, preserved trust and empathy, workforce adaptation, and strategic clarity.

6.5 LIMITATIONS OF THE STUDY

This study successfully met its objectives and offered useful information on the effects of digital transformation on operational performance and client services in the South African insurance sector; however, several limitations must be recognised.

6.5.1 Sample Size and Generalisability

The research used purpose sampling, including 21 participants from various positions within the insurance industry. This approach provided detailed, context-specific insights; however, the limited sample size constrains the generalisability of the findings. The views expressed may not comprehensively reflect all insurance companies or geographical areas in South Africa.
The results should be regarded as suggestive rather than universally representative.

6.5.2 Geographic and Sectoral Concentration

The exclusive emphasis on the South African insurance business offers substantial contextual significance; however, it may not accurately represent the dynamics of digital transformation in other areas or industries. For example, trends in digital adoption in more technologically advanced businesses or sectors, such as banking or healthcare, can vary considerably.

6.5.3 Self-Reported Data and Possible Biases

The data gathered was solely based on self-reported experiences obtained through semi-structured interviews. This strategy, although adept at capturing complex perceptions, may also add social desirability bias or retrospective distortion. Participants may have represented their organisations or positions in a more favourable light, especially when discussing sensitive issues such as opposition to change or skill deficiencies.

6.5.4 Pace of Technological Advancement

The digital transformation is evolving rapidly. The findings of this study represent a specific point in time, and emerging technologies, particularly in AI, blockchain and data analytics, may soon shift industry practices in ways not yet captured (Dubey, Bryde, Dwivedi, & Graham, 2022). This limits the long-term applicability of the insights.

6.5.5 Lack of Longitudinal Perspective

As a cross-sectional study, the research reflects the perceptions at one point in time. However, digital transformation is an ongoing process, and a longitudinal design could have tracked changes in implementation strategies, workforce adaptation and outcomes over time, offering a deeper understanding of transformation trajectories (Raimo et al., 2023).

Notwithstanding these constraints, the study substantially enhances comprehension of the prevailing facts, issues and strategies related to digital transformation within the South African insurance industry. Subsequent study may expand upon these findings via extensive sampling, comparative cross-sector analysis or longitudinal case studies.

6.6 CONTRIBUTION TO KNOWLEDGE AND PRACTICE

This study contributes significantly to both academic literature and professional practice by providing empirical insights into the various effects of digital transformation on operational performance and client services in the South African insurance industry. While digital transformation has been frequently explored in global contexts, there is a relative scarcity of region-specific, qualitative research that investigates how such transformation occurs inside emerging economies, particularly in vital and regulated areas such as insurance. By focusing on the South African setting, this study fills a significant vacuum in the existing literature, which has traditionally focused on technologically sophisticated economies.

Academically, the study adds to the growing body of research that explores digital transformation as a holistic organisational transition affecting structures, cultures, employee roles and customer interactions, rather than just as a technical or IT-driven project. This study investigates how organisational players perceive and comprehend digital change, showing the underlying conflicts, adjustments and solutions utilised during the transition. These results provide a contextually rich viewpoint that may stimulate further research in related industries or countries, leading to a more nuanced understanding of the relationship between technology and organisational behaviour.

From a practical aspect, the report provides insurance professionals with tangible ways to navigate the current digital change. It outlines important drivers of effective change, such as inclusive leadership, workforce engagement, digital literacy development and client-centric innovation. It also identifies barriers such as opposition to change, skill shortages and concerns about trust and data privacy that must be addressed for digital efforts to succeed. The report

presents a roadmap for managers, politicians and industry leaders to undertake digital transformation efforts more effectively and ethically by contextualising their findings.

Importantly, the study's emphasis on both operational performance and client services guarantees that it addresses the dual demands of efficiency and customer pleasure, which are frequently at odds yet must be balanced for long-term organisational success. It advocates for a transformation journey that is both technologically sound and socially ethical, assisting organisations in achieving innovation and sustainability. This research makes a long-term contribution to how digital transformation is understood and implemented in South Africa's growing insurance industry.

6.6.1 Contribution to Knowledge

6.6.1 Advancement of Theoretical Understanding

This study introduces a novel lens for exploring digital transformation within insurance organisations by applying paradox theory. This framework delves into how companies navigate the inherent tensions and contradictions brought about by technological change. By highlighting the interplay between digital innovations and human elements such as trust, empathy and adaptability, it sheds light on the intricate processes of organisational evolution in the digital age. The research reveals that successful digital transformation is not solely about implementing new technologies; it crucially depends on how individuals within the organisation manage and harmonise these paradoxes to drive innovation and long-term growth.

6.6.2 Contextualising Digital Transformation in Developing Economies

The present collection of research on digital transformation is highly skewed toward developed nations, providing few insights into the lived reality of professionals in emerging markets. By focusing on the South African insurance market, this study fills a critical vacuum by contextualising digital transformation difficulties that are particular to developing economies. The data revealed significant issues such as old legacy systems, unequal infrastructure, cultural aversion to change and pervasive digital skill gaps. These limitations, which are sometimes disregarded in global digital transformation frameworks, provide a better understanding of the institutional and human limits that insurance companies in South Africa face.

6.6.3 New Thematic Contributions

The study discovered nine unique and interrelated themes that expand on existing digital transformation frameworks using qualitative analysis. Key themes such as Human-Centric Digitalisation, Client Trust and Personalisation, Digital Maturity and Skills Gaps, and The Future of Employment and Roles offer new analytical lenses for insurance businesses to examine and navigate their transformation journeys. These themes complement and build on current models, such as Teichert's (2019) digital transformation readiness model, by emphasising worker adaptation and client relationship dynamics as equally important to digital success.

6.6.4 Contribution to Practice

This study provides practitioners with concrete insights into how to increase operational performance, client-service quality and worker engagement in the face of ongoing digital upheaval. The information received from industry professionals provides insight into real-world practices and strategic initiatives that promote both technology adoption and human-centred service delivery.

6.6.5 Workforce-Centred Transformation

A crucial practical takeaway from this study is the identification of employee resistance and skill gaps as critical hurdles to effective digital transformation. Several participants mentioned a mismatch between the pace of technology implementation and employee preparation, which frequently results in lower morale or inefficiency. Based on these findings, companies are recommended to implement inclusive change management techniques, provide ongoing training and maintain open communication regarding the purpose and implications of digital tools. These tactics not only increase employee buy-in but also build a culture of adaptability and learning.

6.6.6 Client-Centric Digital Services

Another practical addition is the focus participants placed on empathy, emotional intelligence and personalisation in client encounters, even those in digital situations. While technologies like AI and automation were lauded for increasing speed and efficiency, there was a constant warning against over-reliance on impersonal systems. To create and maintain customer trust, insurance companies should use hybrid service models that combine technology efficiencies with genuine human contact.

6.6.7 Guidance for Policymakers and Educators

With the emergence of new roles and the redefinition of existing ones, the study's findings have important implications for curriculum design and strategic workforce planning. Participants selected new skills in AI, data analytics, digital communication and customer experience design as crucial for the future workforce. These insights can be used by policymakers and educational institutions to realign training programmes and support structures, better preparing future professionals for a technologically improved insurance environment.

6.6.8 Summary of Contributions

In conclusion, this study advances our theoretical understanding of digital transformation by providing an integrated, human-centred framework for evaluating and applying technology in the insurance industry. It also offers practical, evidence-based solutions to help managers, HR executives and policymakers create adaptive, client-focused and digitally proficient businesses. The study lays the groundwork for future research and cross-sector collaboration, helping to achieve the larger objective of inclusive and sustainable digital transformation in Africa's service industry.

6.7 IMPLICATIONS FOR MANAGEMENT

The findings of this study have important and actionable consequences for management in the South African insurance business. As digital transformation reshapes the operational and service landscape, leaders must take a more human-centred, adaptable and strategic approach to ensure effective adoption and long-term organisational performance. This involves a fundamental shift in how technology is integrated into the workplace. Professor Lakhani (2024) correctly claimed that "you won't lose your job to AI – you'll lose it to someone using AI." This observation is clearly consistent with the participants' thoughts, which stressed that technology alone is insufficient to achieve transformation. Employee empowerment, continuous upskilling and a culture of human-machine collaboration are essential.

The findings demonstrated a widespread worry about digital exclusion and skill gaps, emphasising the significance of providing employees with both technical expertise and adaptable capacities. Managers must thus invest in focused training programmes, develop a supportive change environment, and set a good example in encouraging digital fluency at all levels of the business.

6.7.1 Leading Change from the Front

Many interviewees indicated doubt and fear about the pace and intent of digital transformation in their organisations. Management must play an active and visible role in leading digital efforts. This includes not only announcing changes, but also guiding teams through transitions, communicating the vision for digital projects, and providing emotional support. Managers who drive change must establish trust by being accessible, sympathetic and transparent, especially in situations where prior changes may have failed or were poorly communicated.

6.7.2 Bridging the Digital Skills Divide

The findings raised serious worries about a growing skills gap, with some employees prospering in digital contexts while others feel alienated or overwhelmed. Management must design focused training programmes that cover both technical capabilities (e.g., AI, cloud-based platforms, and data analytics) and soft skills (e.g., adaptability, empathy, communication). Participants emphasised that learning should be continual, practical and inclusive of all ages and experience levels, rather than being limited to younger or more tech-savvy personnel.
Cross-functional mentoring and peer learning activities can also assist in closing these gaps.

6.7.3 Supporting Hybrid Service Models

While automation and digitisation progress, participants continually emphasised the importance of empathy, responsiveness and personalised support, particularly in high-stakes interactions such as claims processing. Managers must strike a balance between efficiency and human touch, ensuring that digital systems complement, rather than replace, client interactions. This entails investing in hybrid service models in which technology handles mundane activities and humans manage sophisticated, emotional or sensitive encounters. This method increases both client happiness and employee engagement.

6.7.6 Building and Sustaining Trust through Transparent Data Practices

Trust appeared as a prominent theme in participant replies, with many clients expressing reservations about giving data. Managers must prioritise strong data governance policies and clear communication strategies for explaining how client data is gathered, maintained and used. This involves informing clients of their rights, describing the benefits of data sharing, and providing opt-in options. Management should also instil ethical data use in the business culture

and provide training to frontline personnel who come into contact with clients and handle sensitive information.

6.7.6 Shaping Organisational Culture to Enable Transformation

Participants identified corporate culture as either an enabler or a barrier to transformation. Resistance to change was especially high in contexts where previous transformation efforts had been top-down, hurried or punitive. Management must create a psychologically safe workplace in which people feel valued, consulted and motivated to contribute to innovation. Cultivating digital champions across departments, recognising modest victories and appreciating the emotional cost of change are all critical leadership behaviours that help improve cultural readiness.

6.7.7 Addressing the Future of Work Proactively

As automation alters roles and responsibilities, many participants raised concerns about job security and future career opportunities. Managers must be open about the changing nature of work and provide clear paths for professional advancement. This includes identifying emergent positions (such as data analyst and digital claims handler), reskilling current personnel and codesigning new procedures that combine human and technical assets. Importantly, management should engage people in these discussions rather than forcing decisions from above.

6.8 RECOMMENDATIONS FOR FUTURE-PROOFING THE INSURANCE WORKFORCE

Drawing on the study's results and the larger context of digital transformation, numerous practical recommendations can assist the South African insurance business in developing a workforce that is resilient, talented and prepared for ongoing technological change. These proposals go beyond typical upskilling by emphasising organisational culture, ethical awareness and collaborative techniques, all of which are critical for long-term success.

6.8.1 Develop Cross-Functional Collaboration

Digital transformation is a technological, organisational and cultural issue. Encourage cross-functional communication among IT specialists, client-service teams and business leaders to break down silos and foster holistic problem resolution. When heterogeneous teams collaborate, they have a deeper understanding of how digital tools impact both internal operations and

customer experiences. This collaborative mindset fosters invention, enhances communication and guarantees that technological solutions are practical and user-friendly. For insurers, forming multidisciplinary project teams and holding frequent cross-departmental workshops can help with integration.

6.8.2 Implement Agile Learning Frameworks

The rate of technological innovation necessitates continuous learning models that are both adaptable and relevant. Traditional, one-time training sessions are insufficient to keep staff informed about new AI capabilities, data analytics and cybersecurity concerns. Agile learning frameworks provide modular, on-demand training that employees can access as needed, according to their specific responsibilities and learning styles. These programmes can include microlearning, virtual simulations and peer-to-peer coaching, allowing employees to gradually develop competences and use new abilities right away. To retain workforce agility, insurers should invest in digital learning systems and offer incentives for continued professional development.

6.8.3 Develop Mental Models for Human-AI Interaction

As AI technologies become more integrated into everyday operations, employees want clear mental models to understand how these systems work and when human judgement is needed. Workers should be trained to understand both the capabilities of AI, such as data processing speed and pattern recognition, and its limits, such as potential biases and the need for contextual interpretation. By building this knowledge, employees will be more confident and effective in interacting with AI, resulting in greater decision-making and trust in technology. Scenario-based learning and role-playing exercises can be particularly useful in creating these cognitive frameworks.

6.8.4 Create Feedback Loops between Employees and Technology Developers

AI and automation systems should be designed and implemented iteratively, with input from individuals who use them every day. Establishing regular feedback channels, such as user forums, surveys, and co-creation workshops, enables frontline employees to report issues, suggest improvements and share insights on system performance. This collaborative approach guarantees that technology grows in ways that align with operational realities and customer

needs, decreasing opposition and increasing adoption. Insurers can include this feedback method into their governance systems to ensure continual improvement.

6.8.5 Prioritise Psychological Safety and Change Readiness

Employees frequently express concern and resistance to digital transformation, particularly when roles and workflows change considerably. Organisations must foster a psychological safety atmosphere in which people feel comfortable expressing concerns, asking questions and experimenting without fear of repercussions. Leadership is crucial in demonstrating transparency, communicating clearly about change goals, and providing support resources like coaching and mental health initiatives. Preparing people emotionally and culturally for change boosts resilience, increases adoption and promotes a growth attitude throughout the organisation.

6.8.6 Encourage Ethical Awareness and Responsibility

As AI systems progressively affect insurance decision-making, from underwriting to claims processing, ethical considerations become critical. Employees should be made aware of potential biases and hazards through training programmes that contain components on AI transparency, data privacy, fairness and accountability. Integrating ethical values into daily actions promotes customer trust and guarantees regulatory compliance. Furthermore, employees with an ethical lens can be proactive stewards of technology, identifying and correcting unintended consequences before they worsen.

6.8.7 Empowering Insurers: Enhancing Service Quality and Customer Satisfaction with Technology

This study discovered that, while digital technologies such as AI, automation and data analytics increase efficiency, their successful integration is dependent on how well employees are enabled to work alongside these tools. Many attendees emphasised the significance of upskilling and continuing learning to help staff use digital technology confidently. Instead of replacing human jobs, technology should be used to supplement and assist employees in providing more personalised and efficient services.

Respondents noted issues where personnel lacked the technical skills to swiftly adjust to new tools, which hampered service delivery and caused irritation. Client trust and pleasure were found to be directly related to the empathy and responsiveness of human agents, even in digital

surroundings. Therefore, researchers should explore ways in which insurers can create work environments where humans and technology work together harmoniously rather than in opposition. This includes developing self-service platforms that still allow for personalised interactions, as well as investigating how predictive analytics may anticipate client needs and increase loyalty. Furthermore, as employee roles change, insurers must better understand how to facilitate this transition through specialised reskilling, mentoring and internal mobility programmes.

6.9 CONCLUSIONS

This study shows that digital transformation in South Africa's insurance sector is changing both operations and client-service delivery through the use of AI, BDA, IoT, and blockchain. These technologies improve efficiency by reducing delays, errors and costs, while also allowing more personalised and data-driven services. However, these benefits depend on certain conditions, such as clear leadership, supportive organisational culture, continuous training and transparent data practices that protect client trust.

The study contributes to theory by applying paradox thinking, which explains how insurers must deal with competing needs such as efficiency and empathy, automation and human judgement, and standardisation and personalisation at the same time. It also adds to knowledge by focusing on the South African context, where legacy systems, limited infrastructure, and digital skills gaps create challenges that are less visible in developed economies. The framework developed in this study offers a practical guide for balancing technology with the human side of client relationships and workforce development.

For practice, the findings suggest that hybrid service models – where technology handles routine tasks and humans focus on complex or sensitive interactions – are most effective. Managers should take an active role in guiding change, provide continuous and relevant training, and create safe environments where employees can adapt to new ways of working. Building client trust also requires clear and open communication about how data is used and protected.

The conclusions should be read with the study's limits in mind, such as the small sample size, focus on South Africa, reliance on self-reported data, rapid pace of technological change, and use of a cross-sectional design. Future research should expand on these results by using larger samples, comparing different industries and countries, and tracking changes over time. Overall,

the study shows that insurers can improve both performance and client service when digital technologies are combined with human values and skills.

6.10 RECOMMENDATIONS FOR FURTHER RESEARCH

Building on the limitations identified in this study, several areas for further research are recommended.

- To address the limitation of sample size and generalisability, future studies should employ larger and more diverse samples across different insurance companies and geographical regions.
- Quantitative or mixed-methods designs may complement qualitative insights, allowing for broader generalisation of findings.
- Given the geographic and sectoral concentration of this study on the South African insurance sector, comparative cross-sector and cross-country research could provide valuable perspectives. For example, examining digital transformation in more technologically advanced sectors such as banking or healthcare may highlight transferable practices and sector-specific contrasts.
- To mitigate self-reported data and potential biases, future research could incorporate multiple data sources, such as organisational records, performance metrics or client satisfaction surveys, to triangulate findings and reduce reliance on subjective perceptions.
- Considering the rapid pace of technological advancement, longitudinal studies are needed to track how emerging technologies such as advanced AI, blockchain applications and big data tools continue to reshape client services and operational performance over time. The lack of a longitudinal perspective highlights the need for future research that follows organisations through different stages of digital transformation. Such designs would capture adaptation trajectories, workforce reskilling processes and evolving client expectations, offering deeper insights into the sustainability of digital transformation strategies.

6.11 FINAL REMARKS

This study found that digital transformation is profoundly changing the South African insurance business by increasing operational efficiency, redefining staff duties and revolutionising customer service tactics. Digital transformation is more than just a technological upgrade; it is

a complex, strategic shift that integrates technological innovation and human dynamics. As a result, this transition necessitates purposeful change leadership, a focus on empathy and ongoing efforts to foster and maintain trust among all stakeholders.

The study reveals that although digital technologies such as AI, data analytics, the IoT, and automation enhance efficiency, precision and decision-making, they also introduce significant challenges. These include labour resistance to change, expanding skill gaps, fear of job displacement and client concerns about data security and depersonalised service experiences. These concerns underline the vital necessity for a transformation strategy that is not just technically strong, but also socially and ethically sound.

Applying the recommendations given in this report, insurers may create an organisational culture that balances technology innovation with a strong commitment to human insight and ethical stewardship. This includes developing a culture of continuous learning, facilitating staff upskilling and reskilling, and encouraging open discourse about the future of work. Furthermore, leadership must aggressively promote transparent communication and inclusive decision-making to alleviate concerns about digital disruption and gain buy-in from all levels of the organisation.

The paper makes major theoretical and practical advances. Theoretically, it contributes to our knowledge of digital transformation in emerging markets by emphasising the relationship between technology competence, organisational culture and employee experience. Practically, it provides tangible recommendations for insurance executives, policymakers and educational institutions. These include incorporating digital literacy into training programmes, collaborating on client-centric service innovations, and aligning technology adoption with overall strategy goals and values.

This study proposes for a balanced and human-centred change approach. A future-ready insurance workforce actively drives change rather than passively adapting to it, embracing innovation while retaining the distinctive value of human judgement, compassion and relational intelligence. In an increasingly digitised and competitive world, South African insurers may promote organisational resilience, strengthen client connections and drive long-term innovation by investing in both technology infrastructure and human capital.

The route forward is to recognise that the success of digital transformation is determined not only by the technologies used but also by how well these technologies are integrated with human

values, ethical considerations and organisational purpose. This balanced strategy would enable the South African insurance market to not just survive but thrive in the digital age.

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APPENDICES

APPENDIX A: ETHICAL CLEARANCE

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Rhodes University Human Research Ethics Committee
Main Admin Building, Drostdy Road, Makhanda, 6139, South Africa
PO Box 94, Makhanda, 6140, South Africa
t: +27 (0) 46 603 7314
e: ethics-committee@ru.ac.za
https://www.ru.ac.za/researchgateway/ethics/
NHREC Registration number: RC-241114-045

01 October 2024

Mrs Lavhelesani Netshiswinzhe

Email: g22n2341@campus.ru.ac.za

Review Reference: 2024-7942-9094

Dear Mrs Netshiswinzhe,

Re: Enhancing operational performance in insurance client services: An integrative framework for the digital era.

Researcher: Mrs Lavhelesani Netshiswinzhe

Supervisor: Dr Matolwandile Mtotywa

This letter confirms that the above research proposal has been reviewed and **APPROVED** by the Rhodes University Human Research Ethics Committee (RU-HREC). Your Approval number is: 2024-7942-9094

Approval has been granted for 1 year. An annual progress report will be required in order to renew approval for an additional period. You will receive an email notifying you when the annual report is due.

Please apply for a protocol amendment should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators. Email your request to ethics-committee@ru.ac.za.

Please submit a brief report to the ethics committee on the completion of the research. The purpose of this report is to indicate whether the research was conducted successfully, if any aspects could not be completed, or if any problems arose that the ethical standards committee should be aware of.

If a thesis or dissertation arising from this research is submitted to the library's electronic theses and dissertations (ETD) repository, please notify the committee of the date of submission and/or any reference or cataloguing number allocated.

Sincerely,

Janet Hayward

Dr Janet Hayward

Chair: Rhodes University Human Research Ethics Committee (RU-HREC)

APPENDIX B: PARTICIPANT INVITATION LETTER

Project Title: Enhancing operational performance in insurance client services:

An integrative framework for the digital era.

Summary

I, Lavhelesani Netshiswinzhe from the Rhodes Business School, Rhodes University, have received ethical clearance [2024-7942-9094] to conduct a study on how digital transformation is affecting operational performance and client services within the South African insurance industry. This includes understanding the challenges and opportunities posed by technological advancements, exploring individual employee experiences and perspectives, and developing strategies for integrating technology while maintaining a human-centric approach.

Benefit to participants

By sharing your experiences and perspectives, you will contribute to advancing knowledge in the field of digital transformation within the insurance industry. Your insights will inform strategies that could potentially enhance operational performance and client services. This collaborative effort allows you to play a vital role in shaping the future of technology adoption and service delivery in the industry.

Your participation

You are invited to participate in this study, which examines the impact of digital transformation on operational performance and client services within the insurance industry. Your contributions are crucial to its success. Your email address was obtained through professional networks and referrals within the industry. Participation is voluntary, and you can withdraw at any time. No personal identifiers will be collected, and data will be analysed at an aggregated level to ensure confidentiality. If you know others who might be interested in participating, please feel free to inform them about the study and encourage them to contact me directly. By sharing your experiences and perspectives, you will help advance knowledge in the field and shape future strategies for technology adoption and service delivery in the insurance industry.

If you require further information, please contact me, Lavhelesani Netshiswinzhe, on G22N2341@campus.ru.ac.za. Or, in the alternative, please contact my supervisor, Dr. Mtotywa, on matolwandile.mtotywa@ru.ac.za, or the Rhodes University Human Research Ethics Committee below.

APPENDIX C: PARTICIPANT INFORMED CONSENT DECLARATION

(To be signed by research participant/s) Project Title: Enhancing operational performance in insurance client services:

An integrative framework for the digital era.

Lavhelesani Netshiswinzhe from the Rhodes Business School, Rhodes University, has requested my permission to participate in the above-mentioned research project.

The nature and the purpose of the research project and of this informed consent declaration have been explained to me in a language that I understand.

I am aware that:

1. The purpose of the research project is to investigate how digital transformation is affecting operational performance and client services within the South African insurance industry. This includes understanding the challenges and opportunities posed by technological advancements, exploring individual employee experiences and perspectives, and developing strategies for integrating technology while maintaining a human-centric approach.
2. Rhodes University has given ethical clearance to this research project No. 2024-7942-9094and I have seen/may request to see the clearance certificate by contacting the Ethics Coordinator (ethics-committee@ru.ac.za)
3. By participating in this research project, I will be contributing towards a deeper understanding of how digital transformation impacts operational performance and client services in the South African insurance industry. My insights will help develop strategies that balance technological advancements with the preservation of human-centric qualities in the workplace, ultimately benefiting both the industry and its workforce.
4. I will participate in the project sharing my personal experiences and perspectives through a semi-structured interview. This interview will focus on my views regarding operational performance, client services and the impact of digital transformation within the insurance industry.
5. My participation is entirely voluntary and should I at any stage wish to withdraw from participating further, I may do so without any negative consequences.
6. I understand that I have the right to refuse to respond to any question that I would prefer not to answer.
7. I will not be compensated for participating in the research.
8. The following risks are associated with my participation:
   - **Time Commitment:** Participation requires dedicating time to complete the interview, which might be inconvenient for some individuals.
9. The results of the research will be available electronically on the RU library. In addition, the researcher aims to publish a conference paper or journal article. However, confidentiality and anonymity of records will be maintained, and my name and identity will not be revealed to anyone who has not been involved in the conducting of the research unless I indicate to the contrary, in which case I agree to accept the loss of anonymity.
10. In terms of the Protection of Personal Information Act (No. 4 of 2013) it remains my right to request the Researcher to provide me with a detailed explanation of exactly how confidentiality and anonymity of the data I provide will be achieved. I may also request to know exactly how my personal information will be stored securely, for how long it will be stored.

11. Data collected from me for this research project will not be used for any further study.
12. In terms of the POPI Act, I possess the right to receive feedback about this research. This will take the form of a formal communication unless I elect not to receive this feedback.
13. Any further questions that I might have regarding the nature of the research and/or my participation in it will be answered by Lavhelesani Netshiswinzhe G22N2341@campus.ru.ac.za.
14. By signing this informed consent declaration, I am not waiving any legal claims, rights or remedies. A copy of this informed consent declaration will be given to me, and the original will be kept on record by the Researcher.

I, ……., have read the above information / confirm that the above information has been explained to me in a language that I understand, and I am aware of this document's contents. I have asked all questions that I wished to ask, and these have been answered to my satisfaction. I fully understand what is expected of me during the research.

I have not been pressurised in any way and I voluntarily agree to participate in the above-mentioned project.

…….. …… …….

Participant's signature **Witness** **Date**

APPENDIX D: INTERVIEW QUESTIONS

My name is Lavhelesani Netshiswinzhe, a Master's student at Rhodes University Business School. I am conducting research on "The Impact of Digital Transformation on Operational Performance and Client Services within the Insurance Industry in South Africa, and I invite you to participate in this study. The Ethics in Research Committee of Rhodes University has authorised and granted permission to proceed with the study. Your participation in this study is completely voluntary, and you may opt out at any time. Your responses will be kept confidential and used solely for academic research purposes. You are not required to provide any personally identifiable or sensitive information. Completing this interview should take approximately 20 minutes. By continuing, you are giving your implied consent to participate in this research study.

SECTION A: DEMOGRAPHIC INFORMATION

In this section, you are requested to mark your answer with an X.

What is your gender?

Gender	
Male	
Female	
Prefer not to answer	

What is your age?

18 – 24 years	
25 – 44 years	
45 years +	

What is your highest qualification?

National Diploma	
Bachelor’s Degree	
Honour’s Degree	

Master's Degree	
Doctorate	
Other (specify)	Click or tap here to enter text.

What is your current position/title?

How many years have you been in your current position?

< 1 year	
1 – 2 years	
2 – 4 years	
> 4 years	

SECTION B: INTERVIEW QUESTIONS

Digital transformation has become a critical focus for organisations seeking to enhance operational performance and client services, particularly in the insurance industry. As companies integrate technologies like artificial intelligence (automation), big data (analytics), and blockchain (security), they face both opportunities and challenges. This shift has led to enhanced efficiencies but also introduces complexities in maintaining a client-centred approach amidst technological advancements. My research aims to explore the impacts of these digital transformations within the South African insurance industry, with a focus on how such changes influence operational outcomes and the quality of client services.

1. Can you describe how digital transformation has influenced operational efficiency and client services within your role or department?

- What measurable changes (e.g., time saved, reduced errors) have you observed?

Click or tap here to enter text.

2. What are the main benefits and challenges you've observed from using technologies like artificial intelligence, BDA, and blockchain in client services?

Click or tap here to enter text.

3. How do you see automation and emerging technologies impacting traditional job roles in the insurance sector? Are there roles that are more vulnerable to change or displacement?

Click or tap here to enter text.

4. In your view, what balance should be struck between technology integration and maintaining a human-centred approach in client interactions?

Click or tap here to enter text.

5. How prepared do you think the current workforce is to adapt to new technologies, and what skill gaps might need to be addressed?

Click or tap here to enter text.

6. What training or development initiatives has your organisation implemented to support employees in adapting to digital transformation, and how effective do you think these initiatives have been?

7. What strategies or approaches would you recommend to ensure that digital advancements enhance rather than diminish client trust and personalisation in insurance services?

Click or tap here to enter text.

8. Reflecting on the future, what new roles or skills do you foresee becoming essential within the insurance industry due to digital transformation?

Click or tap here to enter text.

9. Have you encountered any resistance or barriers from within your organisation regarding the adoption of digital technologies? If so, what were they?

Click or tap here to enter text.

APPENDIX E: INTERVIEW INSTRUMENT ALIGNED TO RESEARCH OBJECTIVES

Interview Question	Purpose	Research Objective(s) Addressed
1. Can you describe how digital transformation has influenced operational efficiency and client services within your role or department?	To understand the operational impact of digital technologies on service delivery and efficiency.	• Investigate the role and benefits of artificial intelligence, BDA, and blockchain in enhancing operational efficiencies within client services.
• What measurable changes (e.g., time saved, reduced errors) have you observed?		• Understand the current landscape of digital transformation and its implications for operations management within the South African insurance industry.
2. What are the main benefits and challenges you've observed from using technologies like artificial intelligence, BDA, and blockchain in client services?	To explore the dual outcomes (benefits and challenges) of advanced technologies.	• Investigate the role and benefits of artificial intelligence, BDA, and blockchain in enhancing operational efficiencies within client services.
		• Explore the nature and underlying factors of challenges posed by technological advancements in meeting client-service expectations.
3. How do you see automation and emerging technologies impacting traditional job roles in the insurance sector?	To examine how automation influences job roles and workforce structure.	• Explore capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.
• Are there roles that are more vulnerable to change or displacement?		
4. In your view, what balance should be struck between technology integration and maintaining a human-centred approach in client interactions?	To assess perceptions about achieving synergy between digital tools and personalised services.	• Explore capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.
5. How prepared do you think the current workforce is to adapt to new technologies, and what skill gaps might need to be addressed?	To evaluate workforce readiness and future capabilities.	• Explore capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.
6. What training or development initiatives has your organisation implemented to support employees in adapting to digital transformation, and how effective do you think these initiatives have been?	To explore organisational responses to workforce transformation.	• Understand the current landscape of digital transformation and its implications for operations management within the South African insurance industry.
		• Explore capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.
7. What strategies or approaches would you recommend to ensure that digital advancements enhance rather than diminish client trust and personalisation in insurance services?	To identify practical solutions for preserving personalisation and trust in digital environments.	• Explore the nature and underlying factors of challenges posed by technological advancements in meeting client-service expectations.
		• Explore capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.

Interview Question	Purpose	Research Objective(s) Addressed
8. Reflecting on the future, what new roles or skills do you foresee becoming essential within the insurance industry due to digital transformation?	To anticipate future workforce needs in a digital context.	• Explore capabilities required to deliver dual value of seamlessly integrating and balancing technology and human-centric interaction.
9. Have you encountered any resistance or barriers from within your organisation regarding the adoption of digital technologies?	To uncover internal organisational barriers to transformation.	• Explore the nature and underlying factors of challenges posed by technological advancements in meeting client-service expectations.
• If so, what were they?		• Understand the current landscape of digital transformation and its implications for operations management within the South African insurance industry.

APPENDIX F: SAMPLE INTERVIEW TRANSCRIPT

Participant 4

SECTION A: DEMOGRAPHIC INFORMATION

In this section, you are requested to mark your answer with an X.

What is your gender?

Gender	
Male	
Female	X
Prefer not to answer	

What is your age?

18 – 24 years	
25 – 44 years	X
45 years +	

What is your highest qualification?

National Diploma	
Bachelor's Degree	
Honour's Degree	
Master's Degree	X
Doctorate	
Other (specify)	Click or tap here to enter text.

What is your current position/title?

Head of Customer Experience

How many years have you been in your current position?

< 1 year	
1 – 2 years	X
2 – 4 years	
> 4 years	

Lavhe Netshiswinzhe 0:03

Thank you so much for joining and also making a contribution to the study.

Lavhe Netshiswinzhe started transcription

Lavhe Netshiswinzhe 0:09

What is your Genda

Participant 4 1:30

OK.

A female.

Lavhe Netshiswinzhe 1:36

And.

What is your age? Are you?

Is your age between?

Participant 4 1:44

I'm 43.

Lavhe Netshiswinzhe 1:45

, OK.

So it's between 25 and 44, OK.

Participant 4 1:47

I'm 43.

Lavhe Netshiswinzhe 1:54

Thank you.

What is your highest qualification?

Participant 4 1:58

It's a master's degree.

Lavhe Netshiswinzhe 2:03

And.

What is your current position title?

Participant 4 2:10

I just got a new job, so let's keep it ahead of customer experience.

I'm starting on the 1st.

Lavhe Netshiswinzhe 2:16

OK.

Oh my God, congratulations.

Participant 42:20

I know.

Thank you.

Lavhe Netshiswinzhe 2:33

OK.

Nice one.

And how many years have you been in your current position?

Participant 42:40

Just over a year.

Lavhe Netshiswinzhe 2:42

So, what is your current role and main responsibilities in the insurance industry?

Participant 43:00

OK, my main responsibilities are optimising operational efficiencies.

Within the insurance space, and that's basically the core of my expertise.

And making sure.

The outcome of everything that we do speaks to enhancing experiences for customers.

Lavhe Netshiswinzhe 3:22

That's perfect.

So you are the perfect candidate, basically, yeah.

Lavhe Netshiswinzhe 3:31

So what factors impact operational performance in your department?

Participant 43:38

I think I can say the lack of.

That's with the strategy.

So if you don't understand the formulation of a strategy and why you are doing things.

That definitely impacts the objectives of performance and the efficiencies that you're trying to create.

Lavhe Netshiswinzhe 4:08

OK.

So the next question would be around.

How has digital transformation affected client services in your company?

Would you say the impact has been positive or negative?

And I'll give you an example of digital transformation, right?

So it would be.

Participant 44:33

OK.

Lavhe Netshiswinzhe 4:37

It maybe big data or

If you have anything that is related to the Internet of Things.

And also any artificial intelligence.

Machine learning.

Do you have chatbots that you guys are using in your company?

I know my question is long, but I just wanted to give you an idea.

Participant 4 5:15

Yeah. So definitely it has impacted, like the digitisation of the business has positively impacted, firstly, our customers because those are priorities. And in Myspace, when I talk about customers, I talk about premium paying customers and brokers and service providers, right. So, that's some of the things that we have.

Lavhe Netshiswinzhe 5:39

K.

Participant 4 5:42

Especially in my current role as the head of customer experience.

My obsession is to create.

Amazing experiences for customers.

Lavhe Netshiswinzhe 5:51

OK.

Participant 4 5:51

And it involves using a lot of data.

So data from before I talk about data, IT forces organisations to start looking at a viewpoint of literally how to improve through changing experiences instead of through charging customers. So you start looking at your business from.

A customer's point of view.

So when you start looking at a business from a customer point of view.

You start understanding how to use data to understand who your customers are.

Lavhe Netshiswinzhe 6:26

Great!

TM **Participant 4**6:26

So the data that I'm referring to is generational data.

Who do your customers within this generation generally belong to?

Because if you're going to solve solutions for your customers holistically without understanding who they are, then you solve the wrong solutions. Even if you start implementing digital solutions, you can't implement, for example, a digital solution for.

For someone who's in their 90s.

Because those are not the solutions that they're looking for.

So our organisation discovery specifically, we use a lot of data to build the right telemetrics solution.

I think most people also know that before an accident happens, we get alerted, you know, because we have our own devices.

Lavhe Netshiswinzhe 7:07

Mm hmm.

TM **Participant 4**7:16

Also.

The few companies that have.

A high recovery rate of vehicles that have been stolen because of the telemetrics that we have.

So we use our data to also understand how to build customised solutions.

So we modularise solutions for customers to say.

Gen Z may need a solution X, but Gen Millennium may need solution Y, so without data, you can't solve for your customers.

So you take all of that data. Understanding who your customer is, and then you start building solutions.

Lavhe Netshiswinzhe 7:50

Mm hmm.

Participant 47:54

So you obviously bring in AI to help you create solutions that speak to those particular customers and the bespoke solutions that you want to build.

And I love this part because you start treating your customers.

As individuals, you don't clap them all together, and you think all customers want the same solutions, you know. So we use a lot of data to just understand what it is that our customers want, as their needs keep changing, and at what point.

Lavhe Netshiswinzhe 8:25

Hmm.

Participant 48:25

Do they want it, and what is the information? Tell us about our customers.

What do they Google throughout the day? That information is important, because then you start building your next step.

Lavhe Netshiswinzhe 8:33

Yeah.

Participant 48:38

For them, you know you can't be speaking to a customer without understanding what their life is all about.

And that's where we get the data from.

AI tells us what these customers do throughout the day and how we can start building solutions. So, in this era within the insurance space.

I don't think we would.

We would be able to do what we do without the digital solutions that all of these AI IoT, the stuff that you've mentioned earlier.

Because you know, they help us respond in a specific way to our customers, and ultimately, all of it impacts experiences for customers. And in the end, it actually improves our return on investment because customers have become loyal to convenience.

Lavhe Netshiswinzhe 9:21

Mm hmm.

Participant 49:32

Customers want convenience and digital, so you can create convenience through digital solutions.

You know, customers don't want to speak to contact centres, for example.

Lavhe Netshiswinzhe 9:38

Hmm.

Participant 49:42

But we use chatbots, we have virtual agents where a customer can speak, and for example, in a claims environment, a customer can register a claim between 4/7.

So they don't need to wait for a call centre to open at 80 o'clock. They can attach their photos, they can use digital solutions to attach their photos. In an event, we need to validate the claim, and service providers can pay themselves once the repairs have been made.

Lavhe Netshiswinzhe 9:57

Yeah.

Participant 410:09

It's out so you just see pockets of excellence within the operational entry end of the business?

Lavhe Netshiswinzhe 10:18

OK.

That is so, so like you've said a mouthful.

I think your company is moving.

In the right direction, so to say, but.

Now that we are talking about digital transformation, right?

How do you feel about the pace of digital transformation in your company?

Participant 410:43

I think in my company it's.

Lavhe Netshiswinzhe 10:43

Is it moving fast, slow or just right?

Participant 410:47

You know what?

We've adapted very well at discovery for an example.

I know that there's a perception in the market that we are like trendsetters.

So yeah, we, we, I'm comfortable with the pace because what you need to understand also is in the adaptation. There's also your cons.

You know, when you talk about the culture, because the culture can also slow down the pace. Of your digital transformation.

So we've adapted very well and we also choose areas where we want to give the most focus right.

So we choose specific customer paths where we believe will get better wins for customers, and importantly again, why we've adapted easily, it's because we sold for customers and not the other way around.

So we're not solving for the business, we're solving for customers.

So the data that we collect helps us obviously.

Quickly solve solutions for our customers.

Lavhe Netshiswinzhe 11:51

OK.

Do you feel adequately supported and trained to use new digital tools introduced by your company?

TM **Participant 4**12:04

I would say partially because I think the excitement about.

All the technology solutions that are coming up are almost like being planted in the business, but not necessarily planted or adopted by specialists.

Do you know what I mean?

So the business buys solutions, but it uses the same capabilities within the business.

Lavhe Netshiswinzhe 12:22

In.

Participant 412:28

Who would need to first understand how these capabilities work, how we will respond to the capabilities and what we can do with the capabilities?

So it's partial, sometimes not fully supported, but in most cases, I do feel fully supported.

Lavhe Netshiswinzhe 12:46

OK. Thank you.

Now we're going to the future of employment and automation right in your company.

How do you feel about the growing use of automation and artificial intelligence in the insurance industry?

Do you think it will?

Participant 413:05

I'm so wonder.

Lavhe Netshiswinzhe 13:07

Yeah. Do you think it will significantly affect employment in the sector?

Participant 413:13

I don't think so, right?

Ultimately, what you get to understand is that the technology is there to enhance processes, right? And to create efficiencies so that you reduce expenses.

But there's still a big element of human intervention that our South African market needs, right?

Lavhe Netshiswinzhe 13:31

Yeah, yeah.

Participant 413:33

And I'll tell you this, because if I look at it, I've worked for three big corporate insurers, right?

And the drivers have always been creating access to customers to use digital platform space. But in all three of these organisations.

The usage of customer digital platforms is less than 20%.

So it's less than 20% because the customer still wants to speak to somebody you know. And personally, I'm one of the people who want an answer now, right?

Lavhe Netshiswinzhe 13:58

Yeah.

Participant 414:03

So sometimes I call the call centre even though I may get frustrated.

Lavhe Netshiswinzhe 14:04

Yes.

Participant 414:09

So I don't think we will ever be at a point where we don't need human beings for specific jobs, 'cause remember the robotics.

Hey, whatever it is that you can inject into the system, it does not have the emotional touch, because if you think about customer experience, customer experience is about the emotion, how you make customers feel.

Lavhe Netshiswinzhe 14:32

Yes, yes.

Participant 414:34

You know, until such technology is built that it gives the customers the feeling of a human being.

I don't think the job market is a threat in any way.

Lavhe Netshiswinzhe 14:41

Mm hmm.

Oh, OK. Thank you.

In your opinion, what types of jobs in the insurance industry are most vulnerable to being replaced or transformed by automation?

Participant 415:01

Mundane work, like payments, for example.

You don't need someone to process a payment, right?

Lavhe Netshiswinzhe 15:08

Yes, yes.

Participant 415:09

And I'll give you an example.

We've done a lot of work where we've taken away mundane functions within the insurance space. For example, if a client wants an updated policy document, you don't need a person to do that.

So we have created an environment where the customer can access that information without speaking to anyone.

Service providers who go out to either carry out repairs at customers' properties or carry out repairs in vehicles, as long as the quote matches the invoice and it meets the other requirements, they can pay themselves.

So we have reduced resources in that aspect where a customer requires in the banking space. Like, if you remember back in the days, if you needed.

Lavhe Netshiswinzhe 15:53

Mm hmm mm.

TM **Participant 4**15:59

A few bank statements you had to queue.

Lavhe Netshiswinzhe 16:00

Yeah.

TM **Participant 4**16:02

You know long at the bank, but you know so.

Lavhe Netshiswinzhe 16:04

Yeah.

TM **Participant 4**16:05

So their capabilities have been improved.

Merely by making sure that people do meaningful work.

Meaningful work which speaks to how you create experiences which are amazing for customers instead of just sending them documents?

Lavhe Netshiswinzhe 16:14

Huh.

OK.

That's.

Very valuable.

Do you think the shift towards automation will create new roles or opportunities in the insurance sector?

If so, what types of roles do you foresee emerging in the future?

Participant 416:42

No, definitely. I'm thinking along the lines of if you talk about automation, you're talking about.

Data analysis, right?

So I just foresee the insurance industry moving into a space where we have a harbour of researchers. You know, you're sitting with data.

Lots and lots of data, but the data might inform future decisions.

You know, but then you need people who will research the data.

Lavhe Netshiswinzhe 17:07

Yes, yes.

Participant 417:12

Think about a typical day for all insurers.

Everyone is just chasing the red rays.

We are just running, running, running.

So there's no one that's going into the data, and OK, not that there's no one.

We don't have enough people doing research on, for example. How do we start creating new frameworks to better underwrite customers? You know, it's still done by an underwriter who is there to do underwriting of policies, but there's still a chunk of data that is not being accessed.

And utilized to create future solutions.

So I would personally say the insurance space is 1 industry that, definitely, in the future, the more we digitise, the more we use automation, the more we create opportunities for researchers who are like insurance or financial services researchers to start looking at, not just insurance solutions, but start.

Lavhe Netshiswinzhe 18:03

Yes, yes.

TM **Participant 4**18:07

Looking at financial services solutions for customers holistically.

Lavhe Netshiswinzhe 18:10

Thank you so much

That was the last question that I had for you.

Do you perhaps have any additional comments or thoughts regarding the integration of digital technologies in the insurance industry?

TM **Participant 4**18:32

You know what I think?

The one thing that I've seen insurers struggle with, right, is everyone wants a solution, right?

And we create the strategies, but we are still leaving the customer behind, right? And I'm an advocate.

Yeah, every room that I enter into, I always want to know.

The solution that we saw.

We were creating. How is it helping the customer?

What solutions are you creating, and how are they going to help the customer? So a lot of times I think as organisations we are too quick to want to create solutions, but leaving the customer out, you know, but we are living in a world where creating great experiences for customers should be an option for every single business, not just insurance.

If you're running a business, your priority is customer experience, and through customer experience, you will get loyalty from those customers. And loyalty obviously speaks to how long the customer will stay with you, and you can actually because you already have a client on your books, you can act.

Sell more products, you know, and as a result, you actually increase your return on investment on just that particular customer.

Lavhe Netshiswinzhe 19:46

Hmm.

Yeah. I guess I agree with what you're saying.

I as a client. If you're not giving me what I want, I'll definitely go somewhere where they're quick to respond to my needs and I don't have to wait 3-4 days for you guys to come back to me.

Participant 420:17

TM Absolutely.

Lavhe Netshiswinzhe 20:21

Stop the recording quickly.

I really appreciate you making time to join the meeting too, so your insights are very valuable. I love that your rule is to make sure that your clients are getting exactly what they deserve.

TM **Participant 4**20:53

It's a pleasure.

I'm glad I could help.

Lavhe Netshiswinzhe 20:57

OK, I have stopped the recording.

Lavhe Netshiswinzhe stopped transcription

APPENDIX G: CODING OF INTERVIEW TRANSCRIPTS

Research Questions	Codes	Sub-Themes	Themes	Participant Quotations (examples)
RQ 1: What role do artificial intelligence, BDA, and blockchain play in enhancing operational efficiencies within client services in the South African insurance industry?	Automation efficiency, Reduced claim processing time, Digital claims processing, Speed of operations, Efficient document handling, Improved data accessibility	Process Efficiency Gains	**Digital Transformation Impact (Operational Efficiency)**	"Automation has significantly improved accuracy and efficiency, particularly in handling death claims." (Participant 1)
				"Processes like claims handling or updating policies now take hours instead of several days." (Participant 6)
				"Automating data cleanup reduced what would have taken approximately 24 years of manual effort to just one year." (Participant 8)
				"Automated claims processing reduced claim settlement times by 30-50%." (Participant 18)
				"Digital transformation has streamlined our processes, reducing manual effort and increasing operational speed significantly." (Participant 14)
	Error rate reduction, Data accuracy improvement, Consistency in service quality, Reduced manual tasks	Reduced Error Rates		"Since automation, errors in documentation decreased substantially." (Participant 9)
				"Automating repetitive tasks, streamlining processes and reducing human errors have all led to faster, more accurate decision-making." (Participant 21)
				"Everything in our operations is still manual, making processes prone to errors and manipulation, significantly affecting accuracy." (Participant 12)
				"Automating repetitive, time-consuming tasks significantly reduced errors." (Participant 7)
		Improved Client Responsiveness		"Digitisation allows immediate responses to client incidents like vehicle theft, greatly improving service." (Participant 4)
				"Communication with clients is faster and more convenient through platforms like MS Teams, Zoom, WhatsApp or video calls." (Participant 19)
	Faster issue resolution,			"AI integration into the claims system significantly improved

	Improved turnaround time			responsiveness and client satisfaction." (Participant 10)
				"Digital tools like chatbots, WhatsApp buttons and self-service portals have improved customer experience." (Participant 14)

Research Questions	Codes	Sub-Themes	Themes	Participant Quotations (examples)
				"Claim processes reduced drastically from days to a few hours after automation." (Participant 5)
	Predictive analytics, Customer insights, Real-time data analysis, Improved decision-making	Advanced Data Analytics	**Technology Adoption Benefits**	"BDA helps us predict client behaviour and preferences." (Participant 4)
				"BDA allows deep understanding of customer needs, resulting in hyper-personalised services." (Participant 3)
				"BDA provides insights into customer behaviour, enabling targeted and relevant services." (Participant 21)
		AI Integration Benefits		"AI and analytics provide precise insights into customer behaviours for proactive solutions." (Participant 4)
	Process automation through AI, AI chatbots effectiveness, Automated data cleaning, Efficient customer engagement			"AI tools enhance transparency and accuracy in project tracking and reporting." (Participant 2)
				"AI anticipates customer needs and potential problems, enabling proactive services." (Participant 18)
				"Integrating AI into CRM tools significantly improved handling large volumes of client queries efficiently." (Participant 9)
				"AI-driven chatbots have helped speed up response times significantly." (Participant 7)
	Data security enhancement (Blockchain), Traceability of transactions,	Blockchain Potential		Blockchain technology offers enhanced security and transparency, ensuring data integrity and significantly reducing fraud risks." (Participant 15)

	Enhanced fraud detection, Transparency through blockchain			"Using voice biometrics has greatly reduced fraud risks, with an error rate of less than 0.5%, making processes safer and more reliable." (Participant 19)
				"Blockchain significantly enhanced security and transparency in transactions." (Participant 13)
RQ 2: What challenges do technological advancements present in meeting client-service expectations, and what underlying factors drive these challenges?	High costs of technology, Budget limitations, Resource scarcity, Financial risk of investment	Financial Constraints	**Challenges in Digital Integration**	"The primary challenge we face is the high initial investment cost for advanced tech tools." (Participant 2)

Research Questions	**Codes**	**Sub-Themes**	**Themes**	**Participant Quotations (examples)**
	Employee resistance to technology, Fear of redundancy, Low acceptance of new methods, Technology fatigue	Resistance to Change		"Older employees are especially resistant to shifting to new technologies." (Participant 16)
		Employee Resistance		"The biggest challenge has been overcoming the fear of change." – (Participant 21)
				"Yes, there has been some resistance and barriers... particularly from employees who are used to traditional processes and methods." – (Participant 21)
				"Old workers stuck in the old way of working." – (Participant 20)
				"Employees fear that automation and AI will lead to job losses." – (Participant 18)
				"Yes, the resistance mostly came from elderly staff that is not tech-savvy." – (Participant 17)
				"Business users sometimes prefer defaulting back to what they know... you always have to remind them not to use the email system." – (Participant 11)

				"There's a bit of a resistance there… the moment we talk about automations people start thinking automation will take their job." – (Participant 13)
				"People still not embracing change... there is a resistance from those employees that have been here for long." – (Participant 12)
	Cultural resistance, Generation gap in technology use, Legacy system constraints, Cultural inertia	Organisational or Legacy Culture	**Cultural Barriers**	"Cultural inertia and reliance on legacy systems hinder the pace of digital adoption." (Participant 18)
				"The insurance industry is still doing things the old way… that's what is frustrating me a lot." – (Participant 12)
				"They still holding on to how they've been working all along… it's very difficult for them to embrace change." – (Participant 12)
				"Some employees are comfortable with existing processes and reluctant to adopt new ones." – (Participant 18)
				"Older employees may face challenges in embracing these changes... the age gap can significantly impact technology adoption." – (Participant 21)
RQ 3: What is the current landscape of digital transformation in the South African insurance industry, and what implications does it have for operations management?	Older employees struggling,	Workforce Adaptation Challenges	**Workforce Readiness and Skill Gaps**	Long-serving staff struggle significantly to adapt to emerging digital platforms. (Participant 11)

Research Questions	**Codes**	**Sub-Themes**	**Themes**	**Participant Quotations (examples)**
	Adaptation to automation challenges,			"Older employees struggling with new tools has made some processes slower to transition." (Participant 12)

	Learning curve of new technology			“People still not embracing change… there is a resistance from those employees that have been here for long.” (Participant 12)
	Limited technical skills, Lack of AI skills, Insufficient data analytics expertise, Cloud computing knowledge gap	Digital Skill Deficiencies		"Most current employees lack in-depth skills in data analytics and artificial intelligence." (Participant 17)
				“The lack of technical knowledge, especially in AI and data, makes it hard to adopt new systems.” (Participant 17)
	Need for frequent training, Skill mismatches in employees, Employee readiness variations, Continuous learning necessity	Upskilling Requirements		"Continuous training programmes are critical in helping employees adapt to new technology." (Participant 15)
				“The company still needs to invest more in training and adopting new tools.” (Participant 9)
				“You need to upskill… anything to do with data science, data analytics, algorithm, machine learning – that’s where we are going.” (Participant 13)
	Administrative roles displacement, Automation of routine tasks, Reduced callcenter roles, AI-driven job transformation	Job Role Evolution	**Future of Employment and Roles**	"Routine administrative roles, especially data entry, will largely be automated." (Participant 21)
				“Automation has changed the way death claim processes are handled – we used to do everything manually.” (Participant 1)
				“AI is getting so good, it will take over a big chunk of roles like underwriting, contact centres.” (Participant 2)
				“Companies are now migrating manual processes online and trying to reduce costs by cutting some of the people.” (Participant 9)
				“We automated the ones that could easily be built with logic and left humans to investigate the rest.” (Participant 8)
	New role: data analysts, New role: automation specialists,	Emergence of New Roles		"Automation specialists and data analysts will be critical future hires." (Participant 3)
				Automation is transforming traditional call centre roles,

Research Questions	Codes	Sub-Themes	Themes	Participant Quotations (examples)
	Increased cybersecurity roles, Roles in client experience design			making upskilling essential. (Participant 5)
				Roles involving routine tasks like claims processing are highly vulnerable to automation. (Participant 6)
				Soft skills such as empathy, critical thinking and communication are becoming increasingly important. (Participant 16)
				"Roles in the data field like analysts and data engineers will become vital for insurance." (Participant 1)
				"New roles like prompt engineers for AI will be needed." (Participant 2)
				"I started as a service specialist and became a business process analyst – that change came because of digital processes." (Participant 8)
	Emphasis on soft skills, Skills in data science, Essential technical literacy, Future job: cloud specialists	Essential Future Skills		"Soft skills such as empathy, critical thinking and communication are becoming increasingly important." (Participant 16)
				"Communication is the most important… you need to engage clients and make them understand the transformation." (Participant 13)
				"Soft skills such as empathy, critical thinking and communication are becoming increasingly important." (Participant 16)
				"Using CRM automation makes communication with clients easy – email, push notifications, everything." (Participant 20)
	Job security concerns, Workforce size reduction, Employment stability uncertainty,	Employment Impact from Automation		"There's significant anxiety around job security due to automation." (Participant 1)
				"There will be a lot of changes – manual client services roles will be cut because of automation." (Participant 9)

	Need for reskilling programmes			"Automation and other technologies are taking over all the mundane tasks." (Participant 1)
RQ 4: What capabilities are required for insurance companies to seamlessly integrate and balance technology with human-centric interaction?	Combined human-tech interactions, Choice of service	Hybrid Service Models	**Human-Centric Digitalisation**	"Hybrid models, combining technology with human interaction, work best to retain customer satisfaction." (Participant 8)

Research Questions	**Codes**	**Sub-Themes**	**Themes**	**Participant Quotations (examples)**
	methods, Human oversight necessity			"Clients prefer options – some want self-service apps, but others still want to talk to someone on the phone." (Participant 1)
	Importance of empathy, Customer preference for human service, Human touch in complex scenarios	Importance of Human Interaction		"Human empathy remains essential, particularly in sensitive cases like claim handling." (Participant 10)
				"People who are going through emotions... they still need that emotional part of things." (Participant 13)
	Emotional intelligence necessity, Service personalisation, Client emotional support, Nuanced human responses	Empathy in Client-Service		"Even with automation, we still need people to verify, explain and handle sensitive cases – empathy matters." (Participant 13)
				"Empathy is the heartbeat of exceptional client-service, demanding emotional intelligence, personalised support and nuanced human connections." (Participant 9)
	Data security assurance, Transparent data practices, Clear privacy policies, Building client confidence	Maintaining Client Trust	**Client Trust and Personalisation**	"Clear and transparent communication on data usage is essential for building trust." (Participant 20)
				"You need to start communicating... clients are more interested in what it benefits them." (Participant 13)

				"You also need to start communicating what steps are you taking to make sure that their information is safe." (Participant 13)
	Personalised client journeys, Tailored digital experiences, Individualised customer communication	Personalisation of Digital Services		"We prioritise tailoring our digital services to each individual client." (Participant 12)
				"We use CRM automation to tailor communications, like push notifications and targeted emails." (Participant 20)
	Proactive client engagement, Regular updates to clients, Responsiveness to client feedback, Client-centric customisation	Transparency of Data Usage		"In a client-centric world, transparency in data usage is the foundation that fosters trust, enabling proactive engagement, timely updates and truly personalised experiences." (Participant 3)
				"In a data-driven environment, transparency is key – clients need to know why you're collecting their information." (Participant 13)
	Structured change management, Incremental	Change Management Strategies	**Organisational Strategies for Digital Adoption**	"We've successfully employed structured change management frameworks to drive digital adoption." (Participant 14)
Research Questions	**Codes**	**Sub-Themes**	**Themes**	**Participant Quotations (examples)**
	technology adoption, Leadership-driven initiatives			"There's still a bit of resistance – we need to use change management to help staff understand technology is there to assist." (Participant 13)
				"We just need the change management in place to give people an understanding that AI is not there to take your job." (Participant 13)
	Regular employee training, Workshops and seminars, Digital training resources, Mentorship programmes	Training and Development Initiatives		"Regular workshops and targeted seminars have been effective in bridging skill gaps." (Participant 19)
				"We've had workshops and training programmes for automation tools, AI and data analytics." (Participant 7)
				"A centre of excellence helps the team explore and share tool learnings – it encourages experimentation." (Participant 9)

	Effective internal communication, Regular feedback mechanisms, Clear technological guidelines, Stakeholder engagement strategies	Effective Communication Practices		"Consistent communication about new tools and their benefits helps minimise resistance." (Participant 6)
				“Communication is the most important – take the journey with clients and make them understand the transformation.” (Participant 13)
				“We are now more proactive with feedback – clients say what they didn’t like and we improve fast.” (Participant 8)

APPENDIX H: CONFIRMATION OF PROFESSIONAL EDITING

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Declaration of editing

EXPLORING DUAL DIVERGENT BENEFITS OF TECHNOLOGICAL INTEGRATION AND HUMAN-CENTREDNESS IN INSURANCE CLIENT SERVICES

by

Lavhelesani Mavis Netshiswinzhe

I declare that I have edited and proofread this thesis. My involvement was restricted to language usage and spelling, completeness and consistency.

I am qualified to have done such editing, being in possession of a Bachelor's degree with a major in English, having taught English to matriculation, and having a Certificate in Copy Editing from the University of Cape Town. I have edited more than 600 Masters and Doctoral theses, as well as articles, books and reports.

As the copy editor,

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Sincerely,

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