Gordon Institute of Business Science
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The role of skills in digital transformation

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Philosophy (Change Leadership).

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Abstract

Emerging technologies are disrupting businesses and societies, leading to organisations making substantial investments in digital transformation in response to these changes. These technological advances have also significantly changed the nature of jobs and the skills required in the digital age. The purpose of the study was to explore the role of skills in the implementation of digital transformation.

The research provides the opportunity for both scholars and business leaders to better understand how skills impact the implementation of digital transformation, which skills are most important and how organisations are aligning their talent management practices to prepare the workforce for the skills demanded in the future.

A qualitative research design was adopted, using a purposive sampling method to select participants from organisations currently implementing digital transformation. Semi-structured interviews were conducted with participants from the information and communication technology, mining, financial services, and public sectors. Thematic analysis was used to analyse and code the data.

This study identified several similarities to existing literature that contributed to reinforcing the importance of both technical and soft skills in digital transformation. There was also one nuance identified relating to the evolving skills required by customers that could potentially contribute to literature.

Keywords
digital transformation, skills, talent management

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Philosophy in Change Leadership at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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List of Abbreviations

AI	artificial intelligence
HR	human resources
GIBS	Gordon Institute of Business Science
ICT	information, communication and technology
Industry 4.0	Fourth Industrial Revolution
IT	information technology
KPI	key performance indicator
RBV	resource-based view
WEF	World Economic Forum

CHAPTER 1: INTRODUCTION

1.1 Introduction

The introduction chapter provides background information on the proposed study and sets the context for the research. This chapter introduces the research topic and motivates why conducting this research was important from both a practical and a theoretical perspective. The practical perspective illustrates the business problem, its significance and potential benefits to practitioners.

The theoretical perspective discusses the theoretical relevance of the research question by exploring the key academic journals related to the problem and motivating how this research can contribute to existing literary knowledge and be of value to academics.

This chapter motivates why this research had to be conducted urgently and it highlights the existing gaps in the literature and potential areas for future research. Based on this foundation, the main research question is presented, along with supporting sub-questions and the reasons why they were formulated.

1.2 Background

Organisations currently operate in complex and volatile environments (Haarhaus & Liening, 2020). Factors such as emerging technologies, increased competition in the market, the changing preferences of customers, and stakeholder pressure on returns are forcing organisations to adopt digital technologies (Omrani et al., 2024). The digital age demands that organisations become more agile, flexible, adaptable, and innovative (Lee & Trimi, 2021); therefore, organisations are adopting digital transformation to transform, develop new business models, increase value to their customers, and strengthen their competitiveness in the markets in which they operate (Ancillai et al., 2023; Bonnet & Westerman, 2021; Carroll et al., 2023; Correani et al., 2020). As a result, digital transformation has become a central strategic priority for organisations (Hanelt et al., 2021), driving significant investments in digital technologies to realise this strategic objective (Carroll et al., 2023; Sousa-Zomer et al., 2020).

Digital transformation has impacted organisations, changed their strategies and business models and how they interact with both their internal and external ecosystems (Bresciani et al., 2021; Choudrie et al., 2025; Verhoef & Bijmolt, 2019; Verhoef et al., 2021). Adopting a digital transformation strategy results in an organisational change impacting systems, structures, activities, and processes (Montero Guerra et al., 2023; Verhoef & Bijmolt, 2019).

In addition, the emerging technology trends have led to some jobs becoming obsolete while simultaneously creating new jobs that require digital skills (Menz et al., 2021; Vaiman et al., 2021). Although digital skills are in high demand, there is a massive global shortage of digitally skilled workers (Carroll et al., 2023), especially in developing regions such as Sub-Saharan Africa (Latukha et al., 2022).

While technology is the enabler of digital transformation and technical skills have become increasingly important, it is not enough to differentiate the organisation from its competitors (Bonnet & Westerman, 2021). Organisations also must manage the change process and the impact on their workforce to reach their digital transformation objectives. The successful implementation of digital transformation depends significantly on the skills and capabilities of the organisation's workforce (Bouwmans et al., 2024). However, to fully optimise their investments in technology, organisations need their workforces to analyse and interpret data to provide key insights and recommendations to management (Bonnet & Westerman, 2021; Frankiewicz & Chamorro-Premuzic, 2020; Verhoef et al., 2021). Scholars agree that the workforce needs to have digital and analytical skills and capabilities to successfully implement digital transformation (Chatterjee et al., 2022; Collings & McMackin, 2025; Menz et al., 2021).

Digital transformation changed the type of jobs and the skills required, and Frankiewicz and Chamorro-Premuzic (2020) suggest that organisations use talent management as a strategy to close the gap between the demand and supply of skilled workers. Scholars argue that to improve the outcomes of digital transformation projects, organisations must be agile and proactively upskill the workforce by developing the skills needed for the future to help them cope with the rapid pace of change (Bonnet & Westerman, 2021; Frankiewicz & Chamorro-Premuzic, 2020; Montero Guerra et al., 2023).

1.3 Business relevance

Technological advancement is one of the key macrotrends impacting the global economy (World Economic Forum, 2025) and countries all over the world are adopting digital technologies to grow their economies, create jobs, and drive innovation (The World Bank, 2024). The African Union (2020) sees digital transformation as the driving force for innovative, inclusive and sustainable growth across the continent. In Sub-Saharan Africa, governments have partnered with The World Bank to invest over USD2,8 billion in digital projects in the last ten years, which has resulted in significant progress towards digital development (The World Bank, 2024). Despite this progress, the region continues to face a shortage of digital skills,

which is a major challenge to successfully implement and sustain digital transformation (World Economic Forum, 2025).

Digital transformation offers significant benefits and opportunities, and organisations that can effectively implement it effectively can achieve stronger financial market performance than those lacking a clear strategy (Deloitte, 2024). It is, however, a challenging and complex process, with many organisations struggling to implement it successfully (McKinsey, 2018). Only a few companies have managed to realise the full potential of digital transformation, achieve the required returns on investment and successfully incorporate it into their normal business operations (McKinsey, 2018; McKinsey, 2021). It is thus critical to further explore the reasons for the failures so that organisations can implement interventions to improve their outcomes and benefit from the full potential of digital transformation.

Emerging technological trends are transforming the labour market by redefining existing job roles and the skills required by the workforce (World Economic Forum, 2025). The fastest-growing roles in the world are those that involve technology skills (World Economic Forum, 2025). This results in an increase in the demand by employers for digital skills, with analytical skills being the top sought-after skill, followed by artificial intelligence (AI) and big data skills (World Economic Forum, 2025). Despite the demand, The World Economic Forum's (2025, p.6) Future of Jobs Survey indicates that "63% of employers" consider the lack of skill to be the biggest challenge to the successful implementation of transformations (World Economic Forum, 2025).

Organisations invest significant financial resources in digital transformation, and it is critical that organisations achieve the returns on their investment by leveraging the full potential of digital transformation. To achieve this objective, it is imperative that organisations adopt a people-centred approach to address their challenges and improve their chances of success (The World Bank, 2024). This is supported by McKinsey (2021), who emphasises that building capabilities for the future workforce is one of the key success factors in digital transformation (McKinsey, 2018). The World Bank (2024) agrees with this view and further emphasises that skills are an enabler of digital transformation, and developing these in-demand skills is critical to close the skills gap. Digital transformation does not only involve the implementation of new technologies, it also requires a supportive organisational culture and a workforce that can adapt to these changes (Deloitte, 2024).

This research study is therefore important from a business perspective, as it is important to understand the role that skills play in the successful implementation of digital transformation.

This understanding will provide leaders with the knowledge to implement the changes needed to achieve success with their digital transformation project. The organisation is part of an ecosystem, and the improved success rate of digital transformation projects ultimately contributes to the digital development goals of the region and leads to economic growth, sustainable development and digital inclusion.

1.4 Theoretical relevance

Although there has been an increase in the interest from both academics and practitioners on the topic of digital transformation over the last few years (Choudrie et al., 2025; Hanelt et al., 2021), there is no consensus on its definition amongst academics (Ancillai et al., 2023; Hanelt et al., 2021). Furr et al. (2022) describe it as a broad and complex phenomenon that does not fit into any theory. The concept is not entirely new, but it is becoming increasingly important to organisations because of how emerging technologies (Carroll et al., 2023) are disrupting their external environments. It is thus important to improve the knowledge and understanding of the phenomenon of digital transformation both in theory and in practice (Sousa-Zomer et al., 2020).

Although digital transformation offers numerous benefits to organisations, it is a complex process with high risks (Li, 2020). Many organisations face the “digital paradox”, where they invest heavily in digital transformation but do not achieve the required returns on investment (Ancillai et al., 2023). Indeed, the failure rate of digital transformation is high, with research suggesting that approximately 70% of digital initiatives fail (Ghosh et al., 2022). This is a major concern since the organisation is investing significant financial and non-financial resources (Correani et al., 2020) in digital transformation whilst it is not yielding the required returns.

The reasons for the high failure rate are not clear, and there seems to be a gap between academic literature and the business leaders on the understanding of why these failure rates are so high (Carroll et al., 2023). Correani et al. (2020) suggest that one of the reasons projects fail is that organisations do not consider how digital transformation impacts their workforce. Digital transformation leads to an organisational change impacting systems, structures, activities, and processes (Montero Guerra et al., 2023; Verhoef & Bijmolt, 2019). Employees can either be the greatest blockers to change or the greatest enablers of transformations (Bonnet & Westerman, 2021) and it is therefore important to take them along in the digital transformation journey. Vial (2019) concurs with this view and emphasises that people play a critical role in transformations.

Montero Guerra et al. (2023) conducted a study on talent management in organisations that were implementing digital transformation. Their findings indicate a significant link between digital transformation and talent management and conclude that digital transformation is changing the way in which companies manage talent. The authors also emphasise that that the workforce skills are crucial to the successful implementation of digital transformation (Montero Guerra et al., 2023).

The study suggests that future research should explore whether implementing talent management practices can improve the success rate of digital transformation projects (Montero Guerra et al., 2023). This research took up the recommendation from Montero Guerra et al. (2023) by exploring which specific skills are required for digital transformation and how they contribute to its successful implementation.

The study is thus relevant from a theoretical perspective, as it aims to add to existing literature on skills and digital transformation and improve academic understanding of the phenomenon.

1.5 Research questions

Organisations are making significant investments in digital transformation initiatives (Carroll et al., 2023; Sousa-Zomer et al., 2020), and executives are under pressure to provide shareholders with the required returns on these investments (Omrani et al., 2024). One of the ways to improve the successful outcome of digital transformation projects is for leaders to adopt a people-centric approach (Bonnet & Westerman, 2021) to the transformation. Vial (2019) supports this strategy and emphasises that the role of employees, their talent, skills and support are vital to implement successful digital transformation projects.

Montero Guerra et al. (2023) suggest future research should explore whether talent management practices can improve the success rate of digital transformation projects. The concept of talent management is, however, broad and Jooss et al. (2024) argue that the skills agenda is not given sufficient priority in talent management literature, especially in today's digital era. The scope of this study was therefore narrowed to focus on the skills component of talent management and to explore the role it plays in the successful implementation of digital transformation to respond to the call of Montero Guerra et al. (2023).

There is, however, no consensus amongst academic scholars about which skills are important for digital transformation because the digital skills required are changing as fast as technology does (Bouwmans et al., 2024). The existing frameworks, such as digital literacy, information

literacy and digital competence do not fully meet the complex needs of digital transformation, as they focus mainly on technological or digital skills and neglect soft skills, which are equally important in Bouwmans et al. (2024) view.

This study aimed to contribute towards the understanding of digital transformation and improving its success rate by studying the impact of skills on the implementation of digital transformation.

The main and sub-research questions are listed below:

Table 1:

Main research question

Main research question
What is the impact of skills on the implementation digital transformation? (Bonnet & Westerman, 2021; Jooss et al., 2024; Montero Guerra et al., 2023).

The research design of the study is exploratory, and the sub-research questions aimed to explore the main research question in more depth and seek new insights into the phenomena (Saunders et al., 2023a) by exploring the problem from a business and theoretical perspective.

Table 2:

Sub-research questions

Sub-research questions	
Research question 1	How does the availability, type and level of skills in the organisation influence the implementation of digital transformation (Bouwmans et al., 2024; Chatterjee et al., 2022; Collings & McMackin, 2025; Fernandez-Vidal et al., 2022; Frankiewicz & Chamorro-Premuzic, 2020; Menz et al., 2021; Ostmeier & Strobel, 2022; Vaiman et al., 2021; Vial 2019).
Research question 2	How does the organisation's talent management approaches, particularly related to skills, support digital transformation? (Collings & McMackin, 2025; Gallardo-Gallardo et al., 2020; Harsch & Festing, 2020; Jooss et al., 2024; Kaliannan et al., 2023; Montero Guerra et al., 2023; Wikhamn et al., 2021).
Research question 3	How do organisations develop the skills needed for the successful implementation of digital transformation? (Collings & McMackin, 2025; Correani et al. 2020; Fernandez-Vidal et al., 2022, Frankiewicz & Chamorro-Premuzic, 2020; Rikala et al., 2024; Ostmeier & Strobel, 2022)

1.6 Research aims

Digital transformation is a broad and complex phenomenon that does not fit into any theory (Furr et al., 2022) and that impacts various industries (Cetindamar et al., 2024). It is becoming increasingly important to organisations because emerging technologies (Carroll et al., 2023) are disrupting their external environments. The technological change is not only disrupting organisations, but it is also widening the skills gaps (Bouwmans et al., 2024; Li, 2022), with workforce skills becoming outdated or the quality of existing skills deteriorating (Rikala et al., 2024). Despite these challenges, scholars agree that people and their skills play a critical role in the successful implementation of digital transformation (Bonnet & Westerman, 2021; Vial, 2019).

This study is thus important from a theoretical perspective, as it aims to contribute to the existing literature on skills and digital transformation and improve academic understanding of the phenomenon. From a business perspective, this research aimed to provide leaders with valuable and practical insights that they can use to develop future skills for their workforce. Additional insights on improving the returns on the project and meeting digital transformation goals, including adding value to customers, future-proofing employees, transforming operations and developing new business models were also drawn (Bonnet & Westerman, 2021; Lumineau et al., 2025).

This research impacts multiple stakeholders and is of interest to a wide audience, including academics and practitioners. This research is also timely and urgent given the rapid pace of technology advancement and the shortage of digitally skilled people, especially in Sub-Saharan Africa (Carroll et al., 2023; Latukha et al., 2022; Omrani et al., 2024). Li (2024) highlights the importance of an inclusive society where no one is excluded from the benefits of digital transformation, emphasising that everyone should be given the opportunity to develop the skills that are needed for the organisations of the future. It is thus critical that organisations address the challenges of inadequate skill sets of their workforce to contribute towards the digital development goals of the Sub-Saharan region.

This study attempted to explore the challenge and to contribute towards the understanding of digital transformation and improving the success rate by studying the role of skills in the implementation of digital transformation. The main research question therefore explored the role of skills in the implementation of digital transformation in organisations. The sub-research questions explored the main research question in more detail and focused on how skills impact digital transformation, which skills are most important, how organisations are preparing the

workforce for these skills and how talent management practices are aligned to obtain the full benefits of digital transformation.

1.7 Research contribution

Crane et al. (2016, p.4) suggest that research studies can provide a theoretical contribution by “developing, refining, or testing theory”. This study aimed to contribute to the literature by identifying potential similarities and nuances that could provide new insights into the role of skills in digital transformation.

Most of the research findings were overwhelmingly similar to literature, which can contribute to existing theory (Crane et al., 2016).

The study also identified one nuance that could contribute to the body of literature (Crane et al., 2016). Under Theme 1, evolving skill sets, although the focus was on skills from an organisational perspective, companies – specifically in the financial services sector – highlighted that the evolving skills required by customers are equally important. While there is limited literature on the need to target customers from a skills perspective, as this could potentially strengthen digital adoption, this study identified it as a critical insight, which was subsequently included in the study’s recommendations.

1.8 Research scope

Theoretical

The two main constructs identified in this study were digital transformation and talent management. As digital transformation is broad in scope and there is no agreed definition of digital transformation amongst academics (Ancillai et al., 2023; Hanelt et al., 2021; Markus & Rowe, 2021), the literature review on digital transformation explored various definitions, including the difference between digitisation and digital transformation.

The concept of talent management is, however, broad, and it was narrowed to focus on the skills aspect because of the criticality of digital skills for the future, the global shortage of digitally skilled workers and the lack of research on the skills, especially in today’s digital era (Carroll et al., 2023; Jooss et al., 2024; Latukha et al., 2022; Menz et al., 2021; Vaiman et al., 2021). The different skills frameworks were also reviewed to determine which skills are important for digital transformation (Bouwmans et al., 2024).

The resource-based view (RBV), in particular the human capital theory, was used to complement the main constructs, as talent is viewed as a unique resource that may be a source of competitive advantage if organisations invest in human capital (Latukha et al., 2022).

Physical research scope

Digital transformation is a global phenomenon that impacts a variety of industries and sectors, individuals and societies across the world (Cetindamar et al., 2024; Sousa-Zomer et al., 2020; Verhoef et al., 2021). Given the widespread impact and relevance of digital transformation, the industry in this study was thus not narrowed to a specific one. The research sample was selected from multiple sectors to provide an overview of digital transformation from different sector contexts.

This study focused on Sub-Saharan Africa, with Namibia and South Africa selected as the research sites for two key reasons. First, there is a need to focus on digital transformation from the perspective of developing economies due to inequalities of technologies, infrastructure and the skills gap (Feliciano-Cestero et al., 2023). Second, Sub-Saharan Africa is lagging its peers in digital transformation and faces critical challenges, which include the shortage of digitally skilled workers (The World Bank, 2024).

Digital landscape in Namibia and South Africa

Namibia is a relevant case for this study as the Namibian government adopted its National Digital Strategy to leverage technology and transform Namibia into a prosperous economy in line with national development goals (Ministry of Information and Communication Technology, 2025). The goals of this strategy include enhancing digital infrastructure and connectivity, promoting digital literacy and skills development and improving public services through e-government (Ministry of Information and Communication Technology, 2025).

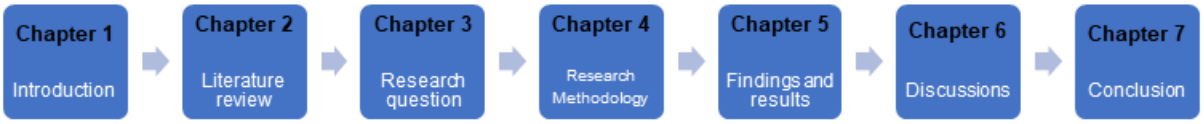
Similarly, South Africa launched its National Digital and Future Skills Strategy in 2020 (Department of Communications and Digital Technologies, 2020), which is aimed at providing its people with the digital skills so that everyone can participate in the digital revolution to improve their lives (Department of Communications and Digital Technologies, 2020). These country goals emphasise the need for talent management strategies that support digital literacy and skills development to align with national goals. Both Namibia and South Africa therefore provided the opportunity to further explore these concepts through this research.

1.9 Research report structure

The research report is structured to provide a logical flow from the start of the paper to the conclusion of the final chapter.

Figure 1*:*

Research report structure



Source: Author's own

Chapter 1 provides a background of the study and illustrates the practical and theoretical relevance of the research. It also justifies the choice of research topics and presents the research questions. Chapter 2 contains the literature related to the two academic constructs that formed the basis of the study. It critically examines the existing and latest literature in the field and identifies the research gaps, which served as motivation for the study.

Chapter 3 presents the research questions and links them to the context established in the previous chapters. Chapter 4 provides the motivation for the research methodology chosen, outlining the philosophy and design, sampling techniques, data collection and analysis to answer the research questions. Chapter 5 presents the results and findings from the data analysis, while Chapter 6 provides a detailed discussion of the findings with the literature review as a basis.

Finally, Chapter 7 offers the main conclusions of the research, outlines recommendations for management and discusses the implications for business. It also presents the limitations of the study and future suggestions for research.

The next chapter is the literature review that contains academic literature to provide the theoretical grounding for the research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section examines the literature on the two constructs of digital transformation and talent management, as well as the main theory that underpinning them. The chapter highlights what is known and not known about the constructs and the research gap that formed the basis of the research question.

First, the construct of digital transformation is reviewed, starting with its definition and then discussing its multi-dimensional impact through an analysis at the macro, meso and micro levels. Also, the impact of digital transformation on organisational change is discussed. Talent management, as the second construct is discussed. It is however broad and has therefore been narrowed to the skills aspect. Third, the two constructs were integrated to review the role of skills in digital transformation, discussing the similarities as well as the gaps in literature.

The resource-based view is adopted as the main theory for this study. It provides a framework to understand how using technology and people can help the organisation achieve its strategic goals and obtain a competitive advantage, particularly in the context of digital transformation.

The chapter concludes with a summary of the most pertinent aspects from the literature, which forms the foundation of the research question.

2.2 Resource based view

The RBV is a mature theory (Barney et al., 2021) which emphasises that the organisation needs resources to successfully implement its strategy (Barney, 1991). Internal resources can be a source of competitive advantage (Köseoglu et al., 2020; Verhoef et al., 2021) that can lead to the organisation improving its performance (Barney, 1991). Both physical assets such as technology and people as well as intellectual assets such as skills and knowledge are key internal resources, required by the organisation to execute its strategy (Barney, 1991; Verhoef et al., 2021). Chatterjee et al. (2022) agree with this view and argue that organisations who deploy internal resources more effectively and efficiently will be more successful in the market (Chatterjee et al., 2022).

While the RBV is one of the most widely used theories, it has also received its fair share of critique (Kraaijenbrink et al., 2010). The concepts of resources and value are fundamental to the resource-based theory (Kraaijenbrink et al., 2010) and it is built on two main assumptions,

namely that a firm's resources are heterogeneous and immobile (Barney, 1991). Barney (1991) further argues that an organisation can obtain only a sustainable competitive advantage if it has internal resources that are valuable, rare or unique, imperfectly imitable and the resource cannot be substituted (Barney, 1991). Although the framework is widely used, Kraaijenbrink et al. (2010) critiqued the theory as being static, and that it places too much emphasis on the possession of resources rather than on building and acquiring them (Kraaijenbrink et al., 2010). To improve on this theory, Kraaijenbrink et al. (2010) suggest that the elements of resource building and acquisition must be added to the definition.

Human capital is a critical internal resource that comprises the knowledge, skills and experience of employees (Latukha et al., 2022). Knowledge, skills and abilities are talent inputs, making up the organisational capital (Jooss et al., 2021). In the RBV context, talent is a form of human capital that is valuable and unique and that can assist organisations in obtaining a sustainable competitive advantage (Dries, 2013b; Latukha et al., 2022). Technology and human capital are the internal resources that are at the centre of digital transformation. Digital transformation leverages digital technologies to create additional value, and the organisation needs to integrate technology in its internal resource base and invest in talent by building digital skills and capabilities (Hortovanyi et al., 2023; Jooss et al., 2021) to benefit from its investment in digital transformation.

The emergence of new technologies, however, increases the complexity and uncertainty in both the organisation's internal as well as external environment (Mrugalska & Ahmed, 2021). These aspects put pressure on the organisation and how it prioritises its internal resources (Mrugalska & Ahmed, 2021). There is therefore, an increasing need for practitioners to improve understanding of how organisations manage their resources (human and financial skills) to obtain improved outcomes with digital transformation (Hortovanyi et al., 2023). The RBV calls on organisations to efficiently use their internal resources and strengths to obtain a competitive advantage (Feliciano-Cestero et al., 2023). The organisation consequently needs to determine how to acquire these resources (Köseoglu et al., 2020) or how to use its existing resources more efficiently and effectively to leverage the benefits of digital transformation (Furr et al., 2022).

The successful implementation of digital transformation requires specific organisational resources such as technical competencies, digital technologies, support from top management and changes to the organisational structure (Omrani et al., 2024). The decision to adopt digital transformation, however, depends on the size of the organisation and the availability of resources and capabilities within the organisation (Omrani et al., 2024). Larger

firms are more likely to adopt digital transformation as they have the financial resources and capabilities to execute the transformation projects (Omrani et al., 2024). They can also absorb the risks related to digital transformation (Omrani et al., 2024). In contrast, the shortage of both human skills and financial resources is a challenge in smaller organisations and SMEs, to successfully implement digital transformation (Omrani et al., 2024). These smaller entities therefore need to be much more efficient in allocating their resources (Omrani et al., 2024).

2.3 Digital transformation

In the last few years, digital transformation has attracted significant interest from both academics and practitioners (Choudrie et al., 2025; Hanelt et al., 2021). It is widely recognised as a complex phenomenon with a broad focus and an extensive reach that does not fit into any single theory (Furr et al., 2022; Hanelt et al., 2021; Verhoef et al., 2021). Digital transformation transcends geographical, industrial and organisational borders (Furr et al., 2022) and affects nearly every industry (Cetindamar et al., 2024). It is impacting people, businesses and systems and changing the relationship between and across ecosystems (Bresciani et al., 2021).

Despite this growing interest, academics have yet to agree on a definition, and defining the concept remains a challenge. What has added to this lack of agreement is that because the concept is so broad, practitioners have redefined the concept to suit their needs based on the industry, sector or organisation (Ancillai et al., 2023; Furr et al., 2022; Markus & Rowe, 2023). The knowledge around the topic is still “fragmented and ambiguous” (Tana et al., 2023, p.1619), lacks “conceptual and empirical clarity” (Markus & Rowe, 2023, p.328), and therefore is not yet considered a well-established theory (Markus & Rowe, 2021). Given this ambiguity and lack of common understanding around digital transformation, there is a need to conduct further research.

Feliciano-Cestero et al. (2023) suggest that further research should be conducted, firstly, on digital transformation from the perspective of developing economies, and secondly, on how the rapid advancement in technology has impacted the new skills and competencies required from the workforce.

2.3.1 Definition

It is important to define digital transformation to improve conceptual clarity. The term digital transformation is often interchangeably used with “digitisation” and “digitalisation” although the terms have different meanings. Digitisation involves the process of converting analogue information into a digital form (Peng et al., 2024), while digitalisation integrates technology into the everyday lives of people, organisations and industries (Carroll et al., 2023; Peng et al., 2024). Digital transformation, however, goes beyond digitisation and digitalisation (Carroll et al., 2023) and uses digital technologies to develop new strategies, create value and revise business models (Furr et al., 2022). It is described as the modern-day fight to survive the threat of digital disruption (Li, 2020).

Markus and Rowe, (2023), however, raise the question of whether digital transformation is really a new phenomenon or whether it is just an IT transformation that was given a new name. Wessel et al. (2021) agree that digital transformation is not a new or unique concept but instead shares a lot of similarities with IT transformations (Wessel et al., 2021). The main difference between the two concepts, according to Wessel et al. (2021), is related to the impact of digital technology on the organisation’s identity and value propositions. Digital transformation leverages digital technologies to transform the organisation’s value proposition and identity, while IT transformations use digital technology to support the existing value proposition and reinforce the organisation’s existing identity (Wessel et al., 2021).

Scholars approach the definition of digital transformation from multiple perspectives. Peng et al. (2024) focus on the central role of digital technologies, while Carroll et al. (2023) and Furr et al. (2022) emphasise the strategic and organisational changes that accompany the adoption of such technologies. Vial (2019, p.118) offers a process view of digital technology by defining digital transformation as a process that uses digital technologies to create disruptions that require strategic responses from organisations to alter their value paths and address structural changes and organisational barriers that affect the positive and negative outcomes of this process. Markus and Rowe (2021) criticise this definition on the grounds that the definition includes the word “process” but that it actually implies an entity, the definition is a statement rather than a theory, and its assumption of human agency does not align with a theoretical perspective on the topic.

Table 3:

Digital transformation definition

Digital transformation definition	Emphasis	Author
Digital transformation is a process that aims to improve an entity by triggering significant changes through combinations of information, computing, communication and connectivity technologies.	Technologies Process	Vial, 2019, p.118
Digital transformation is the adoption of new strategies and business models enabled by new technologies	Technologies Strategies Business models	Furr et al. 2022, p.597
Digital transformation refers to the deep structural business changes organisations make to core processes and business models by exploiting the use of digital tools to compete and meet customers, employees and the wider society's demands	Digital tools Organisational change Competition Customers, Employees and Society	Carroll et al. 2023, p.347

Source: Author's own

It is clear from the above definitions that digital technologies are central to digital transformation (Peng et al., 2024; Vial, 2019). Adopting digital technologies does however not mean that the organisation will be transformed. Caroll et al. (2023) emphasise that digital transformation goes beyond digitisation and digitalisation (Carroll et al., 2023) and includes new strategies, value creation, business models and organisational change (Carroll et al., 2023; Furr et al., 2022). This multidimensional view recognises digital transformation as a phenomenon that impacts people, organisations and ecosystems (Bresciani et al., 2021; Carroll et al., 2023).

In alignment with the academic literature discussed, for the purposes of this study, digital transformation is defined as the adoption of new strategies and business models that are enabled by new technologies which triggers organisational change aimed at redefining value propositions to enhance competitiveness and meet evolving customer demands (adapted from Furr et al., 2022, Carroll et al., 2023; Vial, 2019). This definition acknowledges the importance of new technologies in digital transformation but also adds the strategic and organisational change dimensions to reflect the impact it has on people, business and the entire ecosystem of the organisation (Bresciani et al., 2021).

2.3.2 Overview of digital transformation

The literature and developments on digital transformation were consolidated using Appio et al.'s (2021) three-level Macro-Meso-Micro framework to illustrate its multi-disciplinary and multiple dimensions (Choudrie et al., 2025; Hanelt et al., 2021).

Level 1: Macro level

At the macro-level, the major trends impacting the organisation's external environment are assessed. The digital age has changed the nature of organisations, competition and industries (Menz et al., 2021). The Fourth Industrial Revolution (Industry 4.0) has seen the emergence of new technologies such as artificial intelligence, robotics and the Internet of Things (Choi et al., 2022; Ghosh et al., 2022; Modgil et al., 2023). These technologies are widely adopted and have an impact on the organisation's ecosystem, value creation, ability to innovate and competitiveness in the market (Ancillai et al., 2023; Appio et al., 2021; Choudrie et al., 2025). The COVID-19 pandemic further accelerated the adoption of digital technologies, and it is changing how organisations operate, and how people live and work (Lee & Trimi, 2021; Tana et al., 2023).

Digital technology is used to transform the organisations and to help them obtain a competitive advantage in the market (Ghosh et al., 2022; Bouwmans et al., 2024). Digital technologies are at the centre of digital transformation (Furr et al., 2022) and are reshaping consumer behaviour and expectations, organisations, systems, business models, markets and society (Dąbrowska et al., 2022). Organisations may adopt digital transformation to improve customer service, develop new products and to improve the management of customer relationships (Omrani et al., 2024). Organisations may also be influenced by peer pressure to adopt digital technologies; when competitors implement digital technologies, they are also persuaded to do so (Omrani et al., 2024). Moreover, the adoption of digital transformation helps portray a positive organisational image that indicates that it is agile, digital and innovative (Omrani et al., 2024).

Verhoef et al. (2021) summarised the three major external factors impacting the organisation's decision to adopt digital transformation as digital technology, digital competition and changing consumer behaviour in response to digital technologies. These major trends are forcing organisations to adopt a digital transformation strategy to transform their businesses and change their value propositions to stay competitive in the market and ensure its future sustainability (Correani et al., 2020; Omrani et al., 2024).

Level 2: Meso-level

The rapid development in digital technologies (Li, 2020) has increased environmental complexity, creating challenges for organisations to adapt and survive in the digital age (Sousa-Zomer et al., 2020). The concept of digital transformation is not new, but is increasingly becoming important to organisations due to how the emerging technologies (Carroll et al., 2023) are impacting ecosystems. This item therefore features at the top of organisations' leadership agendas (Hanelt et al., 2021) and organisations are investing significant resources in digital transformation (Carroll et al., 2023; Sousa-Zomer et al., 2020).

Digital transformation affects all aspects of the organisation (Hanelt et al., 2021; Verhoef et al., 2021), which leads to changes in the strategy, structure, resources and processes of the organisation (Dąbrowska et al., 2022; Verhoef et al., 2021).

To remain competitive, organisations must become more agile, flexible, adaptable and innovative (Lee & Trimi, 2021) and this will enable development of new strategies and business models in response to emerging technologies (Furr et al., 2022). The strategy must have a technology roadmap that includes the reskilling and upskilling of employees (Omrani et al., 2024). As digital transformation requires significant financial investments, Furr et al. (2022) suggest using a blend of collaborative and competitive strategies to survive during the digital age. Correani et al. (2020) agree with this view and add that onboarding partners as part of the digital transformation journey enables the organisation to have support in obtaining new data, skills and knowledge that are critical to the implementation of the digital transformation strategy.

Digital transformation is a continuous journey (Carroll et al., 2023) and not one that will ever be completed (Sousa-Zomer et al., 2020) as the external environment is constantly changing (Sousa-Zomer et al., 2020). To fully benefit from the opportunities offered by digital transformation, organisations cannot view this as an occasional update of technologies but must see it as a continuous process that must be embedded in their strategy (Nasiri et al., 2022). The organisation must therefore make changes to its organisational aspects such as its structure, management approaches and cultures (Montero Guerra et al., 2023) to ensure that the transformation is embedded in its organisation and will yield sustainable results.

Digital transformation gives rise to new opportunities, which can change the existing ecosystem in which the organisation is operating (Furr et al., 2022). It can create new value for the organisation by developing new products that can meet customer needs, improve the innovation process and time to market (Correani et al., 2020). The adoption of digital

technologies can also be driven by internal factors such as operational challenges, the need for improved efficiencies or strategic use cases required by stakeholders to improve organisational performance (Omrani et al., 2024). Industry 4.0 allows data gathering in real time, which allows for automation and data analytics enhancing efficiency in operations and providing valuable information to leaders for making strategic and operational decisions (Choi et al., 2022). The advantages of digital technologies include cost reduction, improved product quality, operational flexibility, and improved efficiency and communication with stakeholders (Choi et al., 2022; Omrani et al., 2024).

Technology investments are capital intensive, and organisations need resources to conduct business in the digital age (Sousa-Zomer et al., 2020). Digital technologies have short life cycles and new versions, or new types of technologies are frequently introduced (Feliciano-Cestero et al., 2023). This presents challenges to organisations as they must continuously invest in the newest technologies (Carroll et al., 2023) to keep up with the market and competitors.

Additionally, the risks involved in digital transformation are high, there may be resistance from stakeholders, and returns from digital transformation investments takes substantial time to materialise (Li, 2020). The risks associated with new technologies also include security and privacy (Vial, 2019), which are becoming a major concern for individuals.

Studies indicate that the failure rate of digital transformations in organisations remains high, with approximately 70% of digital initiatives failing to achieve their intended outcomes (Ghosh et al., 2022, p.1). This statistic is a major concern since organisations invest significant financial and non-financial resources (Correani et al., 2020) in digital transformation while failing to achieve the required returns. Ancillai et al. (2023) describe the situation as the “digital paradox”, highlighting the gap between the expected benefits of the project and the actual returns that it delivers.

To address these challenges, Li (2020) suggests three strategies to effectively manage digital transformations. First, leaders should actively scan the market for the latest trends and encourage innovation by experimenting with new ideas. Second, organisations should adopt an incremental approach to implementing digital transformation, introducing small changes as opposed to large-scale ones. Last, leaders should focus on short-term wins while at the same time pursuing long-term digital transformation goals to ensure sustained momentum (Li, 2020).

Level 3: Micro-level

The success of digital transformation is not only dependent on the adoption of new technology, but the specific digital skills and capabilities at the micro-level are crucial to achieve success (Chatterjee et al., 2022). The digital age has changed the nature of jobs and workforce design with automation requiring a higher skill set from the workforce (Menz et al., 2021). Data has emerged as a key driver of digital transformation, making digital skills and data analytics capabilities critical for the successful implementation of digital transformation (Bresciani et al., 2021; Chatterjee et al., 2022). Organisations need to equip their employees with digital skills if they want to benefit from their investments in digital technologies (Cetindamar et al., 2024). If employees are not digitally literate it would be a challenge for the organisation to survive the digital transformation (Cetindamar et al., 2024).

However, digital transformation can also be seen as a threat at the individual level as it threatens current jobs, leading to anxiety and negatively impacting emotional wellbeing (Choi et al., 2022; Dąbrowska et al., 2022). Employees with a lower skill set may become redundant while workers with analytical and digital skills are increasingly in demand (Menz et al., 2021). This shift emphasises the need for human resource strategies to develop workforce skills and capabilities to adapt in the digital age (Chatterjee et al., 2022; Menz et al., 2021).

Despite these challenges, people and technologies have complementary abilities (Furr et al., 2022). Digital tools improve efficiencies including error and cost reductions (Furr et al., 2022) while humans excel at activities that require intuition and emotional intelligence (Furr et al., 2022). Some tasks, especially simple, repetitive tasks that are voluminous and highly dimensional are at risk of being replaced by digital technology, while other tasks requiring contextual information will still require human skills (Furr et al., 2022).

Consolidated framework

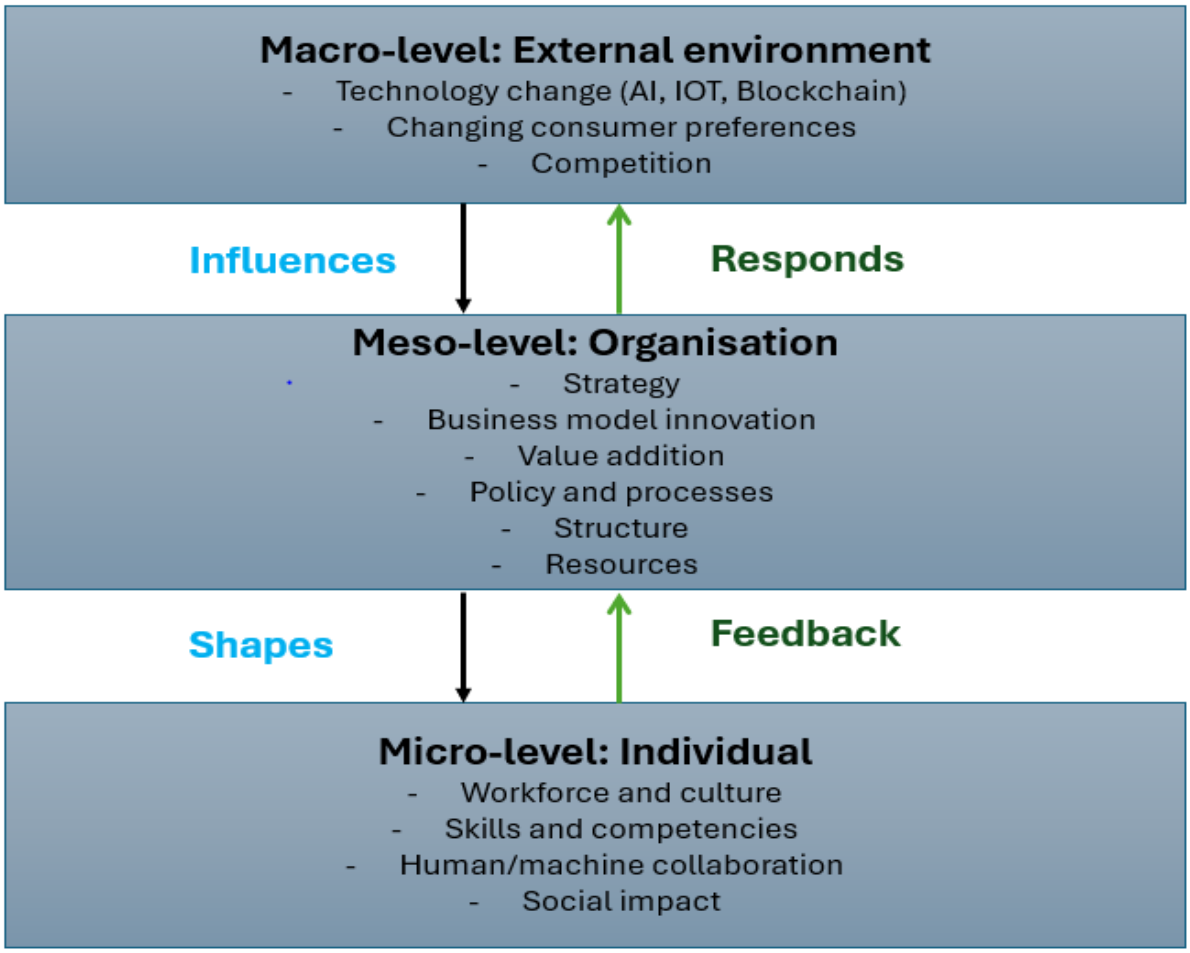
Organisations adopt digital technologies to gain new opportunities and create value or to address existing business problems (Omrani et al., 2024). Digital transformation is impacting people, business and systems and this changes the relationship between and across ecosystems (Bresciani et al., 2021). It also elevates the role of IT from a support function to playing a central role driving value addition and change management to transform organisations (Fernandez-Vidal et al., 2022). To successfully implement digital transformation, the impact of the digital technology needs to be understood, and the phenomenon of digital transformation should be viewed through the lenses of the individual, organisation, and their ecosystem (Dąbrowska et al., 2022).

External environmental changes such rapid technological change and changing consumer preferences are putting pressure on organisations and require them to be agile and adopt a digital transformation strategy. Organisations are forced to review their value propositions, invest in new skills and capabilities, and change their operational models – not as a choice, but as a means of surviving in a digital economy that is becoming increasingly competitive.

The consolidated framework below illustrates the macro-level external drivers, summarises the levels of digital transformation, the meso-level: organisational strategy and capability responses, and the micro-level: workforce and cultural factors and how these impact the organisation.

Figure 2:

Multi-level digital transformation framework



Source: Adapted from Appio et al. (2021), Hanelt et al. (2021), Verhoef et al. (2021), Furr et al. (2022), and Menz et al. (2021).

2.3.3 Digital transformation as an organisational change

Scholars agree that digital transformation constitutes organisational change (Hanelt et al., 2021; Montero Guerra et al., 2023), driven by the advancement and adoption of emerging digital technologies. Change itself is not a new concept; however, due to the volatility of the digital age, it occurs with rapid speed and frequency (Harsch & Festing, 2020; Lee & Trimi, 2021). Organisations are increasingly adopting digital technologies (Hanelt et al., 2021), impacting them at the meso level and changing their culture, systems, and operations (Mrugalska & Ahmed, 2021; Zhao et al., 2024). Correani et al. (2020) describe digital transformation as a complex and disruptive change that affects the organisation's business models (Correani et al., 2020) and value propositions (Choudrie et al., 2025). Carroll et al. (2023) emphasise that it is a continuous journey (Carroll et al., 2023) and a continuous change (Vial, 2019) to transition from the organisation's current state towards its desired digital future (Li, 2020). The organisation, however, also faces the risk that the transformation may not succeed. Digital transformation leads to an organisation-wide change to structures and processes which might lead to internal resistance to the proposed change (Li, 2020; Omrani et al., 2024). The main challenge for companies is therefore to adapt their culture, mindset, and competencies to the digital era (Cetindamar et al., 2024).

In volatile and uncertain environments, organisations must be agile enough to quickly respond to threats and opportunities (Collings & McMackin, 2021; Mrugalska & Ahmed, 2021). Harsch and Festing (2020) support this view and describe strategic agility as a crucial enabler for organisations to survive in the current dynamic environment. Digital transformation leverages new and emerging technologies to redefine business models, value propositions, processes, and organisational structures (Choudrie et al., 2025; Peng et al., 2024; Verhoef et al., 2021). These changes increase the demand on organisational resources, requiring the organisation to review and realign their existing strategies to adapt to digital transformation to remain competitive (Köseoglu et al., 2020), as failure to do so may lead to the organisation being left behind. These strategies must be agile and focus on customer needs, problem solving, organisational learning, knowledge development, and a culture of change (Jooss et al., 2024) to ensure that the organisation achieves its intended outcomes from their digital transformation.

Digital transformation affects both the organisation and its workforce and the success of implementing digital technologies depends on whether the user uses the technologies for the purpose that it was intended (Chatterjee et al., 2022; Dąbrowska et al., 2022). Several factors can impact the technology adoption rate by the workforce including the perceived usefulness

of the technology, the ease of use and the social influence of others in the workplace (Omrani et al., 2024). The workforce can resist change due to the need to maintain the status and the fear of learning new things (Chatterjee et al., 2022), which leads to the organisation not obtaining the required returns from the technology investments (Ancillai et al., 2023).

Bouwmans et al. (2024) emphasise that the successful implementation of digital transformation depends significantly on the organisation's workforce; however, organisations often underestimate the impact that this complex change has on their employees (Dąbrowska et al., 2022). Recognising the significant role of the workforce is essential, as digital transformation does not only depend on technologies but also leads to complex changes across the organisation, which include a wide range of soft aspects (Cetindamar et al., 2024). It is therefore important that the organisation aligns its internal structures and its communication practices as key components to their digital transformation strategy.

For digital transformation to be successful, organisations should not only focus on the adoption of technology but also have a comprehensive change management strategy in place (Dąbrowska et al., 2022; Frankiewicz & Chamorro-Premuzic, 2020). According to Chatterjee et al. (2022), this is critical, due to the complexity of the change, superior change management abilities are needed to implement digital transformation. This includes assessing the impact that the transformation has on the organisation's workforce and preparing them to use the new technologies (Cetindamar et al., 2024; Dąbrowska et al., 2022; Frankiewicz & Chamorro-Premuzic, 2020).

Digital transformation resulted in an increased reliance on IT due to the analytics capabilities necessary to acquire and analyse big data (Verhoef et al., 2021). Consequently, the functional role of IT in the organisation has shifted from primarily a support role to a strategic role that creates value for the business and drives change throughout the organisation (Fernandez-Vidal et al., 2022). Digital transformation, however, does not only impact the IT function as employees across the organisation are part of the change (Vial, 2019). It is therefore important for the IT department not only to lead the digital transformation project, but also to play a supporting role in ensuring that the entire workforce is included in the journey (Vial, 2019).

Digital transformation has a significant impact on the organisation's business models (Correani et al., 2020) and leads to changes in the organisation's structures and processes (Li, 2020; Omrani et al., 2024). As part of this transformation, organisations are establishing new business units and digital functional areas (Verhoef, 2021). Given that digital transformation is increasingly being seen as a top strategic priority (Hanelt et al., 2021), it is

important that the appropriate organisational structures are in place to facilitate this transformation (Singh et al., 2020).

Organisations are therefore establishing new managerial roles to lead new digital functional areas, leverage the opportunities of digital transformation, and manage its risks (Singh et al., 2020). One such role is that of the Chief Digital Officer, who is responsible for the implementation of digital initiatives and demonstrates executive commitment and support for the project (Singh et al., 2020). Other new roles in the technical areas include Chief Transformation Officer, Head of Digital Strategy and IT & Digital Leaders (Fernandez-Vidal et al., 2022). Organisations are not only focusing on technical roles but are also increasingly focused on improving the employee experience with digital transformation (Bonnet & Westerman, 2021). As such, a new role has emerged in human resources (HR) where organisations have introduced a Chief Learning Officer that is responsible for developing new models of learning that are fit for the digital age (Bonnet & Westerman, 2021).

Organisational structures are also leaner and more flexible, which enable employees to take up new roles outside their traditional functions (Fernandez-Vidal et al., 2022; Verhoef, 2021; Vial, 2019). The flatter structures enable the building of dynamic and cross-functional teams that can be quickly redeployed to other areas of the organisation to support digital transformation initiatives (Fernandez-Vidal et al., 2022). These flexible structures are important for organisational agility, while also appealing to younger employees who are increasingly interested in exploring roles outside of their traditional responsibilities to acquire new skills and advance their careers (Fernandez-Vidal et al., 2022). In addition, cross-functional teams offer the opportunity for cross-generational mentorship, to share knowledge, improve collaboration between younger and older employees, and improve team efficiency (Fernandez-Vidal et al., 2022).

In a market where talent is scarce, it is important for organisations to create work environments that appeal to the younger generation, as they demand flexible working arrangements (Fernandez-Vidal et al., 2022). To facilitate these requirements, the organisational structure needs to be flexible so it can quickly adapt to the changing needs of the organisation (Fernandez-Vidal et al., 2022). In addition, organisations need to create a culture that prioritises learning. To address the talent shortages (Fernandez-Vidal et al., 2022), reskilling and upskilling programmes must be implemented to prepare the workforce for the changes brought about by digital transformation (Frankiewicz & Chamorro-Premuzic, 2020).

2.4 Talent management

2.4.1 Definition

Talent management is a fast-emerging topic across all management disciplines (Kravariti et al., 2022). The talent management field is rapidly growing but has not yet reached the status of a mature field of study (Dries, 2013a; Dries, 2013b; Kravariti et al., 2022). Jooss et al. (2021) agrees and further emphasises that it is moving from infancy to an adolescent state (Jooss et al., 2021).

Despite its growing importance, there is a lack of clear definitions and consensus amongst practitioners and academics on its definition (Dries, 2013a; Jooss et al., 2021). It is often described as a phenomenon because no single theory can fully capture the scope of the concept (Jooss et al., 2021). Talent is regarded as a "socially constructed idea" (McDonnell et al., 2023, p.1133) with no exact and agreed upon definition (McDonnell et al., 2023). Similarly, d'Armagnac et al. (2022) emphasize its social constructed nature (d'Armagnac et al., 2022), arguing that it is subject to change depending on the context. Talent management is not a stand-alone phenomenon and is designed and implemented within organisations which are part of society (Gallardo-Gallardo et al., 2020).

The discrepancy between practitioner and academic interest in talent management highlights an opportunity for theory building (Dries, 2013b). Gallardo-Gallardo et al. (2020) suggest that contextualising talent management research, can help to bridge the gap between academic and practitioner understanding of talent management. Since it is a complex social phenomenon, d'Armagnac et al. (2022) suggest that qualitative research is best suited to investigate the phenomenon.

2.4.2 Theoretical foundation

Talent management is a component of HR management (Latukha et al., 2022), and Harsch and Festing (2020) describe it as one of the most important human resources functions (Harsch & Festing, 2020). Digital transformation offers a unique opportunity for HR to influence employee culture, well-being and engagement (Montero Guerra et al., 2023). The ability to attract, develop and retain talent that can execute the organisation's strategy is a key element of success (Modgil et al., 2023). However, human resources practitioners globally believe that talent management is one of the most important human capital challenges facing organisations today (Dries, 2013a). It plays a key role in the human resource strategy of organisations (Jooss et al., 2024; Wikhamn et al., 2021), and between 60% and 70% of organisations have a talent management programme in place (Wikhamn et al., 2021).

Talent management is viewed from the objective approach, which considers the unique qualities and competencies that the individual possesses, which allow them to perform at a high level or have the potential to do so (Kravariti et al., 2022). Talent is a valuable and unique resource that can assist organisations in obtaining a sustainable competitive advantage (Dries, 2013b; Harsch & Festing, 2020; Latukha et al., 2022). Jooss et al. (2021) define talent as employees who demonstrate performance that adds value to the business and who possess the potential to grow (Jooss et al., 2021). Wiblen and McDonnell (2020) agree with this definition and emphasise that talent consists of individuals who have unique skills and capabilities that are deemed valuable.

These definitions align well with the RBV that views the employee's knowledge, skills and abilities as talent inputs that make up the organisation's human capital (Jooss et al., 2021). The organisation can benefit greatly from its talent through increased innovation, consumer value and financial profitability (Montero Guerra et al., 2023). To gain all these advantages, however, the organisation must make a significant investment of financial resources to identify, develop, reward and deploy talent (Harsch & Festing, 2020; Jooss et al., 2021).

Talent management consists of activities and processes, involving talent attraction, identification, development, engagement, retention and deployment of the talents (Al Jawali et al., 2022; Gallardo-Gallardo et al., 2020). Gallardo-Gallardo et al. (2020) emphasise that talent management cannot be understood as a stand-alone phenomenon, as it is implemented in the organisation that is part of an ecosystem (Gallardo-Gallardo et al., 2020). d'Armagnac et al. (2022) concur with this view but add that it is a social construct that is subject to change. There is therefore no single and correct talent management practice, as each approach can have its benefits as well as its limitations (Dries, 2013b).

The organisation's talent management practices are impacted by several internal as well as external factors (Gallardo-Gallardo et al., 2020; Harsch & Festing, 2020). The complexity of today's external environment is driven by various factors including globalisation and technology, and it impacts how organisations implement talent management (Gallardo-Gallardo et al., 2020). Organisations are no longer only competing with local talent, but also compete on a global scale (Gallardo-Gallardo et al., 2020). d'Armagnac et al. (2022) add that these turbulent external factors are forcing talent management practices to evolve in order to cope with these changes.

Internal contextual factors that impact the adoption of talent management approaches include the size of the organisation, budget availability, location, ownership and size of the workforce

(Gallardo-Gallardo et al., 2020). Both micro- and macro-factors influence how the organisation adopts talent management practices as it leads to new ways of working and skills required by the workforce (Harsch & Festing, 2020; Wiblen and McDonnell (2020). It is therefore essential for organisations to understand the macro- and micro-factors impacting their operations (Wiblen & McDonnell, 2020) and align their talent management practices with these factors and the organisation's strategic objectives (Al Jawali et al., 2022).

In addition to micro and macro-factors, talent management is also context dependent and company specific (Gallardo-Gallardo et al., 2020; Harsch & Festing, 2020); thus, requiring organisations to have different talent management practices that fit their strategic objectives (Harsch & Festing, 2020). Gallardo-Gallardo et al. (2020) highlight that, due to the unique characteristics of SMEs such as limited size and scarcer resources, their talent management approach is likely to be impacted. Equally, Kravariti et al. (2022) add the view of the public sector, which faces unique challenges such as resource constraints; as a result, talent management is more complex in this sector.

Overall, talent management is criticised for its static approach which does not support strategic agility (Jooss et al., 2024). Traditional management practices are regarded as outdated and not fit for the digital era (Montero Guerra et al., 2023). Fernandez-Vidal et al. (2022) call for these traditional HR practices to change and to adapt to operate with new HR practices that are more suitable for the digital era. Harsch and Festing (2020) therefore recommend that talent management practices need to be agile in response to the dynamic and changing external factors as well as to the internal and company-specific contextual factors.

The aim of talent management is to provide the organisation with the talent it needs to meet the challenges of its dynamic external environment (Harsch & Festing, 2020). Talent management therefore needs to bridge the gap between the organisation's requirements and the capabilities of its workforce (d'Armagnac et al., 2022). Having a proper talent management system in place will enhance the employees' value proposition, improve organisational competitiveness and sustainability and mitigate high employee turnover (Kravariti et al., 2022).

Talent management can be considered at the individual, team and organisation levels, respectively (Kravariti et al., 2022). At the organisational level, talent management promotes knowledge sharing within an organisation, which contributes to individual talent growth (Kaliannan et al., 2023), increased job satisfaction and employee motivation and decreased staff turnover (Latukha et al., 2022). At organisational level, talent management creates talent pools to fill key positions within the organisation (Latukha et al., 2022). At the individual level,

talent management supports career development and learning opportunities, and improves the organisational culture (Latukha et al., 2022).

The key stakeholders in a talent system comprise senior management, line managers, human resource professionals and individual employees (McDonnell et al., 2023). It is therefore important to consider a multi-stakeholder perspective due to the absence of a shared and consistent understanding of the concept among various stakeholders (Jooss et al., 2021). Gallardo-Gallardo et al. (2020) agree with this view and advocate for a multi-stakeholder perspective including HR, management, employees and the trade unions. In addition, McDonnell et al. (2023) call for a broader workforce perspective to improve the understanding of talent management.

Gallardo-Gallardo et al. (2020) add that the majority of existing talent management research is focused on the meso (organisational) level and suggest that future research focuses on the individual-level or macro-level research.

2.4.3 The war of talent

Talent management is an important tool for balancing the supply and demand for talent (Latukha et al., 2022). In emerging markets, talent shortages are a significant challenge where the high demand for talent and skills forces organisations to compete to attract and retain the best talent (Latukha et al., 2022; McDonnell et al., 2023). The external environment has become increasingly volatile due to globalisation and emerging technologies, impacting the organisation's operations and redefining the skills needed for the future (Harsch & Festing, 2020). Technology will change the nature of jobs rather than eliminate them and it is critical for organisations to understand and develop the new skills required (Barro & Davenport, 2019).

Attracting, developing and retaining talent is a key challenge for organisations today, increasing the need to manage talent more effectively (d'Armagnac et al., 2022; Gallardo-Gallardo et al., 2020). The volatile external environment is forcing the talent management field to evolve in order to cope with the changes (d'Armagnac et al., 2022) and forcing organisations to reconsider how they identify, attract, retain and develop talent (d'Armagnac et al., 2022; Kravariti et al., 2022) to survive in the digital age.

To address these challenges, scholars argue that a more dynamic approach to talent management is needed, which emphasises a flexible resource allocation strategy and

strategic agility (Jooss et al., 2024). The RBV urges organisations to efficiently leverage their internal resources to obtain a competitive advantage (Feliciano-Cestero et al., 2023). Scholars, however, argue for an inclusive-exclusive talent philosophy, with the exclusive talent approach being the most used by organisations (Vardi & Collings, 2023). In the exclusive approach, organisations recruit top talent externally and only develop a selected group of employees internally (Kaliannan et al., 2023). This approach assumes that investing in top talent will result in high returns (Al Jawali et al., 2022). While this approach is widely adopted, it is, however, criticised for excluding employees outside the talent pool, which decreases employee motivation and negatively influences the organisational culture (Vardi & Collings, 2023).

As an alternative, Kaliannan et al. (2023) advocate for the inclusive talent development approach to address talent shortages and close the talent gap (Kaliannan et al., 2023). In this approach, the organisation invests in the skills and capabilities of all employees instead of a select few (Kaliannan et al., 2023) and emphasises the importance of equal opportunities for development for all employees (Al Jawali et al., 2022). Li (2020) emphasises the importance of providing all employees with the opportunity to develop skills so that they can fully participate in the workplace and to create inclusive societies.

This approach has benefits for both the individual and the organisation, by adding value to the individual and contributing to the organisation's growth (Kaliannan et al., 2023). For inclusive talent management to be effective, the organisation must conduct a training needs analysis, skills gap assessment, promote lifelong learning, and use a value-based approach to individual talent development (Kaliannan et al., 2023). To realise the benefits at the organisational level, it must develop formal talent management strategies, frameworks, processes, and policies (Kaliannan et al., 2023).

The inclusive talent approach aligns closely with the RBV and can be a strategy adopted by organisations to retain and develop talents to build the skills it needs for the future while at the same time mitigating the talent gap. However, Wiblen and McDonnell (2020) argue that talent approaches are not mutually exclusive and advocate for a pluralistic approach where the organisation develops internal talent while at the same time recruiting externally for the skills lacking internally (Kaliannan et al., 2023).

2.4.4 Skills

The digital age has changed the nature of jobs and workforce design, with automation requiring a higher skill set from the workforce (Menz et al., 2021). The speed of technology advancements is disrupting organisations and widening the skills gaps (Bouwmans et al., 2024; Li, 2022), with skills becoming outdated or the quality of existing skills deteriorating (Rikala et al., 2024). The skills that are relevant today may thus become obsolete in the future (Modgil et al., 2023). While emerging technologies have led to automation and made several of the existing jobs redundant (Dąbrowska et al., 2022; Frankiewicz & Chamorro-Premuzic, 2020), new opportunities and jobs are being created, mitigating the negative impact of automation (Dąbrowska et al., 2022; Frankiewicz & Chamorro-Premuzic, 2020).

Industry 4.0 may lead to redundancies and job losses, particularly for the blue-collar workforce, middle management and older employees (Mukhuty et al., 2022). As manual jobs continue to disappear, the demand for digital skills is increasing (Mukhuty et al., 2022).

To mitigate these challenges, upskilling and reskilling the workforce is essential. Upskilling helps employees to gain new skills while reskilling equips employees with the skills to take on new roles (Li, 2022). In the labour-intensive industry, workers with routine tasks need reskilling while skilled professionals need upskilling (Li, 2022). We are however moving towards Industry 5.0 which will see machines and humans collaborating and working as partners to minimise errors and to develop quick solutions (Choi et al., 2022; Ghosh et al., 2022; Modgil et al., 2023). Industry 5.0 will see even more use of emerging technologies (Modgil et al., 2023) but the benefits of technology can only be properly leveraged if combined with human skills (Frankiewicz & Chamorro-Premuzic, 2020).

A shortage of relevant skills is one of the biggest challenges that organisations face when adapting to the rapid advancement of emerging technologies (Collings & McMackin, 2025). Skills can be defined and classified in multiple ways (Rêgo et al., 2024). The concept can be defined in terms of cognitive factors such as knowledge, personality traits and social skills (Ellstrom & Kock, 2009 as cited in Rêgo et al., 2024) or as abilities specific to a job, profession or sector (OECD, 2017 as cited in Rikala et al., 2024). Rikala et al. (2024) distinguish between technical, cognitive or soft skills, while Rêgo et al. (2024) refer to hard and soft skills, defining hard skills as technical skills aptitudes, knowledge and abilities and soft skills as personal and behavioural skills (Rêgo et al., 2024).

The different terms of skills gaps, mismatches and shortages are often interchangeably used (Rikala et al., 2024) but have very different meanings. Rikala et al. (2024) clarify these concepts by indicating that skills gaps occur when employees do not have adequate skills to perform their tasks (McGuinness et al., 2028 as cited in Rikala et al., 2024). A skills shortage is where the demand outweighs supply of specific skills (Rikala et al., 2024), whereas a skills mismatch occurs when the employee's skills do not align with the organisation's requirements (Rikala et al., 2024).

The skills gap is a multifaceted challenge and Rikala et al. (2024, p.15) define it as the difficulty to provide the right skills to the right people, at the right time to enhance employee productivity, improve organisational performance, create value, support digital transformation and narrow the gap between the business reality and the labour market. Understanding the skills gap can help organisations to effectively realign talent management strategies to match to the technology driven environment (Modgil et al., 2023; Rikala et al., 2024). The ability for organisations to identify, source and deploy skills will be critical to achieve strategic goals and enhance performance (Collings & McMackin, 2025).

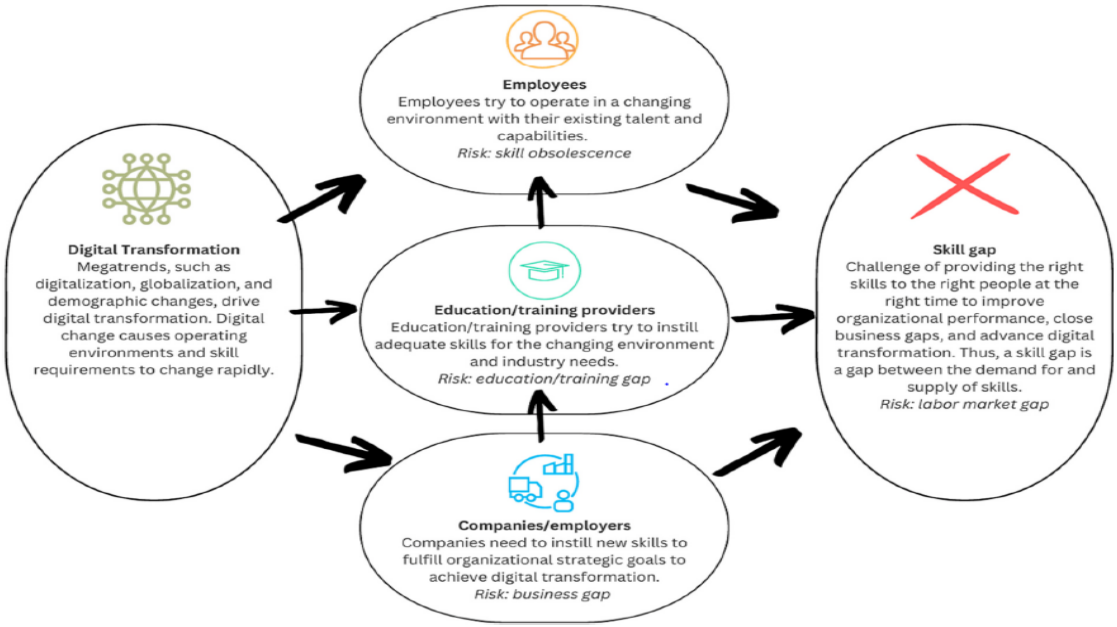
The skills gap involves multiple stakeholders, including organisations, the workforce, political decision-makers, and educational providers (Rikala et al., 2024), all of whom contribute to and are affected by this challenge. Education and training providers in particular are struggling to adapt to the changing industry demands and skills required by organisations, which widens the skills gap (Rikala et al., 2024). Rikala et al. (2024) argue that solving the skills gap is complex and that no single solution exists. The authors further emphasise that it is critical for each of these stakeholders to understand their role in the ecosystem and take collective responsibility to bridge the skills gap, especially in the context of digital transformation (Rikala et al., 2024).

The author argues that although individuals have a responsibility to develop their own skills, they can only do so with the support of their employers (Rikala et al., 2024). Consequently, employers, educators and policymakers must collaborate to provide financial and non-financial resources to support ongoing skills development (Rikala et al., 2024).

The multiple players in the ecosystem are shown in Figure 3 below.

Figure 3:

Players in the ecosystem



Source: Rikala et al., 2024, p.6

From the RBV perspective, organisations can only use skills of the workforce as a competitive advantage if the organisation needs to develop specific competencies and skills to enable the workforce to execute the digital transformation strategy (Zhao et al., 2024). Matching the workforce skills to the demands in the organisation is key (Collings & McMackin, 2021). Collings and McMackin (2021) suggest that a skills audit should be conducted to understand the current capabilities of the organisation's workforce, identifying the gaps and then implementing a plan to close this gap. Reskilling the workforce is a critical priority for organisations and sufficient resources should be allocated to this task (Collings & McMackin, 2021).

Gallardo-Gallardo et al. (2020) emphasise that a talent and learning culture is critical to support creativity, communication and knowledge management. Organisations should therefore plan and ensure that skills and capabilities are built by allocating the necessary resources to equip their workforces to leverage digital technologies (Collings & McMackin, 2021; Rikala et al., 2024). Reskilling and upskilling should focus on the strategy of human-machine collaboration (Li, 2022). The reskilling and upskilling of the workforce is important not only for the organisations but for the country's overall economic development (Li, 2022).

The limited engagement with the skills agenda in talent management literature is a shortcoming and a misalignment with the emerging skills priorities in organisations (Jooss et

al., 2024). It is important to study talent management as there is a “war for talent” and a lack of future skills in the market (Dries, 2013a).

2.5 Digital transformation and skills

It is clear from the above definitions that digital technologies are central to digital transformation (Peng et al., 2024; Vial, 2019). Adopting digital technologies does not, however, mean that the organisation will be transformed. Caroll et al. (2023) emphasise that digital transformation goes beyond digitisation and digitalisation (Carroll et al., 2023) and includes new strategies, value creation, business models and organisational change (Carroll et al., 2023; Furr et al., 2022).

Most studies on digital transformation have focused on macro-level dynamics, such as how digital technologies reshape organisational structures and strategies (Vial, 2019; Peng et al., 2024). In contrast, Cetindamar et al. (2021) argue that micro-level effects, particularly those impacting employees, have been largely overlooked. Scholars further highlight that due to technology advancement, people are being increasingly recognised as the strategic assets of their organisations (Frankiewicz & Chamorro-Premuzic, 2020; Montero Guerra et al., 2023). Frankiewicz and Chamorro-Premuzic, (2020) agree with this view and add that digital transformation is not only about the technology aspect, but people are critical in the process as well (Frankiewicz & Chamorro-Premuzic, 2020).

The successful implementation of digital transformation relies heavily on its workforce (Bouwmans et al., 2024). Employee skill and competencies are important to leverage technology and maintain a competitive edge (Blanka et al., 2022; Bouwmans et al., 2024).

Employee skill set is often recognised as a prerequisite for successful implementation of digital transformation because digital transformation changes the skills required in the workplace (Bouwmans et al., 2024). Zhao et al. (2024) agree with this view and emphasise that the organisation needs to develop specific competencies and skills to enable the workforce to execute the digital transformation strategy. Bouwmans et al. (2024) on the other hand argue that employees need both digital and non-digital skills to excel in the environment of digital transformation (Bouwmans et al., 2024).

Digital transformation requires employees with digital and analytical skills that need to execute the project (Verhoef et al., 2021). However, there is a massive global shortage of digitally skilled employees required by organisations to implement digital transformation (Carroll et al.,

2023). Despite this critical skill shortage, Cetindamar et al. (2024) emphasise that the role of the employees and their digital skills in transforming organisations has been neglected. To address this issue, organisations need to equip their employees with digital skills if they want to benefit from the investments made in digital technologies (Cetindamar et al., 2024).

There is, however, no agreement among scholars and academics about which skills are important for digital transformation (Bouwmans et al., 2024). Several reasons have been identified for this lack of agreement. Rikala et al. (2024) argue that digital transformation impacts a variety of industries with various stakeholders with different interests, which leads to disagreements about the type of skills needed (Rikala et al., 2024). Similarly, Gallardo-Gallardo et al. (2020) and Harsch and Festing (2020) suggest that talent management is context dependent and company specific, indicating that skills required may vary across sectors. In addition, as technology continues to advance and evolve at a rapid pace, digital-related skills must also continuously adapt (Bouwmans et al., 2024). This dynamic nature of both technology and talent management necessitates that organisations have agile talent management practices in place that can respond to evolving skills demands (Jooss et al., 2024).

Digital transformation has driven the adoption of new technologies and digital business models (Collings & McMackin, 2021), resulting in skills gaps, particularly significant in technology areas such as automation, cloud, cybersecurity and data management (Fernandez-Vidal et al., 2022, p.38). Although technological advancements are one of the major trends that impact organisations, what will give them a competitive advantage is not the latest technologies but rather the skills and capabilities within the organisation to interpret and analyse the data effectively and provide management with key insights and recommendations (Frankiewicz & Chamorro-Premuzic, 2020). Employees must therefore be able to combine their technical and analytical skills with the knowledge of how to use technology (Modgil et al., 2023). In this context, digital and analytical skills are increasingly being identified as some of the most critical skills that organisations will need their workforce to have in future (Collings & McMackin, 2021). Li (2020) emphasises the importance of digital skills and recommends that the unemployed should learn skills such as big data analytics, cybersecurity and information technology to be relevant in the job market.

Technical expertise includes IT skills, analytics, artificial intelligence and application development (Fernandez-Vidal et al., 2022). In addition, IT and digital teams need the required business knowledge to ensure that they understand the business, the financial implications of their technical decision and add value to the organisation (Fernandez-Vidal et al., 2022). This

includes keeping up to date with the latest trends and understanding the potential implications, including the opportunities and the threats to the organisation (Fernandez-Vidal et al., 2022). Thus, IT is not only a technical role, but also a strategic role that needs to create value for business as well as drive the organisational change (Fernandez-Vidal et al., 2022).

Zhao et al. (2024) define digital literacy as the abilities of a person when interacting with digital technologies. It includes digital skills, digital human capital, digital readiness and digital competence (Zhao et al., 2024). The cognitive dimension of digital literacy focuses on the digital ability of individuals such as information and data literacy, communication and collaboration, digital content creation, safety awareness and problem solving (Zhao et al. (2024). There is however a lack of consistent understanding amongst scholars on digital literacy (Zhao et al., 2024).

All employees are impacted and required to use digital tools, irrespective of whether they have digital skills (Dąbrowska et al., 2022; Vial, 2019). Digital transformation starts with using the ICT technologies at an individual level (Feliciano-Cestero et al., 2023). If employees are not digitally literate, it could be a challenge to survive digital transformation (Cetindamar et al., 2024). Digital literacy is the ability of the employee to make use of digital technologies to perform their work (Cetindamar et al., 2024). IT tools can increase productivity and efficiency if they are successfully adopted (Cetindamar et al., 2024) and digital literate employees can enhance the utilisation of digital technologies in the organisation (Cetindamar et al., 2024). Digitally literate employees become more motivated and willing to engage with technology, and it allows them to take advantage of digital technologies (Cetindamar et al., 2024).

Digital literacy is important at the lower workforce levels and Zhao et al. (2024) argue that digital literacy of senior executives plays a critical role in supporting the digital transformation strategy in the organisation (Zhao et al., 2024). To digitally transform businesses, organisations need both leaders and ordinary employees to have digital skills as people play a critical role in executing digital transformation strategies (Sousa-Zomer et al., 2020). Barro and Davenport, (2019) agree with this view and further argue that training should start at the executive level because they play a pivotal role in making strategic decisions about investments in technology. Senior executive digital literacy combined with employee digital literacy will promote organisational digital transformation (Zhao et al., 2024). Chatterjee et al. (2022) agree with the view of Zhao et al. (2024) and emphasise that leaders of the organisation are responsible for convincing employees to use new technologies (Chatterjee et al., 2022).

According to Sousa-Zomer et al. (2020), being digitally savvy can help to enable digital transformation capabilities in the organisation (Sousa-Zomer et al., 2020). In addition, Warner and Wagner (2019 as cited in Sousa-Zomer et al., 2020) emphasise that digital natives are needed to successfully execute a digital transformation strategy. These insights from scholars provide an opportunity for organisations to bridge the skills gap by hiring tech-savvy digital natives to complement the in-house expertise (Dąbrowska et al., 2022), which leads to corroboration and knowledge sharing to build internal skills.

Zhao et al. (2024) emphasise that one of the biggest challenges for the organisation is convincing employees and managers to support digital transformation. Management plays a critical role in driving digital transformation initiatives, and given that people are often resistant to change, it is critical for leaders to secure their support and commitment (Fernandez-Vidal et al., 2022). Fernandez-Vidal et al. (2022) emphasise that the digital age has changed the role of managers, and they are now required to lead change, manage flexible organisational structures, manage talent complexity, and adopt a culture of learning. To deal with these complexities, they must possess a variety of skills, including organisational agility, technical skills and emotional intelligence to deal with talent management in the digital age (Fernandez-Vidal et al., 2022). In addition, strong emotional and social intelligence skills, as well as excellent networking and communication abilities, are needed to manage transformation in the organisation (Fernandez-Vidal et al., 2022).

Bouwmans et al. (2024) argue that existing frameworks, such as digital literacy, information literacy, and digital competence, do not fully meet the complex needs of digital transformation. The authors criticise existing frameworks because they mainly focus on technological or digital skills and ignore soft skills (Bouwmans et al., 2024). In Bouwmans et al.'s (2024) view, soft skills are equally important as they allow for adaptability and flexibility during the change process. Consequently, the authors propose that the essential skills for successful digital transformation should be a combination of technical skills (hard skills) and transformation-orientated skills (soft skills) (Bouwmans et al., 2024).

2.5.1 Skills development

Digital transformation is changing the type of skills needed and organisations will have to review and realign the skills of their workforce to be successful (Ostmeier & Strobel, 2022). There is a widening skills gap as employees often do not have the required skill set to function in the organisation where digital transformation has been adopted (Bouwmans et al., 2024). Organisations need to adapt to the digital future by developing the skills required in future and

closing the gap between the talent supply and demand (Frankiewicz & Chamorro-Premuzic, 2020). As digital transformation requires a significant financial investment, Furr et al. (2022) suggest using a blend of collaborative and competitive strategies to survive during the digital age.

One of these strategies the organisation can use is the resource-based strategy, to optimise internal resources and invest in their employees. This internal strategy can focus on reskilling and upskilling the workforce so that they are able to cope with the challenges of the digital era (Frankiewicz & Chamorro-Premuzic, 2020). As digital transformation is a continuous change, the upskilling and reskilling of the workforce should also be a continuous process rather than a once-off activity (Rikala et al., 2024). Another strategy is for the organisation to design employee communication on the impact of macro-level trends such as new technologies on their organisation to promote skill development amongst employees (Ostmeier & Strobel, 2022). Where benchmarking was done, the results of benchmarking should also be shared and communicated with the workforce (Ostmeier & Strobel, 2022). Organisations should raise the digital awareness by communicating values and regulations which enhance the adoption and the use of new technologies (Omrani et al., 2024).

In addition to internally upskilling employees, Dąbrowska et al. (2022) suggest that organisations bridge the skills gap by recruiting external talent with the required skills. However, the scholars also caution that such interventions may result in tensions between the existing employees who possess years of valuable experience and new employees with digital skills (Dąbrowska et al., 2022). Similarly, Correani et al. (2020) suggest that onboarding partners during digital transformation provides the organisation with access to data, skills, and knowledge that may not be available internally. Bonnet and Westerman (2021) provide an opposing perspective, arguing that while outsourcing to partners offers numerous advantages, it requires significant investment in resources and time to effectively manage these relationships. The authors recommend that organisations focus instead on multiskilling their workforce to develop talent pipelines (Bonnet & Westerman, 2021).

In the public sector, Grant et al. (2020) highlight that collaboration between organisations is considered an effective strategy to obtain additional benefits and reducing costs. However, the authors found that this strategy does not always deliver results due to the differences in cultures and ways of doing business between the public and private sectors.

2.5.2 Future research

The role that human capital and competencies play in digital transformation remains underexplored (Blanka et al., 2022). Blanka et al. (2022) identified human capital as a crucial resource for organisations that are in the process of digital transformation. The workforce is not only impacted by digitalisation but can use their knowledge and skills to advance digital transformation (Blanka et al., 2022). The role of employees at all levels, not only at management level, was deemed as critical in the context of digital transformation (Blanka et al., 2022).

Blanka et al. (2022) therefore recommend that organisations need to apply a human-centred approach to digital transformation to improve the success rate of their projects. Bouwmans et al. (2024) add that future research must focus on expanding the framework for essential digital transformation skills particularly skills related to emerging technologies.

2.6 Conclusion

This section highlighted technology megatrends and how organisations respond to changing environments by implementing digital transformation strategies. The digital age has changed the nature of jobs and workforce design, with automation requiring a higher skill set from the workforce (Menz et al., 2021). The speed of technology advancements is disrupting organisations and widening the skills gaps (Bouwmans et al., 2024; Li, 2022) with skills becoming outdated, or the quality of existing skills are deteriorating (Rikala et al., 2024).

Digital transformation is a popular and widely debated topic among practitioners and several industry reports have been published in the past few years (Sousa-Zomer et al., 2020). The topic is also of interest to academics; however, scholars are still debating the definition and knowledge around the topic is described as “fragmented and ambiguous” (Tana et al., 2023, p.1619).

Li (2020) describes it as a complex process with high risks and organisations are facing challenges in successfully implementing the process (McKinsey, 2018; Sailer et al., 2019 as cited in Sousa-Zomer et al., 2020). The reasons for the failures are not clear and there seems to be a mismatch between literature and the practitioner audiences on why these failure rates are so high (Carroll et al., 2023). There is thus a need to improve the knowledge and understanding of this phenomenon both in theory and in practice (Nasiri et al., 2022; Sousa-Zomer et al., 2020).

Digital transformation is an organisational change (Hanelt et al., 2021; Montero Guerra et al., 2023) that is triggered by the advancement and the adoption of new technologies by organisations (Hanelt et al., 2021). People play an important role in digital transformation (Montero Guerra et al., 2023, Vial 2019) and aligning talent management strategies to changes in technology therefore becomes increasingly important (Collings & Mellahi, 2009). Organisations need digital skills at both leader and workforce levels to be able to successfully implement digital transformation strategies (Sousa-Zomer et al., 2020).

Montero Guerra et al. (2023) highlight a theoretical gap in understanding how talent management impacts digital transformation and in whether it improves the success rates of digital transformation projects.

This study explored that gap and to contribute towards the understanding of digital transformation by exploring the role of talent management, with specific reference to skills on digital transformation.

CHAPTER 3: RESEARCH QUESTIONS

3.1 Introduction

The literature review section detailed the practical and theoretical relevance of the study as well as the motivation for conducting the research study. It examined the latest developments in the field and highlighted the potential gaps in the literature that served as the basis for the research questions.

This chapter formulates the main research question as well as the sub-research questions.

3.2 Main research question

Despite the growing interest in the topic of digital transformation from both practitioners and academics (Choudrie et al., 2025; Hanelt et al., 2021), there is a lack of common understanding around digital transformation (Markus & Rowe, 2021), which leads to a need to conduct further research. Montero Guerra et al. (2023) highlight a theoretical gap in understanding how talent management impacts digital transformation and whether it improves the success rates of digital transformation projects.

Talent management is however broad and given the massive global shortage of digitally skilled employees required by organisations to implement digital transformation (Carroll et al., 2023), the study focused on the skills component of talent management. Jooss et al. (2024) support the focus on skills and argue that the skills agenda is not given sufficient attention in talent management literature, which is a concern in light of the evolving skills priorities driven by digital transformation.

Feliciano-Cestero et al. (2023) highlight that existing studies on digital transformation have focused mainly on developed economies. They suggest that further research should, first, examine digital transformation from the perspective of developing economies and, second, explore how rapid advancement in technology has impacted the new skills and competencies required of the workforce (Feliciano-Cestero et al., 2023).

Cetindamar et al. (2024) corroborate these arguments and emphasise that the role of employee digital skills in transforming organisations has been neglected. The misalignment between talent management theory and the practical challenges experienced in the real world highlights a gap that this study explored.

The research aims to provide valuable and practical insights for organisations to address the challenges of digital transformation and skills shortages (Lumineau et al., 2025) to improve the success rate of their digital transformations. It aims to contribute to academic literature (Lumineau et al., 2025) after exploring the future research suggested by scholars to provide new insights (Saunders et al., 2023a) on the digital skills challenge and digital transformation.

The overall research question aimed to generate new insights into the research problem (Saunders et al., 2023a):

What is the role of skills in the implementation of digital transformation?

3.3 Sub-research questions

The research design of the study is exploratory and the sub-research questions aimed to explore the main research question in greater depth and seek new insights into the phenomena (Saunders et al., 2023a).

Research question 1: How does the availability, type and level of skills in the organisation influence the implementation of digital transformation?
(Bouwmans et al., 2024; Chatterjee et al., 2022; Collings & McMackin, 2025; Fernandez-Vidal et al., 2022; Frankiewicz & Chamorro-Premuzic, 2020; Menz et al., 2021; Ostmeier & Strobel, 2022; Vaiman et al., 2021; Vial 2019).

Research question 1 aimed to address the business relevance of the study by focussing on the practical issue of the skills shortages and its impact on digital transformation. It explored how the availability, type and level of skills influence the successful implementation of digital transformations. In addition, the question aimed to understand the scarcity of skills from an organisational business perspective and which specific types of skills are regarded as most important for digital transformation. The question assisted in answering the main research question.

Research question 2: How does the organisation's talent management approaches, particularly related to skills, support digital transformation? (Collings & McMackin, 2025; Gallardo-Gallardo et al., 2020; Harsch & Festing, 2020; Jooss et al., 2024; Kaliannan et al., 2023; Montero Guerra et al., 2023; Wikhamn et al., 2021).

The aim of research question 2 was to understand how talent management approaches have evolved in response to digital transformation, particularly related to skills. It also explored talent management practices and strategies that organisations across different sectors employ to manage skills. The question assisted in answering the main research question.

Research question 3: How do organisations develop the skills needed for the successful implementation of digital transformation? (Collings & McMackin, 2025; Correani et al. 2020; Fernandez-Vidal et al., 2022, Frankiewicz & Chamorro-Premuzic, 2020; Rikala et al., 2024; Ostmeier & Strobel, 2022)

Research question 3 aimed to understand how organisations across different sectors are developing skills, not just for digital transformation but also for the future. It also explored how organisations attempt to bridge the gap between the current skill sets of their workforce and the skills required in the future. The question assisted in answering the main research question.

The consistency matrix in Appendix 5 illustrates how the interview questions were mapped to the research questions and the literature review to ensure alignment and consistency throughout the research process.

The next chapter discusses the research methodology adopted for this study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

The methodology section presents the framework of how the research was carried out and how the research question was answered to achieve the aims and objectives of the research report (Bell, 2019). This chapter details the choice of research design and methodology together with the motivation and justifications of why the specific methods were chosen.

4.2 Research philosophy and design

4.2.1 Philosophy

Bell et al. (2019) indicate that considering the philosophical assumptions of the researcher is important to ensure that they align with the research design and methodology to collect the right type of data, obtain valuable information and attain the envisaged outcomes of the research study. The aim of the research was to improve or clarify the understanding and to gain a fresh perspective of the role of skills in digital transformation (Goldkuhl, 2012; Saunders et al., 2023a).

The interpretivism philosophy was deemed appropriate for this study, as the research aimed for interpretation and understanding of the phenomenon of digital transformation (Goldkuhl, 2012) and to gain rich and detailed data of participants' experiences during the transformation. This choice is corroborated by Goldkuhl (2012), who highlights that qualitative research is often associated with the interpretivism philosophy. Participants who are part of the digital transformation process in their organisations were interviewed to understand their perspectives and experiences (Bell et al., 2019) of the research problem.

4.2.2 Design

According to scholars, the phenomenon of digital transformation is still developing and lacks an agreed conceptual understanding amongst academics and practitioners (Choudrie et al., 2025; Hanelt et al., 2021). Given this problem, the exploratory research design was therefore adopted to clarify the understanding and to gain a fresh perspective on the topic (Saunders et al., 2023a).

This design was deemed appropriate for this study given that the phenomena is in the early stages of development and not yet mature (Markus & Rowe, 2021). Additionally, there is limited research on the skills aspect in talent management literature and the role that

employees and their skills play in digital transformations (Cetindamar et al., 2024; Jooss et al., 2024). Saunders et al. (2023a; 2023b) corroborate the choice of research design and emphasise that the exploratory design is suitable for qualitative studies using the interpretivist method.

One of the advantages of using the exploratory research design is its flexibility and adaptability to change – this allowed the researcher to ask clarifying and follow-up questions during the semi-structured interviews to obtain in-depth insights from the participants (Bell et al., 2019; Saunders et al., 2023a; Saunders et al., 2023b).

4.3 Research methodology

4.3.1 Method

Doz (2011) emphasises that qualitative research methods are instrumental in expanding existing literature and providing theoretical grounding in areas where literature is not yet mature. Bradley et al. (2007) corroborate this view and add that the method is also well suited to exploring and understanding a developing phenomenon. Given that the phenomenon of digital transformation is still developing and there is a lack of clarity among practitioners and academics (Markus & Rowe, 2021), the qualitative method was adopted for this study. The choice is further supported by d'Armagnac et al. (2022), who argue that talent management is a complex social phenomenon that is best researched using qualitative methods (d'Armagnac et al., 2022).

This approach aligns with the interpretivism method, which focuses on understanding a phenomenon and enables understanding of human behaviour (Bell et al., 2019; Goldkuhl, 2012; Saunders et al., 2023a). The qualitative approach provided the researcher with detailed and contextual understanding and valuable insights into the respondents' beliefs, perspectives and experiences (Saunders et al., 2023b) on the role of skills in digital transformation. These insights were then collated and analysed to add theoretical insights from the perspective of the developing economy and provide critical future recommendations that can be used to address the practical challenges of digital transformation (Bradley et al., 2007).

4.3.2 Approach to theory development

The study adopted an inductive research approach, which is appropriate for exploratory and qualitative research that adopted a phenomenology approach (Bell et al., 2019; Saunders et al., 2023a). Semi-structured interviews were conducted with participants who are directly involved in digital transformation within their organisations. The inductive approach was further

used to analyse the data and identify themes and patterns to understand the participants' experiences in the phenomena of digital transformation (Bell et al., 2019; Saunders et al., 2023).

4.4 Research strategy

4.4.1 Phenomenology

Digital transformation is a phenomenon with a broad scope which impacts a multiple of stakeholders in the organisation (Hanelt et al., 2021; Verhoef et al. 2021). It is a complex phenomenon which makes it difficult to fit into any framework (Furr et al., 2022). The phenomenology approach was used in this study because the research is exploratory in nature and followed an interpretivist philosophy (Creswell et al., 2007). According to Creswell et al. (2007), phenomenology is well suited for qualitative studies where data is gathered through semi-structured interviews. Data was analysed to describe and interpret the participants' experiences with digital transformation.

One-on-one semi-structured interviews were conducted with the individuals who have experienced the phenomenon of digital transformation in their organisations (Creswell et al., 2007). Participants who were selected had different opinions and perspectives and these were based on their lived and unique experiences with digital transformation (Saunders et al., 2023a). The analysis of data not only focused on the individual respondent's experiences with digital transformation but collected a summary of all the respondents' data (Creswell et al., 2007). The summary was analysed using thematic analysis and coding techniques to describe common themes and analyse how the participants experienced the role of skills in digital transformation (Creswell et al., 2007). This allowed the researcher to obtain an in-depth understanding of the research question.

4.5 Time horizon

The cross-sectional time horizon was chosen as most suitable because the study was qualitative research (Saunders et al., 2023a) and because there was a time constraint to complete the study. Data gathering commenced after ethical clearance had been obtained on 28 July 2025 and semi-structured interviews were conducted with participants during the period of August and the beginning of September 2025.

4.6 Population

Feliciano-Cestero et al. (2023) highlight that existing studies on digital transformation focused mainly on developing economies. Developing economies however face unique challenges and inequalities due to the lack of developed technologies, access to infrastructure and the digital skills gap (Feliciano-Cestero et al., 2023). Countries in the Sub-Saharan region in particular are impacted by these challenges, and the region continues to lag its peers when it comes to digital transformation (The World Bank, 2024). The participants for this study were predominantly based in Namibia with a few in South Africa. The research provides local context and the developing economy perspective to the literature on digital transformation.

Digital transformation is a global phenomenon that impacts almost every industry and a variety of stakeholders (Cetindamar et al., 2024; Sousa-Zomer et al., 2020). To get a more comprehensive understanding of this challenge, the target population for this study comprised professionals who have extensive knowledge of and experience with digital transformation within organisations that have gone through or are in the process of digital transformation. The study aims to enhance the understanding of digital transformation in different industries and (Furr et al., 2022) the industries selected for this study were ICT, mining, financial services, postal and public sectors.

4.7 Sampling technique

Sampling considerations are a critical component of any empirical research, particularly in qualitative studies where the goal is to obtain rich and detailed insights (Czernek-Marszałek & McCabe, 2024). The choice of sampling strategy was guided by the philosophical assumptions adopted for the study as well as considerations such as time constraints, financial resources and ethical issues (Czernek-Marszałek & McCabe, 2024). In alignment with the study's interpretivist philosophy and inductive approach, a non-probability sampling technique was selected, relying on the researcher's judgement to guide participant selection (Bell et al., 2019). The sample therefore had some biases and validity measures, and quality control checks were introduced to minimise these risks, which are detailed in Section 4.13.

The purposive sampling technique was selected for this study and the researcher's judgement was used to develop the criteria relevant to the research objectives on which the sample was selected (Guest et al., 2006; Saunders et al., 2023a). This method is appropriate, because the study is qualitative and the researcher is interested in the knowledge and experience of the participants (Saunders et al., 2023a). The purpose of the criteria developed was to select professionals with direct experience in digital transformation who could provide rich and

meaningful data that could contribute to the understanding of skills and their role in digital transformation (Saunders et al., 2023a).

The heterogeneous sampling approach was chosen to include a multi-stakeholder perspective across the organisation (Gallardo-Gallardo et al., 2020; McDonnell et al., 2023; Saunders et al., 2023a). Participants from organisations in the ICT, mining, financial services, postal and public sectors were included in the criteria to improve the understanding of digital transformation in these sectors (Furr et al., 2022).

Jooss et al. (2024) argue that the diversity in the sample in terms of industries and selecting participants from different operational functions in the organisation increases complexity and limits the in-depth knowledge of a particular group or industry. However, the diversity in the sample also provided rich and detailed data through a wide range of perspectives which resulted in "more nuanced findings" (Jooss et al., 2024, p 146).

The sampling criteria were defined at both the level of analysis as well as the unit of analysis. At the level of analysis, the organisations had to be active in their digital transformation projects to be considered for selection. At the unit level of analysis, the research took place at an individual level with pre-determined selection criteria based on judgement by the researcher. The table below provides a summary of the sampling approach.

Table 4:

Summary of sampling approach

Item	Description
Level of analysis	Organisations that are active in digital transformation.
Unit of analysis	Individuals specifically at management level that are involved with digital transformation initiatives within their organisation.
Motivation for unit of analysis	Individuals at management level that had experience in digital transformation and could provide detailed insights into the phenomenon (Saunders et al., 2023a).
Sampling strategy	Purposive sampling with a heterogeneous approach to capture diverse perspectives across industries and demographics.
Selection criteria	Participants at management level including HR and talent management practitioners and digital transformation experts.
Individual selection criteria	1. Experience with digital transformation projects 2. HR professionals involved in talent management 3. The remainder of the sample from various departments.
Target sample size	15 participants.
Geographical scope	Namibia and South Africa.

Source: Author's own

4.8 Sample size

Saunders et al. (2023a) argue that the sample size in the non-probability sampling technique does not have to be large because it does not have to be representative of the sample. In fact, a small sample size is recommended when using an inductive approach (Saunders et al., 2023). The population is large, and it would be impractical to interview all participants meeting the criteria across Namibia and South Africa (Saunders et al., 2023a). Given the time constraints of the study, a smaller sample was therefore considered appropriate.

In qualitative research, data saturation occurs after a certain number of interviews have been undertaken and no new themes, insights or perspectives emerge from the data (Bradley et al., 2007; Czernek-Marszałek & McCabe, 2024; Saunders et al., 2023b). However, it is not possible to predetermine at which point saturation will occur (Czernek-Marszałek & McCabe, 2024) as it depends on the nature of the study (Saunders et al., 2023b). Scholars, however, suggest some guidelines, with Saunders et al. (2023a) indicating that a heterogeneous sample in qualitative research may range between 12 and 30 participants depending on the research strategies and complexity. This view is supported by Guest et al. (2006, p.76), who found that saturation often occurs “within the first 12 interviews”, and Saunders et al. (2023b) who suggest that saturation typically happens between 9 and 17 interviews.

Given the time and resource constraints and the guidance from literature on qualitative sample sizes, an initial target of 15 participants was selected for this study. These participants were identified through the researcher’s professional networks, LinkedIn, industry contacts and referrals. The target sample size was successfully achieved with a total of 15 semi-structured interviews conducted.

4.9 Unit of analysis

The study was conducted in organisations currently implementing digital transformation – in the Namibian context, and a few in the South African context. The unit of analysis was at the individual level, focusing on professionals at the management level who have experienced or been directly involved in digital transformation (Bell et al., 2019; Creswell et al., 2017). The selection criteria were aligned with the research purpose (Bell et al., 2019) to enhance the depth and quality of data collected during the semi-structured interviews. The participants had different opinions and perspectives based on their individual experiences (Saunders et al., 2023a), which provided rich and detailed data to analyse.

Fernandez-Vidal et al. (2022) argue that the role of management has changed significantly in the digital age. Managers are now expected to lead organisational change, manage flexible structures, manage talent complexity and create a culture of learning (Fernandez-Vidal et al., 2022) to effectively lead their teams in the digital age. Given this view, the primary selection criteria focused on participants at management level within organisations undergoing digital transformation.

The selection criteria included manager's technical knowledge in digital transformation, human resource leaders with talent management expertise, specifically the skills aspect, and other professionals from other departments in organisations involved in digital transformation. The criteria ensured that participants had the required experience to provide insights and add a meaningful contribution to the research. The research participants, all of whom held decision-making roles in middle or senior management, were purposefully selected to ensure insight into both the skills required and the implications of digital transformation for teams and the broader organisation.

Digital transformation impacts the whole organisation (Cetindamar Kozanoglu & Abedin, 2021) and the sample was balanced to include technical expertise, HR practitioners with skills management experience in the context of digital transformation, and professionals from other departments who are impacted by digital transformation or directly involved in the digital transformation initiatives. The balanced approach ensured incorporation of a multi-stakeholder approach, representing the human capital and broader organisational perspectives (McDonnell et al., 2023).

The researcher used their professional networks and referrals to identify professionals involved in digital transformation in the ICT, mining, financial services, postal and public sectors. Having worked in an organisation which has gone through major digital shifts, the researcher has a network of professionals who have expertise in digital transformation. These contacts were used to unlock further participants through referrals. The sampling approach reflects the participants' experience across countries and industries; and through this approach the research included participants who could contribute towards an improved understanding of and new insights into the role of skills in digital transformation.

The sample targeted five professionals who have expertise in digital transformation and have led or supported digital transformation as key players, three HR professionals from the same organisations, five team members who were part of digital transformation and two digital transformation experts who may be familiar with the latest trends and best practices.

Table 5:

Participant summary 1

Department	Targeted sample
HR	3
Digital transformation	2
Technical expertise	5
Other departments	5
Total	15

Source: Author's own

4.10 Research measurement instrument

The purpose of the research design is important to determine the most appropriate qualitative approach to use to answer the research question (Gehman et al., 2018). The research question guides the research approach and design in qualitative research (Creswell et al., 2017). For this study, a mono-method qualitative study design was used, with a single data collection technique (Saunders et al., 2023a). The research design for this study is exploratory with an inductive approach; therefore, semi-structured interviews were chosen as the most appropriate research measurement instrument (Saunders et al., 2023a). This approach is consistent with the open nature of qualitative research which provides an opportunity to collect detailed and rich data to clarify the understanding of the phenomena and gain a fresh perspective on the role of skills in digital transformation (Doz, 2011).

The semi-structured interview method offered flexibility during the interviews, allowing the interviewer to deviate from the sequential order of questions, ask clarifying, probing and follow-up questions to allow more detailed perspectives and fresh insights during data collection (Bell et al., 2019; Saunders et al., 2023a). This is well aligned with the exploratory research design, which is flexible and adaptable to change (Saunders et al., 2023a). This approach is also consistent with the interpretivist philosophical research strategy used (Saunders et al., 2023a), which aims to understand how the participants experienced the digital transformation phenomenon.

For this study, 15 participants who met the sampling criteria outlined in Section 4.7 were purposively targeted for semi-structured interviews. Participants were identified through the researcher's professional networks, LinkedIn, industry contacts and referrals.

A semi-structured interview guide, provided in Appendix 3, was used as a research measurement instrument, which contained the list of interview questions (Bell et al., 2019).

The guide contained a list of questions designed with a logical flow to ensure that the interview was seamless, and rich data could be obtained.

The consistency matrix in Appendix 5 illustrates how the interview questions were mapped to the research questions and the literature review to ensure alignment and consistency throughout the research process.

4.11 Data collection

Primary data were collected by conducting 15 semi-structured interviews with participants experienced with digital transformation. Once ethical clearance had been obtained, the researcher invited suitable participants who met the research criteria for interviews. Semi-structured interviews were conducted using Microsoft Teams and the interview time was set to be approximately 60 minutes. The informed consent form in Appendix 1 was distributed to the participants ahead of the interviews to read, complete and sign. The researcher reaffirmed confidentiality and anonymity, highlighted the voluntary nature of participation, and that participants could withdraw any time without penalty. The researcher also invited participants to raise questions or seek clarification before the interview commenced.

The interviews were conducted in English and Microsoft Teams was used to record and transcribe the interviews with the consent of the participants. The researcher also made notes of key insights during the interviews. Following the interviews, the researcher downloaded the transcripts from Microsoft Teams into Microsoft Word. These were then reviewed for accuracy and edited by listening to the audio recording. The edited transcription and audio recording were uploaded to Atlas.ti, a software programme that was used to code and analyse the data. To ensure confidentiality, the transcriptions and recordings were stored anonymously without identifiers both in Atlas.ti and on the researcher's cloud storage and hard drive.

4.12 Data analysis

Data analysis is considered the most challenging step of a research project (Kiger & Varpio, 2020); therefore, the selection of the data analysis technique is crucial. In qualitative research the emphasis is on words rather than numbers (Bell et al., 2019) and therefore the data analysis technique must both describe and interpret (Vaismoradi et al., 2016) the participant's interview responses. Given that this study used a qualitative approach, thematic analysis was considered the appropriate technique to analyse the thoughts, experiences and opinions of the participants (Kiger & Varpio, 2020).

Thematic analysis was performed using a six-step approach, as outlined by Braun and Clarke (2006), with the use of Atlas.ti software to code and organise the data. This method was chosen because of its accessibility and flexibility, as well as its ability to analyse the rich details and complexities of the qualitative data (Saunders et al., 2023a; Saunders et al., 2023b).

Saunders et al. (2023b) emphasise that thematic analysis is an iterative process, and therefore saturation was considered throughout from the data collection to the data analysis phase (Saunders et al., 2023b). The inductive approach was further used to analyse the data and identify themes and patterns to understand the participants' experiences in the phenomena of digital transformation (Bell et al., 2019; Saunders et al., 2023).

As the themes developed from the analysis, the researcher closely monitored whether new insights or findings emerged from the data to determine whether saturation had been reached (Bradley et al., 2007; Czernek-Marszałek & McCabe, 2024; Saunders et al., 2023b). This process is summarised next.

Data familiarisation

The first step in the process involved the researcher listening to the recordings, reading, re-reading and reviewing the transcripts multiple times to familiarise herself with the data (Braun & Clarke, 2006; Saunders et al., 2023a). This enabled the researcher to understand the data and look for meanings, recurring themes and patterns (Saunders et al., 2023a). The researcher made notes on preliminary thoughts and impressions on Atlas.ti (Saunders et al., 2023b).

Data coding

A detailed coding process was undertaken where the transcripts were reviewed line by line to identify significant statements or quotes (Creswell et al., 2007; Saunders et al., 2023b). A long list of codes was created in line with the research question, aims (Saunders et al., 2023a) and the data was categorised, organised and tagged using Atlas.ti.

Theme generation

After the coding stage, the codebook was extracted from Atlas.ti into Excel to determine the themes. The codes were reviewed multiple times and were combined into categories which reflected similar patterns (Braun & Clarke, 2006; Saunders et al., 2023a).

Reviewing themes

Preliminary themes were then created from the groups of codes which were reviewed and analysed to ensure that they are supported by data and aligned with the research question (Saunders et al., 2023b). All the common themes were categorised together to create a thematic map (Saunders et al., 2023a).

Defining and naming themes

The themes were refined to generate clear definitions and names for each theme (Braun & Clarke, 2006). Themes were further reviewed and aligned with the codes, literature review and the research questions (Braun & Clarke, 2006).

Producing the report

The final analysis was performed by summarising the main themes and insights that were supported by relevant quotes by the participants (Saunders et al., 2023b). The results were interpreted and contextualised to produce meaningful analysis and insights (Saunders et al., 2023b).

4.13 Research quality and rigour

The most commonly used criteria for evaluating research are assessing “the reliability, replicability, and validity” of the research study (Bell et al., 2019, p.49). The research design for this study is exploratory with an inductive approach, therefore semi-structured interviews were chosen as the most appropriate research measurement instrument (Saunders et al., 2023a). However, due to the informal structure of semi-structured interviews, interviewer and participant bias are among the main risks to data quality (Saunders et al., 2023a).

The researcher implemented data quality checks, which included properly preparing for the interviews, careful phrasing of questions to avoid interviewer bias, summarising, and testing the interview responses with the interviewee to ensure the correct understanding, and using probing questions to explore responses from a variety of perspectives (Saunders et al., 2023a).

Complete records were kept of all phases of the research project, including the researcher’s notes during the data collection and analysis stages to ensure consistency throughout the process (Bell et al., 2019; Saunders et al., 2023a). These records are securely stored in line with the university’s requirements.

Thematic analysis was chosen as the appropriate data analysis technique using Atlas.ti software to code and organise the data to ensure that themes were accurately identified, and consistency was applied throughout the analysis process.

The consistency matrix in Appendix 5 also illustrates how the interview questions were mapped to the research questions and the literature review to ensure alignment and consistency throughout the research process. Literature from top tiered journals was reviewed and used as the basis for the research question to ensure quality research.

4.14 Ethical considerations

All ethical considerations adhered to the GIBS ethical guidelines for research projects (Saunders et al., 2023a). Ethical clearance was obtained from the GIBS Ethics Committee before the data collection process started to ensure all potential ethical issues were recognised and addressed and participants were protected (Saunders et al., 2023a).

Ethical considerations were continuously assessed throughout the process (Saunders et al., 2023a), and the following quality assurance procedures were put in place to protect participants: The informed consent form was sent to the participants to complete before the start of the interview; the researcher personally assured the participants of confidentiality and anonymity; data was kept confidential during the analysing and transcribing process, and will be stored securely in the cloud for a period of ten years in accordance with the university's requirements (Saunders et al., 2023a).

Participation in the interview was entirely voluntary, and no incentives were offered to take part in the research.

The ethical clearance approval obtained from the GIBS Ethics committee is attached in Appendix 2.

4.15 Limitations of research design and methods

The limitations of the research study were as follows:

Philosophy

The study used interpretivism philosophy, which is subjective (Saunders et al., 2023a) and may lead to biases.

Researcher experience

The researcher is inexperienced in qualitative data methods and conducting interviews for research purposes. This was partially mitigated through matching the interview guide to the consistency matrix.

Research time horizon

Research was done on a cross-sectional design, and future prospective researchers can focus on longitudinal designs to consider the impact of skills on digital transformation over time.

Purposeful sampling

Purposeful sampling techniques were used, and these were based on the judgement of the researcher and the selection of participants from the professional networks of the researcher. Most of the responses were thus from participants in Namibia, which limits the generalisation of the research to the Sub-Saharan African context.

The participants were selected from only the ICT, mining, banking financial services and public sectors and it is thus difficult to generalise the results to other sectors.

4.16 Conclusion

This chapter presented the research methodology used to explore the role of skills in digital transformation. It discussed the choice of research design, methodology and the motivation for selecting specific methods. The chapter concluded with ethical considerations and limitations of the research. The next chapter will discuss the findings of the research.

CHAPTER 5: FINDINGS

5.1 Introduction

This chapter presents the findings of the research, based on the methodology outlined in the previous chapter. It commences with a summary of the research participants and their experience, providing context to the findings that follow. Data saturation is discussed next to illustrate the adequacy of the sample. This is followed by a discussion of the findings, highlighting the main themes per research question as well as the differences and similarities between the sectors.

5.2 Overview of research participants

5.2.1 Sample description

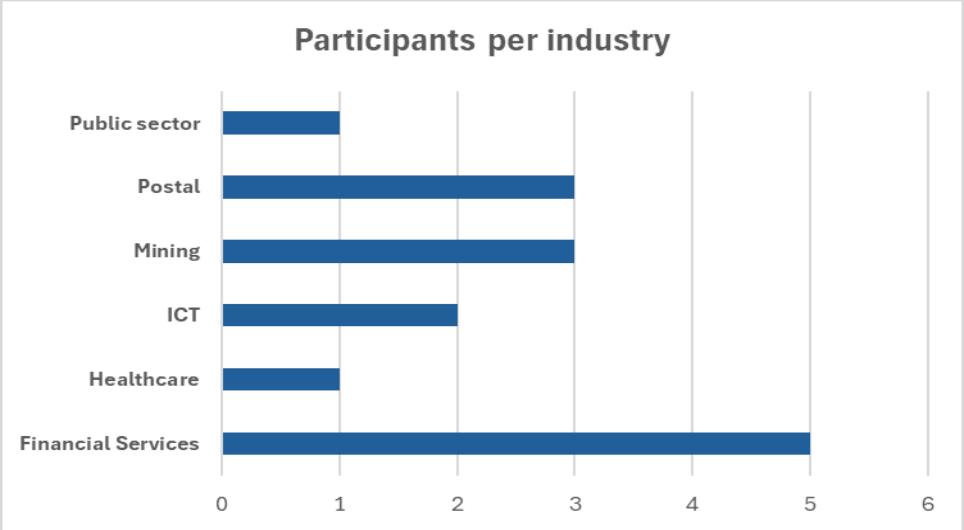
The study used a purposive sampling technique, and the researcher's judgement was used to develop the criteria for selecting the participants (Guest et al., 2006; Saunders et al., 2023a). Fifteen interviews were conducted for this study with 14 participants based in Namibia and only one participant in South Africa. The participant in South Africa was a digital transformation expert, with valuable experience, and was deemed critical to be included in the sample.

The participants represented a range of sectors, included both males and females, and represented various departments within the organisations to provide a multi-stakeholder view. Data was kept confidential during the analysing and transcribing processes, tags were used to identify participants, and company information was anonymised in the transcripts. Participants were given pseudo names and/or tags to protect confidentiality. Annexure 5 presents a summary of the participants along with their respective tags used.

The participants were identified from the researcher's networks and LinkedIn and were comprised of professionals with digital transformation expertise from the financial services, ICT, mining, postal, health and public sector industries. Most participants meeting the sampling criteria were from the financial services sector, followed by the mining, postal and ICT sectors. Interviews were conducted with individual participants from both the public and health sectors to complete the sample of 15 participants.

Figure 4*:*

Participants per industry



Source: Author's own

The intended sample consisted of five professionals who have expertise in digital transformation and who have led or supported digital transformation as key players; three HR professionals from the same organisation; five team members who were part of digital transformation; and two digital transformation experts who may be familiar with the latest trends and best practices. The researcher, however, had difficulty obtaining the targeted participants as indicated in the methodology, and the actual participants' numbers and departments differed slightly from the planned sample, as indicated in Table 6.

Table 6:

Participant intended and final samples

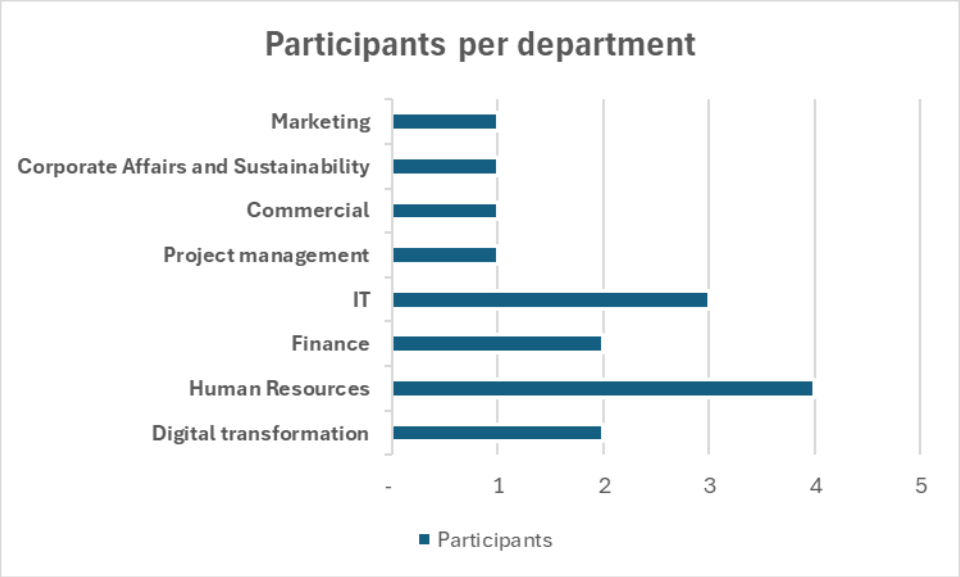
Department	Intended sample	Final sample
HR	3	4
Digital transformation	2	2
Technical expertise	5	3
Other departments	5	6
Total	15	15

Source: Author's own

Participants consisted of four HR professionals, three IT participants, and two digital transformation experts; the remainder were team members from supporting departments who have digital transformation experience. The supporting departments included marketing, corporate affairs and sustainability, commercial, project management and finance.

Figure 5*:*

Participants per department



Source: Author's own

5.2.2 Suitability of research participants

The objective of the research was to obtain a perspective from participants who had experience in digital transformation and would be able to add a meaningful contribution to the proposed research. To demonstrate that the 15 participants have the required expertise in digital transformation, a sample of interview quotes was extracted from the transcripts:

> *P1: "About four years ago, I was co-opted into the digital transformation team. My responsibility is to manage how new digital and self-service channels affect employees — redesigning roles, restructuring, and repurposing to prepare the business and employees for change".*

> *P3: "We started out digital transformation journey around 2021 or 2022. Currently, I am the Head of the Project Management Office, where we are implementing a digital transformation project called Project xxx".*

> *P12: "The mine took digital transformation very seriously. They were also a very deliberate in terms of the drive for digital transformation".*

> *P13: "I was appointed as part of a task team in 2021 to come up with a digitalisation strategy and roadmap to roll out an operating plan that speaks to digital transformation".*

P14: "I'm current the HRD manager for xxx, where i am responsible for identifying the kind of skills that we require for digitalisation".

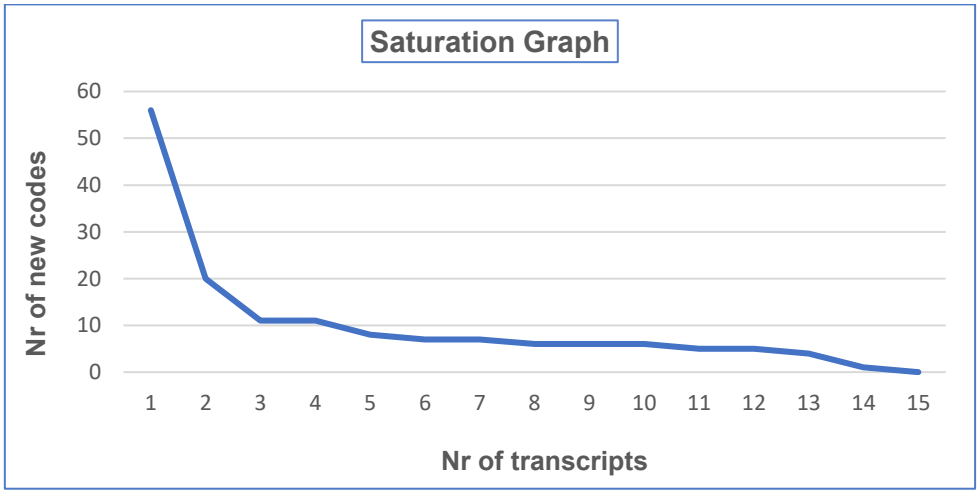
The above quotation extracts provide sufficient evidence that the participants' experience and expertise in digital transformation contributed meaningfully to this research.

5.3 Data saturation

The sample size was determined to be 15 participants, and data was gathered through conducting semi-structured interviews via Microsoft Teams. Data saturation occurs when no new themes, insights, or perspectives emerge from the data after a certain number of interviews have been conducted (Bradley et al., 2007; Czernek-Marszałek & McCabe, 2024; Saunders et al., 2023b).

The transcripts from the 15 participants were analysed to determine the new codes generated per transcript, as shown in Figure 6. Only a few new codes were generated for the last two interviews, and therefore the sample was considered adequate and there was no need to collect further data.

Figure 6*:*
New codes generated per transcript



Source: Author's own

5.4 Findings

The key findings are presented in line with the research questions as outlined in Chapter 3. The data was analysed by thematic analysis using a six-step approach, as outlined by Braun and Clarke (2006), with the use of Atlas.ti software to code and organise the data. The themes

were then aligned with the sub-research questions, as indicated in the interview protocol attached Appendix 3.

The themes were categorised in line with the research questions and structured to include an introduction, evidence of the theme with participant's quotes, cross-case and in case analysis to illustrate similarities and differences across sectors. This layout was consistently applied for the 12 themes identified.

5.4.1 Findings: Research question 1: How do the availability, type and level of skills in the organisation influence the implementation of digital transformation

Research question 1 aimed to highlight the significant role that people play in digital transformation and the types of skills that are required to improve digital transformation outcomes. The thematic analysis revealed four themes connected to research question 1, which are listed in Table 11.

5.4.1.1 Theme 1: Evolving skill sets

The first theme that emerged from the analysis is the evolving skill sets of the workforce. The participants consistently emphasised that skills traditionally valued as important in organisations are becoming obsolete and that new skills are emerging driven by the 4th Industrial Revolution and the changing digital landscape. The organisation's future success depends on the workforce and customer's ability to adapt to the rapidly changing technology. Skills were therefore identified as a crucial enabler for digital transformation.

Evidence of evolving skill sets

This evidence is clearly presented in Table 7.

Table 7:

Evidence for Theme 1: Evolving skills sets

Participant	Quote	Sector
P12	"the skill set that we have currently, and the skill set that we need for the future digital department is vastly different". "we are also looking at the 4th industrial revolution". "where you've got your application support team. Now we're looking at we're looking at solution architects."	Mining
P9	"when we talk about the digital transformation, it's important to position it not only in terms of the skills profile, but also in terms of the age profile"…youngsters are coming in with different skills where they are much more tech savvy".	Mining
P2	"we need to shift from a screwdriver only technician to a multi skilled digital specialist".	ICT
P7	"The adoption rate in Namibia has really been slow compared to other countries...our parents with all due respect to a bit old school and they are not really catching up with the tech".	Financial services
P10	"we're seeing that we would need a combination of skills and not just something that you that you specialise in".	Financial services
P6	"emerging technologies are constantly changing"	Health
P5	"The skills are not at the level where they ought to be to support proper digital transformation".	Public sector

Source: Author's own

Cross-case and in-case analysis: Evolving skill sets

The mining and ICT sectors all agreed that the workforce skill set is evolving, noting that the skills needed in the past differ from those required in the future. Within the ICT sector in particular, P2 mentioned the shift from traditional technical job roles to a multi-skilled digital specialist. P12 from the mining sector agreed with this view and indicated that previously they were searching for an application support team, but now they are looking at solution architects. P5 provided a view from the public sector perspective, and expressed concern that skills in the public sector were not at the required levels to support digital transformation.

The financial services sector (P7) gave a slightly different perspective, focusing on the issues faced by customers rather than the workforce perspective. Participants highlighted the challenge of how the rollout of their digital products was impacted by the technology adoption rate of their customers, particularly among the older generation. The generational differences theme was highlighted across all sectors. Younger employees were described as more digitally savvy, whereas older employees struggled with the pace of technological change. These generational differences were also highlighted at a customer level in the financial services sector.

The reasons attributed to the evolving skill sets were identified as the advancement in technology, as evidenced by P6, who highlighted that “emerging technologies are constantly changing”, and P12, who mentioned “the fourth industrial revolution” as the reasons for adopting digital transformation.

Conclusion of theme 1

Based on the above analysis, technological advancement and the adoption of digital transformation are impacting the skills needed. It is interesting to note that skills are important from a multi-stakeholder lens, with the workforce and customers central to the transformation. While the sectors share similarities in terms of evolving skill sets, their perspectives differ. The mining and ICT industries focused on the evolving skills from a workforce perspective and highlighted the challenges posed by an ageing workforce. By contrast, the financial services sector identified technological adoption from a customer perspective as a major challenge, linking it both to the slow pace of digital adoption in Namibia as well as to the generational differences. The private sector entities appeared to be more proactive in reshaping job roles in response to changing technologies, while the public sector appeared to be struggling with the right skills to support digital transformation.

Despite their different perspectives, participants agreed that skills are evolving, and that this evolution impacts job roles. From an employee perspective, the requirement for a multi-skilled employee group instead of traditional job roles and narrow skills was a critical take-away of key considerations for skills in the age of digital transformation.

5.4.1.2 Theme 2: Scarcity of skills

The second theme that emerged was around the availability and scarcity of skills needed for successful digital transformation. The participants expressed concern about Namibia’s limited availability of the skills needed for digital transformation. The participants also emphasised the challenge of retaining this talent once appointed.

Evidence of evolving skill sets

This evidence is clearly presented in Table 8.

Table 8:

Evidence for Theme 2: Scarcity of skills

Participant	Quote	Sector
P9	“we don't have an issue attracting the skills....however due to the small town and its location, it is sometimes a challenge ...especially for the younger people who get restless quickly”.	Mining
P2	“the competition is tough for the skills, even the ones we have are being actively poached by others”.	ICT
P1	“we really struggled especially in the beginning was with IT skills, because there's no big Brother or sister...we recruited Namibians from abroad. We also have some external IT consultants as well from India and China that are assisting remotely”.	Financial services
P7	“we are lucky in the sense that we belong to a bigger company that has skills in other markets”.	Financial services
P10	“Talent retention is struggling as everybody else is because almost all of the organisations are going through this journey in some shape or form”.	Financial services
P6	“In the Namibian market, the skills are very rare”.	Health
P3	“During the digital transformation…one of the successes was the skills that we have within the organisation. We have a very strong project management office.”	Postal
P5	“Attracting skills is a big challenge not just on the remuneration but creating the right environment”.	Public sector

Source: Author’s own

Cross-case and in-case analysis: Scarcity of skills

Except for the postal sector, all other sectors agreed that there is a scarcity of skills needed for digital transformation. Participants repeatedly highlighted the talent scarcity and aggressive poaching as major concerns, particularly in the financial services, ICT and health sectors. It was interesting to note that in the mining sector, the issue was less about scarcity of talent and more about the geographical location. Mining companies find it difficult to attract young talent to remote towns, and even when they attract this talent, they become restless quickly and move on, as noted by P9.

In contrast, P7 in the financial sector, which was part of a group of companies, did not see talent scarcity as an issue because the organisation benefited from access to skills internationally as a multi-national group, and this was highlighted as a benefit that mitigates the shortage of skills in the Namibian market. The postal sector was pleased with the skills that they have in their organisation to support digital transformation and claimed that it was one of the enablers of success of their digital transformation project (P3).

Remuneration and an attractive organisational environment also emerged as key factors influencing the ability to attract and retain talent. The public sector, as highlighted by P5, faces challenges in recruiting talent due to non-competitive remuneration and an attractive organisational environment. These challenges have resulted in a gap between the private and the public sector when it comes to the advancement of digital transformation.

Conclusion of theme 2

Participants agreed that the shortage and unavailability of skills were major constraints in the successful implementation of digital transformation. The skills challenge varies by sector: in mining, it is largely due to location issues; in financial services and ICT, it comes from competition and talent poaching; and in the public sector, it arises from non-competitive remuneration and an unattractive organisational environment.

Organisations that were part of a larger multi-national group of companies had support to manage the skills shortages. They had access to skills across the group to fill the critical skills gaps. In contrast, local Namibian organisations, particularly those in the financial services sector, did not have such support, which resulted in them having more skills gaps and having to compete for talent in the market. This limited access to talent impacted their competitive market position and the progress of their digital transformation strategies.

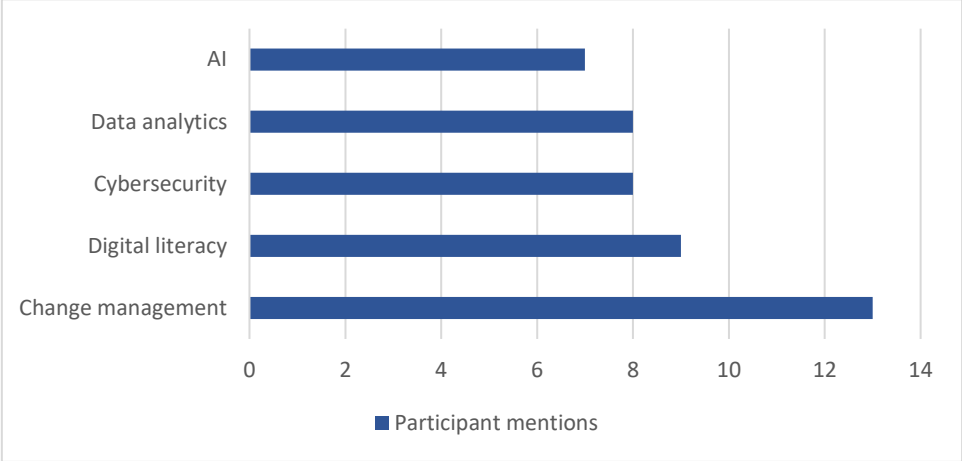
5.4.1.3 Theme 3: Technical and soft skills

The third theme identified from the analysis is a combination of technical and soft skills needed to make digital transformation successful. Although all participants highlighted technical skills as important, they also stated that success is not solely dependent on them but that soft skills are equally important.

The top five skills mentioned by participants are change management, digital literacy, cybersecurity, data analytics and AI. These skills are presented in Figure 7.

Figure 7:

Top five skills mentioned by participants



Source: Author's own

Evidence of scarcity of technical and soft skills

This evidence is clearly presented in Table 9.

Table 9:

Evidence for Theme 3: Technical and soft skills

Participant	Quote	Sector
P1	"We lacked IT skills...digital literacy was another challenge".	Financial services
P12	"AI, machine learning, data analytics .... we need to make sure that we start utilising data for decision making"	Mining
P7	"Coding and cybersecurity"	Financial services
P6	"Your board needs to understand the importance of digital transformation"	Health
P15	"Skills are important, but I don't think it's mainly about technical skills.... The bigger challenge is around change management and project management".	Financial services
P14	"getting people to buy into it...because if they don't buy into it, they won't be committed to it".	Mining
P5	"The most critical skill is leadership".	Public sector

Source: Author's own

Technical skills

Participants identified a range of technical skills required for digital transformation, with the top three being digital literacy, data analytics and cybersecurity. Nine out of 15 participants mentioned digital literacy as the critical foundation for digital transformation, stating that it is essential for the workforce to be confident when using new technologies and that they can adapt to the change.

The ICT and mining sectors strongly prioritised data skills like AI, machine learning, and data analytics. P12 from the mining sector emphasised the importance of using data for decision-making. Participants identified and highlighted cybersecurity, software development, and coding as other technical skills, which were evident in the ICT and financial services sectors.

Soft skills

Although technical skills were acknowledged as important, participants emphasised that soft skills are critical to the successful implementation of digital transformation. Change management emerged as the top skill with 13 of 15 participants mentioning change management as the most important skill needed in digital transformation. Participants indicated that people are anxious during digital transformation and that some of their anxiety relates to fear of technology and job losses. As a result, it is important to have change management skills to take people along on the journey and to secure their buy-in to the project (P14).

Participants also mentioned leadership and project management as essential soft skills. P5 rated leadership as the most important skill, while P15 emphasised that the bigger challenge is change management and project management. P6, from the health sector, added a different perspective by highlighting the importance of board-level skills to understand digital transformation and ensure its success.

Cross-case and in-case analysis: Technical and soft skills

Across sectors, participants recognised the importance of both technical and soft skills in the digital transformation. There were no major differences between sectors; instead, the findings highlight the significance of technical and soft skills for digital transformation. The views suggest that digital transformation is not only a technical process but that people play an important role in it as well.

Conclusion of theme 3

Across sectors, participants agreed that technical skills alone are not enough and that digital transformation requires a combination of both technical and soft skills. Participants emphasised that while technical competencies, such as digital literacy, coding, data analytics, and cybersecurity, are important for digital transformation, soft skills, such as change management, leadership, and project management, are crucial to its success. The skills identified are important at all levels, from the top all the way to the bottom.

5.4.1.4 Theme 4: The importance of human capital (people) in digital transformation

The fifth theme that emerged from the analysis is the critical role the people play in driving successful digital transformation. Across all sectors, participants agreed that technology alone cannot deliver the benefits expected from digital transformation and that skills and employee commitment are central to the success of digital transformation.

Evidence of the importance of human capital (people) in digital transformation

This evidence is clearly presented in Table 10.

Table 10:

Evidence for Theme 4: The importance of human capital (people) in digital transformation

Participant	Quote	Sector
P10	"If the people aren't transformed and you throw technology at them, this is where white elephants come from".	Financial Services
P1	"Don't implement things that have people affected, and then only contact the Union, involve them from the start".	Financial Services
P5	"a company that wants to digitally transform...get the right people... who can move mountains, who can lead people".	Public sector
P8	"the overall benefits that you are trying to get from digital transformation it might be working well for your clients, the customers and stakeholders, but your internal customers which are your staff members, we need to make sure that they are on board with you".	Postal
P6	"…buy in from all your stakeholders, particularly your staff…. there could be resistance if there's no proper communication".	Health
P2	You cannot leave the people behind. Unfortunately, we are in Africa and because we are in Africa, in terms of development compared to the West is different. We need to look at where people are in terms of skills, digital skills".	ICT

Source: Author's own

Cross-case and in-case analysis: The importance of human capital (people) in digital transformation

Participants across all sectors agreed that people play a critical role in digital transformation. The emphasis, however, differed slightly across sectors. P6 stressed the commitment and buy-in from the stakeholders, as the project might face resistance if stakeholders are not on board. P1 highlighted the union as a very important stakeholder in the process to secure buy-in before implementing initiatives that impact people.

P5 emphasised the need for people to lead teams and drive the project, as well as strong leadership. P8 highlighted the significance of a multi-stakeholder lens, and that the organisation should not only consider how digital transformation might benefit external clients or customers. Instead, internal employees should also be an important consideration to realise the full value of digital transformation.

Lastly, P2 was the only participant who mentioned the importance of skills development in the context of Africa. The participant highlighted that the continent faced unique challenges, making it essential to develop the digital skills of people to advance the development of the continent.

Conclusion of theme 4

All sectors agreed that people play a critical role in digital transformation and that technology alone will not ensure success. Leaders, employees and stakeholders all play important roles in the process, and failing to address the people aspect of digital transformation may result in resistance and a lack of adequate skills and support for it.

5.4.2 Summary of themes

The summary of the themes related to research question 1 is listed in the table below.

Table 11:

Themes related to question 1

Research Question 1: How do the availability, type and level of skills in the organisation influence the implementation of digital transformation?	
Theme	**Focus area**
Theme 1: Evolving skills sets	Changing job roles and skills in response to digital transformation
Theme 2: Scarcity of skills	Talent scarcity and skills gaps
Theme 3: Technical and soft skills	Combination of technical and soft skills required
Theme 4: The importance of human capital (people) in digital transformation	People centred approach to digital transformation

5.4.3 Conclusion of research question 1

The analysis revealed that skill sets are evolving as technology is advancing, leading to new types of jobs. Participants highlighted the scarcity of skills needed for digital transformation and expressed concern about the slow adoption of technology in Namibia, particularly in the context of generational differences within the workforce.

The findings further indicate that a combination of technical and soft skills is crucial for digital transformation. Technical skills such as digital literacy, data analytics, AI and cybersecurity were frequently mentioned as important, while soft skills, especially change management and leadership, were seen as equally important. Across all sectors, participants agreed that people play a critical role in digital transformation. Therefore, the most critical skills for digital transformation are a combination of technical and soft skills that enable the organisation to successfully implement their digital transformation project.

This understanding of the required skills and the critical role that people play in digital transformation laid the foundation for the next sub-research question, which explored how the organisation aligns its talent management practices to develop future skills.

5.4.4 Findings: Research question 2: How does the organisation's talent management approaches particularly related to skills, support digital transformation?

Advancement in technologies is impacting the skills needed for the future and creating new types of jobs. Traditional HR approaches are becoming less effective; therefore, the second research question explored how organisations are aligning their talent management practices to support skills development in the context of digital transformation.

5.4.4.1 Theme 5: Adaptive talent management

The fifth theme highlights how talent management practices are evolving in response to digital transformation. Participants across sectors noted the shift from traditional HR approaches towards a more adaptive approach to respond to the digital changes. Organisations are increasingly focussing on skills audits, skills development, succession planning, and employee upskilling to ensure that the workforce is prepared for the demands of the future.

Evidence of transition from adaptive talent management

This evidence is clearly presented in Table 12.

Table 12:

Evidence for Theme 5: Adaptive talent management

Participant	Quote	Sector
P2	“We have the human resource development policy which is the overarching policy for all the training interventions. It is however outdated but there are some proposals that were made for it to be amended”.	ICT
P2	“We have done a digital skills audit.	ICT
P5	“We don't have the proper systems in place to ensure that talent is nurtured and well rewarded”.	Public sector
P6	“we do have a talent management policy and a talent management strategy.	Health
P14	“make it part of people's development programmes”.	Mining
P11	“we are allocating budget every year for training and development interventions for all employees whose needs are identified either through the performance management process when we do our reviews or as part of their personal development plan”. “we are giving interest free study loans to our employee to motivate them to upgrade themselves to have undergraduate qualifications”. “We are also appointing coaches to support them… adjusting to this new environment”. ”we are implementing a learning management system.”	Postal
P8	“We don't have talent management policy yet.”.	Postal
P13	“We source graduates to develop the talent pipeline”.	ICT
P4	“we look at what are the critical skill sets that will be required for the future and provide bursaries”.	Financial Services

Source: Author’s own

Cross-case and in-case analysis: Adaptive talent management

Across all the sectors, participants highlighted a shift in talent management approaches to meet the demands of digital transformation. The financial services and ICT sectors highlighted approaches that organisations use to identify skills gaps, including assessments, job matching and digital skills audits.

The public and health sectors acknowledged that there are gaps in talent management and that personal development and upskilling programmes were introduced to close these gaps (P5, P6). Participants across sectors highlighted various interventions, such as workforce planning, coaching and learning management systems, to ensure that employees adapt to changing roles and technologies.

All sectors stated that organisations are investing in existing and new employees to ensure their development and upskilling, which includes personal development programmes, succession planning, training budgets, bursaries, interest-free study loans, coaches, learning management systems, and graduate development programmes.

Most of the sectors had a talent management policy in place although it needed to be updated (P2). In contrast, the postal (P8) and public sectors (P5) indicated that they did not have a talent management policy in place at all but that they are in the process of developing one. This is particularly concerning as it highlights that the public sector in particular is lagging behind in the development and the nurturing of talent needed to advance digital transformation in that sector.

Conclusion of theme 5

The findings suggest that in response to digital transformation, talent management strategies are evolving to become more adaptive and strategic, with an emphasis on future skills. Organisations are implementing various initiatives and interventions to invest in their workforce, ensuring that it has the necessary skills and remains relevant to support the organisation's digital transformation initiatives. However, the lack of an up-to-date talent policy is concerning, as this could slow down the organisation's progress with talent management and reduce its ability to attract and retain key talent.

5.4.4.2 Theme 6: Strategic alignment

The sixth theme which emerged centred around how important strategic alignment is to ensure that digital transformation is successful. Participants emphasised that support from leadership, particularly executive leadership and the board, is crucial to ensuring the project's success.

Evidence of strategic alignment

This evidence is clearly presented in Table 13.

Table 13:

Evidence for Theme 6: Strategic alignment

Participant	Quote	Sector
P15	"the strategy is important… to get executive management and the board on par to and to sensitise them to train them".	Financial Services
P5	"Somebody who can set a vision and guide people towards a particular vision, is very critical. Otherwise, that digital transformation will lead into failure".	Public sector
P6	"if your board does not have that understanding, they will never support the ideas or they will never support the initiatives or the projects which are related to digital transformation".	Health
P12	"the company was a very deliberate in terms of the drive for digital transformation. The tone was set from the top, from the chairman. the CEO of the group was also the Chief digital officer for the group."	Mining
P13	"we have come up with a digitalization strategy and road map... that strategy was approved and currently we have also rolled out the annual operating plan that speaks to the digital transformation". "Exco and the board the buy in is already there. It's just a matter of rolling out the digitalization strategy".	ICT

Source: Author's own

Cross-case and in-case analysis: Strategic alignment

Participants across all sectors emphasised the importance of strategic alignment and support from the most senior levels in the organisation, and aligning digital transformation with the strategy. Participants strongly emphasised the need for executive management, the CEO, and the board to fully align with digital transformation. Without this support, digital transformation could fail (P5).

The mining and the ICT sectors emphasised the support given to digital transformation in their respective organisations. P12, from the mining industry, highlighted that the tone was set from the top for digital transformation and highlighted the position of Chief Digital Officer that was created to drive digital transformation.

P13 from the ICT sector emphasised that top management was in full support of digital transformation, indicating that their digital strategy was approved and operationalised as part of the annual operating plan.

Conclusion of theme 6

Participants across sectors agreed that digital transformation needs to be part of the strategy of the organisation and that it needs support from the top, specifically at the board and the executive management level. Without this alignment and support, digital transformation is at risk of failure.

5.4.4.3 Theme 7: Structures

The seventh theme that emerged was the importance of organisational structure in enabling digital transformation. Participants emphasised that digital transformation required structural realignment, including creating new roles, departments and reporting lines that reflect digital transformation as a strategic priority.

Evidence of structures

This evidence is clearly presented in Table 14.

Table 14:

Evidence for Theme 7: Structures

Participant	Quote	Sector
P1	"there was a plan in terms of what technology would be ready by when and we based our structures and roles on that plan".	Financial Services
P5	"Structures are quite outdated. You still get your traditional roles which are not, in line with the current digital transformation trends. We have been trying to change our structures, to get the right people on board. We cannot attract the right people because we cannot afford them."	Public sector
P6	"I think every technical person will tell you that they are so grateful for COVID because before COVID, no one listened to your pitch."	Health
P12	"the company was a very deliberate in terms of the drive for digital transformation… the CEO of the group was also the Chief digital officer for the group."	Mining
P14	"completely new jobs and roles opened up that did not exist 10 years ago".	Mining
P11	"you can get the expert out there. But then when you must reward then you are stuck because the position is tied to a salary notch. We have reviewed some of the organograms and identified specialist positions that will be remunerated differently.	Postal
P13	"we intend to roll out the 2027 digital organisational structure."	ICT

Source: Author's own

Cross-case and in-case analysis: Structures

Across all sectors, the participants consistently highlighted the structural implications of digital transformation. The financial services sector (P1) emphasised the importance of proactive planning to match structures with the anticipated implementation of new technologies. In contrast, the public sector (P5) has struggled to attract and retain talent due to rigid salary structures and budget constraints.

The postal sector (P) shared a similar experience, where the traditional pay structures and organograms are preventing the organisation from recruiting the specialist expertise required to drive digital transformation. However, the postal sector was in the process of identifying specialist positions that could be remunerated at market-related salaries to be more competitive in attracting or retaining key talent needed for digital transformation.

The ICT sector (P13) was in the process of changing their organisational structures in response to digital transformation. The changes involved the creation of new roles, digital departments and forward-looking digital organisational structures. These actions indicated that the organisations were aware that their current structures were outdated and did not support the changes required by digital transformation.

The mining and financial sectors had implemented new structures and roles in response to digital transformation. The mining sector (P12) indicated the creation of a chief digital officer at executive level to support digital transformation, whereas P1 from the financial services sector was working in the Digital Data and Customer Transformation department (Appendix 6). P14 from the mining sector emphasised new roles that were not in existence ten years ago.

The health sector (P6) had a different perspective and observed a notable shift in the importance of IT post the COVID-19 pandemic, with the role being elevated to the level of executive leadership, recognising the strategic importance of the role.

Conclusion of theme 7

These experiences from the participants suggest that digital transformation necessitates organisational transformation, not only in technology but also in how people and structures must be aligned. Among the sectors analysed, the financial services and mining sectors appeared to be the most advanced with implementing new structures and roles to support digital transformation. In contrast, the other sectors were still in the process of finalising their

new structures or were operating with outdated structures which limits their ability to attract and retain key talent needed for digital transformation.

5.4.5 Summary of themes

The findings related to research question 2 revealed three themes that illustrate how talent management practices are evolving to support digital transformation. These are listed in the table below.

Table 15:

Themes related to question 2

Research Question 2: How does the organisation's talent management approaches, particularly related to skills, support digital transformation?	
Theme	**Focus area**
Theme 5: Adaptive talent management	Emphasises the shift from traditional HR practices to more agile, skills-focused talent strategies
Theme 6: Strategic alignment	Highlights the need for leadership commitment and the integration of digital transformation within the organisational strategy.
Theme 7: Structures	Demonstrates how organisational structures are being realigned to enable digital transformation.

5.4.6 Conclusion of research question 2

The findings for research question 2 illustrate how organisations across sectors are rethinking their talent management approaches to respond to the demands of digital transformation. Organisations are adapting their talent management practices to focus on the evolving skills requirements of digital transformation to ensure strategic realignment. This shift enhances their competitiveness and ensures that organisations can build a future-ready workforce that is able to adapt to the rapid technology changes.

Overall, the findings suggest that talent management services are a crucial enabler of digital transformation that needs leadership commitment to ensure that skills evolve in response to the rapid advancement in technologies.

5.4.7 Findings: Research question 3: How do organisations develop skills needed for digital transformation?

Building on the previous research questions that identified critical skills and the importance of talent management, the third question explored how organisations develop the skills required to successfully implement digital transformation. Five key themes emerged: cross-collaboration, partnerships, workplace readiness, resources and continuous learning and

development. These themes provide insights into how organisations develop skills for the future.

5.4.7.1 Theme 8: Cross-collaboration

The eighth theme that emerged from the analysis is the importance of cross-collaboration in enabling successful digital transformation. It is evident from the participants' responses that digital transformation cannot occur in silos within individual departments but that it requires collaboration across functions.

Evidence of cross-collaboration

This evidence is clearly presented in Table 16.

Table 16:

Evidence for Theme 8: Cross-collaboration

Participant	Quote	Sector
P5	"we mentor each other and we mentor across different departments as well.... we are becoming innovative with the little that we have".	Public sector
P14	"we established digital transformation forums, cross processes… digital leads that were nominated within business… we collaborated to develop solutions"	Mining
P11	"you can multi skill the person by rotating them around to acquire not just one skill...becoming an all rounder almost".	Postal
P13	"the Board of Directors were very impressed with the cross functional team".	ICT
P1	"I'm traditionally from a human resources background but was approached to be co-opted to the transformation team for my organisation."	Financial Services
P9	"A person in one department could really benefit from secondment to IT for three months and then going back to be the champion".	Mining

Source: Author's own

Cross-case and in-case analysis: Cross-collaboration

All sectors, except for the health sector, referred to collaboration or some sort of teamwork as part of their digital transformation journey. P11 and P13 highlighted the formation of digital transformation teams or forums that brought together employees from different departments to drive digital transformation. P1 from the financial sector added to this perspective by demonstrating inclusivity with the involvement of employees from a non-technical background

by indicating that she was co-opted from the human resources department to join the digital transformation team.

P5 from the public sector highlighted that despite limited resources, they used mentoring across departments as an innovative solution to promote learning. P11, similarly, mentioned that their organisation makes use of staff rotation to acquire diverse skills and encourage collaboration across departments.

Conclusion of theme 8

The findings highlighted that cross-collaboration is a key enabler of digital transformation. This showed how the organisation works internally together to address its challenges. It brings together employees from different departments to share knowledge, innovate and leverage diverse skill sets towards making digital transformation a success. Cross-functional collaboration is a valuable tool to overcome resource constraints, as it allows the organisation to leverage its existing resources to drive digital transformation. These findings reinforce that digital transformation requires organisation-wide effort.

5.4.7.2 Theme 9: Partnerships

The ninth theme that emerged from the analysis is the key role that partnerships play in supporting digital transformation. Participants from all sectors collaborate with external parties, such as consulting firms, universities, government ministries, and international organisations. These partnerships are essential to developing digital skills and transferring knowledge to support digital transformation initiatives. It not only gives the organisation access to specialised skills, it also brings different perspectives together. As a result, the organisation is better prepared for its digital transformation journey and achieves its goals.

Evidence of partnerships

This evidence is clearly presented in Table 17.

Table 17:

Evidence for Theme 9: Partnerships

Participant	Quote	Sector
P1	"we also partnered with SHL to look at the new roles. We profiled them with competencies to roll out the branch of the future."	Financial Services
P5	"We have local and international partnerships. At the local level we have partnered with xxx on our cybersecurity program. They have offered us some training where they will come inhouse and train our people".	Public sector
P6	"I had to reach out beyond Namibia to get those skills. on a consulting basis, while upskilling inhouse." "We do have a graduate program in place and a MOU with a university."	Health
P12	"We have partnered with a big consulting house to make digital transformation a priority." "Building capacity needs to go hand in hand with this initiative because you cannot be reliant on outsourcing to partners."	Mining
P11	"Where we cannot find the skills... We search for consultants".	Postal
P2	"collaborating with universities or Institute of Higher Education has also opened our eyes."	ICT
P4	"we are busy working very closely with the Ministry of xxx".	Financial Services
P10	"One of the universities have introduced what is called xxx Learning… and we used to employ a lot of the people through that program".	Financial Services

Source: Author's own

Cross-case and in-case analysis: Partnerships

Across all sectors, participants agreed that partnerships are an important tool to strengthen digital transformation skills. However, the nature of these partnerships varied by sector, depending on the resources and skills that organisations had in place. The financial services and public sector made use of both local and international partnerships to support training and cybersecurity initiatives (P4, P5, P10). P1 from the finance sector highlighted that they used consultants to assist with a new structure and define new roles to build their branch for the future so that it can compete with other banks.

The health sector (P6) relied on consulting expertise outside Namibia to bridge the skills gap while investing in local partnerships with universities to build a long-term talent pipeline. The mining sector (P12) noted partnerships with large international consulting firms but noted that these partnerships should be temporary, emphasising the importance of building internal

capacity. The postal and ICT sectors (P2, P11) made use of local partnerships with universities and with consulting partners to strengthen their digital transformation capacity.

Conclusion of theme 9

Organisations make use of both international and local partnerships to mitigate resource and skills gaps while at the same time allowing for skills transfer, innovation and problem-solving. This strategy makes use of external partners while at the same time building internal skills, which meets long-term goals. It also enables organisations to respond to the changing environment and to increase their competitiveness. However, participants cautioned against overreliance on external partnerships and emphasised the importance of having a balanced strategy to build internal skills as opposed to substituting them.

5.4.7.3 Theme 10: Workplace readiness

The tenth theme highlights the gap between formal education and workplace readiness, particularly for the skills needed for digital transformation. Participants from most sectors noted that while graduates have the technical knowledge and tertiary education, they do not have experience or industry-specific skills needed in digital transformation. The findings show that universities are not yet fully aligned with the changing needs of the sectors, for example, in the field of payments technology. Therefore, to bridge that experience gap, organisations need to allocate substantial resources towards on-the-job training and internships or have a strategy of using consultants while building the internal skills.

Evidence of transition from workplace readiness

This evidence is clearly presented in Table 18.

Table 18:

Evidence for Theme 10: Workplace readiness

Participant	Quote	Sector
P7	"Technology perspective, we do not have those skills in Namibia. We have to bring in companies from South Africa because we don't have the skills in the country, and the university is also not teaching that either. My students from the university does not know about payments technology because they were never exposed to that".	Financial Services
P5	"we don't have that specific people who are experienced in leading digital transformation."	Public sector
P12	"we are looking at recruiting skills and growing them for the positions that we need".	Mining
P2	"graduates have the qualifications, but then they still need the exposure and the training."	ICT
P12	"young people come with the technical skills… But it is another thing to use the technology to drive business results".	Mining
P10	"The people with technical skills are the people that are getting out of university with zero skills in working. What we have done is to have them work under the supervision of experienced analysts".	Financial Services
P4	"but from a skills perspective, the skills are there. Not enough and maybe the experience is also the other thing".	Financial Services

Source: Author's own

Cross-case and in-case analysis: Workplace readiness

Except for the postal sector, participants expressed concern about the readiness of new graduates to effectively contribute to digital transformation projects. It was particularly highlighted in the financial services industry, which indicated that they have experienced challenges with graduates not having knowledge of payment technology and that graduates lack experience (P7, P10, P4). P10 added that to address this issue, graduates are often paired to work with experienced employees to mentor and train them.

The ICT sector shares this sentiment (P2) and indicated that graduates still needed work exposure and training before being able to fully contribute to the organisation. The public sector (P5) reinforced this sentiment and highlighted that, particularly for digital transformation, the lack of experienced people is a challenge to manage the project. In contrast, the mining sector noted a different perspective and highlighted that while young professionals have the technical skills, they often fail to translate them into business value (P12), which indicates a need for a stronger integration of business acumen and digital skills.

This cross-sector analysis emphasises the importance of the transition from education to employment. The development of digital transformation talent requires the implementation of internships, graduate programmes, and industry partnerships. Given that the sectors are already experiencing scarcity in skills, and unless they are willing to pay extra for the expertise, organisations must make use of the graduates and invest time and money to develop them. This highlights the need for a combination of younger professionals with the technical skills and the older workforce with the experience to build the talent pipeline and advance the organisation's digital transformation journey.

Conclusion of theme 10

The findings indicate that the transition from education to work remains a significant barrier to digital transformation. Although the universities produce technically qualified graduates, most lack practical experience, business acumen and exposure to real-world systems. This theme reinforces the need for stronger partnerships between academia, industry and government to ensure a curriculum that reflects evolving digital skills needs. Closing this gap will build national capacity, reduce reliance on international consultants, and accelerate the development of a digitally skilled workforce.

5.4.7.4 Theme 11: Resources

The eleventh theme that emerged from the analysis is the critical role that resources play in enabling digital transformation. Participants consistently emphasised that successful transformation depends on financial, human and organisational resources. Without adequate resources in place, the project risks delays, inefficiency, failure or not providing the required return to investors.

Evidence of resources

This evidence is clearly presented in Table 19.

Table 19:

Evidence for Theme 11: Resources

Participant	Quote	Sector
P4	"we put down our requirements from skills evaluation and upskilling and HR plays a very clear critical role in ensuring the necessary budgets and the necessary programs".	Financial Services
P1	"in terms of getting the resources, it's expensive and you have to really be able to demonstrate your return on investment".	Financial Services
P5	"we don't have resources that can allow us to digitalise faster to get the proper tools. So we are always trying to catch up."	Public sector
P6	"your client nowadays is looking for the digital service because it's much easier to do business with you".	Health
P14	"To look at problem statements and how digital can then solve it".	Mining
P9	"The good times are very short lived and then we go into the dip and the first thing is all training and development stops". We are always up against production… it's this constant tension between, wanting to bring people along on the journey…. but production comes first".	Mining
P3	"During the digital transformation...key to its successes was the skills that we have within the organisation."	Postal
P2	"we have a budget on digital training. Over the years we have increased that a little bit". Training budgets for digital initiatives have grown, but benchmarking shows we still lag behind regional peers. "When you are busy with digital transformation, the training budget should be in the region of 6% to 10% of your salary bill".	ICT

Source: Author's own

Cross-case and in-case analysis: Resources

Across all sectors, participants agreed that adequate resources were essential to making digital transformation a success. P6 emphasised that digitalisation is no longer optional as the customers increasingly require digital services from organisations. Consequently, financial resources are needed for tools, investing in training, and funding digital transformation projects (P2, and P5) to ensure that the organisation meets customer demands and stays competitive in the market.

P14 from the mining sector highlighted the strategic nature of digital transformation projects that are often guided by business cases and the returns on investments that they need to generate for the organisation. P3 noted the importance of the human resource aspect,

emphasising that adequate skills and training budgets are needed to execute digital transformation initiatives. P4 agreed with the sentiment, pointing out that HR plays a critical role in ensuring that budgets are prioritised for training.

In contrast, P5 in the public sector noted that limited financial resources slow progress and force the sector to continuously play catch-up with the private sector. The ICT sector (P2), in contrast, had clear measurable targets for training on digital transformation and has seen increasing budget allocations over the years to support digital transformation.

P9 provided a contrasting view and reflected on the operational tension that exists within the mining sector between maintaining production targets and dedicating time for training. These competing priorities highlight the challenge that digital transformation initiatives face when short-term production pressures override long-term transformational goals.

Conclusion of theme 11

Overall, there was consensus across sectors that financial, human and technological resources are a critical enabler of digital transformation. Budget constraints, lack of tools and lack of capacity can slow down the progress of digital transformation and limit the value it is expected to deliver. The perspective of P10 gives a critical insight into how competing priorities can slow down learning and development needed for digital transformation. This tension highlights the need for strategic alignment between operational objectives and long-term digital transformation goals.

The findings reveal that while financial investment is essential, it also requires leadership buy-in to support training budgets, balance operational demands and provide the necessary resources to build a digitally skilled workforce.

5.4.7.5 Theme 12: Continuous learning and development

Theme number 12 highlights the importance of continuous learning and development as a critical element of digital transformation. Across all sectors, participants described how digital transformation demands a workforce that is constantly learning, unlearning and acquiring new skills. Organisations are increasingly prioritising upskilling, reskilling, and continuously learning by implementing training programmes, personal development plans, and management learning systems. These initiatives showed that learning is not viewed by organisations as a once-off event but as an ongoing process.

Evidence of continuous learning and development

This evidence is clearly presented in Table 20.

Table 20:

Evidence for Theme 12: Continuous learning and development

Participant	Quote	Sector
P1	“it's really been a journey because we had to design and redesign all the training processes.”	Financial Services
P5	“We have a personal development program. So as part of your performance management, you choose areas that you want to develop. Additionally, we look at where you are not performing, and we look at ways that we can develop it”.	Public sector
P6	“training, learning and unlearning...those are the keywords that supports digital transformation”.	Health
P14	“Encouraging people to stay on top of their space and changes that is happening in other businesses bringing it back to our own, constantly challenging people to think of a better way.”	Mining
P11	“HR really need to step in and take the older generations on this drive of digitalization”.	Postal
P2	“We need digital bootcamps to accelerate learning, and a Learning Management System integrated with our performance management system. This would allow us to track training, link it to KPIs, and encourage self-paced digital learning.”	ICT
P13	“training to upskill the employees to become digital ready.”	ICT
P10	“the digital landscape that has changed...if you have gone through university, studied IT in and graduated six years ago, what you were taught in university is almost on its way to obsoleteness.”	Financial services
P10	“It's a journey. It's not a destination”.	Financial Services
P4	“every year we do workforce planning and development planning. We look at what are the future skills that are needed, how are we evolving and we put down these requirements from skills evaluation and upskilling. HR plays a critical role in ensuring the necessary budgets and programs. They play a key role, but they play it together with us because you would understand your business better and you know what is needed more”.	Financial Services

Source: Author’s own

Cross-case and in-case analysis: Continuous learning and development

All sectors discussed the importance of ongoing learning and employee development in response to an evolving digital landscape. P10 emphasised that digital transformation is a journey, not a destination, and it requires constant improvement. The participant also emphasised the speed of technological change, which impacts existing knowledge and highlights the need for continuous upskilling.

The financial services and IT sectors place a strong emphasis on interventions such as learning management systems, training budgets and digital bootcamps, while the health sector recognised that humans play a critical role in digital transformation and need to be upskilled to support the process (P6). The mining sector (P14) concurred with the health sectors and added that people are showing a willingness to learn and that it is the organisation's responsibility to train them for the future. The postal sector added the generational aspect and highlighted that HR plays a key role in ensuring that people are taken along the journey of digital transformation (P11).

P4 emphasised that continuous learning is not only an HR responsibility, but it needs to be done in conjunction with the rest of the business to ensure that the required skills are identified and that the training rolled out meets the workforce needs. The public sector linked it directly to performance management (P5) by identifying the training needs and training the workforce to meet their personal performance target that can contribute to the organisation's overall performance. P2 from the ICT sector added the technology aspect by indicating that if KPIs are linked to the learning management system, tracking these would be much more efficient for the organisation.

Conclusion of theme 12

The theme revealed strong alignment across sectors; digital transformation is an ongoing journey rather than a once-off project and therefore continuous learning and development are important. Organisations are integrating these interventions into their talent management processes, aligning them with performance management, skills gap assessment and future skills planning. This emphasis on continuous learning, supported by these interventions, ensures that employees remain relevant and agile and helps to make digital transformation a success.

5.4.8 Summary of themes

The summary of the themes related to research question 3 is listed in the table below.

Table 21:

Themes related to question 3

Research Question 3: How do organisations develop the skills needed for the future	
Theme	**Focus area**
Theme 8: Cross-collaboration	Internal collaboration and knowledge sharing
Theme 9: Partnerships	External collaboration through partnerships
Theme 10: Workplace readiness	Employee preparedness
Theme 11: Resources	Financial, human and technological resource allocation
Theme 12: Continuous learning and development	Lifelong learning

5.4.9 Conclusion of research question 3

The findings for research question 3 show that developing the skills needed for digital transformation requires an integrated approach that includes multiple stakeholders, both internal and external, to ensure collaboration, partnerships, workplace readiness, resource allocation and continuous learning. The sectors with resource constraints found innovative ways to continue to learn, although it was at a slower pace. In contrast, the organisations with access to resources showed greater progress in their digital transformation journeys. These findings also indicate the importance of ensuring that such initiatives are not once-off events, but part of an ongoing effort to ensure that the workforce is prepared for the future.

5.5 Conclusion

This chapter discussed the findings of the research conducted using the methodology, as explained in the previous chapter. Data was collected by conducting semi-structured interviews with 15 participants with digital transformation expertise from different sectors. The data was analysed using thematic analysis to code the data and identify themes based on the research questions. The analysis identified 12 themes that were related to the research questions. The findings were presented in line with the research questions, highlighting the main themes and highlighting cross sector differences and similarities.

The findings of this study suggest that digital transformation results in the need for skills evolution, and organisations must adapt their talent management practices to keep up with the changing digital landscape. People were identified as a critical component in the digital transformation journey, and thus the skills required to make digital transformation successful are a combination of technical skills and soft skills. However, the participants highlighted that

generational differences and the slow adoption of technology in Namibia are key challenges that the organisations need to address.

Talent management was identified as a key enabler of digital transformation, with organisations increasingly adopting adaptive approaches to develop skills. These approaches include skill audits, succession planning, personal development programmes, coaching, and learning management systems. Strategic alignment and leadership commitment at the board and executive levels were found to be essential to driving digital transformation and obtaining the resources needed to make the project a success.

Overall, the findings suggest that digital transformation is not only a technological change but also requires an overall shift from the organisation that involves people, processes and structures. The changing digital landscape is resulting in skills evolving and new jobs being created. In response to these changes, participants highlighted that organisational structures need to be reviewed to include these new roles and departments to facilitate digital transformation and to be able to offer candidates with specialist skills competitive salaries.

Digital transformation is a journey; developing the skills needed for digital transformation is an ongoing process that requires an organisation-wide effort. By encouraging cross-functional collaboration and establishing strategic partnerships, the organisation can mitigate the challenges of digital transformation particularly related to skills, especially when having limited resources.

Allocating resources and ensuring workplace readiness are crucial in equipping the workforce with the necessary skills. The emphasis on continuous learning benefits both the individual and the organisation by ensuring that they are ready for the changing digital age. A combination of adaptive talent management, strategic alignment, adequate resourcing, and continuous skill development is essential to building a future-ready workforce that can accelerate digital transformation.

The next chapter integrates the findings with the literature as discussed in Chapter 2.

CHAPTER 6: DISCUSSION

6.1 Introduction

This chapter discusses the findings shared in the previous chapter (Chapter 5) and brings in a theoretical perspective. The format of this chapter is similar to the structure followed in Chapter 5, with the findings presented as per research question. A total of 12 themes that were related to the research questions were identified in Chapter 5, using thematic analysis.

The chapter starts with an overview of the main research question, followed by the sub-research questions. It then continues to present an overview of the key findings for each theme, and places these within a theoretical context by analysis of themes.

6.1.1 Overview of research questions

This study explored the impact of skills on digital transformation. The main research question aimed to generate new insights into the research problem (Saunders et al., 2023a).

Main Research Question

- What is the role of skills on the implementation digital transformation?

The sub-research questions aimed to explore the main research question in more depth and seek new insights into the phenomena (Saunders et al., 2023a). Research question 1 highlights the impact of skills levels on digital transformation and highlights the reality of current and future skills gaps.

Research question 2 sought to understand how talent management practices evolved in response to digital transformation, and lastly, research question 3 explored how talent management attempts to bridge the gap between the existing workforce skills and the skills required when it embarks on its digital transformation journey.

Sub-research questions

Research question 1

How does the availability, type and level of skills in the organisation influence the implementation of digital transformation?

Research question 2

How does the organisation's talent management approaches, particularly related to skills, support digital transformation?

Research question 3

How do organisations develop the skills needed for the successful implementation of digital transformation?

6.1.2 Summary of themes

The themes that were identified per research question in Chapter 5 are listed in the table below.

Table 22:

Summary of themes

Research Question 1: How do the availability, type and level of skills in the organisation influence the implementation of digital transformation	
Theme	Focus area
Theme 1: Evolving skills sets	Changing job roles and skills in response to digital transformation
Theme 2: Scarcity of skills	Talent scarcity and skills gaps
Theme 3: Technical and soft skills	Combination of technical and soft skills required
Theme 4: The importance of human capital (people) in digital transformation	People-centred approach to digital transformation
Research Question 2: How does the organisation's talent management approaches, particularly related to skills, support digital transformation?	
Theme 5: Adaptive talent management	Emphasises the shift from traditional HR practices to more agile, skills-focused talent strategies
Theme 6: Strategic alignment	Highlights the need for leadership commitment and the integration of digital transformation within the organisational strategy.
Theme 7: Structures	Demonstrates how organisational structures are being redefined to enable digital transformation
Research Question 3: How do organisations develop the skills needed for the future	
Theme 8: Cross-collaboration	Internal collaboration and knowledge sharing
Theme 9: Partnerships	External collaboration through partnerships
Theme 10: Workplace readiness	Employee readiness
Theme 11: Resources	Financial, human and technological resource allocation
Theme 12: Continuous learning and development	Lifelong learning

Source: Author's own

The next section discusses the themes based on the research questions, summarises key findings and relevant literature, compares these findings to existing literature, and concludes with an analysis of each theme. The same structure was followed for all of the themes identified in Chapter 5.

6.1.3 Comparison to literature

The findings were compared to the literature in Chapter 2 to find any differences and similarities in relation to each theme. A systematic word search was done in the literature review in Chapter 2 to locate the relevant studies supporting each theme. In instances where no suitable literature was found in Chapter 2, the researcher extended the search to review the existing reference sources in depth to determine if the themes had not been addressed in those works.

Lastly, if there was no reference in the literature review or in the existing sources the researcher had gathered, the search was further extended using Google Scholar to identify additional top-rated, peer-reviewed academic journals that could provide theoretical support for the theme.

The newly identified sources were then used to update the literature review in Chapter 2 to ensure its completeness.

6.2 Research question 1: How do the availability, type and level of skills in the organisation influence the implementation of digital transformation

6.2.1 Theme 1: Evolving skill sets

This theme is about understanding how digital transformation impacts the skill sets of the workforce and how these skills are evolving in response to digital transformation.

Theme 1: Evolving skill sets: Summary of key findings

The findings indicate that although technologies are rapidly advancing, the slow adoption rate of these technologies in Namibia has impacted the progress of digital transformation. Despite this, digital transformation is still significantly impacting the skills needed by the workforce and customers across all sectors.

Within the organisational context, skills that were traditionally valued as important are becoming obsolete, and new skills are required to support digital transformation. Employees are increasingly required to possess multiple skills rather than just a single area of expertise. This shift has led to changes to traditional job roles and the need for entirely new positions in some areas.

The findings also highlighted the evolution of skills required from customers as equally important, particularly in the financial services sector. Organisations in that sector noted that

the slow technology adoption rates among older customers have affected the uptake of their digital products and services – impacting the overall success of their digital transformation initiatives.

Overall, skills were identified as a critical enabler for digital transformation, with the future success of organisations depending on both the workforce's and customers' ability to adapt to and effectively use new technologies.

Theme 1: Evolving skill sets: Summary of key literature

Previous studies, e.g. Haarhaus and Liening (2020), emphasise the complexity and volatility of environments in which organisations operate (Haarhaus & Liening, 2020), and state that emerging technologies are the driver of digital technology adoption (Omrani et al., 2024).

Digital transformation is changing the skills needed by employees (Ostmeier & Strobel, 2022), leading to some jobs becoming obsolete while simultaneously creating new jobs that require digital skills (Menz et al., 2021; Vaiman et al., 2021). Digital transformation depends on both the adoption of new technology and the specific skills of the workforce to use it effectively (Chatterjee et al., 2022).

Bonnet and Westerman, (2021) recommend that organisations focus on multiskilling their workforce to develop talent pipelines.

Theme 1: Evolving skill sets: Comparison of key findings to key literature

The findings are closely aligned with the literature, which also acknowledges contextual realities and the evolution of skills. Scholars (Ostmeier & Strobel, 2022) highlight that traditional skills are becoming obsolete and new skills are required for digital transformation to succeed. Similarly, the findings in this study, namely that employees are required to be multi-skilled, resulting in new job roles, correspond to studies by Bonnet and Westerman, (2021), Chatterjee et al. (2022), Menz et al. (2021) and Vaiman et al. (2021), who all highlight the shifts in skills and new career paths.

Changing customer behaviour and preferences were noted by Omrani et al. (2024) and Verhoef et al. (2021) as one of the considerations by organisations in adopting digital transformation. While not much has been written on the need to target customers from a skills perspective, as this could potentially strengthen digital adoption, the findings of this study highlight this insight as critical – and it will be included in recommendations of the study.

Theme 1: Evolving skill sets: Conclusion

The research findings confirmed that the success of digital transformation is not only dependent on technology but also the skills of the workforce and the ability of teams to use technology. As highlighted by the financial sector, the digital readiness of customers also plays a crucial role. Therefore, organisations must support skill development for their workforce as well as their customers.

6.2.2 Theme 2: Scarcity of skills

The second theme highlighted the availability and scarcity of skills needed for successful digital transformation.

Theme 2: Scarcity of skills: Summary of key findings

Participants agreed that the shortage and availability of skills is a major constraint in the successful implementation of digital transformation. Participants attributed the scarcity of skills to various factors, such as location issues, fierce competition, talent poaching, non-competitive salaries, and an unattractive organisational environment.

Organisations that were part of a group structure (international) benefited from larger talent pools, whilst local organisations struggled to obtain the talent needed for digital transformation and had to source talent from outside Namibia. The findings from the public sector highlighted that, in addition to remuneration, an attractive working environment is equally important to attract and retain skills. The public sector in particular found it difficult to compete with the private sector for scarce skills, which highlights the widening gap between these two sectors when it comes to the implementation of digital transformation.

Theme 2: Scarcity of skills: Summary of key literature

There is a global shortage of digitally skilled employees who are essential for successful implementation of digital transformation (Carroll et al., 2023). These challenges are particularly significant in developing regions such as Sub-Saharan Africa, because the high demand for talent and skills forces organisations to compete to attract and retain the best talent (Latukha et al., 2022; McDonnell et al., 2023). Collings and McMackin (2025) emphasise that the shortage of relevant skills is one of the biggest challenges that organisations face when adopting digital technologies. The speed of technology advancements is disrupting organisations and widening the skills gaps (Bouwmans et al., 2024; Li, 2022).

Organisations require resources to implement digital transformation, and larger firms are more likely to adopt digital transformation as they have the financial resources and the capabilities to do so and can also absorb the risks related to digital transformation (Omrani et al., 2024). Kravariti et al. (2022) also highlight that talent management is more complex in the public sector due to resource constraints,

In a market where talent is scarce, it is important for organisations to create work environments that appeal to the younger generation as they demand flexible working arrangements (Fernandez-Vidal et al., 2022). In addition, organisations need to create a culture that prioritises learning in order to address the talent shortages (Fernandez-Vidal et al., 2022),

Theme 2: Scarcity of skills: Comparison of key findings to key literature

The findings are strongly aligned with the existing literature on the scarcity of skills needed to support digital transformation. The participants' concern about the shortage of skills needed for digital transformation in Namibia aligns with observations by Carroll et al. (2023) and Collings and McMackin (2025).

The finding that larger organisations with a group structure have better access to skilled employees is supported by Omrani et al. (2024), who argue that organisational size and resource capacity play a role in the successful implementation of digital transformation. Kravariti et al. (2022) also highlight that talent management is more complex in the public sector due to resource constraints.

The finding in the public sector related to the importance of an attractive organisational environment to attract and retain skills aligns with Fernandez-Vidal et al. (2022) who emphasise the importance of an attractive organisational environment and a culture of learning which is particularly important to the younger generation.

Theme 2: Scarcity of skills: Conclusion

The scarcity of skills represents a challenge for organisations which could hinder successful implementation of digital transformation. The findings were consistent with literature that highlights global shortages of skills and that these shortages are particularly challenging in emerging markets such as Namibia.

6.2.3 Theme 3: Technical and soft skills

The third theme identified from the analysis is a combination of technical and soft skills needed to support digital transformation.

Theme 3: Technical and soft skills: Summary of key findings

Across the sectors, participants agreed that technical skills alone are not enough to make digital transformation a success. They emphasised that digital transformation requires a combination of technical and soft skills. What was interesting to note was that digital literacy was identified as the top skill required by the workforce to enable digital transformation.

Participants also acknowledged that, while technical competencies, such as digital literacy, coding, data analytics, and cybersecurity, are important for digital transformation, soft skills, such as change management, leadership, and project management, are crucial to its success. The skills identified were viewed as important at all levels, from the executive level to the lower-level workforce.

Theme 3: Technical and soft skills: Key literature

Digital transformation impacts a variety of sectors and stakeholders, each with a different view of which type of skills is most important (Rikala et al., 2024). Digital literacy was identified as an important skill, not only for the lower-level workforce, but also for executives who are responsible for making strategic decisions for digital transformation (Barro & Davenport, 2019; Sousa-Zomer et al., 2020; Zhao et al., 2024). Blanka et al. (2022) emphasise the critical role played by employees at all levels, not only at management levels; the role played by Human Capital across different levels of the organisation was deemed critical in the context of digital transformation (Blanka et al., 2022).

Other key technical skills identified by scholars as essential for organisations of the future were digital skills, analytical skills, data analytics, cybersecurity and information technology. (Collings & McMackin, 2021; Li, 2020). Bouwmans et al. (2024) consider essential digital transformation skills to be a combination of digital skills (hard skills) as well as transformation-oriented skills (soft skills).

Although technological advancement is one of the major trends that impact organisations, what will give them a competitive advantage is not the latest technologies but rather the skills and capabilities within the organisation to interpret and analyse the data effectively and

provide management with key insights and recommendations (Frankiewicz & Chamorro-Premuzic, 2020).

Managers are responsible for driving digital transformation and are required to secure the support and the commitment of the employees (Fernandez-Vidal et al., 2022). They therefore need to have organisational agility, technical skills and the emotional intelligence to deal with talent management in the digital age (Fernandez-Vidal et al., 2022). Chatterjee et al. (2022) add that superior change management abilities are needed to implement digital transformation.

Theme 3: Technical and soft skills: Comparison of key findings to key literature

The findings strongly align with literature confirming that both technical and soft skills are needed for digital transformation, as highlighted by Bouwmans et al. (2024). Participants highlighted that digital literacy is an important technical skill at all levels, which is in alignment with studies by Barro and Davenport (2019), Sousa-Zomer et al. (2020) and Zhao et al. (2024).

The top technical skills identified by participants corresponded with the findings of Collings and McMackin (2021) and Li (2020). Furthermore, the importance of soft skills highlighted by participants for leading digital transformation, securing buy-in and managing change aligns with the work of Chatterjee et al. (2022) and Fernandez-Vidal et al. (2022).

An interesting distinction, however, emerged between practitioners and scholars. Practitioners identified digital literacy as the most important skill needed for digital transformation, whereas scholars put greater emphasis on skills relevant to the digital age, such as AI, coding and cybersecurity. This difference in priority between practitioners and scholars suggests that in the context of Namibia, digital transformation is still in its early stages, with organisations focusing on building foundational skills such as digital literacy before progressing to emerging digital skills.

Theme 3: Technical and soft skills: Conclusion

The research findings are aligned with previous studies, which also confirm that organisations need both technical and soft skills across all levels to support digital transformation.

6.2.4 Theme 4: The importance of human capital (people) in digital transformation

The fourth theme that emerged from the analysis is the critical role people play in driving successful digital transformation.

Theme 4: The importance of human capital (people) in digital transformation: Summary of key findings

Participants across all sectors agreed that people play a critical role in the success of digital transformation. The participants highlighted that technology alone will not ensure success, but that leaders, employees and stakeholders all play important roles in the process. Organisations that fail to address the people aspect of digital transformation could face resistance and a lack of adequate skills and support required to make the transformation a success. The findings emphasise that people are critical enablers of digital transformation, actively contributing to its success through their skills, commitment and support.

Theme 4: The importance of human capital (people) in digital transformation: Summary of key literature

Digital transformation impacts a variety of sectors and stakeholders (Rikala et al., 2024). Gallardo-Gallardo et al. (2020) agree with this view and advocate for a multi-stakeholder perspective to talent management including HR, management, employee and the trade unions.

Scholars recognise people as strategic assets of their organisations, particularly in the context of digital transformation (Frankiewicz & Chamorro-Premuzic, 2020; Montero Guerra et al., 2023). Scholars agree that digital transformation is not only about technological aspect as people are critical enablers of the process to ensure its success (Frankiewicz & Chamorro-Premuzic, 2020; Montero Guerra et al., 2023, Vial 2019). The workforce is impacted by digitalisation and can use their knowledge and skills to actively advance digital transformation (Blanka et al., 2022).

One of the ways to improve the successful outcome of digital transformation projects is for leaders to adopt a people-centric approach (Blanka et al., 2022; Bonnet & Westerman, 2021) to the transformation. Vial (2019) supports this strategy and emphasises that the role of employees, their talent, skills and support are vital to implement successful digital transformation projects. Talent is a valuable and unique resource that can assist organisations in obtaining a sustainable competitive advantage (Dries, 2013b; Harsch & Festing, 2020; Latukha et al., 2022).

Theme 4: The importance of human capital (people) in digital transformation: Comparison of key findings to key literature

The findings confirm existing literature, which indicates that people are critical to the success of digital transformation. Participants expressed similar sentiments to Frankiewicz and Chamorro-Premuzic (2020), highlighting that technology alone is not enough to achieve digital transformation and that people are critical to the journey. The emphasis on leaders, employees, the union and other stakeholders is in alignment with views by Rikala et al. (2024) and Gallardo-Gallardo et al. (2020), who highlight that digital transformation impacts a variety of sectors and stakeholders and that it is important to include a multi-stakeholder perspective on talent management to ensure alignment, common understanding and the collective achievement of digital transformation goals.

Theme 4: The importance of human capital (people) in digital transformation: Conclusion

The findings indicate that people are critical to the success of digital transformation. Technology alone cannot drive digital transformation but together with leaders, employees and stakeholders it can enable the success of digital transformation.

6.2.5 Conclusion of research question 1

The analysis of research question 1 indicated that skill sets are evolving in response to emerging technology, resulting in new types of jobs and skills required. Participants emphasised the scarcity of skills needed for digital transformation and expressed concern about the slow adoption of technology in Namibia, particularly in light of generational differences within the workforce.

Under Theme 1, which focuses on evolving skill sets, a potential new sub-theme was identified. Although the focus was on skills from an organisational perspective, companies specifically in the financial services sector highlighted the importance of the evolving skills required from customers as equally important. Organisations in that sector noted that the slow adoption of technology among older customers has affected their uptake of digital products and services. This finding adds to the literature by highlighting that digital transformation success does not only depend on employee skills, but customer digital readiness is also a key aspect to ensure the success of the organisation's digital transformation initiatives.

The findings confirm that a combination of technical and soft skills is crucial for digital transformation. Technical skills such as digital literacy, data analytics, AI and cybersecurity

were frequently mentioned, while soft skills, especially change management and leadership, were considered equally important. These findings were aligned with Bouwmans et al. (2024), who argue that digital transformation requires a combination of technical and soft skills, and with Fernandez-Vidal et al. (2022), who highlight the evolving role of managers in response to digital transformation.

An interesting distinction, however, emerged between literature studies and the findings. Participants in the study identified digital literacy as the most important skill required for digital transformation, whereas the literature discussed in Chapter 2 put greater emphasis on skills relevant to the digital age, such as AI, coding and cybersecurity. This difference in priority between literature and the participants suggests that in the context of Namibia, digital transformation is still in its early stages, with organisations focussing on building foundational skills, such as digital literacy, before progressing to emerging digital skills.

The findings also highlighted that people play a critical role in digital transformation and that commitment and buy-in are needed from all stakeholders, including employees, leaders, customers and the union.

Overall, the findings are aligned with literature and confirm that skill sets are evolving in response to digital transformation and that successful digital transformation requires a combination of technical and soft skills as well as adopting a people-centric approach.

6.3 Research question 2: How does the organisation's talent management approaches, particularly related to skills, support digital transformation?

6.3.1 Theme 5: Adaptive talent management

The fifth theme highlights how talent management practices are evolving in response to digital transformation.

Theme 5: Adaptive talent management: Summary of key findings

The findings suggest that in response to digital transformation, talent management strategies are shifting from traditional HR approaches towards becoming more adaptive and strategic to focus on future skills. Organisations are implementing various initiatives and interventions to invest in their workforce, ensuring that employees possess the necessary skills to remain relevant in supporting the organisation's digital transformation initiatives.

However, the findings indicate that not all the sectors had a talent management policy in place. Most of the sectors had a talent management policy in place, although it was outdated (P11). The postal sector, however (P8), indicated that they did not have a talent management policy in place but that they are in the process of developing one. The public sector (P5), in contrast, emphasised that there was no talent management policy in place to ensure that talent is nurtured and rewarded.

Theme 5: Adaptive talent management: Summary of key literature

The fast pace of emerging technologies creates an urgent need to address the scarcity of skills (Lumineau et al., 2025). Both micro- and macro-factors influence how the organisation adopts talent management practices, as it leads to new ways of working and the skills required by the workforce (Harsch & Festing, 2020; Wiblen & McDonnell, 2020). In addition to micro- and macro-factors, talent management is also context-dependent and company-specific; thus, it requires organisations to have different talent management practices that fit their strategic objectives (Gallardo-Gallardo et al., 2020; Harsch & Festing, 2020). Kravariti et al. (2022) also highlight perspectives from the public sector and indicate that this sector deals with unique challenges such as resource constraints, indicating that talent management is more complex in this sector.

Digital transformation offers an opportunity for HR to enhance employee culture, well-being and commitment (Montero Guerra et al., 2023). To realise the benefits at the organisational level, it must develop formal talent management strategies, frameworks, processes, and policies (Kaliannan et al., 2023). However, only between 60% and 70% of organisations have a talent management programme in place (Wikhamn et al., 2021).

Organisations should plan and ensure that they build the skills and capabilities by allocating the necessary resources to equip their workforce to leverage digital technologies (Collings & McMackin, 2021; Rikala et al., 2024). Reskilling and upskilling programmes are thus critical and must be implemented to prepare the workforce and ensure readiness to adjust to the changes brought about by digital transformation (Frankiewicz & Chamorro-Premuzic, 2020).

Theme 5: Adaptive talent management: Comparison of key findings to key literature

The findings highlighted that some sectors lacked formal and updated talent management policies, which align with projections by Wikhamn et al. (2021), indicating that only 60% to 70% of organisations have a talent management programme. This finding is, however, in contrast with the recommendations of Kaliannan et al. (2023) who suggest that to realise the

benefits of digital transformation, organisations need to have formal talent management strategies, policies and frameworks in place.

Organisations in the various sectors all had different types of interventions and initiatives in place, such as reskilling and upskilling programmes that align with Collings and McMackin (2021) and Rikala et al. (2024). Interventions across sectors shared many similarities and differences, which aligned with the findings of Gallardo-Gallardo et al. (2020) and Harsch and Festing (2020), who all suggest that talent management is context dependent and company specific.

The finding related to the non-existence of talent management practices in the public sector aligns with the views of Kravariti et al. (2022), who highlight that the public sector deals with unique challenges and, therefore, talent management is more complex in this sector.

Theme 5: Adaptive talent management: Conclusion

The findings from the study emphasise how talent management supports digital transformation. Across all sectors there is evidence to indicate that traditional HR approaches are no longer sufficient and that talent management practices are evolving in response to the digital era.

While all sectors have implemented reskilling and upskilling activities, not all organisations have a formal updated policy in place, indicating a gap between strategic objectives and implementation. This also emphasises that talent management is context-dependent and company-specific, which is in line with the literature. Kaliannan et al. (2023), however, caution that to realise the benefits of digital transformation, organisations need to have formal talent management strategies, policies and frameworks in place.

6.3.2 Theme 6: Strategic alignment

The sixth theme that emerged focused on the importance of strategic alignment for ensuring success in digital transformation.

Theme 6: Strategic alignment: Summary of key findings

The participants across sectors agreed that digital transformation needs to be fully integrated into the overall strategy of the organisation and that it needs support from the top, specifically at the board and the executive management level. Without this alignment and support, digital transformation is at risk of failure.

Theme 6: Strategic alignment: Summary of key literature

Digital transformation is increasingly being featured at the top of strategic agendas (Hanelt et al., 2021). To effectively implement these initiatives, it is therefore important that the appropriate organisational structures are in place to support this strategic transformation (Singh et al., 2020). To realise the benefits of digital transformation, an organisation must develop formal talent management strategies, frameworks, processes, and policies that align with digital objectives (Kaliannan et al., 2023).

In response to these changes, organisations are therefore establishing new managerial roles to lead new digital functional areas, leverage the opportunities of digital transformation, and manage its risks (Singh et al., 2020). One such role is the Chief Digital Officer, who is responsible for driving digital initiatives and who demonstrates executive commitment to digital transformation (Singh et al., 2020).

Theme 6: Strategic alignment: Comparison of key findings to key literature

Participants emphasised that support from leadership, particularly executive leadership and the board, is crucial to ensuring the project's success. This is aligned with literature, which highlights that it is at the top of strategic agendas (Hanelt et al., 2021) and that policies and structures need to be realigned to support digital transformation initiatives (Kaliannan et al., 2023; Singh et al., 2020).

Theme 6: Strategic alignment: Conclusion

The findings emphasise the importance of strategic alignment in the success of digital transformation. Both the findings and literature highlight that digital transformation needs to be embedded in the overall strategy of the organisation and supported by policy and structural realignment.

6.3.3 Theme 7: Structures

The seventh theme that emerged was the importance of realigning the organisational structure to enable digital transformation.

Theme 7: Structures: Summary of key findings

Participants emphasised that digital transformation requires organisational transformation, not only in technology but also in how people and structures are realigned. Participants highlighted that traditional structures are no longer adequate to support digital transformation and

emphasised the need to create new roles, digital departments, and forward-looking digital organisational structures.

Among the sectors analysed, the financial services and mining sectors appear to be leading in implementing new structures and roles to support digital transformation. Notably, the mining sector was the only sector to mention the creation of a new executive level position, the Chief Digital Officer, to drive digital transformation.

Another key finding was the challenge of attracting scarce skills when organisational structures are outdated and not aligned with market-related remuneration for specialist talent required for digital transformation.

Theme 7: Structures: Summary of key literature

Omrani et al. (2024) emphasise that the successful implementation of digital transformation requires specific organisational resources, such as technical competencies, digital technologies, support from top management, and changes to the organisational structure. Montero Guerra et al. (2023) support this argument, emphasising that the organisation must make these changes to ensure that the transformation is embedded in it and will yield sustainable results in the future.

Organisations are creating new business units and digital functional departments to support their digital strategy (Verhoef, 2021). The organisation needs technical competencies (Omrani et al., 2024) to drive digital transformation, and new managerial roles, such as the Chief Digital Officer, are consequently needed to lead these new departments (Singh et al., 2020). Bonnet and Westerman (2021), however, argue that organisations are not only focusing on technical roles but are also prioritising improving the employee experience through digital transformation (Bonnet & Westerman, 2021). Consequently, many organisations have appointed a Chief Learning Officer who is responsible for developing new learning models that are fit for the digital age (Bonnet & Westerman, 2021).

Theme 7: Structures: Comparison of key findings to key literature

The research findings concur with the arguments of Verhoef (2021) and Singh et al. (2020), indicating that digital transformation requires structural changes, including new business units, departments, and managerial roles. Additionally, Omrani et al. (2024) argue that the organisation needs technical competencies to effectively drive digital transformation, which aligns with findings that specialist technical positions are needed by organisations and that

structures must be realigned to enable organisations to remunerate these specialists appropriately.

An interesting finding was that only the mining industry mentioned the creation of a technical executive role to drive digital transformation, which aligns with findings by Singh et al. (2020). However, none of the participants mentioned the introduction of new or revised HR roles at the executive level, such as a Chief Learning Officer, as highlighted by Bonnet and Westerman (2021). This suggests that while structural changes are indeed taking place, they occur mainly in the technical roles and that the changes needed in human capital and talent management roles are lagging behind.

Theme 7: Structures: Conclusion

The research findings confirmed the literature about changing structures in response to digital transformation. Organisations need to transform their structures, as without them, they might struggle to attract the right skills to fully leverage the benefits of digital transformation, ultimately limiting their competitiveness in a changing environment.

6.3.4 Conclusion of research question 2

The findings for research question 2 illustrate how organisations across sectors are rethinking their talent management approaches to respond to the demands of digital transformation. Across all sectors there is evidence to indicate that traditional HR approaches are no longer sufficient and that talent management practices are evolving in response to the digital era. Organisations are adapting their traditional talent management practices to focus on the evolving skill requirements of digital transformation to ensure strategic realignment. This shift enhances their competitiveness and ensures that the organisation can build a future-ready workforce that is able to adapt to rapid technological changes.

While all sectors have implemented reskilling and upskilling activities, not all organisations have a formal update policy in place, indicating a gap between strategic objectives and implementation. This also emphasises that talent management is context-dependent and company-specific, which is in line with the literature of Gallardo-Gallardo et al. (2020) and Harsch & Festing (2020). Kaliannan et al. (2023), however, caution that organisations need to have formal talent management strategies, policies, and frameworks in place to realise the benefits of digital transformation.

The findings indicate that organisations are creating new digital departments and technical roles to support digital transformation, which is aligned with the findings of Verhoef (2021) and Singh et al. (2020). However, human capital-focused roles, such as the Chief Learning Officer (Bonnet & Westerman, 2021), remained absent, suggesting that technical structures are prioritised in organisations and that talent management structures lag behind.

Overall, the findings suggest that talent management is a crucial enabler of digital transformation that needs leadership commitment and structural alignment to ensure that skills evolve in response to rapid advancement in technologies.

6.4 Research question 3: How do organisations develop skills needed for digital transformation?

6.4.1 Theme 8: Cross-collaboration

The eighth theme which emerged from the analysis is the importance of cross-collaboration in enabling successful digital transformation.

Theme 8: Collaboration: Summary of key findings

The findings highlighted that cross-collaboration is a key enabler of digital transformation. This showed how the organisation internally works together to execute its digital transformation initiatives. Organisations used mentoring across departments as an innovative solution to promote learning and staff rotation to acquire diverse skills and encourage learning.

Cross-collaboration brings together employees from different departments to share knowledge, innovate and leverage diverse skill sets towards making digital transformation a success.

Theme 8: Collaboration: Summary of key literature

Organisational structures are becoming flatter and more flexible, enabling employees to take up new roles outside their traditional functions (Fernandez-Vidal et al., 2022; Verhoef, 2021; Vial, 2019). The flatter structures enable the building of mobile and dynamic teams that are cross-functional to execute digital transformation initiatives (Fernandez-Vidal et al., 2022). In addition, cross-functional teams offer the opportunity for cross-generational mentorship to share knowledge, improve collaboration between younger and older employees, and improve team efficiency (Fernandez-Vidal et al., 2022).

Theme 8: Cross-collaboration: Comparison of key findings to key literature

The findings align well with the views of Fernandez-Vidal et al. (2022), who highlight that cross-functional teams enable and support digital transformation initiatives, which results in mentorship, knowledge sharing, and improved overall team efficiency.

Theme 8: Cross-collaboration: Conclusion

Cross-functional collaboration is a valuable tool to overcome resource constraints, as it allows the organisation to leverage its existing resources to drive digital transformation. These findings reinforce that digital transformation requires organisation-wide effort.

6.4.2 Theme 9: Partnerships

The ninth theme which emerged from the analysis is the key role that partnerships play in supporting digital transformation.

Theme 9: Partnerships: Summary of key findings

The findings indicate that organisations across all sectors make use of both international and local partnerships to mitigate resource and skills gaps while at the same time allowing for skills transfer, innovation and problem-solving. Organisations collaborate with consulting firms, universities, government ministries, and international organisations to develop digital skills and transfer knowledge to support digital transformation initiatives.

This strategy makes use of external partners while at the same time building internal skills, which meets long-term goals. It also enables organisations to respond to changing environments and increase their competitiveness. However, participants cautioned against overreliance on external partnerships and emphasised the importance of having a balanced strategy to build internal skills as opposed to substituting them.

Theme 9: Partnerships: Summary of key literature

As digital transformation requires significant financial investments, Furr et al. (2022) suggest using a blend of collaborative and competitive strategies to survive during the digital age. Correani et al. (2020) agree with this view and suggests that onboarding partners as part of the digital transformation journey enables the organisation to have support in obtaining new data, skills and knowledge that are critical to the implementation of the digital transformation strategy.

In addition, Wiblen and McDonnell (2020) advocate for a pluralistic talent approach where the organisation develops internal talent while recruiting externally for the skills lacking internally (Kaliannan et al., 2023).

Theme 9: Partnerships: Comparison of key findings to key literature

The findings are consistent with the recommendations of Furr et al. (2022), who advocate for a combination of collaborative and competitive strategies to thrive in the digital age. Additionally, Correani et al. (2020) highlight how bringing in partners can equip the organisation with essential skills during its digital transformation journey.

Moreover, the recommendation against excessive reliance on external parties aligns with the views of and Bonnet and Westerman (2021), with Wiblen and McDonnell (2020) promoting a dual approach to talent management which focuses on developing internal capabilities while simultaneously recruiting external expertise to address the skills gap.

Theme 9: Partnerships: Conclusion

Partnerships are critical enablers of digital transformation, especially in organisations where there is a lack of resources or skills. It not only gives the organisation access to specialised skills, it also brings different perspectives together. As a result, the organisation is better prepared for its digital transformation journey and achieves its goals. However, the organisation needs to avoid overreliance on partnerships and adopt a balanced approach that leverages partnerships while at the same time building internal skills.

6.4.3 Theme 10: Workplace readiness

The tenth theme highlights the gap between formal education and workplace readiness, particularly for the skills needed for digital transformation.

Theme 10: Workplace readiness: Summary of key findings

The findings indicate that the transition from education to work remains a significant barrier to digital transformation. Participants from most sectors noted that while graduates have the technical knowledge and tertiary education, they do not have experience or industry-specific skills needed in digital transformation. Although universities produce technically qualified graduates, most lack practical experience, business acumen and exposure to real-world systems.

The findings also highlight that universities are not yet fully aligned with the changing needs across various sectors, including the field of payments technology. Therefore, to bridge that experience gap, organisations need to allocate substantial resources towards on-the-job training and internships or use consultants while at the same time building internal skills.

Theme 10: Workplace readiness: Summary of key literature

IT and digital teams also need the required business knowledge to ensure that they understand the business, the financial implications of their technical decision and add value to the organisation (Fernandez-Vidal et al., 2022).

Rikala et al. (2024) emphasise that education and training providers are struggling to adapt to the changing industry demands and skills required by organisations, which contributes to the widening skills gap. The authors argue that the skills gap involves multiple stakeholders, including organisations, the workforce, political decision-makers, and educational providers (Rikala et al., 2024). Additionally, the author emphasises that although individuals have a responsibility to develop their own skills, they can only do so with the support of their employers (Rikala et al., 2024). Consequently, employers, educators and policymakers must collaborate to provide financial and non-financial resources to support ongoing skills development (Rikala et al., 2024).

Theme 10: Workplace readiness: Comparison of key findings to key literature

The findings for this theme are aligned with literature. The findings highlighted that while graduates have the technical knowledge, they lack practical experience and business acumen. This is aligned with the sentiments expressed by Fernandez-Vidal et al. (2022) that in addition to technical skills, the workforce is also required to understand the business and financial implications to the organisation.

In addition, the findings also raised a concern that the universities are not fully aligned with the changing needs of the industry, which corresponds with the views of Rikala et al. (2024). The literature also emphasises that there should be strong collaboration between employers, educators and policymakers to address the skills gap (Rikala et al., 2024).

Theme 10: Workplace readiness: Conclusion

This theme reinforces the need for stronger partnerships between academia, industry and government to ensure a curriculum that reflects evolving digital skills needs. Closing this gap will build national capacity, reduce reliance on international consultants, and accelerate the development of a digitally skilled workforce.

6.4.4 Theme 11: Resources

The eleventh theme that emerged from the analysis is the critical role that resources play in enabling digital transformation. Participants consistently emphasised that successful transformation depends on financial, human, and organisational resources.

Theme 11: Resources: Summary of key findings

Overall, all participants agreed that financial, human, and technological resources are critical enablers of digital transformation. Budget constraints, insufficient tools, and limited capacity were identified as barriers that can hinder the progress of digital transformation and reduce its expected value. Participants also highlighted that there is a need for strategic alignment between operational objectives and long-term digital transformation goals, as competing priorities can slow down the learning and development needed for digital transformation.

The findings reveal that financial investment is essential, but it also requires leadership buy-in to support training budgets, balance operational demands, and provide the necessary resources to build a digitally skilled workforce. However, participants acknowledged that leaders are under pressure to demonstrate a return on significant investments made in digital transformation.

Theme 11: Resources: Summary of key literature

External factors such as emerging technologies, changing customer needs, and competition can drive the adoption of digital transformation (Omrani et al., 2024). It can, however, also be driven by internal needs, which are based on use cases (Omrani et al., 2024). The successful implementation of digital transformation, however, requires specific organisational resources, such as technical competencies, digital technologies, support from top management, and structural changes (Omrani et al., 2024).

Talent is identified as a key and valuable resource that can assist organisations in obtaining a sustainable competitive advantage (Dries, 2013b; Harsch & Festing, 2020; Latukha et al., 2022). However, to achieve these advantages, the organisation is required to make significant investments in financial resources to identify, develop, reward, and deploy talent (Harsch & Festing, 2020; Jooss et al., 2021).

Although organisations are investing significant financial and non-financial resources (Correani et al., 2020) in digital transformation, many organisations face the "digital paradox", where they invest heavily in it but do not achieve the required returns on investment (Ancillai

et al., 2023). To address these challenges, Li (2020) suggests three strategies to effectively manage digital transformations. First, leaders should actively scan the market for the latest trends and encourage innovation by experimenting with new ideas. Second, organisations should adopt an incremental approach to implementing digital transformation, introducing small changes as opposed to large-scale ones. Last, leaders should focus on short-term wins while at the same time pursuing long-term digital transformation goals to ensure sustained momentum (Li, 2020).

Theme 11: Resources: Comparison of key findings to key literature

The findings are closely aligned with the literature, with both participants and scholars agreeing that resource availability is a key factor in determining the success of digital transformation. Participants highlighted that a budget is needed for digital transformation and that demonstrating the value of the project is important, which aligns with Omrani et al. (2024), who indicate that the adoption of digital transformation can be driven by multiple internal factors including the need for efficiencies and improved organisational performance.

Harsch and Festing (2020) and Jooss et al. (2021) highlight that the organisation is required to make significant investments in talent, which is aligned with participants who highlighted that organisations need to pay for scarce skills of specialists needed in digital transformation and invest in tools and training budgets to develop the workforce.

The participants also highlighted that leaders are required to demonstrate the value of digital transformation, which is aligned with Ancillai et al. (2023), expressing concern about the “digital paradox”.

Theme 11: Resources: Conclusion

Overall, both participants and scholars agree that resource availability is a key factor in determining the success of digital transformation. Leadership support and strategic alignment of resources are needed to support digital transformation.

This study also notes that even when financial resources are available, there is still conflict between short-term goals and long-term digital transformation goals. However, the strategies proposed by Li (2020) provide the organisation with valuable guidance to effectively manage these challenges and improve the success rate of their digital transformation projects.

6.4.5 Theme 12: Continuous learning and development

Theme number twelve highlights the importance of continuous learning and development as a critical element of digital transformation.

Theme 12: Continuous learning: Summary of key findings

The analysis shows that digital transformation is an ongoing journey – therefore, continuous learning and development play a crucial role in digital transformation. Across all sectors, participants described how digital transformation demands a workforce that is constantly learning, unlearning and acquiring new skills. The findings emphasise that people play a critical role in digital transformation and need to be upskilled to support the process.

Organisations are therefore increasingly prioritising upskilling, reskilling, and continuous learning by implementing training budgets, personal development plans, digital bootcamps and management learning systems. Organisations are integrating these interventions into their talent management processes, aligning them with performance management, skills gap assessment and future skills planning. These initiatives showed that learning is not viewed by organisations as a once-off event but as an ongoing process to equip the workforce with the skills needed in future.

Theme 12: Continuous learning: Summary of key literature

The key stakeholders in a talent system comprise senior management, line managers, human resource professionals and individual employees (McDonnell et al., 2023). It is therefore important to consider a multi-stakeholder perspective (Jooss et al., 2021).

Scholars agree that a learning culture is critical to develop knowledge and support talent management (Fernandez-Vidal et al., 2022; Gallardo-Gallardo et al., 2020). Zhao et al. (2024) further suggest that the organisation identifies and develops the specific competencies needed to enable the workforce to execute its digital transformation strategy. The organisation must therefore conduct a training needs analysis, skills gap assessment, promote lifelong learning, and use a value-based approach to individual talent development (Kaliannan et al., 2023). It must then implement interventions such as reskilling and upskilling programmes to prepare the workforce and ensure readiness to adjust to the changes brought about by digital transformation (Frankiewicz & Chamorro-Premuzic, 2020).

Scholars described digital transformation as a continuous journey (Carroll et al., 2023; Sousa-Zomer et al., 2020) due to the constantly changing external environment (Sousa-Zomer et al.,

2020). Bouwmans et al. (2024) and Li (2022) emphasise that the speed of technological advancements is disrupting organisations and widening the skills gaps. Fernandez-Vidal et al. (2022) further add that the workforce has a responsibility to keep themselves updated with the latest trends and understanding the potential implications, including the opportunities and the threats to the organisation.

Theme 12: Continuous learning: Comparison of key findings to key literature

The findings closely align with literature emphasising that digital transformation is an ongoing journey rather than a once-off project in alignment with the views of Carroll et al. (2023) and Sousa-Zomer et al. (2020). The findings also expressed concern about the pace of technology change, and the impact on knowledge and skills, which is in alignment with findings by Bouwmans et al. (2024) and Li, (2022).

One of the findings highlighted that skills development is not only an HR responsibility but must be done in conjunction with the affected department, supported by the findings of Jooss et al. (2021), which emphasise the importance of a multi-stakeholder perspective.

The findings also identified several initiatives implemented by organisations to develop continuous learning such as reskilling and upskilling programmes and conducting skills gaps audits, which is aligned with studies by Frankiewicz and Chamorro-Premuzic, (2020) and Kaliannan et al. (2023).

Theme 12: Continuous learning: Conclusion

The findings emphasised that digital transformation is an ongoing journey due to the speed of technological change. This change impacts existing knowledge and highlights the need for continuous upskilling. It also highlighted that continuous learning is not only an HR responsibility and needs to be done in conjunction with the rest of the business to ensure that the skills identified for development are in line with the workforce and business needs and priorities. The emphasis on continuous learning, supported by these interventions, ensures that employees remain relevant and agile to support the organisation's digital transformation initiatives.

6.4.6 Conclusion of research question 3

The findings for research question 3 show that developing the skills needed for digital transformation requires an integrated approach that includes multiple stakeholders, both internal and external, to ensure collaboration, partnerships, workplace readiness, resource

allocation and continuous learning. Individuals are responsible for their own learning; however, they can only do so with the support of their organisation. It is thus critical that the organisation avails the necessary resources to support continuous skills development.

The sectors with resource constraints found innovative ways to continue to learn, although it was at a slower pace. In contrast, the organisations with access to resources showed greater progress in their digital transformation journeys. These findings also indicate that it is important that these initiatives are not once off but that they are part of ongoing efforts to ensure that the workforce is prepared for the future. The findings also highlighted that continuous learning is not solely an HR responsibility, but must be undertaken in collaboration with the rest of the business to ensure that the skills identified for development meet the workforce and business needs.

The findings highlighted that universities are not yet fully aligned with the changing needs of the sectors This theme reinforces the need for stronger partnerships between academia, industry and government to ensure a curriculum that reflects evolving digital skills needs. Closing this gap will build national capacity, reduce reliance on international consultants, and accelerate the development of a digitally skilled workforce.

6.5 Conclusion

In this chapter, the findings of the study were discussed in relation to the literature. An overview of the main research question, followed by the sub-research questions guided the flow of the discussion. The data was analysed using thematic analysis to code the data and identify themes based on the research questions. The analysis identified 12 themes that were related to the research questions. The findings were presented in line with the research questions, highlighting the main themes and discussing the differences and similarities of these findings between the sectors.

The researcher conducted a comparison between the literature and the findings of the study to identify any similarities and differences that could add to the existing theories on digital transformation. The comparison involved analysing the themes per research question against the literature to identify both similarities and differences and drawing a conclusion per theme. The researcher found that the themes were overwhelmingly similar to the literature, with only one nuance identified that could contribute to the body of literature.

The results of the comparison between the literature and findings are summarised below:

Research question 1 aimed to understand the scarcity of skills from an organisational business perspective and which specific type of skills are regarded as most important for digital transformation. Under Theme 1, evolving skill sets, although the focus was on organisational skills, companies, specifically in the financial services sector, highlighted that the evolving skills required by customers are equally important. While there is limited literature on the need to target customers from a skills perspective, as this could potentially strengthen digital adoption, this study identified it as critical, and this insight will be included in the recommendations of the study.

Research question 2 no potential sub-themes were identified.

Research question 3 no potential sub-themes were identified.

The next chapter, Chapter 7, is the final chapter of this research paper and discusses the conclusions of the research questions.

CHAPTER 7: CONCLUSION

7.1 Introduction

This chapter presents the conclusions from the research in alignment with the research questions. It compares the findings as discussed in the previous chapter with the literature and formulates a theoretical conclusion for each research question. The chapter further outlines the research contribution to both scholars and practitioners, followed by recommendations to management and key stakeholders.

The chapter concludes by highlighting the limitations of the research study and offering suggestions for future research.

7.2 Principal theoretical conclusions

This section discusses the principal theoretical conclusions as per the research questions. The researcher conducted a comparison between the literature and the findings of the study to identify any similarities and differences that could add to the existing theories on digital transformation. The comparison involved comparing the themes per research question against the literature to identify both similarities and differences and drawing a conclusion per theme.

Several similarities with existing literature were identified, along with one nuance that could potentially strengthen digital adoption.

Research question 1: How do the availability, type and level of skills in the organisation influence the implementation of digital transformation?

Research question 1 aimed to understand the impact of skills on the organisation's ability to implement digital transformation, and from this enquiry, four themes emerged: evolving skill sets, scarcity of skills, technical and soft skills, and the importance of human capital (people) in digital transformation.

The study found that skill sets are evolving in response to emerging technology, resulting in new types of jobs and skills required. Participants emphasised the scarcity of skills needed for digital transformation in Namibia, which aligns with global findings that highlight widespread skills shortages, particularly in emerging markets such as Namibia. The study, similar to other studies highlights slow adoption of technology, particularly considering generational differences within the workforce. While there are common challenges, which cut across sectors, this study found that there are sectoral differences; and the private sector is more

proactive in reshaping job roles in response to changing technologies, while the public sector is struggling with attracting and retaining the right skills to support digital transformation.

Digital literacy was identified as the most important skill across all sectors to enable digital transformation, not only for the lower-level workforce, but also for top management and the board who are responsible for making strategic decisions for digital transformation. This suggests that in the context of Namibia, digital transformation is still in its early stages, with organisations focusing on building foundational skills such as digital literacy before progressing to emerging digital skills.

An interesting conclusion of the study, which is not widely written about, is the customer angle. While the focus was largely on skills from an employee perspective, the study concludes that customer skills are equally critical, specifically in the financial services sector. Customer skills also need to evolve for digital transformation to be a success, and the evolution of customer skills is a key consideration for the success of digital transformation. If customers do not have the skills, or appetite to engage digitally, this could impact digital transformation strategies.

Overall, the findings are aligned with literature and confirm that skill sets are evolving in response to digital transformation and that successful digital transformation requires a combination of technical and soft skills as well as adopting a people-centric approach.

Research question 2: How does the organisation's talent management approaches, particularly related to skills, support digital transformation?

The aim of research question 2 was to understand how talent management approaches have evolved in response to digital transformation, particularly related to skills. The three themes identified for this question were adaptive talent management, strategic alignment and structures, as discussed in Chapter 6.

The study concludes that traditional HR approaches are no longer sufficient and talent management practices are evolving in response to the digital era. Consequently, organisations are adapting their traditional talent management practices to focus on the evolving skill requirements of digital transformation to ensure strategic realignment. This shift enhances their competitiveness and ensures that the organisation can build a future-ready workforce that is able to adapt to rapid technological changes.

Although all sectors had interventions in place, some sectors lacked formal talent management policies and others had outdated talent management policies. This finding is,

however, in contrast with the recommendations of Kaliannan et al. (2023) who suggest that to realise the benefits of digital transformation, organisations need to have formal talent management strategies, policies and frameworks in place.

Similar to previous studies, this study concludes that organisations are creating new digital departments and technical roles to support digital transformation. However, human capital-focused roles, such as the Chief Learning Officer, remained absent, suggesting that technical structures are prioritised in organisations and that talent management structures lag.

Overall, the study concludes that talent management is a crucial enabler of digital transformation that needs leadership commitment and structural alignment to ensure that skills evolve in response to rapid advancement in technologies.

The three themes identified were all similar to those in the literature and no new themes or sub-themes were identified.

Research question 3: How do organisations develop the skills needed for the successful implementation of digital transformation?

Research question 3 aimed to understand how organisations across different sectors are developing skills and how they attempt to bridge the gap between current skill sets and the skills required in the future. This study found five themes linked to this question; namely: cross-collaboration, partnerships, workplace readiness, resources and continuous learning and development.

The study concludes that there is agreement between participants and scholars that resource availability is a key factor in determining the success of digital transformation. Organisations need to invest financial and non-financial resources into digital transformation, including paying competitive salaries to attract scarce talent and investing in continuous development of the existing workforce. In addition, leadership support and strategic alignment of resources are needed to support digital transformation. What was interesting to note is that the sectors with resource constraints found innovative ways to manage the skills gaps and continued to learn, although it was at a slower pace. In contrast, the organisations with access to resources showed greater progress in their digital transformation journeys.

These findings indicate that digital transformation is an ongoing journey due to the speed of technological change. This change impacts existing knowledge and highlights the need for continuous upskilling. It is therefore important that upskilling and reskilling initiatives are not

once off but that they comprise an ongoing effort to ensure that the workforce is prepared for the future. The study found that continuous learning is not only an HR responsibility, but that it needs to be done in conjunction with the rest of the business to ensure that the skills identified are developed to meet the workforce needs.

To mitigate the skills gap, organisations are onboarding graduates to strengthen their talent pipelines. However, the study concludes that although these graduates possess technical knowledge and tertiary education, they lack the experience and industry-specific skills required for digital transformation, and universities are not yet fully aligned with the evolving needs across sectors. This reinforces the need for stronger partnerships between academia, industry and government to ensure a curriculum that reflects evolving digital skills needs. Closing this gap will build national capacity, reduce reliance on international consultants, and accelerate the development of a digitally skilled workforce.

Organisations make use of partnerships to mitigate resource and skills gaps. However, participants and scholars caution that they need to avoid overreliance on partnerships and adopt a balanced approach that leverages partnerships while at the same time building internal skills. The findings suggest that developing the skills needed for digital transformation requires an integrated approach that includes multiple stakeholders, both internal and external, to ensure collaboration, partnerships, workplace readiness, resource allocation and continuous learning.

In summary, the five themes discussed under research question 3 were found to be similar to existing literature and no new themes or sub-themes were identified. The research conclusions contribute to existing literature in understanding how organisations develop skills needed for digital transformation.

7.3 Research contributions

This research contributes to the understanding of digital transformation and improving the success rate by examining the role of skills in the implementation of digital transformation. The research builds on the recommendation from of Guerra et al. (2023) by identifying the specific skills required for digital transformation and analysing how they support successful implementation.

The study offers a potential contribution to literature by identifying potential similarities and nuances that could provide new insights into the role of skills in digital transformation.

7.3.1 Similarities with literature: Contributing to the body of knowledge

The themes were overwhelmingly similar to the literature, as listed in the table below.

Table 23:

Similarities with literature

Research Question 1: How do the availability, type and level of skills in the organisation influence the implementation of digital transformation?		
Theme	**Theme similar to literature**	**New potential sub-theme**
Theme 1: Evolving skills sets	✓	None although one nuance was identified that could contribute to the body of literature.
Theme 2: Scarcity of skills	✓	None
Theme 3: Technical and soft skills	✓	None
Theme 4: The importance of human capital (people) in digital transformation	✓	None
Research Question 2: How does the organisation's talent management approaches, particularly related to skills, support digital transformation?		
Theme 5: Adaptive talent management	✓	None
Theme 6: Strategic alignment	✓	None
Theme 7: Structures	✓	None
Research Question 3: How do organisations develop the skills needed for the future		
Theme 8: Cross-collaboration	✓	None
Theme 9: Partnerships	✓	None
Theme 10: Workplace readiness	✓	None
Theme 11: Resources	✓	None
Theme 12: Continuous learning and development	✓	None

Source: Author's own

The main contribution of the study is the potential role of customers in digital transformation; slow adopting by customers, and their skills levels impact digital transformation, specifically in the financial services sector. The evolving skills of customers are a critical consideration (Crane et al., 2016). While there is not much literature on the need to target customers from a skills perspective, as this could potentially strengthen digital adoption; the findings of this study highlighted this insight as critical, and it was included in the recommendations of the study.

7.4 Recommendations to management and other stakeholders

Digital transformation impacts a broad number of stakeholders, including academia, industry and government. The fast pace of emerging technologies created an urgent need to address the shortage of digital skills (Lumineau et al., 2025) and created the need for this study.

The recommendations of this report therefore aim to provide management and other stakeholders, particularly in Namibia, with practical insights and advice to improve the success rate of digital transformation by focusing on skills.

The recommendations are presented as follows.

Formal talent management frameworks

To realise the benefits of digital transformation, organisations need to have formal talent management strategies, policies, and frameworks in place that align with their objectives. These frameworks are necessary to guide the organisation in identifying, developing, and retaining the critical skills required in the digital era.

Dual approach to talent management

Organisations should adopt a dual approach to talent management that focusses on developing internal capabilities while simultaneously recruiting external experts to address the skills gap. This blended approach ensures both short-term competitiveness and long-term capacity building.

Organisational structures

Structural changes must be made for new digital roles not only in technical areas but also in HR to better support digital transformation. These roles should be benchmarked to ensure market-competitive salaries that can attract and retain key talent.

Partnerships between academia, industry and government

The scarcity of skills needed for digital transformation reinforces the need for stronger partnerships between academia, industry and government to ensure a curriculum that reflects evolving digital skills needs. Closing this gap will build national capacity, reduce reliance on international consultants, and accelerate the development of a digitally skilled workforce.

Collaborations and resource-sharing initiatives

For organisations facing resource constraints, partnerships and collaborations offer opportunities to co-develop scarce skills and share digital expertise. These collaborative efforts can speed up skill development and reduce the skills development efforts across various sectors. The findings also highlighted that the public sector is lagging behind in their progress with digital transformation and therefore stronger collaboration is needed between the public and private sectors to share resources and speed up digital transformation in the public sector.

Digital literacy initiatives

The slow adoption of technology in Namibia was identified as a major obstacle to digital transformation. Organisations need to prioritise digital literacy as a core competency at all levels in order to enable employees to use new technologies effectively. These efforts by organisations will contribute to achieving the country's national digital strategy goals.

Attractive work environments for young talent

It is important for organisations to create work environments that appeal to young, digitally savvy professionals. Offering flexible working arrangements and opportunities for continuous learning and development is key to attracting and retaining young talent.

Continuous skills development: Customers

The skill set from customers is equally important to strengthen the adoption of the organisation's digital products. The organisation needs to invest in customer skills development to strengthen digital adoption and to ensure the success of its digital transformation objectives.

7.5 Limitations of research

The limitations of the research methodology for this study were detailed in Chapter 4.
First, the selected time horizon was a cross-sectional design due to the time limitations of this study; thus, the impact of skills on digital transformation over time was not considered.

Second, purposeful sampling was used based on the judgement of the researcher, with most of the participants from Namibia and only one from South Africa, which limits the generalisation of the research within the Sub-Saharan African environment.

Third, the sample selection only included participants from the ICT, mining, financial services and public sectors, making it difficult to generalise the findings to other sectors.

Finally, the sample also only included participants at the management level, which excluded other categories of employees who might have different views on the research topic.

7.6 Suggestions for future research

Future research studies can focus on the following areas:

First, future research studies can adopt a longitudinal design to assess the role of skills in digital transformation over time.

Second, while the scope of this study primarily focused on Namibia, future research could be extended to other Sub-Saharan African countries, given the shortage of digitally skilled workers in developing regions (Latukha et al., 2022).

Third, this research study focused exclusively on five sectors. Future research can include additional sectors, given that digital transformation is a broad phenomenon affecting a variety of industries (Cetindamar et al., 2024; Sousa-Zomer et al., 2020; Verhoef et al., 2021).

Fourth, future studies can focus on digital transformation from a customer perspective to expand existing literature.

Finally, the sample was limited to participants from management, and thus further research can include a broader range of employees to obtain a more diverse perspective on the research topic, given that digital transformation impacts the whole organisation and multiple stakeholders (Cetindamar Kozanoglu & Abedin, 2021; Verhoef et al., 2021).

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APPENDICES

Appendix 1: Consent form

Dear Research participant,

I am conducting research on the role of skills on digital transformation. Our interview is expected to last 60 minutes and will help us understand how skills impact the successful implementation of digital transformation. Your participation is voluntary, and you can withdraw at any time without penalty. I would also like to inform you that any information shared in the interview will be kept confidential.

By signing this letter, you are indicating that you have given permission for:

- The interview to be recorded;
- The recording to be transcribed using online transcription;
- Verbatim quotations from the interview may be used in the report, provided they are not identified with your name or that of your organisation;
- The data to be used as part of a report that will be publicly available once the examination process has been completed; and
- All data to be reported and stored without identifiers.

If you have any concerns, please get in touch with my supervisor or me. Our details are provided below.

Researcher name:
Email : 23013682@mygibs.coza
Phone: +264 852080260

Research Supervisor name: Dr Noma Nyembo
Email: nomanyembo@gmail.com
Phone: +27 734873407

Signature of participant: _____ Date: _____

Signature of researcher: _____ Date: _____

Appendix 2: Ethical clearance approval

GIBS ETHICAL CLEARANCE APPLICATION FORM 2025/26

G. APPROVALS FOR/OF THIS APPLICATION

When the applicant is a student of GIBS, the applicant must please ensure that the supervisor and co-supervisor (where relevant) has signed the form before submission

STUDENT RESEARCHER/APPLICANT:

29. I affirm that all relevant information has been provided in this form and its attachments and that all statements made are correct.

Student Researcher's Name in capital letters:	[redacted]
Date:	05 Jul 2025
Supervisor Name in capital letters:	DR NOMAKHUZE NYEMBO
Date:	05 Jul 2025
Co-supervisor Name in capital letters:	
Date:	05 Jul 2025

Note: GIBS shall do everything in its power to protect the personal information supplied herein, in accordance to its company privacy policies as well the Protection of Personal Information Act, 2013. Access to all of the above provided personal information is restricted, only employees who need the information to perform a specific job are granted access to this information.

Decision:

Approved

REC comments:

Goodluck

Date: 28 Jul 2025

Appendix 3: Interview protocol

Research question	Interview Questions
Participant information	Sector, Gender, Age, Role in organisation, Years of experience, Education
Introduction: **Experience of the respondent**	3. Could you briefly explain your professional background? 2. What is your current role in the organisation? 3. Please tell me about your organisation's digital transformation strategy?
Research question 1: **How do the availability, type and level of skills in the organisation influence the implementation of digital transformation?**	1. Can you please tell me about your experience with digital transformation and the role you played in the process? 2. How does the level of skills in the organisation influence the implementation of digital transformation projects? 3.From your experience, which skills have the greatest impact and why? 4. What is the level of availability of such skills?
Research question 2: **How does your organisation's talent management approaches, particularly related to skills support digital transformation?**	5. How does your organisation's talent management approach (specific to skills) support digital transformation? 6. What have you seen work or not work? 7. What do you think needs to change or be introduced?
Research question 3: **How do organisations develop the skills needed for the successful implementation of digital transformation and for the future?**	8. What have you done to address critical skills needed for digital transformation? 9. How could these skills be developed? 10. Have you benchmarked with other organisations about best practice? 11. What have you learnt from benchmarking that you can implement in your organisation?
Conclusion	Is there anything else you would like to add?
During the interview	Clarifying questions will be used to test the understanding of the researcher (Saunders et al., 2023a). Probing questions to obtain additional information to obtain detailed data (Saunders et al., 2023a) such as: • Please tell me more? • Can you give me an example of that?

Appendix 4: List of codes used for qualitative reports

Count	1st Order Codes	2nd order codes
1	Access to resources	Resources
2	Adaptability	Soft skills
3	Adoption challenges	Change management
4	Adoption of new work practices	Change management
5	Adoption strategies	Change management
6	Agile	Strategic
7	AI	Digital and technical skills
8	Anxiety management	Change management
9	API integrations	Automation
10	Automation	Automation
11	Balancing technology and human interaction	Change management
12	Benefits of digital transformation	Strategic
13	Business acumen	Market awareness
14	Business analysts	Digital and technical skills
15	Business processes	Business processes
16	Buy in of people	Change management
17	Calm	Soft skills
18	Change management	Change management
19	Change resistance	Change management
20	Changes in work environments	Change management
21	Changing customer behaviour	Market awareness
22	Coding skills	Digital and technical skills
23	Collaboration for problem-solving	Collaboration
24	Collaboration with educational institutions	Collaboration with partners
25	Communication	Soft skills
26	Complex	Complexity
27	Conflict between generations	Generational differences
28	Conflict management	Soft skills
29	Continuous improvement	Change management
30	Continuous journey	Change management
31	Corporate governance	Governance
32	Cost considerations	Financial performance
33	Cost efficiencies	Financial performance
34	Creativity	Innovation
35	Cross functional team	Cross-functional team
36	Culture	Culture
37	Customer	Customer
38	Customer engagement	Customer
39	Cybersecurity	Cybersecurity
40	Data analytics.	Data-driven capabilities
41	Data engineers	Digital and technical skills
42	Data enhancement	Data-driven capabilities
43	Data governance	Governance
44	Data protection	Cybersecurity
45	Data scientists.	Digital and technical skills

Note. Authors own

Count	1st Order Codes	2nd order codes
46	Data security	Cybersecurity
47	Data-driven culture	Culture
48	Data-driven decision making	Data-driven capabilities
49	Decision making	Data-driven capabilities
50	Defining roles and responsibilities with data	Structure
51	Developers	Digital and technical skills
52	Digital literacy	Digital and technical skills
53	Digital maturity assessment	Digital readiness
54	Digital readiness	Digital readiness
55	Digital savvy	Digital and technical skills
56	Digital transformation reporting structure	Structure
57	Document approval workflows	Automation
58	Efficiencies	Financial performance
59	Empathy	Soft skills
60	Encourage people	Soft skills
61	Energy	Soft skills
62	Ensure executive teams are digitally literate.	Learning orientation
63	Every function identifying digital transformation opportunities	Collaboration
64	Expertise is expensive	Scarcity of skills
65	Fear of change	Change management
66	Foresight	Strategic
67	Generational skills gap	Generational differences
68	Graphic design	Digital and technical skills
69	HR intervention	HR
70	Implementation challenges	Change management
71	Improved productivity	Financial performance
72	Industrial engineering	Digital and technical skills
73	Industry knowledge	Market awareness
74	Industry trends	Market awareness
75	Influence	Soft skills
76	In-house initiatives	Innovation
77	Innovative	Learning orientation
78	Interest in learning	Learning orientation
79	IT investments	Resources
80	IT skills	Digital and technical skills
81	It's a journey	Learning orientation
82	Job security concerns	Change management
83	Lack of training budget	Resources
84	Lack of understanding of digital transformation	Change management
85	Leadership competencies	Leadership
86	Legal Certifications	Digital and technical skills
87	Loss in the revenue	Financial performance
88	Machine learning	Digital and technical skills
89	Manual processes	Business processes
90	Market awareness	Market awareness
91	Measuring progress	Financial performance

Note. Authors own

Count	1st Order Codes	2nd order codes
92	Mentorship	Soft skills
93	Mistrust in technology	Change management
94	Modernise	Strategic
95	Multi skilled	Multi-skilled
96	New jobs	New jobs
97	New revenue stream	Financial performance
98	Our IM department is the owner of the digital transformation	Structure
99	Outsourcing IT functions	Outsourcing
100	Ownership	Soft skills
101	Partner with business	Partnership
102	Performance management	Performance management
103	Positive attitude	Soft skills
104	Product knowledge	Digital and technical skills
105	Project management.	Digital and technical skills
106	Psychological safety.	Change management
107	Qualified auditors	Digital and technical skills
108	Real time reporting	Automation
109	Reimagining business models	Innovation
110	Resources like funding	Resources
111	Restructuring	Change management
112	Return on digital investment	Financial performance
113	Risk management	Risk management
114	Skill development initiatives	Training
115	Skill gaps	Skills
116	Skills are rare	Skills
117	Skill set is very important	Skills
118	Soft skills	Soft skills
119	software engineering	Digital and technical skills
120	Speed of change	Change management
121	Stakeholder management	Stakeholders
122	Standard training for all	Training
123	Strategic alignment	Strategic
124	Stress management	Soft skills
125	Support from top management	Strategic
126	System benefits	Financial performance
127	Talent Management Policy revision	Talent management
128	Talent poaching	Talent management
129	Technical focus in DT	Digital and technical skills
130	Technical skills	Digital and technical skills
131	Technology changes	Change management
132	Transition from education to employment	Workplace readiness
133	Understand people's expectations	Leadership
134	Unique technology	Automation
135	User engagement	Soft skills
136	Value addition	Innovation
137	Vision alignment	Strategic
138	What is so different for us is the uniqueness	Strategic
139	Workflow management	Automation
140	Younger generation more equipped with digital skills	Generational differences

Note. Authors own

Appendix 5: Consistency matrix

Research questions	Literature review	Data collection tool	Data analysis
Research question 1: How do the availability, type and level of skills in the organisation influence the implementation of digital transformation?	Digital transformation is not only about technology aspect, but the role of employees, their talent, and skills are vital to successful digital transformation (Correani et al., 2020; Frankiewicz & Chamorro-Premuzic, 2020; Vial, 2019). Emerging technology trends have led to some jobs becoming obsolete while simultaneously creating new jobs that require digital skills (Menz et al., 2021; Vaiman et al., 2021). Digital transformation is changing the skills needed by employees (Ostmeier & Strobel, 2022) and the organisation needs their workforce to have digital skills and capabilities to successfully implement digital transformation (Chatterjee et al., 2022; Collings & McMackin, 2025; Menz et al., 2021). Managers are now required to have a combination of different skills such organisational agility, technical skills and emotional intelligence to deal with talent management in the digital age (Fernandez-Vidal et al., 2022). Bouwmans et al. (2024) concurs with this view and consider essential digital transformation skills to be a combination of digital skills (technical skills) as well as transformation-oriented skills (soft skills).	Questions 1, 2, 3, and 4 in questionnaire	Thematic analysis using software Atlasti
Research question 2: How does the organisation's talent management approaches, particularly related to skills, support digital transformation?	Wikhamn et al. (2021) estimates that only 60% - 70% of organisations have a talent management program in place. The ability for organisations to identify, source and deploy skills is critical to achieve strategic goals and enhance performance (Collings & McMackin, 2025). Talent management programs are critical to achieving strategic goals and	Questions 5, 6 and 7 in questionnaire	Thematic analysis using software Atlasti

	enhancing operational performance (Collings & McMackin, 2025). Digital transformation is changing the way in which companies manage talent (Montero Guerra et al., 2023) therefor there is a need for a more dynamic and flexible approach to talent management (Jooss et al., 2024). Kaliannan et al. (2023) suggest that to realise the benefits of digital transformation, organisations need to have formal talent management strategies, policies and frameworks in place. Talent management is however context dependent and company specific thus organisations have different talent management practices (Gallardo-Gallardo et al., 2020; Harsch & Festing, 2020).		
Research question 3: How do organisations develop the skills needed for the successful implementation of digital transformation?	Digital transformation is changing the type of skills needed and organisations will have to review and realign the skills of their workforce to be successful (Ostmeier & Strobel, 2022). Matching the workforce skills to the demands in the organisation is crucial (Collings & McMackin, 2021) and organisations needs to reskill and upskilling their workforce so that they are able to cope with the challenges of the digital era (Frankiewicz & Chamorro-Premuzic, 2020). Organisations should plan and ensure that they build the skills and capabilities by allocating the necessary resources to equip their workforce to leverage digital technologies (Collings & McMackin, 2021; Rikala et al., 2024). Fernandez-Vidal et al. (2022), indicates that cross-functional teams enable and support digital transformation initiatives whilst Correani et al. (2020) highlight how bringing in partners can equip the organisation with essential skills during its digital transformation journey.	Questions 8,9, 10 and 11 in questionnaire	Thematic analysis using software Atlas ti

Appendix 6: Participant summary

Participant Code	Sector	Position	Department
P1	Financial Services	Manager	Digital data and customer transformation
P2	ICT	Manager	Human resources
P3	Postal	Manager	Project Management
P4	Financial Services	Manager	Finance
P5	Public Sector	Manager	IT
P6	Health	Manager	IT
P7	Financial Services	Manager	Commercial
P8	Postal	Manager	Human resources
P9	Mining	Manager	Corporate Affairs and Sustainability
P10	Financial Services	Manager	IT
P11	Postal	Manager	Marketing
P12	Mining	Manager	Digital transformation
P13	ICT	Manager	Human resources
P14	Mining	Manager	Human resources
P15	Financial Services	Manager	Finance