Gordon Institute of Business Science
University of Pretoria

The role of strategic leadership on the effects of digitalisation and automation on employees' psychological well-being and engagement in the workplace

19390981

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 (Corporate Strategy).

27 November 2023

ABSTRACT

Purpose – The objective of this paper is to analyse the correlation between strategic leadership and digitalisation in the workplace. The study aims to explore the impact of strategic leaders in managing the adoption and implementation of digitalisation and automation initiatives. The study focuses on three main constructs: strategic leadership, psychological well-being, and workplace engagement.

Design/methodology/approach – The study utilised a positivist quantitative methodology to gather data from the information technology departments and their corresponding business units in the South African banking industry. The study employed a cross-sectional research design and utilised exploratory factor analysis to analyse the collected data.

Findings – The findings indicate that strategic leadership in the South African banking industry has a clear vision for digitally transforming their organisation. However, the study also reveals that employees are not included in the decision-making process regarding digitalisation and automation. As a result, many employees have experienced negative psychological well-being, which in turn affects their level of engagement at work.

Practical implications – The paper will build upon the current body of literature regarding digital transformation.

Originality/value – The instruments were derived from existing literature, but they were not simply copied. The study's findings could prove to be extremely valuable for organisations and industries looking to embrace and incorporate digitalisation and automation.

Keywords

Strategic leadership, psychological well-being, workplace engagement, digitalisation, automation, and exploratory factor analysis.

DECLARATION

I affirm that I conducted the research independently and that it represents my own work. I received guidance from my supervisor and assistance from a statistician who aided me in analysing the data. This document is being submitted as a partial fulfilment of the requirements for the degree of Master of Philosophy in Corporate Strategy at the Gordon Institute of Business Science, University of Pretoria. This work has not been previously submitted for any degree or examination at any other university. I hereby affirm that I have obtained all the required clearance, authorisation, and consent to conduct the research.

19390981

Name & surname

Signature

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

AI	Artificial Intelligence
B2B	Business-to-business
B2C	Business-to-consumer
ERP	Enterprise Resource Planning
EFA	Exploratory Factor Analysis
4IR	Fourth Industrial Revolution
HR	Human Resources
HRM	Human Resource Management
IoT	Internet of Things
IT	Information Technology
PAF	Principal Axis Factoring
RPA	Robotic Process Automation
SARB	South African Reserve Bank
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
WEF	World Economic Forum

"The earlier you engage your people to shape the change, the easier it is to enable difficult changes to happen….Without this engagement, companies learned the hard way that people can't seem to get over their fear of technology, struggle to understand why they should change what seemed to be working well, and even insist that leadership has it all wrong and is actually harming the company."

Paul Leinwand and Mahadeva Matt Mani

CHAPTER ONE: INTRODUCTION

1.1 Introduction

The rampant digitalisation resulting from technological advancements has significantly transformed virtually every aspect of human existence, culminating in a recent shift towards a cashless economic system (Odu, 2021). The advent of digitalisation has resulted in a significant decline in manual operations, particularly with regard to banking transactions. In terms of the banking industry, clients are no longer required to physically visit banks for cash withdrawal's or deposits (Tyagi et al., 2022). Technology has further been identified as a crucial strategic resource for enhancing efficiency, and productivity, and expediting operational processes within the banking system (Tyagi et al., 2022). Given the rapid progress of technology and the increasing digitalisation of various aspects of life, it is expected that significant changes will occur in the realm of work, as well as in society and organisations as a whole. Consequently, it is imperative for society and organisations to develop strategies that maximise the benefits of these breakthroughs, while also recognising and effectively dealing with the challenges that may arise (Rodriguez-Bustelo et al., 2020). The adoption of digitalisation, supported by emerging technologies, is expected to have a substantial effect on labour content and work organisation which is likely to influence the methods by which individuals contribute to the value chain within an organisation (Subramanien & Sunjka, 2022). The trend of digitalisation is enabling alternative modes of employment that offer increased flexibility. Emerging trends in employment, such as mobile work that relies on information and communication technology and self-employment facilitated by digital platforms, are increasingly prevalent on a global scale (Charles et al., 2022).

The effects of automation extend widely across an organisation, impacting not only the less-educated workforce but also highly skilled workers who perform complex tasks through the utilisation of software algorithms that conduct analyses and subsequently generate automated decisions (Subramanien & Sunjka, 2022). It is imperative for the banking industry labour force to possess the ability to adapt to a dynamic digital landscape and generate innovative solutions to meet the evolving demands of customer decisions (Subramanien & Sunjka, 2022).

Business leaders are, therefore, adapting their workforce to address evolving digital technical requirements by leveraging sophisticated and predictive analytics tools that are becoming increasingly accessible (Kellogg, 2021). According to Kellogg (2021), the

World Economic Forum (WEF) report indicates that a substantial portion of the labour force across various industries will need to undergo significant upskilling in digital technologies within the next few years. Irrespective of the magnitude of the impact of digitalisation on employment, it is evident that laborers will require distinct proficiencies, rather than simply an increase in competencies to navigate through changes brought up by digitalisation (Völker, 2017). This underscores the pressing need for individuals to acquire the digital competencies necessary to remain competitive in the job market. However, leaders engaged in workforce transformation are encountering unanticipated roadblocks, as they endeavour to keep their employees' skills in step with rapid digitisation and automation (Kellogg, 2021).

Regardless of the specific number of occupations that are at risk of becoming automated, continual hollowing-out will destabilise the labour market, causing employment losses in some areas while contributing to job growth in other areas. Acquiring additional skills is going to be a part of the solution (Völker, 2017). The incorporation of novel technologies in the workplace frequently disrupts established status hierarchies based on factors such as tenure, role, or expertise. These factors determine the level of respect, presumed proficiency, and deference that an employee is accorded by others within the organisational framework (Kellogg, 2021).

1.2 Background in terms of the banking industry

The proliferation and heightened utilisation of the Internet and digital technologies in recent decades have presented numerous prospects for the digitalisation of businesses and the development of novel digital business models. The fourth industrial revolution (4IR) has led to a global transformation and restructuring of businesses, including banks (Louw & Nieuwenhuizen, 2020). The emergence of fintech firms, and technology-mediated telecommunication companies has also led to a swift integration into the traditional banking industry, providing financial services that prioritise customer satisfaction, experience, accessibility, and affordability. The rise of digital-only neo-banks has been observed, which place emphasis on payment, money transfer, lending for small and medium-sized firms, and microfinancing. These neo-banks also actively promote technical advancements such as digital wallets and peer-to-peer messaging transactions (Wewege et al., 2020).

The finance industry in South Africa has, therefore, undergone significant radical changes and transformations over the past 20 years. The industry has grown rapidly,

becoming the most stable and resilient sector in South Africa. The industry has endured numerous frightening global challenges, such as the global financial crisis and multiple recessions, and is presently performing among the best in the world, despite the current global geopolitical challenges stemming from the Ukrainian conflict. This stability and resilience are primarily due to the regulatory framework that the South African Reserve Bank (SARB) oversees, which ensures the stability of South African financial markets (Moyo, 2018).

In light of 4IR, numerous industries, such as the banking sector, are contemplating or are adopting digitalisation throughout their business models and services in order to maintain their relevance. In recognition of this reality, traditional banks in South Africa have taken steps to provide customers with the ability to access their respective banking institutions (Louw & Nieuwenhuizen, 2020).

The term digital disruption pertains to the manner in which digital technologies are causing significant upheavals in various industries, thereby altering the established norms and regulations. The concept of digitalisation pertains to the manner in which corporations are adjusting to the novel reality brought about by digital disruption. The process of digital transformation involves not only the reconfiguration of an organisation's vision, strategy, structure, processes, capabilities, and cultures, but also has the potential to disrupt markets and entire industries (Modiba & Kekwaletswe, 2020). The success of an organisation's digitalisation process is contingent upon the involvement of its employees. In the absence of human resources, digitalisation initiatives cannot be achieved. Consequently, the efficacy of digitalisation initiatives relies on the individuals who participate in the transformation process (Modiba & Kekwaletswe, 2020). Therefore, the focus of this study is to comprehend the impact of digitalisation on the psychological well-being of employees and to explore its influence on workplace engagement.

1.3 Research problem

The South African banking industry is undergoing rapid and continuous changes underpinned by the advancement of technology. The current global economic landscape, coupled with the effects of globalisation and the emergence of new players in the banking industry, has prompted established banks to explore new strategies to maintain their relevance and competitiveness in this ever-evolving industry. Many entities in the industry are embracing emerging technologies that are based on the 4IR to digitise, optimise and automate processes that were previously performed manually,

with the aim of enhancing efficiency and augmenting productivity. The widespread implementation of digitalisation and automation is not only affecting the way that banks operate, but is also causing significant nervousness among employees, as many employees' positions are at risk of becoming redundant.

Notwithstanding the various achievements made by the South African banking sector over the years, it is noteworthy that many banks are implementing digitalisation projects without fully considering how doing so will affect their employees. A fundamental shift in how organisations are structured and how people perform their jobs is imposed by 4IR (Flores et al., 2020). Owing to this transition, it is essential to prioritise the importance of human factors, as they are thought to be the driving force behind any revolutionary change (Flores et al., 2020). This calls for a strong will of the human resource management (HRM) of organisations (banks) to align with organisational strategic objectives and comprehend the capabilities needed to succeed in this digital era.

1.4 Research questions

The problem statement served as the basis for the main research question, namely**:**

"What role does strategic leadership play to ensure that employees' psychological well-being is considered during the South African banking sector's transition towards digital and automated processes?

Three sub-questions apply:

RQ1: What are leaders in the banking industry doing to enable employees' psychological well-being in the workplace in the era of digitalisation and automation?

RQ2: What strategies are strategic leaders employing to ensure workplace engagement during the era of digitalisation and automation within the South African banking industry?

RQ3: What are the effects of digitalisation on employees' psychological well-being?

RQ4: What is the role of human resources managers within the South African banking industry in terms of facilitating employees' acceptance of digitalisation and automation in the workplace?

1.5 Purpose of the research

The purpose of this quantitative research was to investigate and assess the effects of digitalisation and automation on the psychological well-being of employees in the SA banking institutions, and their workplace engagement, indicating the role of strategic leadership to facilitate change. Admitting that technological change is a reality, this study would provide empirical evidence that could serve to pacify employees and enhance transformation in the workplace.

Relevant hypotheses are presented in Chapter Three, following the literature review (Chapter Two).

1.6 Research context

1.6.1 Business relevance

Digitalisation utilises digital technologies and data to drive transformative changes within enterprises and their corresponding ecosystems (Dredge et al., 2019). The phenomenon under consideration has the capacity to alter the dynamics of markets and production techniques so yielding noteworthy consequences for economic and social structures, as well as innovation and competitive advantage (Dredge et al., 2019). As a result, this revolution is causing significant changes within the banking industry's ecosystems (Kaur et al., 2020). However, despite the myriad potential that digitalisation presents to organisations, it also fundamentally transforms the nature of work, hence presenting a multitude of problems for employees' skill sets (Charles et al., 2022). Consequently, there is a transformation in how the work is conceptualised and executed (Charles et al., 2022). The effects of the rise of digital technology will continue on labour and employment, and are complex (Charles et al., 2022).

According to Chodyniecka (2022), transformational leadership and employee autonomy are two critical variables that can greatly effect workplace engagement and organisational performance. These factors are equally important to the success of a business. The ability to motivate and inspire individuals to fulfill their full potential, plan for the future, and anticipate change is one of the capabilities that transformational leaders possess. On the other hand, employee autonomy is a crucial driver of human motivation, performance, and satisfaction, as stated by Reisinger and Fetterer (2021). According to earlier studies by Buil et al. (2019),

transformative leadership has an immediate effect on both work performance and workplace engagement. The purpose of this particular study was to investigate the ways in which digitalisation and automation have an effect on the psychological well-being of employees, as well as how these factors influence workplace engagement in high-pressure environments such as the banking industry.

Organisations operate within a business environment that is characterised by many global problems, dynamic consumer expectations, and constantly evolving economic considerations. The aforementioned criteria necessitate strategic leaders to establish an atmosphere that is favourable for empowering people and fostering a culture of workplace engagement. In light of the aforementioned obstacles and uncertainties, it is imperative for strategic leaders to effectively inspire and encourage people to actively embrace and endorse these changes. This can be achieved through the cultivation of employees' readiness and dedication towards embracing change (Faupel & Süß 2019).

In contrast to strategic leadership, it has been found that employee psychological well-being is directly proportional to the degree of employee flexibility (Reisinger & Fetterer, 2021). Reisinger and Fetterer (2021) further state that employees are likely to be more engaged and stay committed to their jobs when they are allowed to choose how to work. It is concerning that job hopping is nowadays more prevalent in the current labour market than ever before Chodyniecka (2022) questioning strategic leadership. In today’s dynamic, complex environment, business leadership has emerged as one of the key competencies of organisations. Organisations with strong-minded, innovative, forward-thinking, risk-taking, and entrepreneurial leaders tend to outperform their competitors. While the study did not seek to study digital transformation, globalisation, COVID-19, or global geopolitical challenges, the researcher drew these phenomena closer to the study because these phenomena have radically changed the business environment, and the ways of working, and strategic leaders are at the center of responding to these radical changes. The outcomes of this study will therefore be crucial for financial institutions in aligning themselves for the future, and taking along a much happier workforce.

1.6.2 The impact of digitalisation and automation

The rise of digitalisation and automation has the potential to significantly influence the characteristics of work and employment. According to Spencer et al. (2021), the influence can be assessed from three distinct dimensions. To begin with, it is important to consider the immediate impacts on employment. The present discourse delves into the examination of arguments and forecasts pertaining to the phenomenon of job displacement resulting from digital automation (Spencer et al., 2021). Additionally, there are implications for pay.

There exists a range of perspectives about the effects of digitalisation and automation on salaries, encompassing both favourable and unfavourable viewpoints. Furthermore, the impact on the nature and content of the work itself should also be considered (Spencer et al., 2021). This study focused on the potential impact of digitalisation and automation on employees' psychological well-being, rather than solely examining changes in workload or its impact on salaries. Consequently, Nazareno and Schiff (2021) argue that the well-being of employees is a matter of significant societal significance, yet in the literature, it is sometimes disregarded in conversations about digitalisation and automation, and the prospective impact on the future of work. Frequently, academic and policy discussions have oversimplified the focus on the benefits of technical complementarity in comparison to the drawbacks of technological substitution.

1.6.3 Job displacement

While automation and digitalisation are not new concepts, there remain unanswered questions and concerns surrounding them. One of the most concerning effects is job displacement, which occurs when jobs are lost as a result of automation or the substitution of human labor with robots (Rakovská, 2020). Consequently, the potential outcomes of change will have a direct impact on the psychological well-being of employees (Winasis et al., 2020). If the situation is not managed effectively, it could potentially have a detrimental impact on the changes itself. This is because organisations rely on the commitment and participation of their employees throughout this phase (Winasis et al., 2020).

The process of digitalisation and automation often sparks concerns about widespread job losses, as advancements in technology have the potential to replace human workers at a faster rate (Rakovská, 2020). Technological

unemployment can be regarded as the consequence of the swift proliferation of digital technologies. However, inquiries emerge about the magnitude and characteristics of employment displacement. Specifically, what is the potential magnitude of job displacement resulting from digitalisation and automation; in which sectors and geographic regions are job losses expected to be most prevalent; moreover at what rate will employment opportunities diminish? These are issues that merit answers to keep the workforce content.

1.6.4 Wage effects of digitalisation and automation

Furthermore, aside from the implications on job displacement, the processes of digitalisation and automation are anticipated to have an influence on the external facets of employment, specifically pertaining to wage levels and compensation. The effects of digitalisation and automation on work extend beyond the mere dichotomy of job generation or elimination, encompassing considerations of job quality such as security and wages (Aubert-Tarby et al., 2018). When considering the aspect of work security, it is observed that digitalisation and automation have a tendency to elevate staff turnover rates and result in less stable employment conditions (Aubert-Tarby et al., 2018). Similarly, empirical evidence has demonstrated that technology advancements exert a negative influence on pay levels (Aubert-Tarby et al., 2018).

The influence of economy 4.0 on pay inequality is expected to remain relatively minimal due to the fact that the digital transformation scenario does not confirm the polarisation hypothesis (Mönnig et al., 2019). The growing salary gap can be attributed to the rise in competition for workers with high levels of education and experience. On the other hand, the fact that the impact of digitalisation on workers with low levels of ability is relatively minimal precludes a more significant rise in wage disparity (Mönnig et al., 2019). Although the study did not directly investigate the impacts of digitalisation and automation on wages, it acknowledged these factors, as existing literature has demonstrated that they can influence employees' psychological well-being either positively or negatively.

1.6.5 Changes to the nature of work and job quality

According to Parker and Grote (2022), who reference Walsh and Strano (2018), technology has the potential to replace tasks that are considered monotonous,

hazardous, or physically demanding. For instance, drones can be employed to identify and mitigate potential dangers. Technology can also enhance the quality of services, as demonstrated by Zume in the USA. Zume utilises advanced technology to cook pizzas inside their specially designed trucks equipped with ovens. The ovens are timed in such a way that the pizzas are perfectly cooked by the time the truck reaches its destination (Parker & Grote, 2022). There is a great deal of enthusiasm surrounding the economic benefits that come from embracing digitalisation and automation, and positive examples like these only add to that excitement. Digital goods and services, for example, are typically more affordable. This affordability allows for distribution on a larger scale, eliminating the need for costly localised production (Parker & Grote, 2022).

Digital technology has a significant impact on production. The emergence of 3D printing has made it possible to manufacture products of various shapes and sizes, ranging from simple components to intricate, multi-component devices. The Internet of Things (IoT) enables you to monitor the movement of raw materials, billets, and finished products throughout all stages of the production cycle, all the way to delivery to consumers (Azoeva et al., 2020). The widespread use and proliferation of digital technology in various sectors of material production and services is, therefore, changing the dynamics between employers and employees. This has significant implications for employment, unemployment, and labor income. The labor market is influenced by various factors, including demographics, technology, economy, society, and politics (Azoeva et al., 2020). Digitalisation is becoming increasingly important as a leading technological factor due to the rapid growth of information flow and the increasing complexity of tools used in industrial and economic activities. Automation has become an effective tool for enterprises to optimise costs.

However, for the working-age population, digitalisation poses a threat as it leads to job cuts resulting from a decrease in labor demand (Azoeva et al., 2020). As a result, the banking sector is undergoing significant changes due to digitalisation and automation. These changes have the potential to impact employees, who may perceive their jobs as being at risk. This study will provide some insight concerning employees thoughts.

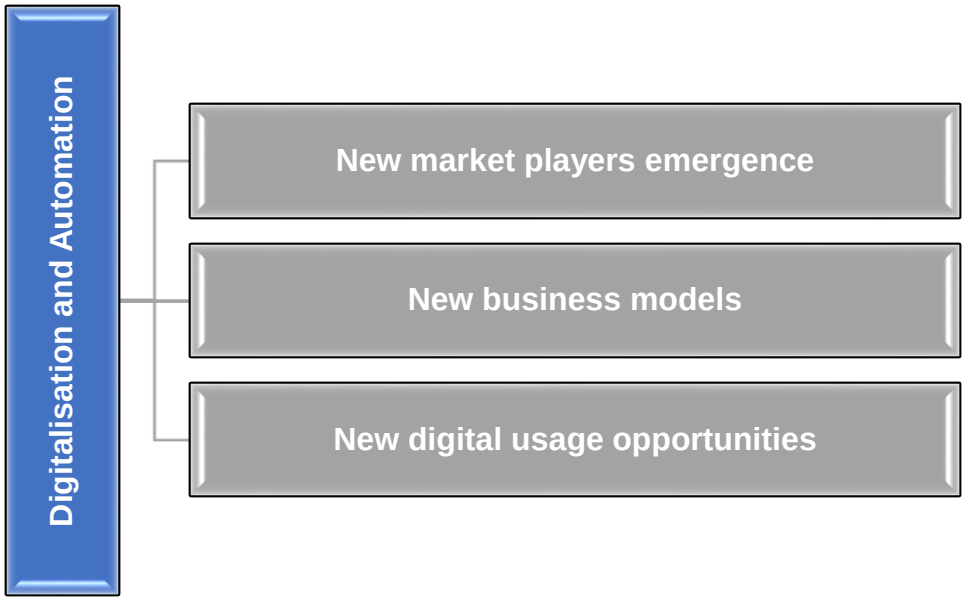
1.6.6 Changing landscape of business models

Although the potential risks to employees from digitalisation and automation have been extensively discussed, it is important to acknowledge that these advancements also provide numerous opportunities for industries and businesses of all sizes, including the ability to enter new markets through the implementation of new business models. The rise of digitalisation has had a significant impact on different aspects of business, particularly on companies' business models. It has facilitated new forms of collaboration between companies, resulting in the development of innovative products and services (Rachinger et al., 2018). Additionally, digitalisation has also transformed the way companies interact with their customers and employees, leading to new types of relationships. Simultaneously, the process of digitalisation has compelled companies to critically evaluate their existing strategies and proactively seek out new business opportunities in a systematic manner and at an early stage (Rachinger et al., 2018).

It is further argued that the degree of digitalisation capability may vary among firms within and across industries. However, a firm is only interested in digitalisation if it can effectively utilise its digitalisation investments in its business model (Ritter & Pedersen, 2020). This occurs when digitalisation is implemented. Without incorporating digitalisation into the business model, a firm's digitalisation capability becomes nothing more than an expense, lacking any return on investment. Hence, it is crucial to accurately identify and analyse the specific areas and manner in which digitalisation affects a particular business model (Ritter & Pedersen, 2020).

Although the aforementioned dimensions are not directly addressed in the study, they have been acknowledged in the literature and are further explored in chapter two. It is suggested that these constructions have the potential to impact factors that may influence workplace engagement and psychological well-being. Figure 1.1 illustrates the potential opportunities that arise from digitalisation and automation for businesses. As mentioned earlier, business models play a crucial role in facilitating interactions between organisations and their employees, which can have both positive and negative effects on workplace engagement.

Figure 1.1: Digitalisation and automation opportunities



Source: Author's own

To provide additional support for the statement above, the study conducted by Goswami and Upadhyay (2019) revealed a significant level of workplace engagement, with a mean score of 3.77 and a standard deviation of 0,37. Based on the available information in the study, it considered the possibility that employees may be more engaged in a digitalised environment as compared to a manual intensive working environment. The study by Goswami and Upadhyay (2019) further applied a regression equation to examine the impact of digitalisation on customer experience, operational efficiency, and business modeling. The results confirmed that digitalisation aimed at improving operational efficiency embedded with new business models significantly affects workplace engagement within an organisation. The results of the study provide direct support for the current research. However, the current study goes a step further by examining how employees' psychological well-being is impacted by these factors.

1.7 Theoretical contribution

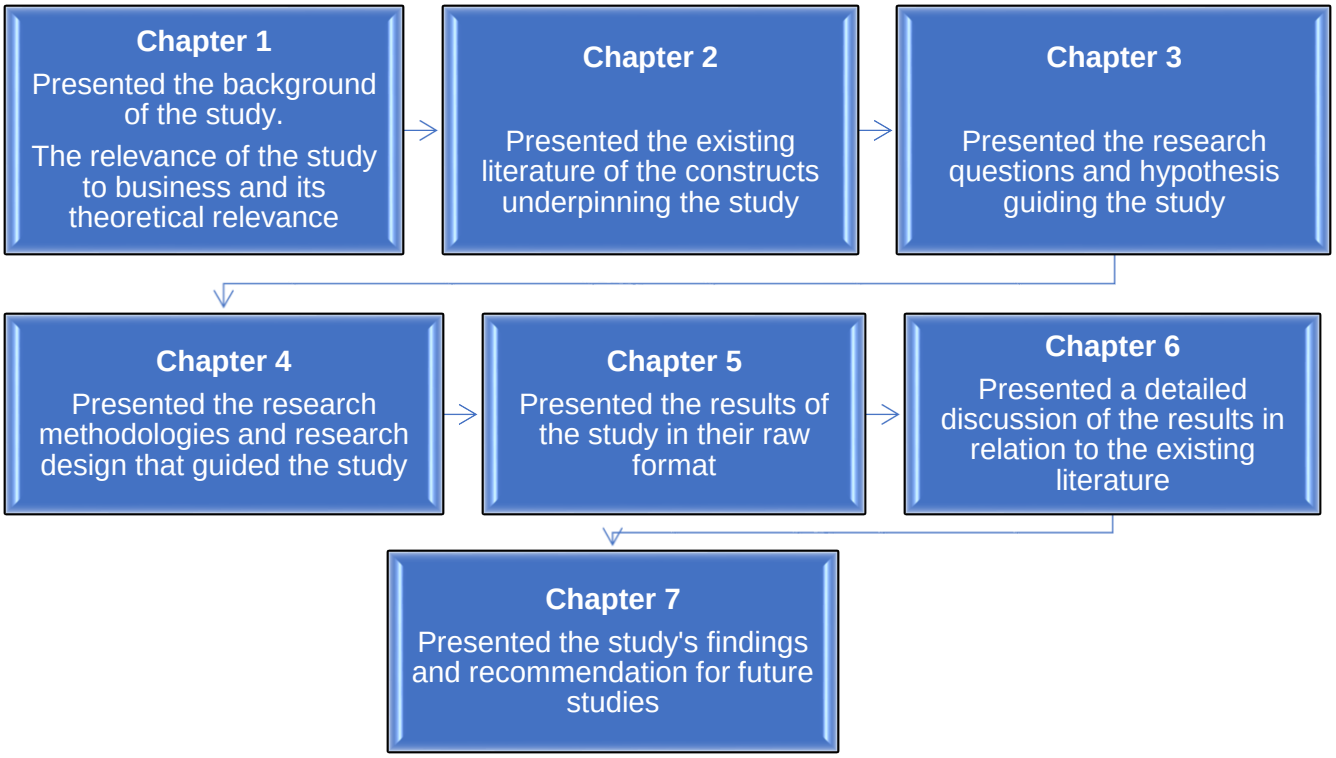
The rise of digitalisation has significantly transformed the attitudes and behaviours of individuals, while also serving as a crucial driver of economic operations. It has made things faster and more user-friendly in every field, but the contribution of this innovation is incredible in the banking sector (Tyagi et al., 2022). Although certain transformations

are expected to enhance our quality of life, the anticipated effects of the digital revolution on labour and employment are a subject of dispute (Rodriguez-Bustelo et al., 2020).

The advent of digitalisation in the labour market presents a plethora of promising prospects, albeit accompanied by significant challenges. The potential benefits encompass enhanced productivity, novel market prospects, increased employment opportunities, improved equilibrium between work and personal life, and elevated remuneration. Furthermore, this presents a prospect for not only economic transformation but also industrial advancement and employment generation, encompassing environmentally sustainable and adaptable job opportunities (Charles et al., 2022). The challenges encompass a range of issues such as limited access to social security, restricted association, inadequate control and inspection of work, and potential health implications. The adverse impacts of digitalisation are linked to factors such as financial instability and employment uncertainty, heightened work demands, and a decline in psychological well-being. Digital labour platforms offer novel employment opportunities and income streams, however, they also pose significant obstacles to safeguarding workers' rights, ensuring their representation, and promoting equitable treatment (Charles et al., 2022).

As a result, the study will strive to provide comprehensive and relevant insights to business leaders and organisations in the South African banking industry (extending literature) on the issues employees face during digitalisation processes, as well as how this affects their psychological well-being. The research will add to the existing body of knowledge by delving deeper into the relationship between digitalisation, strategic leadership, and employees' psychological well-being and workplace engagement. Most critically, the research will look into how strategic leadership influences this relationship. The findings of the study can be used to shape organisational policy by identifying strategies that can help mitigate the negative impact of digitalisation on employees' psychological well-being and engagement. These strategies can be implemented during the digitalisation process and even after it is completed.

Figure 1.2 Research scope



Source: Author's own

1.9 Conclusion

The chapter begins with a discussion on South African banking industry, focusing on efficiency and competitiveness. Furthermore, the chapter not only presented the problem statement and the purpose of the study but also elaborated on the study's significance in relation to the business context. In the concluding part of this conversation, the chapter also discusses the potential contribution that the current study could make to the existing body of knowledge. The chapter delved deeper into the topic of digitalisation and its impact on the banking industry. It indicated how digital technologies and data can be used to drive significant changes within businesses and their surrounding ecosystems. The revolution brings about changes in market dynamics, production techniques, and economic and social structures, resulting in innovation and a competitive advantage. However, it also brings about a fundamental transformation in the nature of work, which in turn presents challenges for employees in terms of their skill sets. Transformational

leadership and employee autonomy are both crucial factors that have a significant impact on workplace engagement and organisational performance.

Transformational leaders play a crucial role in motivating individuals to achieve their maximum potential, while employee autonomy significantly contributes to motivation, performance, and satisfaction. These factors are equally vital for achieving success in business. The chapter explained the business relevance of the study, examining various factors that are believed to contribute to employees' psychological well-being. These factors include job displacements, wages, and the evolving nature of work. The objective of the study was to offer valuable insights to leaders in the South African banking industry regarding the psychological well-being of employees during the process of digitalisation. The study examined the correlation between digitalisation, strategic leadership, and workplace engagement. It also aimed to identify effective strategies for minimising the negative effects of digitalisation on employees.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section offers a complete analysis of the existing literature, with a particular emphasis on the core ideas of digitalisation and automation, which are supported by novel technologies that are revolutionising worldwide corporates processes. This section offers a general summary of the existing literature of the banking industry in South Africa as well as its relevance within the overall economic system of the country. The chapter further focuses on the existing literature on digitalisation by analysing how companies operating within the South African banking industry are shifting from previously manual operations by optimising them to increase efficiency and minimise costs. The chapter further analyses the existing literature on the implications of digitalisation and automation on the mental health of workers in the company.

A large amount of anxiety is generated among banking personnel as a result of concerns surrounding the possibility of job loss and the loss of autonomy at work as a result of the shift to digitalisation and automation. Within the context of the South African banking business, the chapter analyses the existing literature on the benefits and drawbacks associated with the increased use of digitalisation and automation. In addition, it investigates the potential strategies that industry strategic leaders may put into practice in order to maximise the benefits and minimise risks in this era of digitalisation and automation.

The chapter further addresses the theories that formed the basis of the research by presenting the existing literature on the connection between strategic leadership and digitalisation, as well as the connection between digitalisation and workplace engagement. In the end, the research presented two existing established models, one being the technology acceptance model and the other being the job demands-resources (JD-R) model, in the context of the current research.

2.2 Emergence of Digital Technologies

The emergence of digital technologies has brought about significant changes in the behaviour of business-to-business (B2B) and business-to-consumer (B2C) enterprises

in the context of commercial markets, particularly with concerning their product offerings and sales strategies, introducing novel demands for companies' capabilities (Ritter & Pedersen, 2020). This rapid growth of digitisation has given rise to novel approaches for attaining organisational ambidexterity, which refers to the capacity to simultaneously pursue efficiency and flexibility by maintaining a balance between exploitation and exploration (Park et al., 2020), which enables organisations to penetrate new markets, attract new global customers and adopt new business models. These changes have, however, also introduced a variety of complexities that necessitate a shift in how businesses produce products and services and create value. Digitally connected global companies have access to numerous new opportunities, such as obtaining global resources, reaching foreign customers, and enhancing the efficiency of global operations; however, business executives must not underestimate the risks involved (Luo, 2022). Mitigating risk is one of the primary objectives of international businesses (Luo, 2022).

2.3 South African Banking Industry

The banking industry is critical to most countries' economic growth and development (Heerden, 2022). An effective and efficient banking industry is critical to the stability of financial markets in any country, impacting the economy (Banya & Biekpe, 2018). According to Moyo (2018), the banking sector plays a crucial role in mobilising savings and directing them toward productive sectors, thereby contributing to the optimal allocation of resources. South Africa's banking sector is characterised by intense competition, which catalyses innovation, efficiency, and improved customer service. The banking sector in South Africa is well-regulated, established, and capitalised, making it a key contributor to the country's economy (Heerden, 2022).

The primary impetus behind robust and efficient markets is competition, which stimulates innovation among firms, boosts productivity, and leads to the optimal allocation of resources. A competitive atmosphere fosters fair competition among companies and subjects businesses to ongoing pressure to build efficiency and provide the most comprehensive selection of products and services at the most favourable prices (Moyo, 2018). The significance of banking efficiency cannot be overstated, as banks serve as channels for comprehensive economic growth within an economy (Banya & Biekpe, 2018). Thus, banking efficiency is of particular interest to African policymakers and regulators, as well as researchers researching patterns in bank performance in frontier

African countries (Banya & Biekpe, 2018). The enhanced efficiency of the banking industry in South Africa can be attributed to the abandonment of traditional banking models by established banks and the emergence of new competitors who have introduced digital banking models (Wewege et al., 2020). Traditional South African banks are aggressively investing in the digitalisation of their services to differentiate themselves from financial technology startups through innovation and technology (Wewege et al., 2020).

Therefore, the importance of the South African banking industry to the economy cannot be overemphasised. It is also, prudent for the industry to continue transforming and adopting newer business and operating models to stay abreast of the evolution of technology. The rapid progression of technology, particularly the emergence of innovative technologies such as AI, robotic process automation (RPA), and IoT, has presented a challenge to traditional banking models. This provides banks and other entities with the opportunity to restructure and re-engineer their processes and implement innovative business and operating models, leading to the automation of processes that enhance efficiency.

2.4 Digitalisation: A threat or a blessing?

The modern era is characterised by an unprecedented rate of evolution, wherein the management of daily operations, whether in the context of a business or personal life, has shifted away from traditional modes of physical engagement. The advent of rapidly evolving digital technology has become prevalent in this modern era (Mofokeng & Mokoena, 2021). The South African banking industry is also currently shifting towards a digital-first and mobile-first approach, however, the requirement for banking technology and services to be available seven days a week has resulted in a need for accessible-foremost banking business models (Louw & Nieuwenhuizen, 2020). This implies that not only mobile-first strategies are necessary, but also the provision of infrastructure that enables access to online banking technologies, both remotely and on-premises (Louw & Nieuwenhuizen, 2020).

In their research on the effect of automation and digitalisation on occupational stress in the automobile industry, Reddy et al. (2022) assert that the automotive industry is transforming as a consequence of industrial automation and digital technology-induced disruption. The process of digitalisation enhances the capacity of organisations to

reinforce their market standing and facilitates the exploration of new domains. However, the primary objective remains the generation of profits in their fundamental operations (Smirnov, 2022). Based on their research findings, Reddy et al. (2022) recommend that several strategies be implemented inside organisations embarking on digitalisation initiatives to prevent or reduce digitalisation anxiety and to further improve employees' attitudes toward digitalisation. Future research may prioritise comparative studies as a means of generalising findings (Reddy et al., 2022). Based on the findings and recommendations of Reddy et al. (2022), the study will conduct a comparative analysis study within the South African banking industry to investigate strategies that the South African banking industry could implement to prevent and reduce digitalisation anxiety, which could improve employees' attitudes toward digitalisation.

2.4 1 The digitalisation process

The process of digitalisation has a significant impact on global enterprises, resulting in a multitude of changes and innovations that are transforming the way business is conducted (Luo, 2022). The emergence and exponential growth of technologies underpinning digitalisation, such as artificial intelligence (AI), RPA, smart technology, and automation, is projected to have a significant impact on all sectors of our societies, lives, and economies (Rodriguez-Bustelo et al., 2020). According to Joshi (2022), over the past five years, businesses from different industries have observed radical changes in customer behaviour and preference patterns due to technological revolution. Billions, if not trillions of global banking transactions, today, are processed through digital platforms, with mobile devices being at the centre of the revolution in how banking is conducted today (Joshi, 2022). This represents a new frontier in the business world (Luo, 2022). This digitalisation offers local, regional, and national enterprises new opportunities to penetrate global markets and attract new customers, thus fuelling an innovative culture, however, digitalisation also brings unique risks (Luo, 2022). Technologies underpinning digitalisation have significantly shifted consumers' mindset, whereby consumers expect more personalised products and services that are delivered within an acceptable timeframe; therefore, banking institutions have no choice other than to respond to these patterns of change to stay relevant and competitive (Joshi, 2022).

2.4.2 Benefits of digitalisation

Industry 4.0 or 4IR, as it is known by many people today, is a revolution that brings many benefits to organisations and a world where everything is becoming digitalised and

human contact is decreasing. This revolution also brings convenience to the household (Mofokeng & Mokoena, 2021). The proliferation and heightened usage of the internet and related digital technologies in recent decades has presented numerous prospects for the digitalisation of businesses and the development of novel digital business models (Louw & Nieuwenhuizen, 2020). 4IR has had a significant impact on the banking industry by providing increased convenience to customers. Transactions, deposits, and inquiries can now be completed remotely, eliminating the need for physical visits to banks and the associated long queues. This technological advancement has resulted in significant time and cost savings for customers (Mofokeng & Mokoena, 2021). Contemporary digital technologies function as accelerators for advancements, thus augmenting their velocity and breadth of influence. The utilisation of digital technology provides firms with opportunities to experiment, establishing the digital approach as the foundation of innovative practices and yielding outcomes that are both vivid and expeditious, as well as dependable for the firm. Contemporary organisations have the capability to create new products and validate marketing assumptions by utilising the feedback received from their customer base (Gupta et al., 2020).

Efficient automation: Digitalisation of previous manual banking processes, such as loan applications and accounts verifications, has presented financial institutions with the ability to automate tasks that are repetitive or have low added value by utilising techniques such as natural language processing or image recognition (Szalavetz, 2019). The implementation of digitalisation and automation in various industries has been prevalent for several years. The primary purpose of these technologies is to minimise physical labour and enhance the efficiency of human workers (Sarc et al., 2019).

Predictive analytics capability: The fundamental basis of digitalisation and the digital economy lies in the realm of data, making it a vital component of the technological infrastructure that supports digitalisation. Multiple data sources are generating data at a high velocity. Many banking businesses are shifting away from traditional business intelligence analytics and towards predictive analytics capabilities that provide insights into potential future consumer preferences and behaviours (Gupta et al., 2020). Additionally, the capacity of predictive analytics to gather data from various sources enables it to offer comprehensive insights into the market, competition, and customer perceptions of services (Akter et al., 2020). The advancement of predictive analytics capabilities has improved decision-making processes within the banking industry.

Operational efficiency: The turnaround time to respond to customer queries and provide real-time access to quality banking is critical for the banking industry. With new

RPA technology, banking operations are radically transformed (Szalavetz, 2019). RPA may now radically optimise labour efficiency in the banking industry by augmenting a more sustainable workforce with reliable, efficient, and low-cost digital labour, enabling banks to reduce expenses, mitigate future mistakes, and eradicate possible risks (Szalavetz, 2019). Digitalisation not only enables banks to enhance their operational efficiency, but also equips managers and leaders with new capabilities to effectively and efficiently plan, invest, coordinate, and control business resources (Akter et al., 2020).

2.4.3 Risks associated with digitalisation

While digitalisation is not a recent occurrence, the associated challenges and opportunities are continually evolving (Almeida et al., 2020). The process of digitalisation necessitates a reconfiguration of operational procedures, resulting in increased organisational flexibility, investment in more adaptable structures, strengthened standardisation, and automation. These measures are implemented to enhance the company's ability to respond efficiently to customer demands (Almeida et al., 2020). The rapid implementation of digital technologies and digitisation and their adoption by society and organisations have altered our relationship with ourselves, each other, and our environment (Burr et al., 2020), suggests that the degree to which banks embrace digitalisation will have a consequential impact on the interrelationships among banking employees and their work environment, potentially resulting in either favourable or unfavourable outcomes for workplace engagement.

The emergence of digital technologies has led to the automation of numerous routine operations, particularly those involving basic manual labour (Zemtsov et al., 2019). Simultaneously, the emergence of automated systems poses a potential threat to professionals with moderate to high levels of skill across various industries, as well as technologists. The primary concern linked to the accelerated digitalisation and automation of production is the potential challenge that employees may encounter in promptly adjusting to the altered circumstances (Zemtsov et al., 2019). The study by Baptista et al. (2020) demonstrates the increasing use and adoption of workplace technologies with intelligent and self-contained capabilities, as well as the growing number of instances in which technologies generate work activities for humans in organisations, thereby expanding the scope of these technologies from assisting humans to performing some limited managerial tasks (Baptista et al., 2020).

According to Baptista et al. (2020) further, studies could explore inquiries pertaining to the extent of human involvement in digitalisation configurations. What is the level of

quality, distinct from quantity, of the work being produced for human consumption? Based on this recommendation, the study will seek to investigate the involvement of banks employees during digitalisation process, and what type of future is digitalisation producing for bank employees.

2.4.3.1 Digitalisation and employee's psychological well-being

Technological advancements in the workplace have undergone a significant transformation from primitive office software in the 1980s to interconnected digital platforms that incorporate automation and self-learning capabilities driven by AI in modern digital workplaces (Baptista et al., 2020). Digitalisation further necessitates the strengthening of standardisation and automation, all aimed at enhancing the company's ability to respond optimally to customer needs. While organisational restructuring and reconfigurations can yield benefits for companies, they can also generate significant levels of anxiety and stress among employees (Almeida et al., 2020). These negative outcomes can result in decreased productivity, low morale, and a weakened culture of workplace engagement within the organisation.

2.4.3.2 Digitalisation and employee's re-skilling and upskilling

"*Employers in all industries are struggling with considerable shortages of skilled digital workers and are seeking innovative alternatives to meet these needs*" (Bell, 2022, p.36). Existing employees' reskilling and upskilling require a more practical and sustainable approach, and often do not require completion of a formal higher education program (Bell, 2022). In a dynamic business environment of digitalisation, organisations and business leaders must establish a scalable approach for constructing a talent repository (Kar et al., 2020).

4IR is a central force driving digital disruptions and digitalisation, which are transforming industrial processes and exerting a significant influence on globalisation (Li, 2022). This revolution influences the workforce and enhances access to new skills and knowledge (Li, 2022). Citing the WEF report, Li (2022) states that owing to the adoption of new digital technologies, 50% of all employees will require reskilling by 2025. In the current era of digitalisation, cognitive automation, and global economies, coupled with the increasing scarcity of skilled labour, the future workforce is undergoing transformation through the process of re-skilling employees to undertake more distinctive human-oriented tasks (Card & Nelson, 2019). As digitalisation escalates within the banking

industry, existing and new employees will require more cognitive, critical, and analytical skills to navigate through new ways to work and prepare for future work (Li, 2022).

To address the expanding digital divide, leaders in the field of information technology are implementing ongoing educational initiatives aimed at converting their existing IT personnel from conventional "order takers" to consultative, business-oriented service providers who possess a comprehensive understanding of their business unit's objectives and offerings (Card & Nelson, 2019). The demand for talent in the context of evolving digital technologies is characterised by unpredictability. In a dynamic business environment, it is imperative for organisations to formulate a scalable approach towards constructing a talent repository (Kar et al., 2021).

The study by Li (2022) recommends that the interaction between higher education, labour market, and industries be enhanced, since the study revealed that, to some extent, talent shortage exists owing to a lack of awareness of employers' opinions, preferences, and expectations. Based on this the study will further seek to investigate, if any collaboration exist between South African Banking industry and the institute of high learning to collaborate in closing the skill shortage as a result of digitalisation. Kar et al. (2021) suggest that further studies should be carried out utilising a quantitative approach, such as inferential statistics, in a sector where workers must stay up to date with evolving technologies, such as the banking industry. Consequently, the investigation will employ a quantitative methodology.

2.5 Workplace engagement

Humans and machines are increasingly integrated in the period of the Fourth Industrial Revolution. Disruptive technologies like as artificial intelligence, robots, data science, quantum computing, and the Internet of Things are facilitating this convergence. These technologies enable the creation of cutting-edge applications such as social robots, self-driving cars, virtual assistants, 3D printing, and desktop manufacturing (Vermeulen et al., 2018). The possibility for humans to be replaced by technology is typically presented as a source of concern in discussions about the future of work, whilst the potential for humans and technology to collaborate is frequently positioned as a source of optimism (Nazareno & Schiff, 2021). The growing adoption of digitalisation and automation in the banking sector emphasises the importance of strategic leaders capable of developing

digital strategies to mitigate the negative effects of automation and digitalisation on workplace engagement sustainability (Borges et al., 2021).

The implementation of automation and digitalisation has the potential to enhance productivity and augment wages for individuals who retain their employment. However, the impact on the overall well-being of employees may be uncertain or unfavourable (Nazareno & Schiff, 2021). The impact of digitalisation and automation on productivity is a topic of ongoing discussion among labour economists. There exists a body of literature that examines the extent to which these phenomena are responsible for the reduction of employment opportunities, the deterioration of employees' psychological well-being, and the decline of workplace engagement (Vermeulen et al., 2018). Employees' psychological well-being is of significant social importance; however, it is frequently disregarded in dialogue surrounding automation, AI, and the future of work (Nazareno & Schiff, 2021).

The banking industry is distinguished by a high level of competition who endeavour to attract and maintain clientele. Attaining a competitive advantage is of utmost importance to stakeholders operating within the banking sector. The integration of advanced AI technologies with suitable digital business strategies can enable banking enterprises to attain a competitive edge by enhancing workplace engagement, thereby positively impacting the psychological well-being of employees (Borges et al., 2021). According to Book et al. (2019), this has the potential to allow individuals to direct their emotional and cognitive abilities towards converting work into significant and meaningful achievements.

2.5.1 Digitalisation and workplace engagement

2.5.1.1 Changing employees' needs and behaviours

The implementation of digitalisation and automation in the workplace has led to the adoption of novel work methodologies which organisations must adapt to through the adoption of new business models (Sulistianingtiyas & Djastuti, 2022). During digitalisation, employees often undergo a process of personal development as they acquire novel digital skills and comprehension (Blanka et al., 2022). This scenario often leads to employee resistance, which can ultimately disrupt their psychological well-being. According to Blanka et al. (2022), the ability of an organisation to adapt to the emerging opportunities and challenges of digitalisation is primarily contingent upon its workforce. The current body of research and literature pertaining to digitalisation has predominantly centred on the business and strategic aspects, with a restricted inclusion of employee-centric elements (Trenerry et al., 2021). The unavoidable progress of novel digital

technologies within the workplace is inevitable and will result in a transformation of businesses, whilst simultaneously augmenting the apprehensions of both organisations and employees regarding the future of work (Trenerry et al., 2021).

Individual work approaches influence the overall productivity, performance, and efficiency in a digital workplace (Sulistianingtiyas & Djastuti, 2021). To remain competitive and ensure their survival, businesses (including banks) must adopt digital technologies and endure process transformation (Trenerry et al., 2021). The introduction of digitalisation in the workplace was initially intended to increase productivity (Sulistianingtiyas & Djastuti, 2021). The contribution of employees is crucial to the success of the digitalisation process. It is essential to perceive their perceptions and attitudes toward technological change, along with other strategies aimed at enhancing their digital skills (Trenerry et al., 2021).

2.5.1.2 Employees' perceptions of organisational change

Organisational change is a strategic approach that involves the active participation of leaders, employees, structures, and systems in order to anticipate and adapt to environmental changes (W. Adda et al., 2019). Leadership is a crucial aspect of managing organisations. It not only impacts policy and decision-making but also sets the tone for how all members should approach their work during the change process (W. Adda et al., 2019). This is especially important during times of transformation, as it plays a significant role in achieving organisational goals. Digitalisation and automation in the workplace is, therefore, not an exception regarding how leaders are managing it.

The rapid growth of digitalisation has had a significant impact on organisational processes and work environments, leading to an increased pace in employees' daily lives. Work is organised in a more dynamic manner, which necessitates stakeholders to adapt quickly to rapid changes and maintain connectivity, even while working remotely (Sulistianingtiyas & Djastuti, 2022). Sulistianingtiyas and Djastuti (2022) discuss the findings of Cijan et al. (2019) regarding the challenges that arise from digitalisation in the workplace. These challenges include the need for increased employee engagement, the requirement for organisational operations to become more complex, the demand for quick adaptation to technological advancements, the encouragement of new cost-saving initiatives, and the drive to enhance company profitability. Consequently, Adda et al. (2019) emphasise that the role of a leader is crucial in achieving organisational stability through the impact of digitalisation. Without a leader, the understanding of how this organisational change can bring about maximum results will not be fully realised.

The leader, who is regarded as someone knowledgeable about the practical steps required to advance the organisation, must take the initiative to drive change. The leadership role is crucial for effectively managing an organisation and guiding it towards a more favourable direction Adda et al., 2019). Leadership behaviour plays a crucial role in the process of organisational change. It is not only necessary for leaders to introduce a vision for change, but they must also actively support their employees by demonstrating appropriate behaviour models (Adda et al., 2019).

2.5.1.3 Employees' resistance to change

Inherently, employees' fear disrupts their normal setup and brings with it a lot of uncertainties. In the context of organisational development, the presence of resistance to change and adherence to traditional processes and techniques can have detrimental effects (Zada, 2022). This is due to the fact that resistance can manifest itself in various forms, such as inadequate support from senior management in change management, insufficient allocation of resources for change management, resistance from employees, and even opposition from middle management (Zada, 2022). To successfully achieve the goals of organisational change during digitalisation, it is essential to establish harmonious relations between leaders, employees, and organisations. The process of digitalisation currently underway can create barriers to change due to differing perceptions between leaders and employees Adda et al., 2019).

2.5.1.4 Employees' acceptance of digitalisation

Digitalisation at work has significant ramifications for human labour in numerous ways (Peiró & Martínez-Tur, 2022). The adoption of new technologies is significantly influenced by employees' attitudes (Lichtenthaler, 2019). The Technology Acceptance Model (TAM) posits that the decision to adopt a new technology is influenced by several factors, one of which is the perceived usefulness of the technology by employees (Lichtenthaler, 2019). Mechanisation of jobs has rendered several occupations obsolete and forced them out of the labour market (Peiró & Martínez-Tur, 2022). These repercussions in human labour have contributed to many employees completely rejecting digitalisation initiatives. Furthermore, automation of previously manual jobs without clear strategies and a leadership mindset of not understanding or considering employees' concerns and fears of automation often leads to resistance.

Because of the current digitalisation process, new business models have emerged as one of the key drivers of changing the way people work within the enterprises (Bueechl

et al., 2021). In addition to the continual advances in information technologies within the world of business operations, it is imperative for enterprises of various sizes to prioritise the well-being of their employees and guarantee satisfaction among their workforce during the process of digitalisation (Bueechl et al., 2021). Therefore, the implementation of automation in tasks that were previously performed manually, in the absence of well-defined strategies, and a leadership approach that fails to acknowledge and address the apprehensions and anxieties of employees regarding automation frequently results in employees' rejection of automation. Thus, the obligation of employers is to adequately equip themselves for a culture of change in order to alleviate potential negative responses that might jeopardise the successful outcome of digitalisation initiatives (Peiró & Martínez-Tur, 2022). *"Independent of a positive or negative direction, employee attitudes may strongly affect technology acceptance decisions, which in turn impact a firm's innovation outcomes and performance"* (Lichtenthaler, 2019, p.40).

2.5.2 Lack of leadership empathy

Employees' fear of losing jobs due to confronting the challenges of workplace digitisation, is causing employees to experience feelings of despair and fear, as well as more serio us anxious behaviours (Raina, 2022). The recent boom in digitalisation has presented leaders with a multitude of challenges, including the need to manage multiple topics concurrently, process vast amounts of information received through digital channels, adapt to rapid changes, and strike an appropriate equilibrium between traditional and modern approaches (Klus & Müller, 2021). The rapid evolution of digital technology has significantly transformed institutions irreversibly, including leadership behaviours (Chouhan & Mehta, 2022). The cultivation of successful leadership practices is crucial for the survival and competitiveness of any institution during digitalisation process, as the effectiveness of leaders plays a pivotal role in this regard (Chouhan & Mehta, 2022).

The process of digitalisation can lead to a perceived loss of control among employees. Therefore, it is imperative for organisational leaders to promote employee autonomy as it has been shown to have a positive effect on employees' psychological well-being (Raina, 2022). Business leaders are increasingly confronted with the challenge of appropriately adopting new technical advancements in their companies, while also guiding the change process in their own operations (Klus & Müller, 2021). As digitalisation brings various changes within business operation, Klus and Müller (2021) state that the changes in the workplace are causing business leaders to reconsider their strategies and behaviours. The shift in the way leaders behave during the digitalisation

process sets the tone and sends a clear positive message to employees, encouraging them to trust and believe in leadership and the transformation process. Leadership characterised by compassionate and emphatic behaviour has been found to enhance and improve employee motivation, performance, and psychological well-being (Raina, 2022).

2.5.3 Human resource management and digitalisation

In the traditional context, HRM is a strategic function within an organisation that focuses on managing all personnel involved in driving business success and achieving a competitive edge (Oehlhorn et al., 2020). This function is typically performed by a dedicated HRM management department. Numerous challenges necessitate the evolution of HRM into a "business partner" with a more strategic function that entails increased engagement and accountability in the organisation's operations (Oehlhorn et al., 2020). Modern organisations have integrated information technology into their HRM practices, primarily due to the proliferation of advanced enterprise resource planning (ERP) software and internet-based systems that facilitate the automation of activities and processes (Klus & Müller, 2021). Citing the Global Human Capital Trends report, Chygryn et al. (2019) state that the HRM department is faced with the dual challenge of transforming HRM operations and transforming the workforce, and the way work is done on the other. 4IR, with its disruptive technologies, has caused a paradigm shift in organisational structures and human roles and activities (Flores et al., 2020). As a result of this transformation, it is imperative to prioritise the role of human factors as they are deemed to be the primary feature driving a particular transformative change including digitalisation (Flores et al., 2020).

4IR is anticipated to not only transform the dynamics of the workforce but also influence the tasks and responsibilities of individuals. This is due to the increased need for individuals to possess enhanced coordination, creativity, and strategic thinking skills (Flores et al., 2020). In the modern business landscape, HRM must function as a catalyst for innovation by recruiting individuals possessing digital competencies and retraining existing employees to augment their digital proficiencies, thereby facilitating the development of a digital workforce (Chygryn et al., 2019).

2.5.4 Diversity and inclusion

Diversity, including the gender and cultural diversity of employees, and the appropriate administration of diversity are crucial for the organisation's sustainable and innovative development (Kuzior et al., 2022). Research conducted in the past and present has indicated that there is an apparent variation in the degree to which employees from various generations endorse and facilitate digitalisation initiatives (Chaudhuri et al., 2021). Building an inclusive and diverse culture from a different generation's perspective is of paramount importance in the era of digitalisation based on the above literature content.

Notwithstanding the growing age diversity in the labour force, there remains an inadequate amount of knowledge within organisations regarding the potential impact of divergent motivational needs among different generations on both motivational strategies and organisational performance (Heyns & Kerr, 2018). The workplace environment in South Africa is undergoing rapid transformation due to the influx of younger generations who are increasingly entering the workforce (Heyns & Kerr, 2018). It is commonly perceived that the younger workforce exhibits significant differences in their values and priorities compared to the older generations (Heyns & Kerr, 2018). Therefore, it is imperative to gain a comprehensive understanding of the motivational factors that drive various cohorts in a workplace setting (Heyns & Kerr, 2018).

In the current context, younger generations are perceived to exhibit a greater propensity to adopt and integrate digital disruptions in the workplace than their older counterparts owing to their heightened technological proficiency (Bouncken et al., 2021). Therefore, organisational leaders must comprehend these dynamics and develop strategies to establish an inclusive work environment. The primary obstacle to the expansion of firms in today's environment is the assimilation of digital technologies and their application in novel business models (Bouncken et al., 2021).

2.6 Strategic leadership

The global business environment is experiencing a continuous increase in risk, and the ability of organisations to provide accurate market projections is deteriorating as a direct result of the rapid pace of digitalisation, technological advancement, and other factors (Alblooshi et al., 2020). The presence of effective leadership is a crucial factor in achieving successful results for any given organisation (Deshwal & Ashraf Ali, 2020). The leadership style employed exerts a significant impact on employee behaviour, which

in turn has a direct correlation with their productivity (Deshwal & Ashraf Ali, 2020). The practise of leadership is influenced not only by an individual's personal characteristics, actions, and environmental circumstances, but also by the perceptions of others regarding their leadership abilities (Lord et al., 2020). The perception of an individual as a leader has a significant impact on their self-evaluation and the evaluation of their potential and effectiveness by others (Lord et al., 2020).

Organisations are concerned not just with enhancing their current processes and offers, but also with identifying future areas for change that would strengthen and sustain their market position (Alblooshi et al., 2020). To remain competitive in the face of developments such as digitalisation, globalisation, and demographic shifts, organisations must undergo continuous change (Faupel & Süß, 2019). Organisations instigate change processes, such as adopting new strategies, modifying structures, and implementing new or more flexible employment forms in response to changing market forces (Faupel & Süß, 2019). In order to sustain competitiveness in challenging contexts, it is imperative for organisations to engage in ongoing innovation and adapt their established practises (Alblooshi et al., 2020). Therefore, the significance of leadership in driving organisational innovation, including in banks, cannot be overstated, as it serves as a key determinant of the extent to which innovation is fostered and supported within an organisation (Alblooshi et al., 2020).

Table 2.1 Comparative analysis of leadership definitions

Concept	Key Leadership definitions	Authors
Leadership	Inspire, and empower others to make valuable contributions.	(Carreiro & Oliveira, 2019)
	Group-based process	(Alblooshi et al., 2020)
	A leader is perceived as an individual who directs a collective of individuals, an establishment, or facilitates their transformative processes.	(Cortellazzo et al., 2019)

Source: Author's own

The subsequent sections will examine the articulation and definition of the concept of leadership in a strategic context, the leadership theory, and leadership in the digitalisation era. Consequently, Carreiro and Oliveira (2019) define leadership as the

capacity of an individual to exert an impact on, inspire, and empower others to make valuable contributions to the efficacy and triumph of the groups or entities to which they belong. Alternatively Alblooshi et al. (2020) define leadership as a process that is based on group dynamics and involves motivating individuals towards the attainment of a specific objective. Lastly, Cortellazzo et al. (2019) mention that a leader is perceived as an individual who directs a collective of individuals, an establishment, or facilitates their transformative processes.

These definitions share a common theme, which characterises a leader as an individual possessing the aptitude to guide and steer others towards the attainment of set objectives. The definitions imply that a leader must possess the ability to effectively unite individuals from varying backgrounds to collaborate in group environments. Moreover, leadership is considered to be a role that motivates, facilitates, and counsels individuals to maintain order within a group. Based on the literature and definitions, the study attempted to address the recommendations made by Carreiro and Oliveira (2019) of investigating other factors that may impact adoption of innovations such as digitalisation. Carreiro and Oliveira (2019) study had focused on how transformational leadership impact the adoption of mobile cloud computing.

2.6.1 Leadership theory

Perceptions of leadership hold significant importance in determining outcomes at the individual, team, and organisational levels (Lord et al., 2020). Likewise, the significance of followership perceptions holds weight (Lord et al., 2020). Leadership is a desirable and highly regarded asset that is in great demand globally (Northouse, 2022). However, people continue to question themselves and others regarding the characteristics of effective leaders (Northouse, 2022). The perception of an individual as a competent follower has a significant impact on their performance evaluations, potential for promotion, and overall career trajectory (Lord et al., 2020). As individuals, they are interested in learning more about how to become effective leaders (Northouse, 2022). Various conceptualisations of leadership have been generated by various studies. To facilitate this research, the central components of the phenomenon as identified by Northouse (2022) was the primary focus: (1) Leadership is a process, (2) leadership involves influence, (3) leadership occurs in group, and leadership involves common goals.

Leadership is the process by which an individual influences a group to attain a common goal (Northouse, 2022). Leadership entails the exertion of influence. This pertains to the

impact of a leader on their followers and the nature of communication that transpires between them (Northouse, 2022). Leadership is a collaborative phenomenon. Groups are the environment in which leadership occurs. Leadership entails influencing a group of individuals with a shared objective (Northouse, 2022). Leadership entails paying attention to common goals. Leaders focus their efforts on individuals who are working together to attain a common goal (Northouse, 2022). Moreover, it provides leaders with valuable resources for themselves and their teams (Lord et al., 2020).

The subject of leadership has consistently remained a relevant and enduring topic within the realm of organisational behaviour (Deshwal & Ashraf Ali, 2020). Over time, a multitude of leadership theories and styles have emerged (Deshwal & Ashraf Ali, 2020).

2.6.1.1 Transformational leadership

The theory of transformational leadership is a fundamental aspect of leadership studies. The theory of transformational leadership has received significant academic interest since its inception over four decades ago and remains one of the most extensively studied leadership paradigms (Siangchokyoo et al., 2020). Transformational leadership is a leadership style characterised by a leader who exerts an admired influence on their followers (Deshwal & Ali, 2020). This type of leader is known to motivate their followers, provide them with challenging tasks, enhance their creativity, and offer individualised attention to each follower (Deshwal & Ali, 2020). Transformational leadership is widely regarded as a highly effective leadership approach that yields significant benefits for organisations, including the acquisition of knowledge capital, human capital, and improved innovation performance (Lei et al., 2020). The impact of transformational leadership on innovation capability is noteworthy, as it establishes a favourable and cooperative environment that facilitates the development of skills and behaviours conducive to creativity and innovation (Lei et al., 2020).

"Transformational leaders' behaviours comprise Idealised Influence (walking the walk), Inspirational Motivation (exciting the masses and sharing the vision), Intellectual Stimulation (thinking out of the box"), and Individualised Consideration (compassionate leadership)" (Deshwal & Ashraf Ali, 2020, p.41).

The premise that leaders can transform their followers in a manner that results in improved organisational performance is a highly compelling theoretical basis for both academic study and practical application (Siangchokyoo et al., 2020). A leader who adopts a transformational approach can exert a significant impact on their followers, thereby enabling them to realise their full potential (Deshwal & Ali, 2020). This, in turn,

results in improved performance and a greater likelihood of achieving organisational objectives (Deshwal & Ali, 2020). The significance of the transformational leadership construct cannot be denied, as it is supported by numerous empirical studies that establish its association with individual, group, and organisational outcomes (Siangchokyoo et al., 2020).

Notwithstanding its extensive historical background, the theory of transformational leadership finds itself at an important turning point (Siangchokyoo et al., 2020). Critics have identified significant shortcomings in both the theoretical framework and practical implementation of the construct (Siangchokyoo et al., 2020). Some have advocated for the complete abandonment of this construct. On the contrary, scholars persist in dedicating their time and energy to investigating novel domains within this leadership paradigm (Siangchokyoo et al., 2020). The theory of transformational leadership is based on the premise that the followers undergo a process of transformation due to their interactions with specific leaders (Siangchokyoo et al., 2020).

The concept of transformational leadership relates to a leadership style that involves inspiring and motivating followers to align with the objectives and interests of the organisation, and to exceed anticipated levels of performance (Buil et al., 2019). The adoption of transformational leadership is of greatest significance in facilitating the necessary changes for efficient management (Buil et al., 2019). Transformational leadership facilitates innovation through two distinct mechanisms. Initially, it has the potential to enhance the intrinsic motivation of employees by fostering creativity, which is a crucial factor in driving innovation (Feranita et al., 2020). Additionally, it provides cognitive stimulation, thereby promoting employees to engage in innovative thinking (Feranita et al., 2020).

2.6.1.2 Context of transformational leadership

The conduct of employees determines significant influence in the effective management of organisational change within the context of an organisation (Islam et al., 2021). The implementation of change in the absence of effective leadership can be challenging. To effectively drive change, leaders must possess the ability and willingness to adapt their leadership approaches in response to varying circumstances and evolving demands within their organisational contexts (Busari et al., 2019). The complicated and unpredictable nature of organisational change can elicit negative emotions such as fear and cynicism in employees, leading to burnout, disengagement, and a reluctance to participate in the change process (Islam et al., 2021). As a result, employee championing

behaviour is regarded as one of the most effective change supportive behaviours for successfully managing organisational transformation (Faupel & Süß, 2019; Islam et al., 2021).

According to the literature, transformational leadership is a style of leadership that possesses the capacity and aptitude to motivate employees to champion the process of digital transformation. Change, by its very nature, can be disruptive. Digitalisation not only causes disruption but also alters how businesses operate and how employees engage in their daily tasks and responsibilities. Hence, the process of digitalisation requires a leadership approach that is not only innovative and transformative, but also entails a leader who can effectively inspire, persuade, energise, and exhibit a thoughtful interpersonal demeanour.

Transformational leadership involves proactive behaviour and acting as a change agent to stimulate and transform the motives, beliefs, and attitudes of followers from a lower to a higher level of arousal (Busari et al., 2019). In addition, through the transcendence of collective interests, transformational leaders enhance the consciousness of their followers, thereby enabling them to attain exceptional objectives (Busari et al., 2019). Transformational leaders can convey their vision and creativity to their followers, while also reinforcing emotional connections and promoting awareness of, and commitment to, achieving ambitious objectives (Busari et al., 2019).

Inspirational motivation: The concept of inspirational motivation pertains to the traits exhibited by a leader in order to inspire and motivate their subordinates towards the achievement of objectives that may have been deemed unachievable previously (Deshwal & Ali, 2020; Busari et al., 2019).

Idealised influence: The concept of idealised influence pertains to the charismatic and proactive conduct of a leader, which is grounded in their sense of mission, beliefs, and values (Deshwal & Ali, 2020; Busari et al., 2019; Faupel & Süß, 2019).

Intellectual stimulation: Leaders who engage in intellectual stimulation motivate their followers to think creatively and innovatively when approaching familiar challenges using novel approaches (Deshwal & Ali, 2020; Busari et al., 2019).

Individualised consideration: Leaders demonstrate individualised consideration by addressing each follower as a unique individual and taking into account their distinct needs, aspirations, and abilities (Deshwal & Ali, 2020; Busari et al., 2019; Faupel & Süß, 2019). Leaders who exhibit individualised consideration prioritise the development of

their followers' strengths and invest time in providing guidance and coaching (Busari et al., 2019).

The impact of digitalisation on individual employees varies based on the specific characteristics of their job roles. Individuals who embark on this transformative journey as leaders should possess interpersonal skills that enable them to establish a personal connection with their subordinates. They should also be capable of motivating individual employees based on their unique needs and circumstances within the organisation. Lastly, they should possess the ability to influence and inspire individuals, teams, and the entire organisation.

2.6.1.3 Transformational leadership in the era of digitalisation

In the current dynamic landscape of the business world, continuous training of employees is of the utmost significance for the achievement of organisational success (Zada, 2022). Consequently, businesses must enhance their competencies and prioritise learning as an essential strategy (Zada, 2022). Digitalisation refers to the utilisation of digital technologies and data to enhance business operations, generate revenue, revolutionise business processes, and establish a digital business environment that is centred around digital information (Azizan et al., 2021).

Organisations of varying sizes and across diverse industries are currently undergoing a transformation of their physical workspaces into digital workspaces. In contemporary times, a significant number of occupations entail the utilisation of technology to a considerable extent, necessitating the capacity to proficiently leverage it at a rapid pace. The phenomenon of digitalisation is currently viewed as having the potential to both eliminate and generate employment opportunities on a global scale, thereby instigating a significant shift in the requisite skills and qualifications for various occupations. Consequently, leaders must allocate resources towards enhancing the skill sets of their workforce, to provide them with the necessary support and encouragement to tackle challenging learning curves and intellectually demanding challenges (Cortellazzo et al., 2019).

Leaders leading digitalisation initiatives do not necessarily entail a comprehensive understanding of digital technologies. In other words, a leader can still exhibit digital leadership without possessing extensive knowledge of digital tools and platforms. Leaders who possess the ability to effectively manage and direct individuals with high levels of competence in the digital field towards achieving their objectives, despite lacking fluency or comprehension of digital technologies, may be deemed as possessing

a digital leadership spirit. This is particularly true if such leaders can balance the utilisation of human resources and technology (Asri & Darma, 2020).

To ensure the longevity of a business, organisational leadership must prioritise the enhancement of individuals' skill sets and the preservation of their mental well-being (Zada, 2022). This can be achieved through the gradual implementation of novel techniques that facilitate transformational change and necessitate the establishment of a fresh context capable of disrupting prevailing patterns and enabling the emergence of new ones (Zada, 2022). One such technique is digitalisation and automation of processes, which has experienced rapid acceleration in recent times. When incorporating cutting-edge technologies, an organisation's proficiency must consider the requirements of the business (Azizan et al., 2021). Conversely, organisational performance aims to achieve digitalisation to ascertain the procedures through which a company employs its technological competencies to attain exceptional performance within an ambiguous commercial environment (Azizan et al., 2021).

2.7 Theories underpinning the study

2.7.1 Digitalisation

The advent of digital technologies has resulted in profound shifts not only in businesses but also in society (Schildt, 2022). The widespread implementation of digital technologies that supplant human observations and automate human routines necessitates significant changes in organisational structures, management strategies, and work processes. Furthermore, the significant shift towards digitalisation can be observed across various levels, including societies, industries, organisations, and even individual organisational practices (Schildt, 2022). The digitalisation of businesses and the use of digital technology are quickly becoming essential components of a variety of market sectors (Farivar & Richardson, 2021).

2.7.2 Psychological well-being

The modern labour landscape is undergoing rapid transformation due to the proliferation of digital technology, thereby presenting novel challenges for managers to overcome. The significance of digital leadership in addressing these challenges has emerged as a critical theory in the discussion surrounding the necessary abilities of managers in the context of digitalisation (Zeike et al., 2019). Despite the ongoing discourse surrounding digitalisation and its effects, there remains an abundance of research on the actual

impact it has on employees' psychological well-being (Zeike et al., 2019). The occupational well-being of employees is associated with their working environments. The advent of transformative digital technologies, such as computers and networks, is inevitably affecting the working conditions of employees (Li et al., 2022).

2.7.2.1 Digitalisation and psychological well-being

The global banking industry was already experiencing significant changes before the outbreak of the COVID-19 pandemic in early 2020 (Kadur & Dr Supriya, 2022). Over the past decade, the number of branches in the United States has decreased by approximately 20%, while in Nordic countries, the decrease has been even more significant at 60% (Kadur & Dr Supriya, 2022). In the context of digitalisation, it is evident that, like most technological advancements, the overall impact has been more focused on creation rather than destruction. However, although the general idea is apparent, specific details still remain somewhat unclear (Aubert-Tarby et al., 2018).

The question of how digitalisation affects labour is undoubtedly one of the most sensitive issues. Controversies surrounding the impact of digitalisation on labour have been ongoing for some time (Aubert-Tarby et al., 2018). However, given the current economic crisis, this issue has become even more critical (Aubert-Tarby et al., 2018). The recent changes have brought people's concerns to the forefront of bankers' minds. Based on a study conducted before the COVID-19 pandemic, it is anticipated that nearly all positions within bank branches will cease to exist within the next ten years. By the year 2030, it is expected that the average size of branches will have decreased (Kadur & Dr Supriya, 2022).

2.7.2.2 Job displacement

Digitalisation and automation have both positive and negative aspects. Changes in the way customers conduct transactions will have a significant impact in customer orientated industries (Winasis et al., 2020). Distribution channels such as internet banking, mobile banking, chatbots, artificial intelligence, and social media applications are being used more and more. When the digital strategy is implemented correctly and aligned with customer demands, it is anticipated that customer loyalty will increase (Winasis et al., 2020). Citing Nguyen and Phuong (2018), Winasis et al. (2020) argued that the rise of digital technology poses a significant challenge to traditional banking, which heavily relies on manual counters and transactions. This implies that there will be reductions in

work procedures, manual labour, and ultimately a decrease in the need for human labour. In order to effectively address and mitigate the challenges posed to the workforce by digitalisation and automation, W. Adda et al. (2019) assert that leadership must assume a pivotal role in spearheading this transformative process. The behaviour of a leader can effectively address specific changes by addressing shifting perspectives, identifying tasks that need to be accomplished, empowering individuals, monitoring progress, and assisting individuals in adapting to the change process (W. Adda et al., 2019).

2.7.2.3 Effects of digitalisation and automation on wages

Cost-effectiveness refers to the practice of reducing production costs by eliminating various expenses, such as workers' wages (Rakovská, 2020). Digitalisation and automation optimise repetitive processes, thereby improving efficiency and ultimately leading to increased productivity. This could have a negative impact on workers' wages, either because of a decrease in available labour or a reduction in working hours (Rakovská, 2020). However, according to Genz et al. (2019), digitalisation and automation have both negative and positive impacts on wages. According to Genz et al. (2019), there is an argument that skills have a significant impact on wages in relation to digitalisation and automation. However, Mönnig et al. (2019) counter argue, stating that digitalisation and automation contribute to an increase in wage inequality.

2.7.2.4 Effects of digitalisation and automation on job quality

There has been a significant rise in the adoption of digitalisation and automation in the labour market in recent decades, leading to the automation of various occupational tasks (Kortmann et al., 2022). As a result, occupational profiles have undergone significant changes and will continue to do so in the future. These changes may have had and will continue to have significant and wide-ranging impacts on job quality (Kortmann et al., 2022). However, the majority of empirical studies conducted so far have primarily concentrated on isolated and objective elements of job quality such wages and primarily focused on a specific such manufacturing. The current research will examine the effects of these many objective elements on bank workers' psychological well-being, with a particular emphasis on that sector.

In their research, Sætra and Fosch-Villaronga (2021) mentioned various aspects in which digitalisation is transforming work in the healthcare sector. They further stated that

one crucial factor to be considered is whether new technologies are being introduced with the goal of saving costs, improving the quality of care, or achieving both objectives simultaneously. The introduction of digitalisation and other forms of automation with the aim of cost-saving can potentially result in three outcomes regarding quality: a reduction in quality, no effect on quality, or an improvement in quality (Sætra & Fosch-Villaronga, 2021). Regardless of the approach, to achieve cost reduction through task automation, it is essential to enhance the effectiveness of humans (Sætra & Fosch-Villaronga, 2021). According to Rainnie and Dean (2020), it is argued that the current global political-economic conditions could potentially worsen this situation. To achieve a high-quality globally inclusive Future of Work, it is essential to integrate digital technologies with human work. This integration should aim to enhance labour and, whenever possible, steer societies and economies away from the current trend of treating digital platforms as commodities (Rainnie & Dean, 2020). By doing so, digitalisation can truly bring about positive changes in the way people work (Rainnie & Dean, 2020).

2.7.2.5 Effects of digitalisation and automation on business models

Digitalisation and automation have a significant impact on various aspects, including employees, job quality, work processes, product development, people management, and organisational leadership. In recent decades, global industries have experienced significant technological changes (Rachinger et al., 2018). These changes have brought about various opportunities, including greater flexibility, reactivity, and product individualisation. However, they have also posed several challenges such as rapid technological advancements, increased complexity, and evolving customer preferences and legal requirements (Rachinger et al., 2018). In a corporate context, the emergence of numerous new technological opportunities has presented challenges. While these opportunities are recognised, there is uncertainty among people regarding how to effectively utilise and implement them in terms of product and service offerings (Rachinger et al., 2018). In today's world, our society has entered a new digital era due to various factors such as pervasive connectivity, information abundance, global supply chains, the growth of cloud computing, and the emergence of Big Data. Digital technologies are fundamentally reshaping traditional business strategies (Härting et al., 2019). This is due to the emergence of modular, distributed, cross-functional, and global business processes. These processes enable work to be carried out seamlessly across boundaries of time, distance, and function (Härting et al., 2019).

The utilisation of digital technologies has the potential to enhance the efficiency of enterprises because these technologies enable processes to become more agile, ultimately resulting in improved competitiveness (Härting et al., 2019). Furthermore, the concepts of sharing will be greatly enhanced by digitalisation and the implementation of new business models, particularly those that involve digital business processes. Consequently, this can lead to digitalisation to transform the concept of ownership and give rise to projects, processes, and business models centred around the "sharing economy," such as car sharing (Härting et al., 2019).

2.7.3 Workplace engagement

The integration of digital technologies in the workplace is on the rise and has already become deeply ingrained in the daily routines of employees. Scholarly literature suggests that digital technologies are utilised and enhanced to foster innovation, optimise organisational procedures, and guarantee competitiveness and sustainability. Complete comprehension of how employees respond to the digitalisation of work within a team environment remains elusive (Stofberg et al., 2021). When taking into consideration the psychological well-being of workers and their level of achievement, the working environment is an essential component (Li et al., 2022).

2.7.3.1 Digitalisation and workplace engagement

To thrive in the knowledge-based and service-oriented economy, including the manufacturing sector, it is crucial to have highly skilled employees who are motivated and willing to utilise their abilities for the success of the business (Oeij et al., 2019). Therefore, it is essential to prioritise employee engagement and involvement, alongside digitalisation, automation, and business model innovation (Oeij et al., 2019). According to Oeij et al. (2019) citing a European research, companies that engage in the development and implementation of collaborative strategies are distinguished by the presence of "mature relationships" between management and employees, leaders who adopt supportive leadership styles, and the establishment of organisational cultures that foster bottom-up renewal.

The implementation of digital technologies in the workplace brings about changes to business systems, processes, and the roles of employees (Hooi & Chan, 2022). The digitalisation of the workplace has the benefit of relieving employees from both dangerous and mundane tasks, while also increasing the speed at which work is

completed. However, employees may face new job demands, job displacements, and a blurring of the boundaries between work and social life as a result of workplace digitalisation, requiring different strategies and involvement of leadership to manage the process (Hooi & Chan, 2022).

2.7.4 Strategic leadership

The digital transformation in a networked economy has prompted organisations to expand their boundaries and establish connections with various industries, stakeholders, and customers to foster innovation. At a micro level, leaders must cultivate openness as they seek to invest in networking (Cortellazzo et al., 2019). The concept of leadership has been a subject of great interest among individuals across the globe throughout history. The theory of transformational leadership is a prominent example of contemporary leadership theories that have garnered significant attention in the field of leadership research (Reza, 2019). The concept of transformational leadership involves analysing individuals who possess the ability to effect change and exert influence over their followers through the presentation of a challenging and visionary vision. Transformational leadership is a widely recognised and effective form of leadership on a global scale. This is because transformational leaders exhibit consistency in their vision and are highly attentive to the needs and behaviours of their followers. Transformational leadership fosters improved interpersonal relationships between supervisors and subordinates, resulting in heightened levels of job satisfaction among employees (Reza, 2019). The application of transformational leadership theory and practice can augment comprehension of team performance.

2.7.4.1 Strategic leadership and psychological well-being

According to Zeike et al. (2019), based on the World Health Organisation (WHO) report, psychological/mental well-being is defined as a state of well-being where individuals are aware of their own abilities, can effectively handle the typical challenges of life, can be productive and successful in their work, and can make positive contributions to their community. Psychological well-being encompasses multiple dimensions (Zeike et al., 2019). Positive psychology encompasses various aspects, such as self-esteem and life satisfaction, and focuses on the overall well-being and success of individuals' lives. Psychological well-being encompasses both feeling good and functioning effectively (Zeike et al., 2019).

The results from the study by Riasudeen and Singh (2021) found that there is a strong positive relationship between strategic leadership effectiveness and psychological well-being with workplace spirituality. This, in turn, affects the outcomes of work. In the context of the current study, the researcher will investigate the relationship between strategic leadership and psychological well-being with digitalisation. There is no guarantee that enhancing strategic leadership will result in an improvement in psychological well-being. By prioritising the development of strategic leadership digital skills, organisations can significantly improve employees' psychological well-being (Dewi & Sjabadhyni, 2021).

Work-related factors and working conditions play a crucial role in shaping the psychological well-being and overall health of employees. Managers face significant challenges due to the changing working conditions caused by technological developments, digitalisation, and automation in organisations (Dewi & Sjabadhyni, 2021). These challenges have the potential to impact employees' psychological well-being (Dewi & Sjabadhyni, 2021).

2.7.4.2 Strategic leadership and workplace engagement

One proposition posits that the presence of effective leadership and a conducive organisational culture might facilitate the process of digitalisation (Hooi & Chan, 2022). In situations where there is a lack of alignment between the organisational goals, values, and vision that form the foundation of the organisational culture, and the leadership style employed during the process of digitalisation, it is possible for employees to become disillusioned and hinder the successful implementation of digitalisation efforts (Hooi & Chan, 2022). Nevertheless, the cultivation of a congruent organisational culture throughout the age of digitalisation necessitates the endorsement of leadership that is both supportive and transformative, with a clear focus on long-term goals and objectives (Hooi & Chan, 2022). The importance of competent strategic leadership is widely recognised as a crucial factor in the successful functioning of an organisation within the ever evolving and challenging technology landscape of the 21st century (Bhardwaj et al., 2021).

In today's digital era, where automation is becoming more prevalent and employees may feel uncertain about their future, it is crucial for organisations to have strategic leadership (Bhardwaj et al., 2021). This type of leadership is necessary to effectively navigate organisational challenges and ensure that the necessary transformations are made to achieve the desired goals. Numerous conceptual and empirical studies have consistently

demonstrated that strategic leadership has a significant impact on outcomes, particularly in the context of change processes (Bhardwaj et al., 2021). While many leadership scholars have defined leadership as the act of influencing others to accomplish objectives and coordinating the process of change, it is crucial to recognise that setting a direction, inspiring individuals to overcome obstacles, and guiding the company towards its desired future are all essential components of effective leadership (Ali & Anwar, 2021). Leaders utilise their influence to inspire and motivate their followers, as well as to coordinate and organise the workplace. This ultimately enables employees to perform their duties more efficiently, leading to increased levels of engagement in the workplace (Ali & Anwar, 2021). On the other hand, Tao et al. (2022) contribute an additional perspective to the conversation by highlighting the significance of strategic leadership and its communication in crisis situations and periods of change, such as digitalisation. They argue that these elements are crucial for effective internal crisis management, change management, and workplace engagement.

"With the effects of perks often fleeting and expensive, the organisation would be better served by focusing on practical approaches that address the persistent drains on employee satisfaction" (Tucker, 2018, p.139). It further emphasised that it is important to:

- **Ensure transparency** regarding the change. Trust is established through transparency and well-prepared parameters. In order to adequately prepare employees, strategic leaders should provide a thorough explanation of the desired change (Tucker, 2018). What specifically needs to be changed? What was the reason behind this need? What are the reasons for adopting this approach to change? Could you please provide more information about the timeline you are referring to? What is the specific role of the employee? What are the requirements, and when does the employee have the freedom to improvise? How will the employee be held accountable? Explanations should be specific, concise, and truthful (Tucker, 2018).
- It is important to **involve employees** in the process of change. Employees desire validation for their concerns and seek platforms that allow them to provide feedback. Strategic leaders have the ability to initiate communication by actively involving employees in the process of examining problems and identifying their underlying causes (Tucker, 2018). Engaging in early communication establishes a sense of ownership regarding the necessary changes and the specific actions required. It also uncovers the needs and perceived barriers of employees. Employees who resist change may encounter roadblocks (Tucker, 2018).

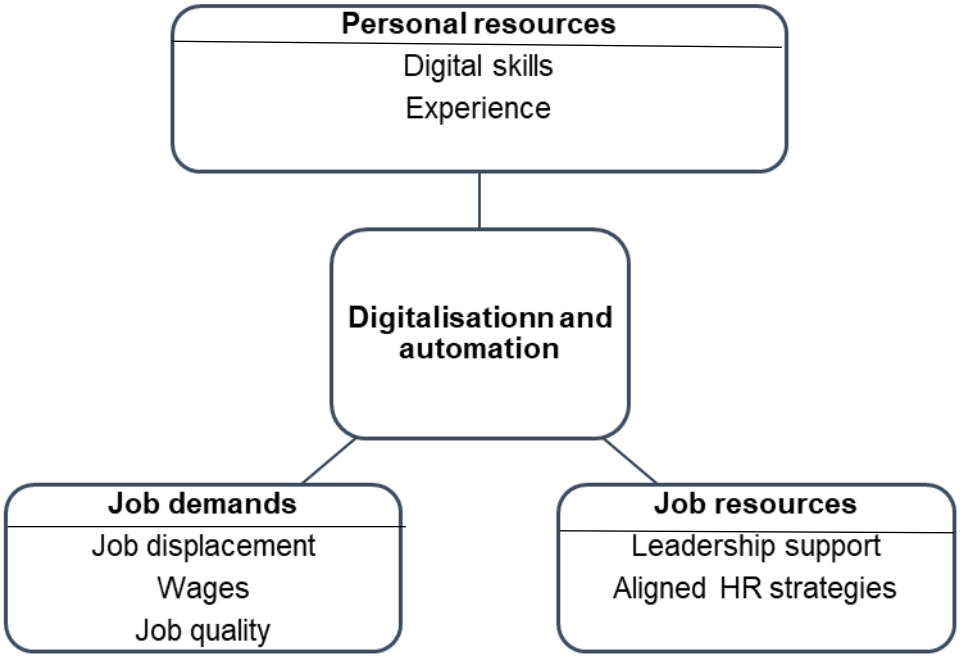
- **Maintain patience** while also being persistent in order to see the desired change come to fruition. Employees also require an adequate allowance in order to embrace and contribute to change. Learning new ways of thinking and working requires a significant amount of time. While strategic leaders have the ability to track adoption, enforce accountability, and remind individuals about the importance of change, it is important to note that immediate transformations are not as common as those that occur gradually and naturally over time.

2.7.5 Job Demands-Resources (JD-R) model

Employment holds significant significance in the lives of many individuals. It provides a sense of organisation, direction, and significance. Through work, people can effectuate a tangible change and contribute positively to their clients, customers, or co-workers (Bakker & De Vries, 2021). A work environment characterised by high job demands and low job resources is likely to result in elevated levels of stress, potentially culminating in persistent stress. Hence, it is imperative for organisations to consistently monitor and enhance job characteristics, such as establishing attainable objectives and challenges, optimising job requirements, and furnishing adequate job resources (Bakker & De Vries, 2021). According to the Job Demands-Resources (JD-R) model, when job demands become excessive, it can lead to a decrease in psychological well-being and an increased risk of work-related burnout. However, this negative impact can be mitigated if there are sufficient job resources in place (Dewi & Sjabadhyni, 2021).

While digitalisation and automation provides employees with improved resources to achieve work-related goals, it also brings about increased job demands and often creates a high level of uncertainty that companies need to effectively manage (Guenzi & Nijssen, 2021). The study will use the JD-R model to simultaneously to consider both the positive and negative effects of digitalisation. By conducting this analysis, the study aim to illuminate the intricate network of connections that defines the psychological responses exhibited by respondents for the study, with primary focus of section D of the research instruments. The study employed the Job Demands Resources model (JD-R) as a theoretical framework. This model integrates job demands, job resources, and personal resources, which respectively represent sources of stress and factors that help mitigate stress (Pansini et al., 2023).

Figure 2.1: JD-R Model

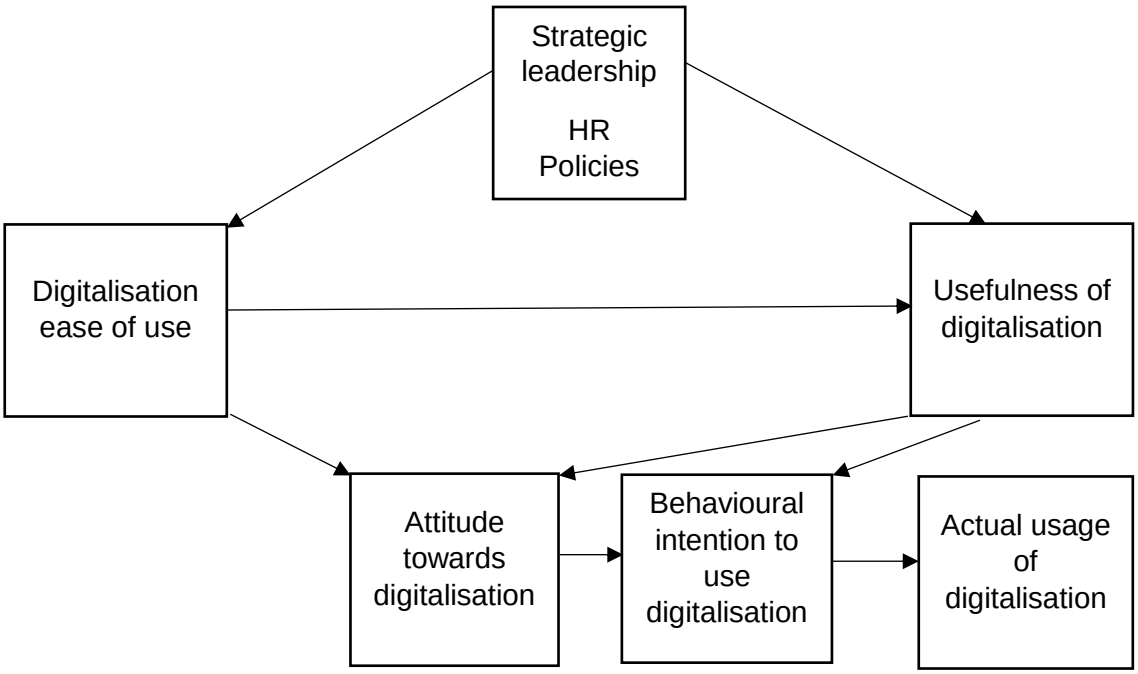


Source: Author's own

2.7.6 Technology acceptance model (TMA)

The work-related psychological well-being of employees has become a major concern for organisations and strategic leaders due to the increasing adoption of digitalisation and automation in the workplace (Shamsi et al., 2021). This study investigates the impact of job characteristics, such as psychological well-being and leadership, as well as technology-related factors, such as perceived ease of use, perceived usefulness, and technology acceptance, on the impact of employees' work engagement, which is a dimension of work psychological well-being (Shamsi et al., 2021).

Figure 2.2: Technology acceptance model



Source: Author's own

2.8 Conceptual framework

The conceptual framework of this study is based on the fundamental notion of the interconnection between the constructs of digitalisation, strategic leadership, employees' psychological well-being, and workplace engagement. Digitalisation refers to the integration or proliferation of digital or computer technology within an organisation (Ritter & Pedersen, 2020). The concept of strategic leadership pertains to the conduct and deeds of leaders in shaping the vision, objectives, and tactics of an organisation, such as a bank (Cortellazzo et al., 2019). Psychological well-being refers to the personal and subjective perception of an individual's psychological well-being, encompassing various aspects such as job satisfaction, work-life equilibrium, and stress levels (Zeike et al., 2019). Workplace engagement pertains to the degree of dedication, participation, and enthusiasm exhibited by employees regarding their occupational responsibilities (Stofberg et al., 2021).

The conceptual framework proposes that digitalisation could potentially exert direct or indirect effects on employees' psychological well-being that could negatively or positively influence their engagement within the workplace (banking environment). The adoption

and implementation of digitalisation in an organisation are believed to be facilitated by the strategic leadership. Therefore, it is imperative to devise strategies to mitigate employee resistance to digitalisation. Strategic leadership can help to reduce the negative impact of digitalisation on employees' psychological well-being.

The objective of this study was to clarify the intricate correlation between digitalisation, employees' psychological well-being, and workplace engagement in the banking industry. The objective of this study is to offer perspectives on the utilisation of strategic leadership techniques by organisations (banks) to cultivate a favourable work atmosphere during digitalisation and automation, thereby advancing the overall well-being of their workforce and elevating their degree of involvement.

2.9 Conclusion

Digitalisation and automation will continue to transform the processes of both internal and external organisations, as well as jobs that were previously done manually. The literature mentioned above effectively communicates the significance of banks adopting digital technology. However, it is important to emphasise the risks associated with digitalisation, as it can greatly affect the psychological well-being of employees. The importance of strategic leadership in managing the potential risks of digitalisation has been highlighted in scholarly literature. The literature further highlighted the importance of HRM in the process of digitalising within an organisation. Finally, the chapter presented two theoretical frameworks that anchored the study: the Job Demands-Resources (JD-R) theory and the Technology Acceptance Model (TAM).

CHAPTER THREE: RESEARCH QUESTIONS

3.1 Purpose of the research

The purpose of this quantitative research is to investigate and assess the effects of digitalisation and automation on the psychological well-being of employees of SA banking institutions, and their workplace engagement. Admitting that technological change is a reality, this study would provide empirical evidence that could serve to pacify employees and enhance digitalisation and automation adoption in the workplace.

3.2 Research question/s

The research problem was investigated in terms of the following research questions:

"What role does strategic leadership play to ensure that employees' psychological well-being is considered during the South African banking sector's transition process towards digital and automated processes?

Three sub-questions applied:

RQ1: What are leaders in the banking industry doing to enable employees' psychological well-being in the workplace in the era of digitalisation and automation?

RQ2: What strategies are strategic leaders employing to ensure workplace engagement during the era of digitalisation and automation within the South African banking industry?

RQ3: What are the effects of digitalisation on employees' psychological well-being.

RQ4: What is the role of human resources managers within the South African banking industry in terms of facilitating employees' acceptance of digitalisation and automation in the workplace?

3.3 Hypotheses

The following hypotheses were deduced from the literature presented in chapter two.

- ***Hypothesis 1 (H1):*** *Strategic leaders in the South African banking industry are enabling employees' psychological well-being in the workplace in the era of digitalisation and automation.*

- ***Hypothesis 2 (H2):*** *Strategic leaders in the South African banking industry employ specific strategies that ensure employees' acceptance of digitalisation and automation initiatives to enhance workplace engagement.*

- ***Hypothesis 3 (H3):*** *Digitalisation negatively affect employees' psychological well-being in the South African banking industry.*

- ***Hypothesis 4 (H4****): Digitalisation and automation within the South African banking industry enhance communication and collaboration among employees, thereby fostering heightened workplace engagement.*

Chapter Four presents the research design and methodology used to investigate the research questions.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Introduction

The primary aim of the study was to examine the impact of strategic leadership on the implementation of digitalisation and automation in the banking sector of South Africa. Additionally, the study sought to explore the measures taken by organisations to mitigate any negative effects on workplace engagement resulting from these developments. Moreover, the present study examined the how strategic leadership facilitates the promotion of favourable psychological well-being among employees in the South African banking sector, particularly in the context of digitalisation and automation in the workplace.

The next sections introduced the research methodologies adopted by the research (summarised in table 4.1), and the justification of why these methodologies were chosen .

Table 4.1: Research methodologies and techniques underpinning the study

Paradigms	Approaches
Philosophy	Positivist
Theory	Deductive
Methodology	Quantitative
Strategy	Survey questionnaire
Time horizon	Cross-sectional
Population	South African banking employees
Sample	IT departments employee

Source: Author's own

4.2 Research methodology

The research methodology is a systematic approach to inquiry that progresses from foundational assumptions to the development of a study design and the collection of data (Pandey & Pandey, 2015). While there exist various categorisations of research methodologies, the prevailing classification of research methods is typically divided into qualitative and quantitative approaches (Pandey & Pandey, 2015).

Quantitative research employs questionnaires, surveys, and experiments as data collection methods, wherein the gathered data is subsequently reviewed and organised in numerical form. This numerical representation enables the data to be characterised and analysed using statistical techniques (Pandey & Pandey, 2015). Quantitative researchers employ a methodology that involves the measurement of variables on a subset of individuals, known as a sample, and subsequently analyse the relationship between these variables using statistical measures such as correlations, relative frequencies, or mean differences. Their primary objective is often centred around the empirical evaluation and validation of theoretical constructs (Pandey & Pandey, 2015).

This research examined how strategic leadership manages the interaction between automation, digitalisation, and employees' psychological well-being, which in turn affects workplace engagement. The **quantitative research methodology** is characterised as a research paradigm that entails the gathering of predominantly numerical data to examine the correlation between variables (Bryman et al., 2019). To effectively address the primary research question and achieve the intended objectives, the study adopted and employed a quantitative research methodology and utilised a **primary data** collection technique administered and collected through and online questionnaire. The quantitative research methodology was further motivated by the objective of collecting data from employees across various banks in the South African banking sector. This approach not only facilitated hypothesis testing but also allowed for comparative analysis of data from multiple banks.

4.2.1 Research philosophy

Based on the quantitative research paradigm, the research adopted and employed a **positivist** research philosophy due to its capability of adopting a theory and generating a hypothesis that can be tested, to prove the validity and reliability of such hypothesis (Bryman et al., 2019). The positivist research philosophy is commonly linked with the

natural sciences and entails the use of **empirical testing**. The philosophical theory of positivism asserts that knowledge can only be derived from phenomena that are perceptible through our senses (Greener & Martelli, 2018).

4.2.2 Research approach

The research examined the role strategic leaders in managing the adoption and implementation of digitalisation and automation within the South African Banking industry, and employees' psychological well-being affecting workplace engagement. In this regard, a **deductive research approach** was be adopted. The deductive technique initiates with a thorough examination of the theoretical framework, followed by the formulation of hypotheses that are relevant to the research question, and subsequently, the empirical testing of the theoretical constructs (Greener & Martelli, 2018).

4.2.3 Research design

The purpose of the research design was to establish a suitable framework for a study (Abu-Taieh et al., 2020). To effectively conduct research, it was imperative to employ an appropriate research design. A research plan is a pre-data collection strategy employed by a researcher to ensure the attainment of research objectives validly (Asenahabi, 2019). The fundamental purpose of research design was to convert a research problem into analysable data, thereby furnishing pertinent solutions to research questions while minimising expenses (Asenahabi, 2019). Following the **quantitative research paradigm**, the study adopted an **explanatory cross-sectional research**, as the study collected a **once-off primary data** from the respondents and examined the relationship between the research constructs. The **cross-sectional approach** involves conducting observations at one or more specific points in time. This method was generally considered to be **descriptive, exploratory, and explanatory** (Asenahabi, 2019). The purpose of the research design was to establish a suitable framework for a study (Abu-Taieh et al., 2020).

4.2.4 Justification for research methodology

The necessity of collecting primary data from respondents working for various banks in South Africa was a major factor in the decision to use a quantitative research approach. Most notably, the rationale was further guided by the necessity of the research to understanding the objective perspectives of respondents on how digitalisation and

automation affect them in the workplace rather than respondents' subjective views. This was because the research aimed to understand how digitalisation and automation affect people in the workplace. In addition, a qualitative study would have taken more time because there would have been a greater need to collect rich subjective data to answer the research questions.

4.3 Population and Unit of Analysis

The term population of the study usually refers to the entire group of people (subjects or events) that share certain traits that the researcher was interested in learning more about in the study (Abu-Taieh et al., 2020). The study population comprised of **employees in the banking sector of South Africa**, with a focus on those working in **IT departments and their respective business units that are vulnerable to digitalisation and automation**. The study posits that this particular population was selected primarily because a significant proportion of their routine operational tasks are susceptible to automation and digitalisation. Consequently, the study aimed to investigate the effects of such technological advancements on the psychological well-being of this population, while also examining the measures undertaken by strategic leaders and HRM departments to support these employees.

The population was selected based on the characteristics and rate of innovation in the South African banking industry. To ensure confidentiality and anonymity, the **names of the companies will not be disclosed** and was classified into categories as follows in the final report:

- Bank A
- Bank B
- Bank C
- Bank D
- Bank E
- Bank F

4.4 Sample and sampling

While population refers to the entire group within certain characteristics that the researcher was interested in, sample refers to the specific group within the population from which the data was collected from (Saunders et al., 2016). Therefore, for the purpose of the study the employees in the IT departments and their respective business units withing various South African banks were sampled. The driving factor for choosing this sample was due to the susceptibility of the population to digitalisation and automation within the South African banking industry. Thus, in order to conduct the research, **a sample of IT department and their respective business units' employees from multiple South African banks was selected**. The rationale behind selecting this particular sample was rooted in the vulnerability of the population to digitalisation and automation in the banking industry of South Africa.

The study utilised a quantitative research methodology and employed a **non-probability convenience sampling technique** due to limitations in reaching the entire population. The sample consisted of respondents who were readily available for the study and who were recruited through the researcher's contacts in the banking industry.

4.5 Measurement instrument

A research instrument is a device or mechanism employed to gather, quantify, and scrutinise data pertaining to one's research interests. The aforementioned instruments are frequently employed within the domains of healthcare, social sciences, and education for the purpose of evaluating individuals, including patients, clients, students, teachers, and personnel (Bryman et al., 2019).

A **survey questionnaire** (Appendix B)**,** served as research instrument to collect and measure the research instruments were adopted. In line with the quantitative research methodology and the descriptive explanatory research, the study administered a survey questionnaire because it is commonly employed for descriptive or explanatory research purposes (Saunders et al., 2016).

Conducting descriptive research by using attitude and opinion questionnaires and organisational practice surveys can facilitate the identification and description of variations within diverse phenomena of the study (Saunders et al., 2016). On the contrary, explanatory or analytical research facilitates the examination and explication of

relationships between variables, particularly those pertaining to cause and effect (Saunders et al., 2016). Furthermore, for the purpose of the study, **self-administered questionnaire** was adopted, as it gave respondents the freedom of completing the survey on their own, without the interference of the researcher (Saunders et al., 2016).

4.5.1 Survey design

According to Saunders et al. (2016), research surveys have the capability of collecting detailed **quantitative (numerical) data** from a large group of respondents, which could aid the study in statistically testing all hypotheses thoroughly. In this study, **certain sections of the questionnaire were formulated by adapting from the existing literature to provide a framework for the research questions. Conversely, additional elements, as elucidated in the subsequent sections on data analysis and measurements, were developed by the researcher**. The questionnaire assessed the impact of digitalisation on employees' psychological well-being and workplace engagement. The data was collected using a **five-point Likert-type scale** due to its flexibility in adjusting to the constructs being measured and its ease of interpretation (Bryman et al., 2019).

4.5.1.1 Measurements

A sample of the questions forming part of the survey are presented in **Appendix B**, and they are categorised as follows:

- The **introduction** gave the respondents some background information about the study. It also gave respondents an idea of how long the survey will take them to complete and lets them know they could stop answering questions at any time without penalty if they choose to opt out. The introduction also includes contact information on the researcher and the supervisor.
- **Section A** of the survey included eight **general demographic questions** required to draw the sample profile. The section included questions on gender, age, highest qualification, employment category, years of experience, whether a respondent was a manager or a supervisor, and whether they had subordinates or not.
- **Section B** of the survey included ten questions about **the relationship between strategic leadership and digitalisation** during the process of undertaking digitalisation and automation initiatives. The questions were formulated and adapted from literature review conducted by Asri and Darma (2020) and

(Cortellazzo et al., 2019). They were not directly copied, but slightly adapted and derived from the content and findings of the study.

- **Section C** of the survey included seven questions about **the relationship between strategic leadership and workplace engagement** during the process of undertaking digitalisation and automation initiatives. The Fourth Industrial Revolution (4IR) is a paradigm shift that utilises advanced technologies to enhance industrialisation on both local and global levels. The Fourth Industrial Revolution (4IR) facilitates a network of interconnected, dynamic, collaborative, reconfigurable, self-organised, and personalised business services and manufacturing interactions (Flores et al., 2020). The Global Human Capital Trends report highlights the dual challenge faced by HR in transforming both HR operations and the workforce. This transformation involves adopting digital technologies in the areas of the digital workforce, digital workplace, and digital HR (Oehlhorn et al., 2020). The questions were adapted from (Flores et al., 2020) and (Oehlhorn et al., 2020). Question 22 was adapted from (Li, 2022).
- **Section D** of the survey included five general questions about **the relationship between digitalisation and psychological well-being in the workplace**. The questions were adapted from (Sam et al., 2022). Sam et al. (2022) revealed that the implementation of digitalisation and automation has the potential to impact employees' stress levels in both advantageous and disadvantageous ways.
- **Section E** of the survey included five general questions about **the relationship between digitalisation and workplace engagement** in the era of digitalisation and automations. The questions were adapted from (Oehlhorn et al., 2020).

4.6 Data collection

The data was gathered subsequent to the completion of several processes, which includes the submission and acceptance of the research proposal, the creation of research instruments, and obtaining of ethical clearance approval. Qualtrics statistical data collection software was utilised throughout the process of developing and structuring the instruments. Data was collected using an online survey utilising a closed-ended questionnaire that had been divided into five sections: Section A; Section B; Section C; Section D, and Section E. The online survey was disseminated to a total of 162 respondents. The respondents that participated in the survey were individuals employed in the Information Technology (IT) and their related business units within the

banking industry of South Africa. A total of 105 respondents successfully completed the questionnaire, with no instances of incomplete responses observed among the completed responses.

In chapter five, the demographic information of the respondents was presented in both tabular and graphical formats.

4.7 Data analysis

Data analysis encompasses a process of transforming raw data into meaningful information in which decisions can be derived from (Bryman et al., 2019). Quantitative data analysis refers to the process of examining numerical data or data that can be readily translated into numerical form without compromising its significance (Saunders et al., 2016). The primary goals of quantitative data analysis was to measure differences between two or more constructs being examined, to analyse the relationship between two or more constructs being studied, and to test the hypothesis in a scientifically rigorous manner (Bryman et al., 2019).

Quantitative data analyses were used to test relationship between digitalisation and employees' psychological well-being and their level of effect on the workplace engagement, and how strategic leadership manage this relationship. A qualified statistician guided the Statistical analysis. A descriptive statistical analysis tests was applied to test the relationships underpinning the study.

The study used Exploratory Factor Analysis (EFA), which was referred to as a complicated and multidimensional method of statistical analysis that is frequently utilised in the fields of information system, social science, education, and psychology (Taherdoost et al., 2022). This technique was commonly used in the development, refinement, and evaluation of tests, scales, and measures (Taherdoost et al., 2022). Thus, the objective of EFA was to ascertain the shared elements that account for the arrangement and organisation of observed variables. In the field of social and behavioural sciences, it is commonly considered that factors refer to latent attributes of individuals that are not directly visible (Watkins, 2018). These factors become apparent through variations in the scores individuals get on measurable variables (Watkins, 2018). In recent years, EFA analysis has been used for a broad variety of purposes, including the determination of correlations between socioeconomic, land use, activity participation, and travel pattern factors (Taherdoost et al., 2022). Therefore, the research investigated

the application of EFA and communalities, which measured the sufficiency of the sampling approaches used for the study. This adequacy was discussed, and the findings of its measurement are reported in chapter five of the study.

Data cleansing: To save time, once the 105 respondents had completed the questionnaire, the data was exported from Qualtrics and loaded into Microsoft Excel, where it was cleaned up and categorised. The primary purpose of this process was to search through the data to identify any missing values that might have been present. Although the dataset initially contained no missing values, certain data items were excluded from subsequent analysis following the completion of statistical analysis. This exclusion process is elucidated and explained in chapter five.

4.8 Quality measures

The determination of research quality in the natural sciences and quantitative research in the social sciences is highly dependent on the concepts of reliability and validity. Ensuring the quality of research was also underpinned by the research design chosen for the study, and last but not least, the integrity and objectivity of the researcher played a role in the quality of the study. This entails acting openly, telling the truth, and promoting correctness. It also means avoiding fraud, dishonesty, and misrepresentation (Saunders et al., 2016). The research upheld a rigorous standard of academic integrity by accurately and objectively presenting all information as they arose from the study's results.

4.8.1 Validity of the study

The concept of validity pertains to the investigation of whether a measurement accurately measures the intended construct (Greener & Martelli, 2018). The maintenance of research validity is of paramount significance, as it enhances the credibility of the research and elevates the research findings to the status of scientific truth, thereby rendering them more widely accepted. The study enhanced its level of validity by ensuring that the constructs designated for measurement were precisely measured without any manual manipulation of the research instruments that could potentially bias the study's results. To assess the validity of the research instruments, the study employed EFA. This technique was thoroughly explained in the section dedicated to data analysis.

According to Ali et al. (2019), validity is the most crucial factor to consider when developing a test since it produces a fact and theory that supports the interpretation of test results. In addition, validity is defined as the correctness of the assessment results' interpretation and application (Ali et al., 2019). It if further, strengthened in that the validity is an evaluative assessment of empirical facts and theoretical reasons that support the sufficiency and appropriateness of conclusions and actions based on test scores (Ali et al., 2019). Evaluating validity is more challenging compared to assessing reliability. In assessing reliability, researchers primarily focus on determining if the measures remain consistent over time, within the instrument, and among different observers (Frost, 2022). On the other hand, the process of evaluating validity entails determining whether the instrument accurately measures the intended characteristic (Frost, 2022).

In relation to the definition and description of validity, the study employed rigorous statistical analysis techniques, including EFA and correlation matrices. These methods were used to ascertain that the research instrument accurately measured the intended construct and that all items within the instrument were duly verified and validated, demonstrating a correlation in accordance with their categorisation. Another significant factor that influenced the selection of EFA as the preferred method for assessing the validity of the instruments was that it was widely regarded as a robust approach for establishing construct validity (Ali et al., 2019). It is also the most frequently employed method for assessing construct validity through an instrument's measurements (Ali et al., 2019).

4.8.2 Reliability of the study

Reliability, according to Saunders et al. (2016), pertains to the processes of replication and consistency. The reliability of research can be established when a researcher successfully reproduces a prior research design and obtains consistent results. In this study, reliability measures, such as Cronbach Alpha were used to ascertain the reliability of constructs measured, using a cut-off of 0,7 (Frost, 2022; Bujang et al., 2018). EFA was utilised to ascertain the dimensions of the assessed constructs prior to undertaking Cronbach Alpha. Cronbach's alpha is a statistical measure used to assess the internal consistency or reliability of a set of items, measurements, or ratings (Bujang et al., 2018). In essence, this method assesses the degree of reliability exhibited by the replies obtained from a questionnaire, a specific domain within a questionnaire, or an instrument or rating system that is reviewed by respondents (Bujang et al., 2018). High Cronbach's alpha values indicate that the response values for each respondent across a set of

questions demonstrate a high level of consistency (Frost, 2022). For instance, in cases where participants exhibit a high level of response for a particular item, it is also probable that they will display high levels of response for the remaining items. The consistent nature of these measurements suggests that they are reliable and that the items being measured may indeed possess the same characteristic (Frost, 2022). This evaluation serves as an indicator of the dependability and reliability of the aforementioned instruments. The development of Cronbach Alpha was attributed to Cronbach, who initially employed it as a means to assess the reliability of a psychometric instrument (Bujang et al., 2018).

4.8.3 Triangulation

The process of triangulation entails the utilisation of multiple data sources and collection methods to verify the credibility, authenticity, and validity of research data, analysis, and interpretation (Saunders et al., 2016). For the benefit of the study, the research employed multiple theories to enable the study to draw parallels from such theories, and from a data collection standpoint, data was collected from individuals employed by multiple banks to enable triangulation of findings.

4.8.4 Statistical analysis

The data was analysed using SPSS (Statistical Package for the Social Sciences), and a professional statistician provided assistance during the analysis process. The information about the professional statistician were provided in Appendix A. The objective of the study was to conduct regression analysis and test for normality. However, during the data analysis phase, it was determined that it would be infeasible to test for both normality and regression simultaneously. The study researcher and the statistician then considered using EFA statistical analysis and its sub-tests for the study. In the following sections, the statistical tests that were utilised in the research project were discussed, along with the reasoning behind why these tests were chosen.

4.8.4.1 Exploratory factor analysis

EFA aims to identify the underlying variables, known as factors, that can explain the correlations observed among a set of variables (IBM, 2021). Factor analysis is a commonly employed technique in data reduction. Its purpose is to identify a limited

number of factors that can account for the majority of the observed variance in a larger set of manifest variables (IBM, 2021). During the statistical analysis, certain items from the research instruments were excluded because they did not effectively test the relationships outlined in the research questions and hypotheses (identified by low factor loadings). This decision was made in accordance with the principle of data reduction in EFA. The omission and justification, as guided by the EFA principles, were further presented in chapter five, where study results are presented.

In supporting the principles of EFA of eliminating irrelevant questions, Shrestha (2021), assert that EFA is a useful method for reducing the number of variables in a dataset. It allows the researcher to extract a smaller number of factors from a larger set of related variables. This can make the data more manageable and easier to use in other types of analysis, such as multiple regression or multivariate analysis of variance (Shrestha, 2021).

Using a questionnaire can be advantageous for development purposes. Sometimes, including additional statements in a questionnaire can cloud the clarity of understanding the variables. Factor analysis can be used to eliminate irrelevant questions from the final questionnaire (Shrestha, 2021). In agreement with other scholars, Yong and Pearce (2013) explain that the primary goal of factor analysis is to condense data in a manner that facilitates the interpretation and comprehension of relationships and patterns. Cluster analysis is a frequently employed method for grouping variables into a limited number of clusters, based on the similarity of their variance. Isolating constructs and concepts can be beneficial.

4.8.4.2 Varimax rotation method

According to Osborne (2015), EFA yields favourable results that are easily interpretable once the results are rotated. Unrotated results from factor analysis can be challenging to interpret. Rotation was developed shortly after factor analysis as a means for researchers to enhance the clarity and simplicity of the results obtained from factor analysis (Osborne, 2015). The EFA can be done using a range of rotation techniques. However, for this study, the Varimax rotation technique was chosen. According to IBM (2021), Varimax has the capability to reduce the number of variables with high loadings on each factor, making it easier to interpret the factors. Varimax also provides a simplified factor structure and identifies distinctive factors (Shrestha, 2021).

4.8.4.3 Principal axis factoring (PAF) extraction method

The Principal axis factor (PAF) method is based on the idea that all variables are part of the first group. Once the factor is extracted, a residual matrix is then calculated. Successive extraction of factors continues until enough variance is accounted for in the correlation matrix (Yong & Pearce, 2013). Principal axis factor analysis is recommended when the data do not meet the assumption of multivariate normality. The primary rationale for employing PAF in the study was rooted in the fact that normality was not tested, as mentioned in previous sections. Adhering to the principle of PAF, which avoids reliance on distributional assumptions, the study refrained from making any assumptions about the distribution (Olanrewaju & Onyekachi, 2020). Most, importantly PAF was adopted since it is commonly used in Likert scale questionnaire (Shrestha, 2021).

One approach to extract factors from the original correlation matrix is by using squared multiple correlation coefficients as initial estimates of the communalities, which are then placed in the diagonal (IBM, 2021). The factor loadings are utilised to calculate new communalities, which then replace the previous estimates in the diagonal. The iterations will continue until the changes in the communalities from one iteration to the next meet the convergence criterion for extraction (IBM, 2021). The study further, used a scree plot to determine the number factors to retain. A scree plot is a tool used to visualise the variance associated with each factor. This plot is used to determine the optimal number of factors to retain (IBM, 2021). The plot usually demonstrates a clear contrast between the sharp decline of the major factors and the gradual decrease of the remaining elements (IBM, 2021). The outputs are presented in chapter five.

It is further stated that PAF involves using the original correlation matrix and it is commonly in the shared variance between items(Schreiber, 2021). Initially, it places squared multiple correlation coefficients on the diagonal (Schreiber, 2021). This is done to eliminate unique and error variance from the factors. The factor loadings are utilised to iteratively estimate new communalities, which then replace the previous estimates in the diagonal (Schreiber, 2021).

4.9 Ethical conduct

The paramount aspect of any research is its capacity to thoroughly eliminate ethical concerns and circumvent any factors that may compromise the research's credibility.

4.9.1 Ethical conduct

During the research process, ethical considerations will arise when designing and planning the study, obtaining access to organisations and individuals, gathering, analysing, managing, and reporting data (Saunders et al., 2016). It is imperative to address ethical considerations in a timely manner throughout all phases of the research process, as failure to do so may compromise the credibility of the research. The study made concerted effort to abide by the strict compliance with all ethical considerations as stipulated by the institution.

4.9.2 Consent

The concept of informed consent pertains to the responsibility of a researcher to furnish comprehensive information and guarantees regarding participation in the set study, enabling individuals to comprehend the consequences of their involvement (Saunders et al., 2016). This allows them to make an informed, deliberate, and voluntary decision without any undue influence or coercion (Saunders et al., 2016). The study adhered to the institutional policies of the Gordon Institute of Business Science, which operates under the University of Pretoria. It also complied with the requirements pertaining to participant consent. All respondents were provided with comprehensive information pertaining to the study, ensuring their understanding of its purpose. Importantly, no participant was subjected to coercion, force, or deception in order to secure their participation.

The **letter of consent** that stipulated the respondents' agreement to take part in the study was included in **Appendix A.**

4.9.3 Bias

In the realm of prospective research, bias refers to any deviation from the truth that may occur during the planning of research protocols, their implementation, or the interpretation of resulting data (Stenson & Kepler, 2019). The researcher should be aware of two prevalent biases, namely participant bias and researcher bias. Participant bias is referred to as any variable that elicits an inaccurate response, while researcher bias is referred to as any variable that causes partiality in the researcher's recordings of participant responses (Saunders et al., 2016). The study implemented measures to ensure that both the respondents and the researcher engaged in the process with a commitment to ethical conduct, free of any external distractions or interference.

4.9.4 Storage of data

The data were put away in a secured folder and will continue to be protected in this manner for at least ten years, to make it possible to examine the data in the event that it is ever required. The secured folder will be kept not only at the academic institution but also in the cloud storage service. The names of respondents were not disclosed (**all will remain anonymous**), neither will their **affiliation to specific banks** was disclosed. No distinction was made between the banks and **only aggregate data** was processed.

4.10 Limitations

The study's limitations pertain to the different categories within the population that were not included in the research. These limitations may be exacerbated by factors such as temporal constraints such time, cost, and geographical disparities that impede access to key respondents (Saunders et al., 2016). Whilst the research was focused on the South African banking sector, it was not feasible to gather data from all banks operating within the country. Therefore, the study was restricted to a selected number of established traditional banks that have been operational in SA for a minimum of fifteen years.

4.11 Conclusion

This chapter began with providing an overview of the research methodology and techniques that was used to direct the investigation of the study, and it further presented the research design, research philosophy, and research approach that formed the foundation of the study. The population, the sample technique, and the sampling frame of the study were covered in the section. The chapter followed with a presentation of the techniques that was used to collect data, analyse data, and quantify quality. This techniques served as the foundation for the research project. In conclusion, the ethical considerations that were taken into account along with the limitations of the study were discussed.

CHAPTER FIVE: RESULTS

5.1 Introduction

This chapter presents an analysis of the statistical results generated by the data collected through the survey questionnaire. The study instruments were developed utilising the no-cost edition of Qualtrics data collection software. The survey was subsequently disseminated to a total of 162 respondents employed in the information technology division of South African banking institutions, as well as their affiliated business units. Among the respondents, a majority of 105 individuals completed the survey in its entirety, without any errors. This represented 64,81% response rate.

5.2 Selection of the Sample

The sample was selected due to the high prevalence of digitalisation and automation in the South African banking industry. The questionnaire consisted of five sections. Section A focused on the demographics of the respondents, including their age, highest qualification, and years of employment experience. The remaining sections B, C, D, and E, were designed to address each research question and hypothesis, and were based on the following scale:

1 – Strongly Disagree; 2 – Disagree; 3 – Neutral; 4 – Agree, and 5 – Strongly Agree.

5.3 Statistical analysis

The data was analysed using frequencies and descriptive statistical analysis. To address the research questions and test the hypothesis, the EFA statistical test was employed. In addition, the reliability and validity of the study were assessed using the Cronbach Alpha statistical test. The preceding sections provided a comprehensive explanation of these details.

5.4 Frequencies and descriptive statistics

The first question of the questionnaire asked respondents to select the age group that was appropriate for them at the time of completing the survey. The age groups were presented in a way that allowed for different options to be chosen. The age groups of the respondents are well represented and evenly distributed across all age ranges. The results of the age group of the respondents are presented in table 5.1 and figure 5.1.

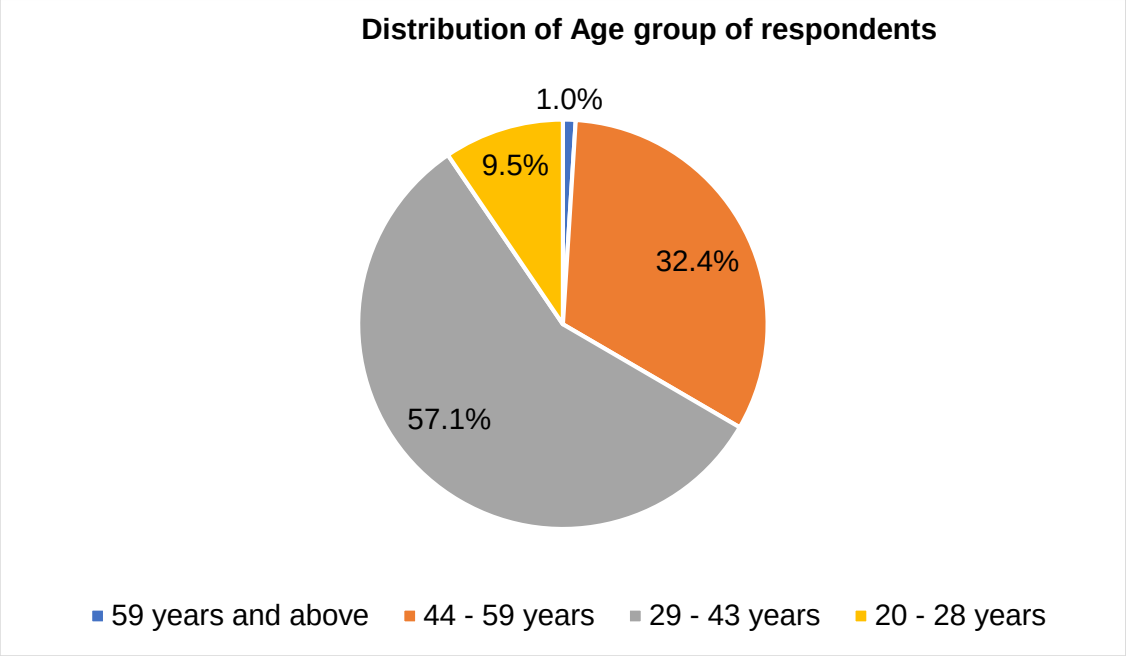
5.4.1 Age groups

Table 5.1 Age groups of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	59 years and above	1	1,0	1,0	1,0
	44 – 59 years	34	32,4	32,4	33,3
	29 – 43 years	60	57,1	57,1	90,5
	20 – 28 years	10	9,5	9,5	100,0
	Total	105	100,0	100,0	

The distribution of age groups based on the collected data is presented in figure 5.1 below. According to the presentation, the age group of 29-43 years is the most well-represented, accounting for 57,1% of the total. Following closely behind is the age group of 44-59 years, which makes up 32,4% of the total.

Figure 5.1 Distribution of age groups



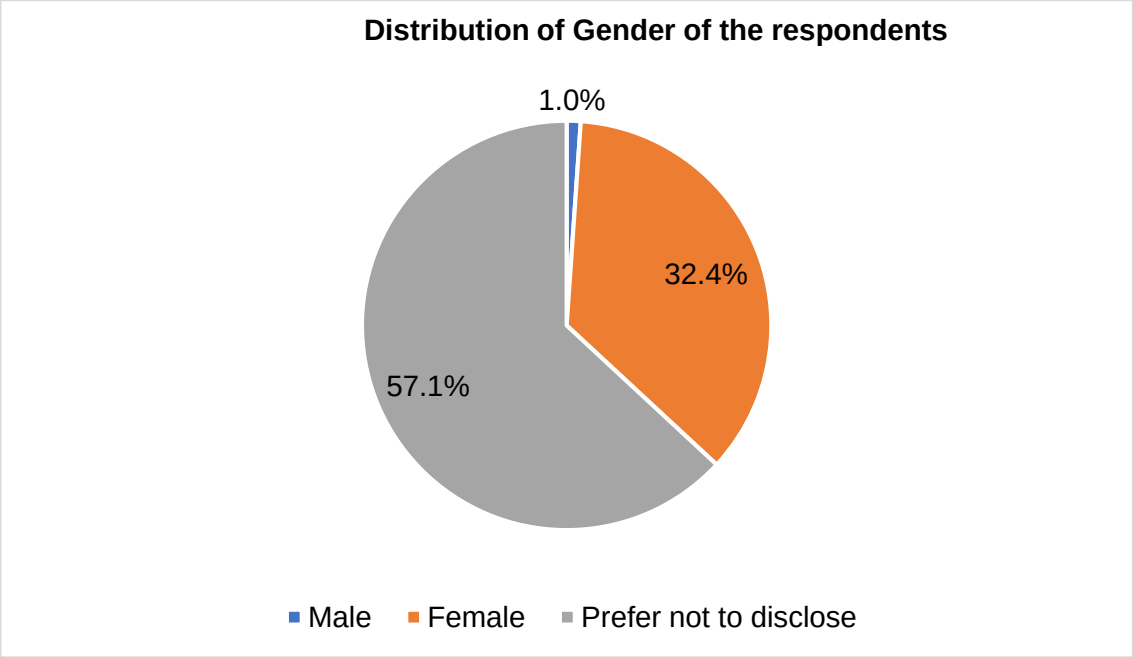
5.4.2 Gender

In addition to other questions, the respondents were asked to confirm their gender. They were also given the option to choose not to disclose their gender. Based on the results, the gender statistics show a relatively balanced distribution. Male respondents accounted for 51,4%, while female respondents accounted for 44,8%. Additionally, 3,8% of respondents chose not to disclose their gender. Table 5.2 and figure 5.2 shows the details.

Table 5.2: Gender of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	47	44,8	44,8	44,8
	Female	54	51,4	51,4	96,2
	Prefer not to disclose	4	3,8	3,8	100,0
	Total	105	100,0	100,0	

Figure 5.2 Gender Distribution



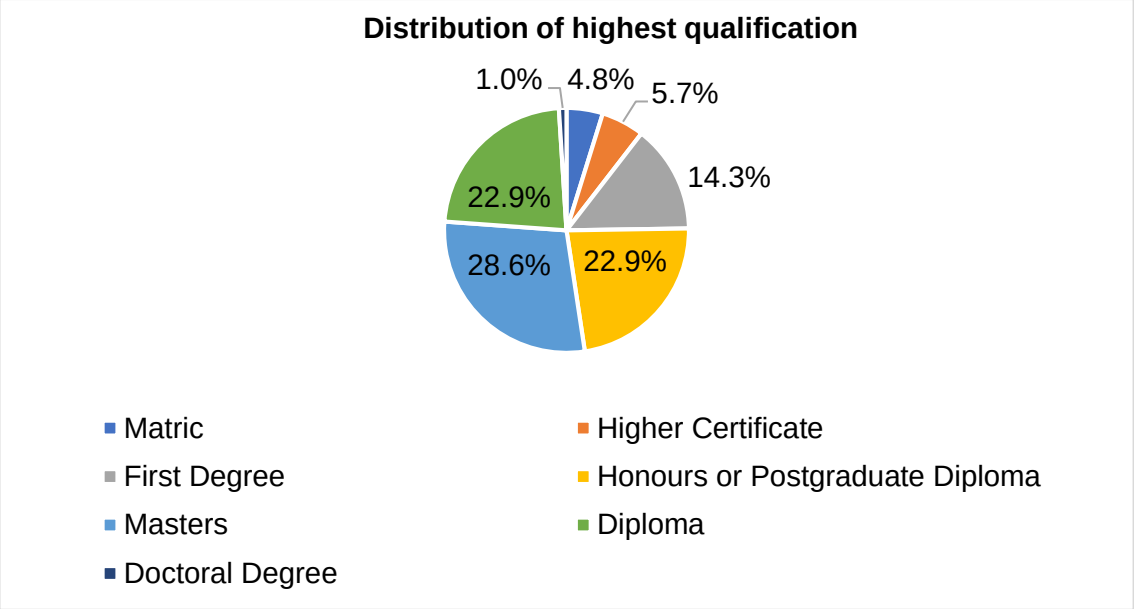
5.4.3 Highest qualification

The next variable that respondents were asked to provide information on was their highest qualification. Once again, the results indicate a relatively balanced distribution of education levels among the respondents. The highest percentage is held by respondents with a master's degree at 28,6%, followed closely by those with a diploma qualification and those with an honours degree or post-graduate diploma, both at 22,9%. Table 5.3 and figure 5.3 display these representations.

Table 5.3 Highest qualification of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Matric	5	4,8	4,8	4,8
	Higher Certificate	6	5,7	5,7	10,5
	First Degree	15	14,3	14,3	24,8
	Honours of Postgraduate Diploma	24	22,9	22,9	47,6
	Masters	30	28,6	28,6	76,2
	Diploma	24	22,9	22,9	99,0
	Doctoral Degree	1	1,0	1,0	100,0
	Total	105	100,0	100,0	

Figure 5.3 Distribution of highest qualification



5.4.4 Manager or supervisor

The next two questions were related to each other. The first question asked respondents about their level of employment, specifically whether they were a manager or supervisor. The second question asked respondents if they had subordinates reporting directly to them. Out of the 105 respondents, 29,5% mentioned that they had subordinates reporting to them, while 70,5% reported that they did not have any direct reports. Table 5.4 and figure 5.4 depict the number of respondents who have direct reports and those who do not, as well as the distribution of direct reports. Table 5.5 displays the count of respondents who have direct reports.

Table 5.4. Manager / Supervisor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	29,5	29,5	29,5
	No	74	70,5	70,5	100,0
	Total	105	100,0	100,0	

Figure 5.4 Distribution manager / supervisor

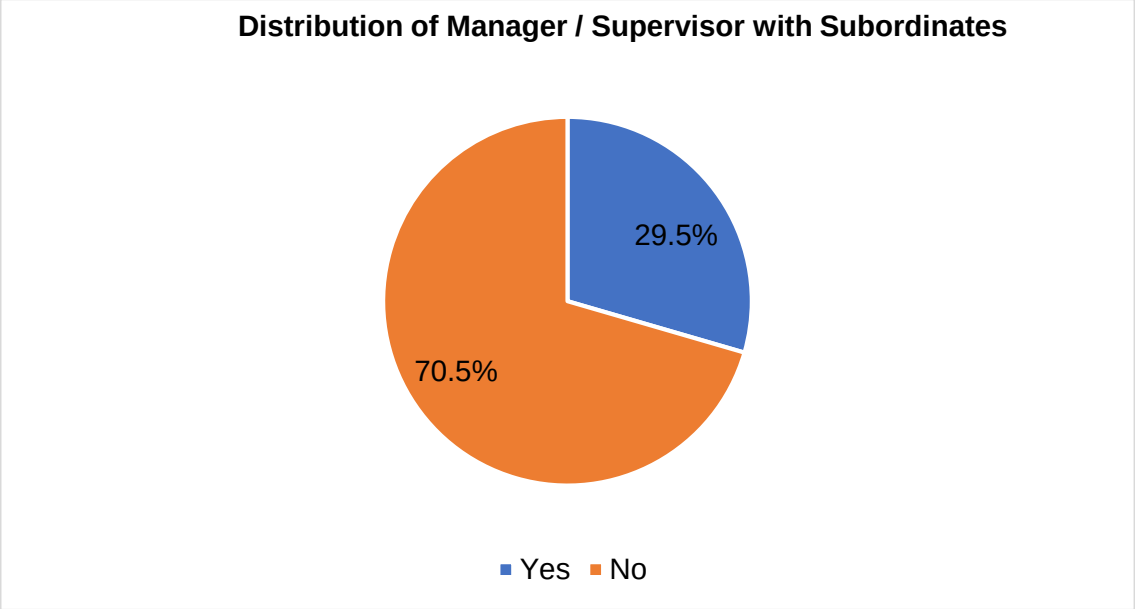


Table 5.5 Manager with Subordinates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	100,0	100,0	100,0

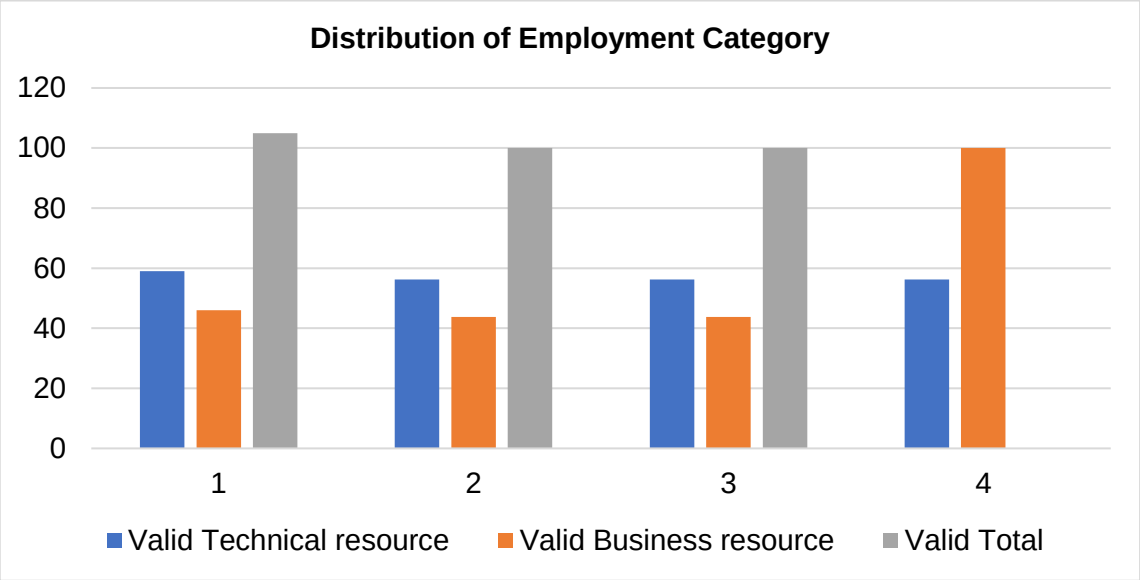
5.4.5 Employment category

As mentioned above in the previous sections, data was gathered from employees who work in IT departments and other related business units within the South African banking industry. The next question in the survey asked the respondents to specify whether they identify as technical resources or business resources. The goal is to classify the respondents to determine which category is most impacted by digitalisation and automation in the workplace. Based on the results presented in table 5.6 and figure 5.5 below, it can be observed that there is a relatively balanced distribution of both technical and business resources. Technical resources accounted for 56,2% of the total, while business resources made up the remaining 43,8%.

Table 5.6 Employment category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Technical resource	59	56,2	56,2	56,2
	Business resource	46	43,8	43,8	100,0
	Total	105	100,0	100,0	

Figure 5.5 Distribution of Employment category



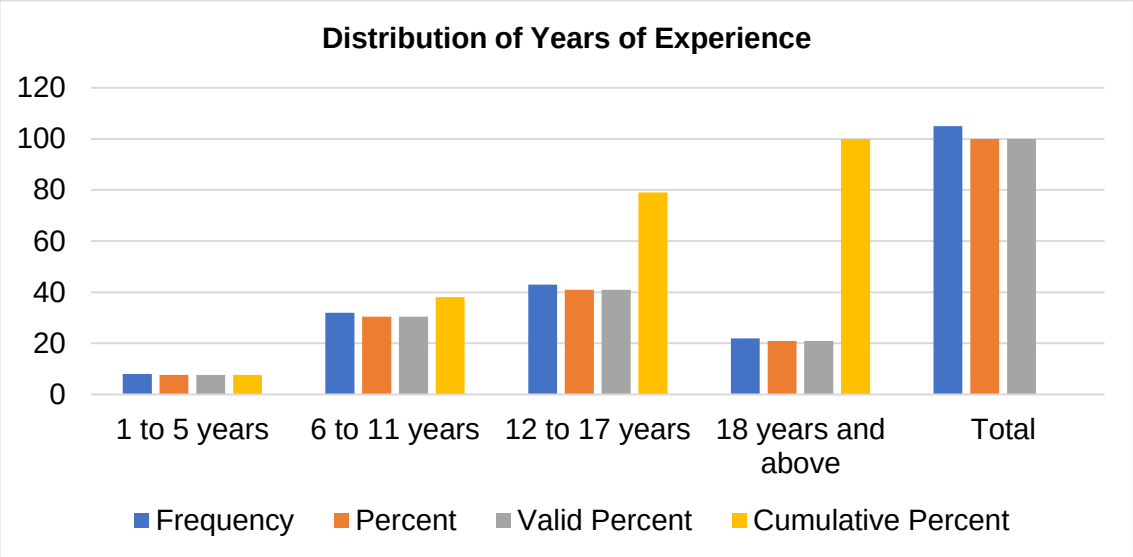
5.4.6 Years of experience

One of the critical questions asked of the respondents was to indicate the number of years they have been employed. Although the study did not specifically focus on examining various generations and their attitudes towards digitalisation and automation in the workplace, it was still crucial to consider whether the number of years of experience affects how employees react to the impacts of digitalisation and automation in terms of workplace engagement and psychological well-being. Table 5.7 and figure 5.6 display the distribution of the number of years of experience among the respondents. It is worth noting that the distribution appears to be relatively balanced.

Table 5.7 Years of experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 to 5 years	8	7,6	7,6	7,6
	6 to 11 years	32	30,5	30,5	38,1
	12 to 17 years	43	41,0	41,0	79,0
	18 years and above	22	21,0	21,0	100,0
	Total	105	100,0	100,0	

Figure 5.6 Distribution of years of experience



5.4.7 Employer

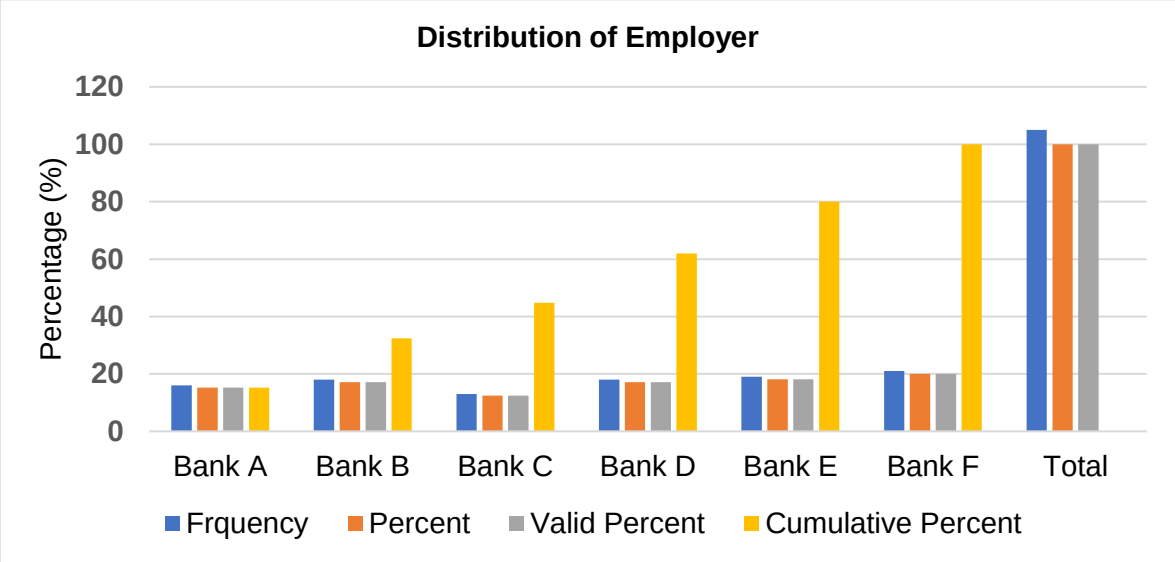
The penultimate question in section A under the demographics requested the respondents to indicate their employment by choosing the company they are working for withing the South African banking industry. To accommodate the limitations imposed by time restrictions, the study purposefully selected six retail banking companies functioning within the industry. These companies were chosen as a suitable means to distribute the survey to their employees, who constituted the sample from which the data was collected. The findings indicate that the selected companies exhibited a generally equal distribution of answers. Table 5.8 and figure 5.7 depict the respective representations. To protect the confidentiality of the companies and respondents, the companies were identified using the following acronyms: **BANK A, BANK B, BANK C, BANK D, BANK**

E, and BANK F. The acronyms provided in the research instrument attached as appendix B below correspond to the actual bank names.

Table 5.8: Employer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bank A	16	15,2	15,2	15,2
	Bank B	18	17,1	17,1	32,4
	Bank C	13	12,4	12,4	44,8
	Bank D	18	17,1	17,1	61,9
	Bank E	19	18,1	18,1	80,0
	Bank F	21	20,0	20,0	100,0
	Total	105	100,0	100,0	

Figure 5.7 Distribution of employer



5.5 Sections pertaining to the research questions and hypotheses

The following sections present the **descriptive statistic results** per the research questions. Each section comprised of various sub-questions **(Appendix B)** that are related to the research questions outlined in chapter one and chapter three.

5.5.1 Strategic leadership: effect on employees' psychological well-being

Section B of the research instruments comprised ten sub-questions that inquire about the role and influence of strategic leadership in the South African banking industry during the era of digitalisation and automation. The sub-questions were itemised as follows: B1, B2, B3, B4, B5, B6, B7, B8, B9, and B10. These sub-questions were linked to the first research and the first research hypothesis in chapter one and chapter three, respectively.

RQ1: What are leaders in the banking industry doing to enable employees' psychological well-being in the workplace in the era of digitalisation and automation?

Based on the findings presented in table 5.9, it can be observed that sub-questions B1, B5, and B2 have the highest mean scores of 4.69, 4.63, and 4.55, respectively. These results indicate that the respondents strongly agreed that strategic leadership plays a crucial role in creating a clear vision, providing guidance and direction, and fostering an optimistic perspective on digitalisation and automation. When considering the mode, the majority of respondents strongly agreed. Standard deviations were small, indicating agreement among the respondents.

Item B1 represents a standard deviation of ***0,625.***

Item B5 represents a standard deviation of ***0,593.***

Item B2 represents a standard deviation of ***0,679****.*

Table 5.9 Strategic leadership effects on psychological well-being

Statistics

	N							
	Valid	Missing	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
B1	105	0	4,69	5,00	5	0,625	2	5
B5	105	0	4,63	5,00	5	0,593	3	5
B2	105	0	4,55	5,00	5	0,679	2	5
B9	105	0	4,50	5,00	5	0,709	3	5
B3	105	0	4,46	5,00	5	0,785	2	5
B10	105	0	4,39	5,00	5	0,893	1	5
B6	105	0	3,54	4,00	4	1,177	1	5
B8	105	0	3,37	4,00	4	1,179	1	5
B4	105	0	3,16	4,00	4	1,324	1	5
B7	105	0	2,81	3,00	4	1,373	1	5

5.5.2 Strategic leadership's effect on workplace engagement

The research instruments included Section C, which consisted of seven sub-questions identified as C1, C2, C3, C4, C5, C6, and C7. The aforementioned items were associated with research question two and hypotheses two, as presented in chapter one and chapter three, respectively.

RQ2: What strategies are strategic leaders employing to ensure workplace engagement during the era of digitalisation and automation within the South African banking industry?

According to the results in table 5.10, it can be observed that item C3, C1, and C5 have the highest mean scores of 4.68, 4.55, and 3.93 respectively. The data indicates that most of the respondents are divided between agreeing and strongly agreeing with the following statements: strategic leadership fosters a culture of continuous learning, effectively communicates the advantages of digitalisation and automation, and offers timely and relevant feedback on employees' performance in relation to digitalisation and automation. This observation demonstrates a balanced distribution between the responses of agree and strongly agree, as shown by the mode. Standard deviations were small, indicating agreement among the respondents.

*Item C3 represents a standard deviation of **0,509.***

*Item C1 represents a standard deviation of **0,679.***

*Item C5 represents a standard deviation of **1,012**.*

Table 5.10 Strategic leadership effects on workplace engagement

Statistics

	N							
	Valid	Missing	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
C3	105	0	4,68	5,00	5	0,509	3	5
C1	105	0	4,55	5,00	5	0,679	2	5
C5	105	0	3,93	4,00	4	1,012	1	5
C7	105	0	3,92	4,00	5	1,124	1	5
C4	105	0	3,34	4,00	4	1,223	1	5
C6	105	0	3,31	4,00	4	1,266	1	5
C2	105	0	2,76	2,00	2	1,390	1	5

5.5.3 Digitalisation's effect on psychological well-being

Section D included five sub-questions labeled as D1, D2, D3, D4, and D5. The section inquired about how digitalisation impacts the psychological well-being of employees; these were linked with research question three and hypotheses presented in chapter one and chapter three, respectively.

RQ3: What are the effects of digitalisation on employees' psychological well-being.

According to the data presented in table 5.11 below, it is evident that items D1, D5, and D4 have the highest mean scores of 4.34, 4.08, and 3.97, respectively. These results indicate that a majority of the respondents agree and followed up by those strongly agree that digitalisation and automation have an impact on their psychological well-being.

Item D1 represents a standard deviation of ***0,928.***

Item D5 represents a standard deviation of ***0,968.***

Item D4 represents a standard deviation of ***0,882****.*

Table 5.11 Digitalisation effects on psychological well-being

Statistics

	N							
	Valid	Missing	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
D1	105	0	4,34	5,00	5	0,928	1	5
D5	105	0	4,08	4,00	4	0,968	1	5
D4	105	0	3,97	4,00	4	0,882	1	5
D3	105	0	3,92	4,00	4	0,937	1	5
D2	105	0	3,87	4,00	5	1,256	1	5

5.*5.4 Digitalisation's effect on workplace engagement*

The final section of the research instruments, Section E, consists of five sub-questions labeled E1, E2, E3, E4, and E5. These sub-questions are related to research question four and hypotheses four, which are presented in chapter one and chapter three, respectively.

RQ4: What is the role of human resources managers within the South African banking industry in terms of facilitating employees' acceptance of digitalisation and automation in the workplace?

Table 5.12 below illustrates a strong consensus among the respondents, indicating strong agreement that HR managers play a crucial role in adequately preparing employees for the implementation of digitalisation and automation initiatives. Furthermore, the data suggests that HR departments are actively developing suitable frameworks for skills development, aimed at equipping employees with the necessary competencies for digitalisation and automation. Moreover, the participants express a high level of agreement regarding the role of HR departments in fostering employee motivation. This is according to the results achieved through the implementation of several strategies, including the provision of bonuses, competitive salaries, and comprehensive benefits. These initiatives are crucial in facilitating the attainment of the organisation's digitalisation and automation objectives. The mean scores for item E1, item E5, and item E2 are 4.64, 4.60, and 4.50, respectively.

Item E1 represents a standard deviation of ***0,695.***

Item E5 represents a standard deviation of ***0,729.***

Item E2 represents a standard deviation of ***0,952****.*

Table 5.12 Digitalisation effects on workplace engagement

Statistics

	N							
	Valid	Missing	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
E1	105	0	4,64	5,00	5	0,695	2	5
E5	105	0	4,60	5,00	5	0,729	2	5
E2	105	0	4,50	5,00	5	0,952	1	5
E3	105	0	4,44	5,00	5	0,843	2	5
E4	105	0	2,09	2,00	1	1,202	1	5

5.6 Factor analysis

The following section presents the results of the EFA for each section of the research instrument, beginning with section B. The study employed a factor analysis technique to ascertain the underlying factors associated with the variables of a questionnaire designed to assess employees' perceptions of strategic leaders' management and

handling of employees' concerns and challenges in the context of digitalisation and automation.

The study employed the Kaiser-Meyer-Olkin measure of sample adequacy (MSA) and Bartlett's test of Sphericity to assess the factorability of the data. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in the variables that could be attributed to underlying factors (Li et al., 2020). Values that are close to 1,0 generally suggest that conducting a factor analysis with the tested data may be beneficial. If the value of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is less than 0,60, the results of the factor analysis likely indicate a weak correlation (Li et al., 2020). Therefore, such values should be omitted when testing for the overall results.

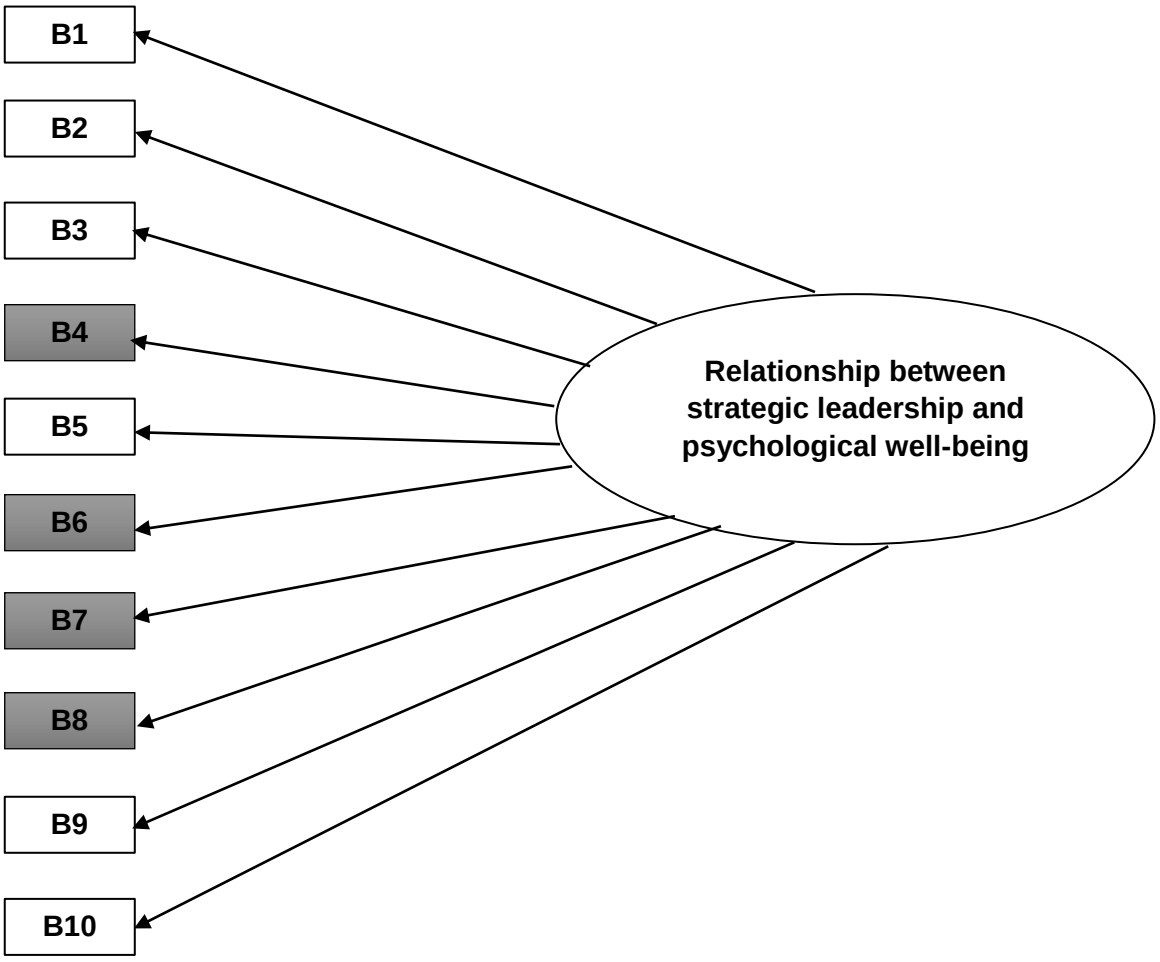
The study also tested for communality to establish factor analysis as a numerical measure of the extent to which the factor model captures the variation of an item (Eaton et al., 2019). Communality is a measure of the extent to which an indicator is influenced by common factors (Grieder & Steiner, 2021). It represents the proportion of variance in the item that can be explained by these shared factors. In other words, communality indicates the strength of the relationship between the item and other items being considered (Grieder & Steiner, 2021). Previous research has proposed that communalities ranging from 0,25 to 0,4 are considered appropriate cutoff values, while communalities of 0,7 or above are regarded as optimal (Eaton et al., 2019).

The calculation of determinant scores was conducted to assess the degree of communality among the variables. Additionally, the determination of the number of components to be retrieved in all sections were conducted by examining total variance, communalities, and the scree plot. Finally, the varimax rotation approach was utilised in all sections to minimise the presence of variables with high loadings on each factor.

5.6.1 EFA: Strategic leadership and psychological well-being

Section B included ten items, which are shown in figure 5.8 below. In Section B, a factor analysis technique was used to determine the underlying factors related to the variables in a questionnaire. This questionnaire was designed to measure employees' perceptions of the relationship between strategic leaders and their psychological well-being. Appendix B illustrates the contents of section B.

Figure 5.8 Section B Items



Source: Author's own

Based on the rules of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and communalities stated above, the highlighted items above were omitted from the factor analysis as they violated these rules as represented in table 5.13 below

Table 5.13 Section B omitted items

Item	Test	Score
B4	MSA	**0,586**
B6	MSA	**0,554**
B7	MSA	**0,540**
B8	Communality	**0,107**

Items B4, B6, and B7 were excluded from the analysis due to their MSA scores falling below the acceptable threshold of 0,60. Furthermore, it should be noted that item B8 has been excluded from the analysis. This decision was made based on its communality value of 0,107, which falls below the established threshold of 0,25. The researchers assumed that the lack of correlation between these items and the remaining items was likely due to the way respondents interpreted the study instruments in relation to the omitted items.

Table 5.14 Section B correlation matrix

Correlation Matrix							
		B1	B2	B3	B5	B9	B10
Correlation	B1	1,000	0,685	0,551	0,253	0,513	0,308
	B2	0,685	1,000	0,785	0,395	0,554	0,259
	B3	0,551	0,785	1,000	0,472	0,566	0,278
	B5	0,253	0,395	0,472	1,000	0,451	0,313
	B9	0,513	0,554	0,566	0,451	1,000	0,415
	B10	0,308	0,259	0,278	0,313	0,415	1,000

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was employed to assess the appropriateness of the data for doing factor analysis (Shrestha, 2021). To assess the suitability of the dataset for factor analysis, several statistical measures were generated, including Bartlett's test of Sphericity, the correlation matrix, and the total variance (Shrestha, 2021). According to table 5.14, the correlation matrix shows that there is enough correlation to support the use of factor analysis (Shrestha, 2021). The correlation matrix indicates that there are many items with inter-correlations greater than 0,3 between the variables. Based on this, the study can conclude that the intended factor model seems to be appropriate (Shrestha, 2021).

Table 5.15 Section B KMO and Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,799
Bartlett's Test of Sphericity	Approx. Chi-Square	266,412
	df	15
	Sig.	<,001

The KMO Measure of Sampling Adequacy for the data presented in table 5.15 is 0,799, above the acceptable threshold of 0,60. Additionally, the Sig. p-value associated with this measure is less than **<0,001**, which is well within the acceptable threshold of **<0,005** (Grieder & Steiner, 2021). This finding provides evidence for the factorability of the correlation matrix (Li et al., 2020).

Table 5.16 Section B diagonal anti-image matrices

Anti-image Matrices

Anti-image Correlation

	B1	B2	B3	B5	B9	B10
B1	,809[a]	-0,460	0,008	0,117	-0,194	-0,138
B2	-0,460	,734[a]	-0,599	-0,046	-0,085	0,063
B3	0,008	-0,599	,779[a]	-0,218	-0,174	-0,009
B5	0,117	-0,046	-0,218	,847[a]	-0,213	-0,159
B9	-0,194	-0,085	-0,174	-0,213	,875[a]	-0,246
B10	-0,138	0,063	-0,009	-0,159	-0,246	,824[a]

a. Measures of Sampling Adequacy(MSA)

Tables 5.16 and 5.17 presented above and below, respectively, display the factor loading, diagonal anti-image correlation, and communality values following the extraction process (Shrestha, 2021). The concept of diagonal anti-image correlation expands the study understanding of the sufficiency of sampling for each individual item. The communalities represent the shared variance within the dataset following the extraction of variables (Shrestha, 2021). The factor loading values indicate the extent to which each item is associated with the underlying factors (Shrestha, 2021).

Table 5.16 presents the MSA (Measurement of Sampling Adequacy) values pertaining to the anti-image correlation. These values exceeded the threshold of 0,70, which is significantly higher than the acceptable criterion of 0,60. Consequently, there was no necessity to exclude any additional items, suggesting that a factor analysis is appropriate.

Tables 5.17 Section B communalities matrix

Communalities		
	Initial	Extraction
B1	0,510	0,489
B2	0,711	0,736
B3	0,659	0,695
B5	0,297	0,272
B9	0,461	0,525
B10	0,207	0,174
Extraction Method: Principal Axis Factoring.		

As previously mentioned, Eaton et al. (2019) established that a communality value of at least 0,25 is considered appropriate. Table 5.17 presented the communality values, all of which exceed the acceptable threshold of 0,25. However, item B10 falls below this threshold with a value of 0,174. Despite this, it was retained in the analysis due to its substantial MSA value of 0,824, which ranks it as the third highest in table 5.16. Additionally, the proximity of 0,174 to the threshold of 0,25 was considered when making this decision. The table demonstrates the presence of a common variance among the items.

Table 5.18 Section B total variance explained

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**3,334**	55,567	**55,567**	2,890	48,175	48,175
2	0,909	15,157	70,724			
3	0,734	12,236	82,960			
4	0,447	7,450	90,410			
5	0,391	6,510	96,919			
6	0,185	3,081	100,000			
Extraction Method: Principal Axis Factoring.						

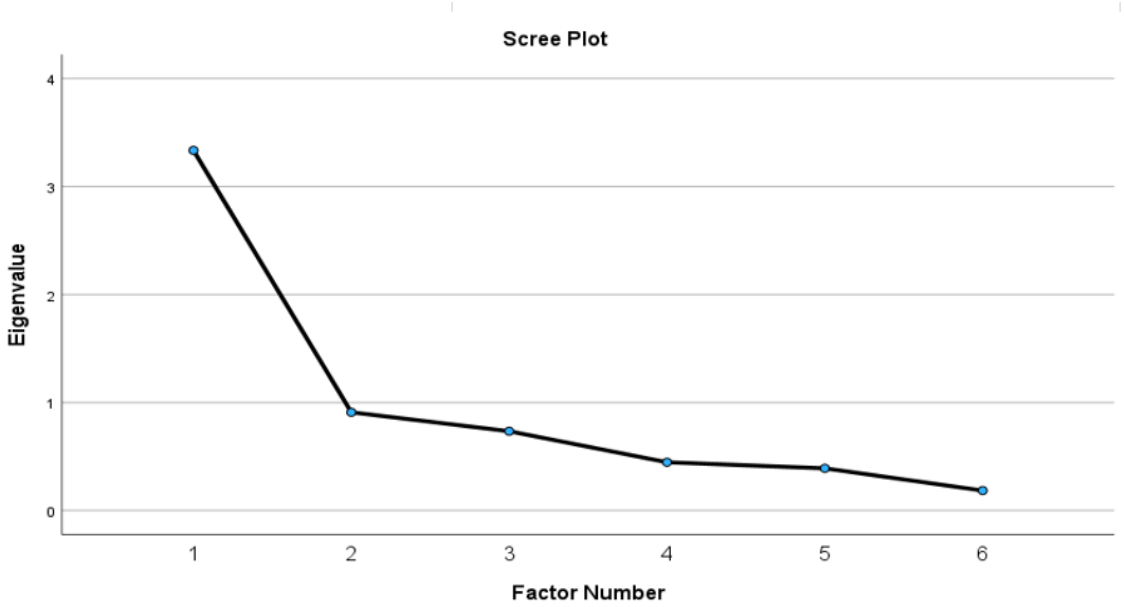
Theoretically, based on the findings presented in table 5.18, it is evident that the PAF technique yielded the extraction of a single factor. This assertion is substantiated by the observation that all items inside the section B were predominantly focused on measuring

the same construct, without of any additional sub-questions or sub-sections that inquired about different elements.

According to Shrestha (2021) the eigenvalue of a factor indicates the proportion of the total variance that is accounted for by that factor. In factor analysis, the significant factors that have an eigenvalue greater than one are retained (Shrestha, 2021). The reasoning behind this rule is sound. An eigenvalue that is greater than one is considered to be significant. It indicates that the factor explains more common variance than unique variance (Shrestha, 2021).

According to table 5.18, one factor was extracted empirically. This factor has an eigenvalue of 3,334, which is greater than one. It accounts for 55,57% of the variance, indicating the presence of common variance.

Figure 5.9 Section B Scree Plot



The scree plot is a graphical representation that displays the magnitudes of eigenvalues on the vertical axis, while the horizontal axis represents the corresponding numbers assigned to each eigenvalue (Shrestha, 2021). The eigenvalues are represented as discrete points on the graph, with a line connecting each consecutive value. The process of factor extraction should be halted when a noticeable "elbow" or peak is observed in the plot (Shrestha, 2021).

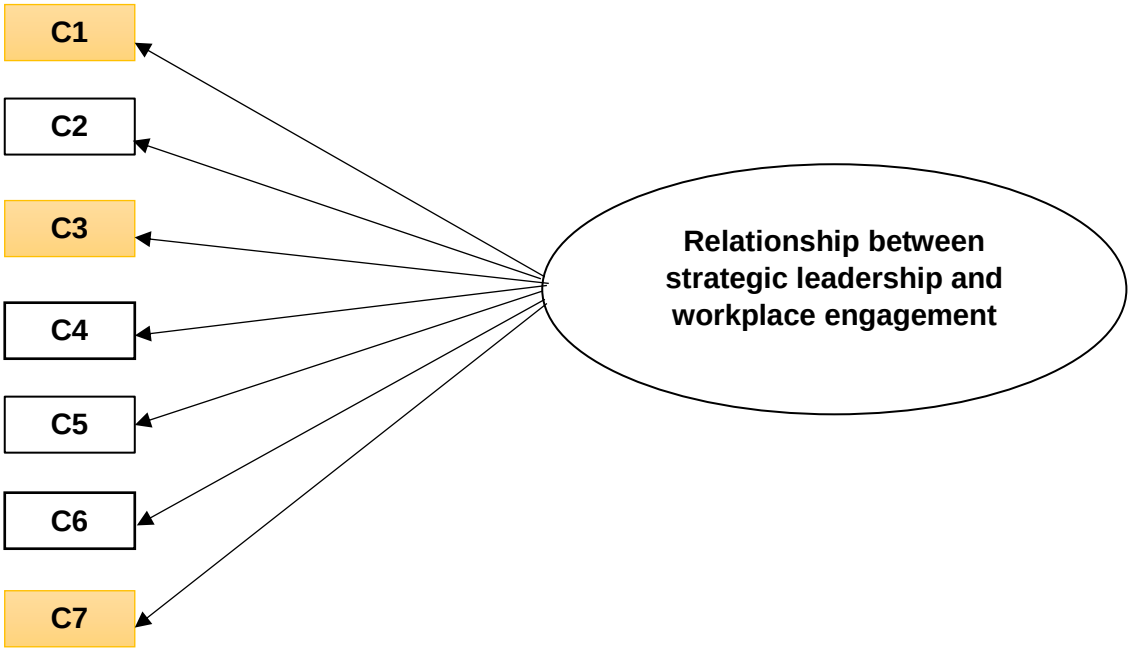
Table 5.19 Section B factor matrix

		Factor
		1
Item	**Research instrument**	**loading**
B2	The strategic leaders in my organisation provide clear guidance and direction on the adjustments required in response to digitalisation and automation processes.	**0,858**
B3	The strategic leaders in my organisation reward employees for their ability to adapt to digitalisation and automation.	**0,833**
B9	The strategic leaders in my organisation prioritise addressing employees' concerns about job security in relation to digitalisation and automation.	**0,725**
B1	The strategic leaders in my organisation create a clear vision and set objectives that align with the successful implementation of digitalisation and automation initiatives in our institution.	**0,699**
B5	The strategic leaders in my organisation actively promote an optimistic perspective on digitalisation and automation.	**0,522**
B10	My immediate supervisor supports employees in managing stress and anxiety related to digitalisation and automation.	**0,417**
Extraction Method: Principal Axis Factoring.		
a. 1 factor extracted. 5 iterations required.		
Rotated Factor Matrix[a] a. Only one factor was extracted. The solution cannot be rotated.		

5.6.2 EFA: Strategic leadership and workplace engagement

Section C consisted of seven items, as depicted in figure 5.10 below. In Section C, the study employed a factor analysis technique to identify the underlying factors associated with the variables in the questionnaire. The purpose of this questionnaire was to assess employees' perceptions of the connection between strategic leaders and workplace engagement during the digitalisation era. Appendix B provides an illustration of the contents found in section C.

Figure 5.10 Section C Items



Source: Author's own

The items highlighted in figure 5.10 above, were omitted from the factor analysis due to their violation of the rules of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and mentioned earlier. Table 5.20 shows the MSA scores of the items that were omitted indicating their score of below 0,60.

Table 5.20 Section C omitted items

Item	Test	Score
C1	MSA	**0,536**
C3	MSA	**0,438**
C7	MSA	**0,494**

Items C1, C3, and C7 were omitted from the factor analysis due to their MSA scores falling below the acceptable threshold of 0,60. The researcher assumed that the low MSA scores on these items could be attributed to the respondents' interpretation of the study instruments pertaining to the omitted items.

Table 5.21 Section C correlation matrix

Correlation Matrix					
		C2	C4	C5	C6
Correlation	C2	1,000	0,416	0,200	0,360
	C4	0,416	1,000	0,415	0,340
	C5	0,200	0,415	1,000	0,324
	C6	0,360	0,340	0,324	1,000

Based on the findings presented in table 5.21, the correlation matrix provides sufficient evidence to justify the application of factor analysis in this study (Shrestha, 2021). The correlation matrix reveals a substantial number of items exhibiting inter-correlations exceeding 0,3 among the variables. Based on the findings of this study, it can be inferred that the proposed factor model appears to be suitable (Shrestha, 2021).

Table 5.22 Section C KMO and Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,682
Bartlett's Test of Sphericity	Approx. Chi-Square	62,745
	df	6
	Sig.	<,001

The KMO Measure of Sampling Adequacy for the data provided in Table 5.22 exhibits a value of 0,68, surpassing the permissible threshold of 0,60. Furthermore, the statistical significance p-value linked to this metric is **<0,001**, which falls comfortably under the acceptable level of **<0,005** (Grieder & Steiner, 2021). The study conducted by Li et al. (2020) offers empirical support for the factorability of the correlation matrix in such instance.

Table 5.23 Section C diagonal anti-image matrices

Anti-image Matrices

Anti-image Correlation

	C2	C4	C5	C6
C2	,669[a]	-0,323	0,022	-0,254
C4	-0,323	,664[a]	-0,331	-0,136
C5	0,022	-0,331	,671[a]	-0,213
C6	-0,254	-0,136	-0,213	,731[a]

a. Measures of Sampling Adequacy(MSA)

The MSA (Measurement of Sampling Adequacy) values of section C related to the anti-image correlation are displayed in table 5.23 The observed values surpassed the designated threshold of 0,60, slightly exceeding the prescribed criterion of 0,60. Notably, item C6 exceeded the threshold by reaching a value above 0,70. Therefore, there was no need to remove any further items, indicating that a factor analysis is suitable.

Table 5.24 Section C communalities matrix

Communalities

	Initial	Extraction
C2	0,227	0,303
C4	0,300	0,508
C5	0,210	0,272
C6	0,211	0,316

Extraction Method: Principal Axis Factoring.

The communality values, as shown in table 5.24, surpass the minimum threshold of 0,25. No item fell below the threshold of 0,25. Therefore, the table illustrates the existence of a shared variance among the items.

Table 5.25 Section C total variance explained

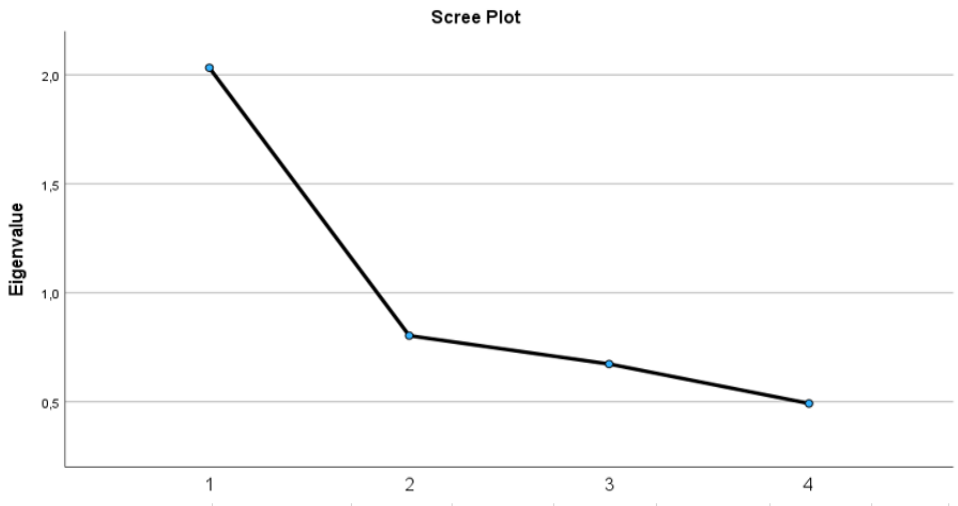
Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**2,032**	50,810	**50,810**	1,400	34,997	34,997
2	0,803	20,073	70,883			
3	0,673	16,821	87,705			
4	0,492	12,295	100,000			

Extraction Method: Principal Axis Factoring.

Based on the findings reported in table 5.25, the PAF technique resulted in the extraction of a solitary factor, as per theoretical considerations. The validity of this claim is supported by the fact that all parts within section C primarily aimed to assess the same underlying concept, without any supplementary sub-questions or sub-sections addressing distinct factors. Therefore, based on the findings, a single factor was retrieved by empirical analysis. The eigenvalue associated with this factor is 2,03, indicating that it exceeds the acceptable value of one. The observed variance amounts to 50,81%, suggesting the existence of shared variance.

Figure 5.11 Section C scree plot



The eigenvalues associated with section C are depicted as discrete data points on the graph, with each subsequent value connected by a line.

Table 5.26 Section C factor matrix

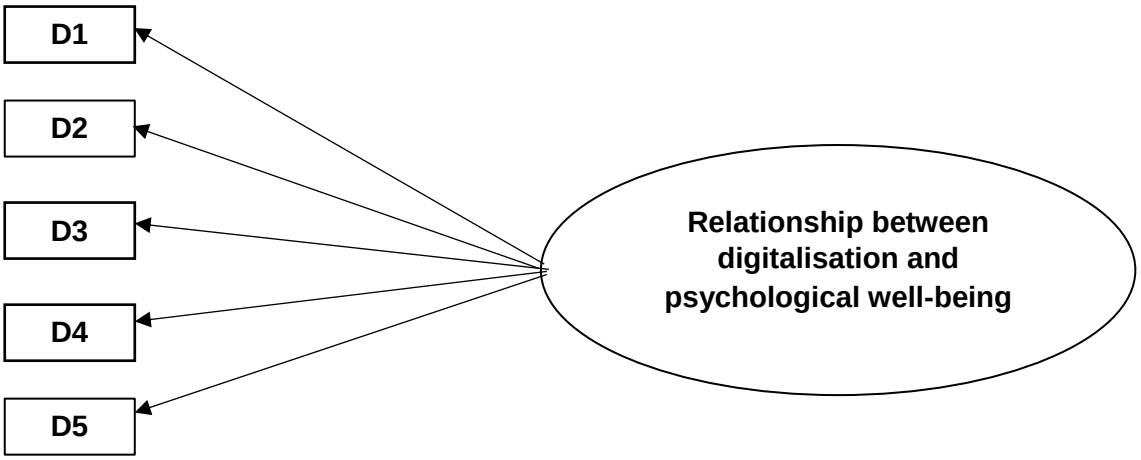
		Factor
		1
Item	**Research instrument**	**loadings**
C4	The strategic leaders in my organisation encourage employees to openly communicate their concerns and challenges regarding the processes of digitalisation and automation.	**0,713**
C6	In the context of digitalisation and automation, the strategic leaders in my organisation cultivate a work environment that promotes collaboration that encompasses the sharing of knowledge.	**0,562**
C2	The strategic leaders in my organisation involve employees in the decision-making process regarding digitalisation and automation.	**0,550**
C5	The strategic leaders in my organisation ensure that employees receive timely and relevant feedback on their performance concerning digitalisation and automation.	**0,522**
Extraction Method: Principal Axis Factoring.		
a. 1 factor extracted. 10 iterations required.		
Rotated Factor Matrix[a] a. Only one factor was extracted. The solution cannot be rotated.		

5.6.3 EFA: Digitalisation and psychological well-being

Section D comprised of five items, as illustrated in figure 5.12 provided below. In Section D, the study utilised a factor analysis technique to ascertain the fundamental factors linked to the variables in the questionnaire. The objective of this questionnaire was to evaluate employees' perspectives on the correlation between digitalisation and psychological well-being in the current era of digitalisation. Appendix B presents a visual representation of the contents of section D.

No items were removed from the section D, indicating that all items returned an MSA score of 0,60 or higher, which is considered an acceptable value.

Figure 5.12 Section D Items



Source: Author's own

Table 5.27 Section D correlation matrix

Correlation Matrix

		D1	D2	D3	D4	D5
Correlation	D1	1,000	0,608	0,594	0,540	0,399
	D2	0,608	1,000	0,620	0,448	0,349
	D3	0,594	0,620	1,000	0,707	0,346
	D4	0,540	0,448	0,707	1,000	0,318
	D5	0,399	0,349	0,346	0,318	1,000

According to the findings presented in table 5.27, the correlation matrix offers comprehensive evidence to support the utilisation of factor analysis in this study (Shrestha, 2021). The correlation matrix displays the items in section D exceeding 0,3. According to the findings of the study conducted by Shrestha (2021), it can be deduced that the proposed factor model demonstrated suitability.

Table 5.28 Section D, KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,791
Bartlett's Test of Sphericity	Approx. Chi-Square	205,839
	df	10
	Sig.	<,001

The KMO Measure of Sampling Adequacy for the data presented in table 5.28 demonstrates a value of 0,79, which exceeds the acceptable threshold of 0,60. Additionally, the statistical significance p-value associated with this metric is <,001, which is well below the acceptable threshold of <,005 (Grieder & Steiner, 2021). The study conducted by Li et al. (2020) provides empirical evidence supporting the factorability of the correlation matrix in this particular case.

Table 5.29 Section D diagonal anti-image matrices

Anti-image Matrices

Anti-image Correlation

	D1	D2	D3	D4	D5
D1	,838[a]	-0,358	-0,148	-0,205	-0,187
D2	-0,358	,793[a]	-0,369	0,076	-0,100
D3	-0,148	-0,369	,746[a]	-0,548	-0,045
D4	-0,205	0,076	-0,548	,756[a]	-0,067
D5	-0,187	-0,100	-0,045	-0,067	,907[a]

a. Measures of Sampling Adequacy(MSA)

The Measurement of Sampling Adequacy (MSA) values pertaining to section C, specifically in relation to the anti-image correlation, can be found in table 5.29. The observed values exceeded the designated threshold of 0,60, surpassing the prescribed criterion of 0,60. It is worth mentioning that item D5 surpassed both the item average and the predetermined threshold by attaining a value greater than 0,90. Consequently, it was unnecessary to exclude any items from section D, suggesting that a factor analysis was appropriate.

Table 5.30 Section D communalities matrix

Communalities

	Initial	Extraction
D1	0,492	0,586
D2	0,481	0,520
D3	0,625	0,727
D4	0,526	0,528
D5	0,188	0,210

Extraction Method: Principal Axis Factoring.

The values of communality, as presented in table 5.30 above, exceed the acceptable threshold of 0,25. With the exception of item D5, which has a value of 0,21, below the threshold of 0,25, but it was included based on its higher MSA value of 0,91, as indicated in table 5.29. Hence, the table demonstrates the presence of a common variance among the items.

Table 5.31 Section D total variance explained

Total Variance Explained

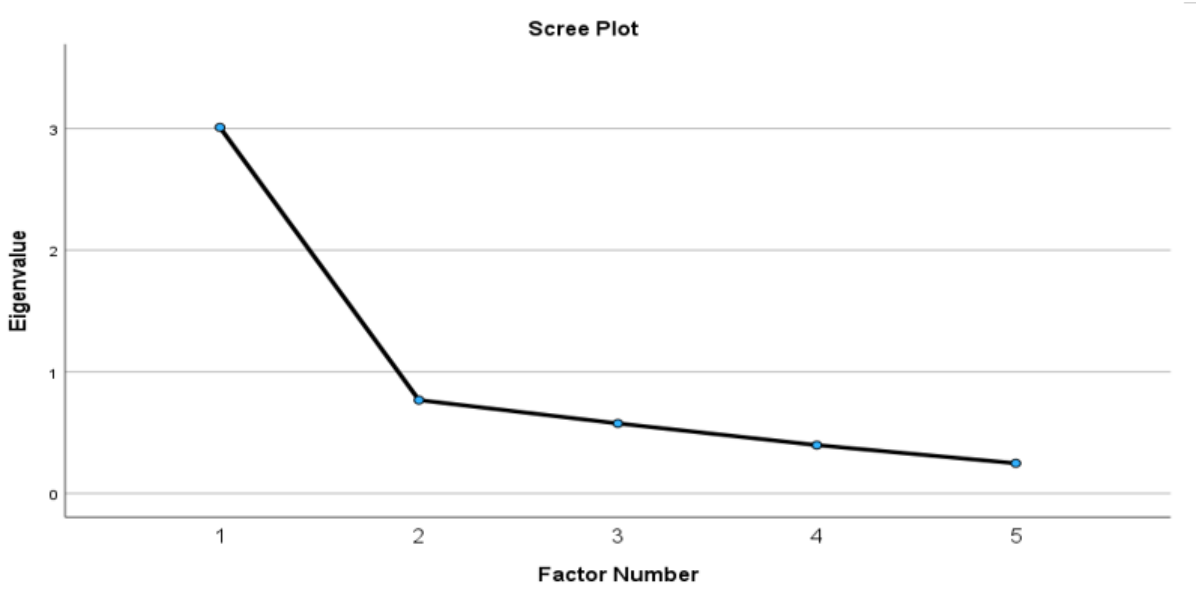
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**3,010**	60,194	**60,194**	2,572	51,439	51,439
2	0,768	15,358	75,552			
3	0,576	11,523	87,075			
4	0,398	7,956	95,031			
5	0,248	4,969	100,000			

Extraction Method: Principal Axis Factoring.

Based on the findings presented in table 5.31, it is evident that the PAF method yielded the extraction of a single factor, in accordance with theoretical considerations. The claim's validity is substantiated by the observation that all components within section D are primarily focused on evaluating the same underlying concept, without any additional sub-questions or subsections addressing separate factors.

The eigenvalue associated with this factor is 3,01, which surpassed the acceptable threshold of one. The observed variance was calculated to be 60,19%, indicating shared variance.

Figure 5.13 Section D scree plot



The eigenvalues corresponding to section D are presented as discrete data points on the graph, with each successive value connected by a line.

Table 5.32 Section D factor matrix

		Factor
		1
Item	**Research instrument**	
D3	Digitalisation and automation have equipped me with new skills through the acquisition of knowledge in emerging technologies, thereby enhancing my preparedness for future employment.	**0,853**
D1	My immediate supervisor supports employees in managing stress and anxiety related to digitalisation and automation.	**0,766**
D4	As an employee, I tend to resist digitalisation and automation initiatives.	**0,727**
D2	The rise of digitalisation and automation has generated concerns among employees about job security, increasing levels of stress and anxiety among us.	**0,721**
D5	I perceive digitalisation and automation initiatives as inclusive, offering opportunities to individuals from diverse backgrounds.	**0,458**
Extraction Method: Principal Axis Factoring.		
a. 1 factors extracted. 6 iterations required.		

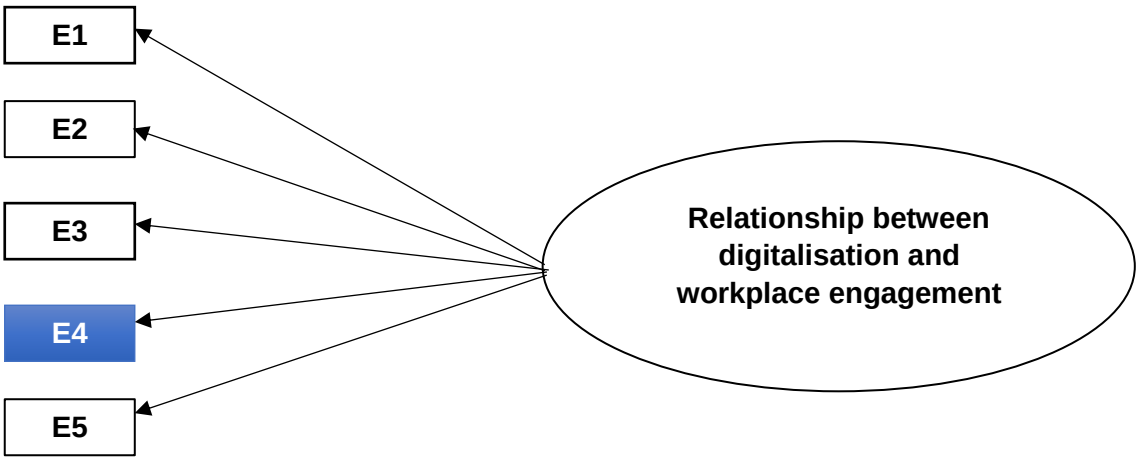
Rotated Factor Matrix[a]

a. Only one factor was extracted. The solution cannot be rotated.

5.6.4 EFA: Digitalisation and workplace engagement

Section E consisted of a total of five items, as depicted in figure 5.14 below. In Section E, the study employed a factor analysis technique to determine the underlying factors associated with the variables in the questionnaire. The purpose of this questionnaire was to assess employees' viewpoints on the relationship between digitalisation and workplace engagement in the current digital era. Appendix B provides a tabular depiction of the materials included in section E.

Figure 5.14 Section E Items



Source: Author's own

The item highlighted in blue above was excluded from the factor analysis due to its violation of the rules outlined in the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and communalities, as indicated in table 5.33 below.

Table 5.33 Section E omitted items

Item	Test	Score
E4	MSA	**0,049**

Item E4 was excluded from the factor analysis because its MSA score was below the acceptable threshold of 0,60. The researcher thought that the low MSA score on this item may be due to how the respondents interpreted the item.

Table 5.34 Section E correlation matrix

Correlation Matrix					
		E1	E2	E3	E5
Correlation	E1	1,000	0,550	0,503	0,433
	E2	0,550	1,000	0,338	0,413
	E3	0,503	0,338	1,000	0,304
	E5	0,433	0,413	0,304	1,000

Based on the results presented in table 5.34, the correlation matrix provides strong evidence to support the use of factor analysis in this study (Shrestha, 2021). The correlation matrix shows that the items in section E have inter-correlations that are greater than 0,3. Based on the findings of Shrestha's (2021) study, it can be concluded that the proposed factor model is suitable in this particular case.

Table 5.35 Section E, KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,735
Bartlett's Test of Sphericity	Approx. Chi-	94,781
	df	6
	Sig.	<,001

The KMO Measure of Sampling Adequacy for the data in table 5.35 indicates a value of 0,735, which is higher than the acceptable threshold of 0,60. Furthermore, the statistical significance p-value linked to this metric is less than 0,001, which is significantly lower

than the acceptable threshold of 0,005 (Grieder & Steiner, 2021). The study conducted by Li et al. (2020) offers empirical evidence that supports the factorability of the correlation matrix in this specific case.

Table 5.36 Section E diagonal anti-image matrices

Anti-image Matrices

Anti-image Correlation

	E1	E2	E3	E5
E1	,685[a]	-0,395	-0,372	-0,215
E2	-0,395	,736[a]	-0,062	-0,225
E3	-0,372	-0,062	,753[a]	-0,093
E5	-0,215	-0,225	-0,093	,810[a]

a. Measures of Sampling Adequacy(MSA)

The values for the Measurement of Sampling Adequacy (MSA) related to section E, specifically concerning the anti-image correlation, are available in table 5.36. The observed values have surpassed the designated threshold of 0,60, exceeding the prescribed criterion of 0,60 in a comprehensive manner. It is worth noting that item E5 exceeded both the average value for items and the predetermined threshold by achieving a value greater than 0,80. Therefore, there was no need to exclude any items from section E, indicating that a factor analysis was appropriate.

Table 5.37 Section E communalities matrix

Communalities

	Initial	Extraction
E1	0,443	0,692
E2	0,342	0,443
E3	0,265	0,317
E5	0,238	0,308

Extraction Method: Principal Axis Factoring.

The values of communality, as shown in table 5.37 above, are higher than the acceptable threshold of 0,25. Therefore, there was a shared variance among the items.

Table 5.38 Section E total variance explained

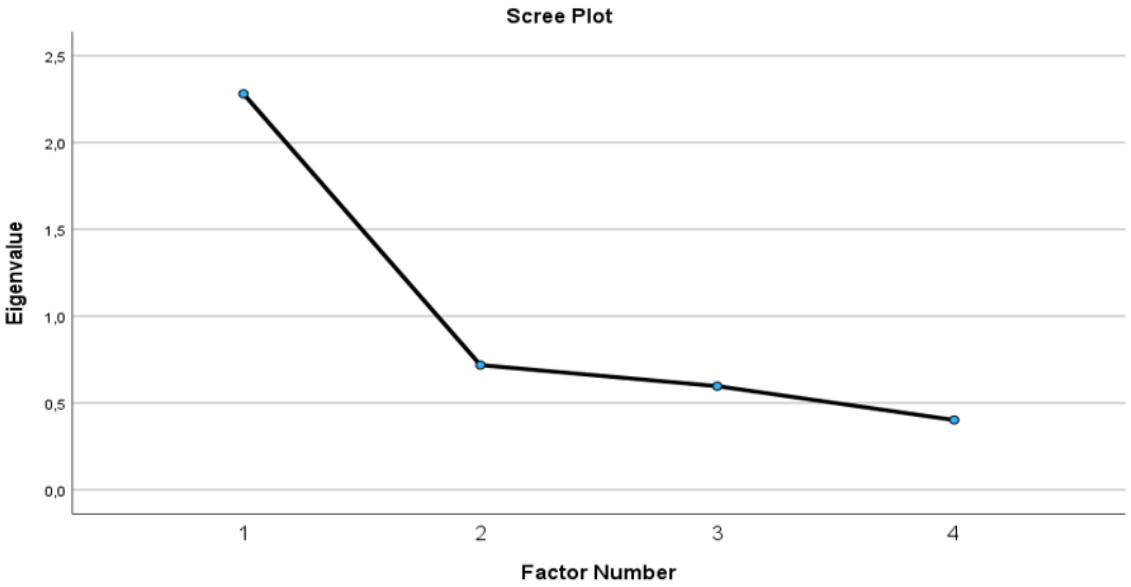
Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**2,281**	57,033	**57,033**	1,761	44,015	44,015
2	0,719	17,972	75,005			
3	0,597	14,934	89,939			
4	0,402	10,061	100,000			

Extraction Method: Principal Axis Factoring.

The findings presented in table 5.38 shows that the PAF method successfully extracted a single factor, which aligns with the theoretical considerations. The claim's validity is supported by the fact that all components in section E primarily focus on evaluating the same underlying concept. There are no additional sub-questions or subsections addressing separate factors. Based on the results, it was concluded that the empirical analysis resulted in a single factor. The eigenvalue associated with this factor is 2,28, which exceeded the acceptable threshold of one. The calculated observed variance is 57,033%, which suggests that there is shared variance present.

Figure 5.15 Section E scree plot



The eigenvalues associated with section E are depicted as discrete data points on the graph, with consecutive values being connected by a line.

Table 5.39 Section E factor matrix

		Factor
		1
Item	**Research instrument**	**loadings**
E1	My organisation's human resources department makes significant efforts to prepare our staff for the introduction of digitalisation and automation.	**0,832**
E2	The HR department of our organisation motivates employees through various methods such as bonuses, salary, and benefits that contribute to the achievement of our organisation's goals and objectives related to digitalisation and automation.	**0,666**
E3	The HR department in my organisation is consistently developing effective communication strategies to facilitate coordination among different departments in order to efficiently manage digitalisation and automation initiatives.	**0,563**
E5	The HR department has created a training framework to address the development of the necessary skills associated with a workforce prepared for digitalisation and automation	**0,555**
Extraction Method: Principal Axis Factoring.		
a. 1 factors extracted. 12 iterations required.		
Rotated Factor Matrix[a] a. Only one factor was extracted. The solution cannot be rotated.		

5.7 Empirical and theoretical reliabilities

The following sections present the empirical and theoretical findings for each section of the research instruments. The sections utilised the Cronbach's Alpha statistical test to assess the reliability of the research instruments. Cronbach's alpha is a statistical measure that ranges from zero to one (Bujang et al., 2018). Higher values indicate that the items being measured are related to the same dimension. On the contrary, if the Cronbach's alpha value is low (close to 0), it indicates that some or all of the items are not effectively measuring the same dimension (Bujang et al., 2018). Many scholars commonly use the value of 0,70 as a benchmark for Cronbach's alpha (Frost, 2022). At this level and beyond, the items consistently demonstrate reliability.

However, it is important to note that certain fields and industries may have varying minimum values (Frost, 2022). A Cronbach's Alpha value of 0,70 or higher was decided to be acceptable for the current study, whereas any value that was lower than 0,70 was regarded as not being suitable and being weak. This decision was made for the benefit of the current study. It is of utmost importance to acknowledge that the empirical Cronbach alpha was calculated without including the omitted items identified during the EFA. Conversely, the theoretical Cronbach alpha was measured by including all items from each section, as illustrated in Appendix B.

5.8 Strategic leadership relationship with psychological well-being

The subsequent sections provide an overview of the empirical and theoretical statistical reliabilities of the research instruments presented in Section B of Appendix B. This analysis specifically examines the correlation between strategic leadership and employee psychological well-being. The relationship in question will be represented as **Factor One**, based on the results of the EFA discussed in the preceding sections. It is important to mention that certain items were omitted during the EFA, and this is evident in the Cronbach's Alpha results in the following sections.

Table 5.40 Factor one empirical and theoretical findings

Empirical Cronbach Alpha	Empirical number of items	Theoretical Cronbach Alpha	Theoretical number of items	Inter-item correlation mean
0,823	6	0,744	10	**0,453**

**** Inter-item correlations will only be considered if the Cronbach alpha is below 0,70 and there are fewer than ten items.***

According to Larsson et al. (2021) when assessing reliability, if the Cronbach alpha value is below 0,70 and there are fewer than ten items, it is recommended to examine the inter-

item correlation mean. In this case, the inter-item correlation value should ideally fall within the range of 0,20 to 0,40 (Larsson et al., 2021).

Table 5.40 presents an overview summary of the empirical and theoretical findings for Factor One. The results clearly indicate a higher empirical Cronbach alpha value of 0,823. Although the theoretical Cronbach alpha value of 0,744 was deemed acceptable, the study opted to use the empirical Cronbach alpha instead. This decision was made because the empirical Cronbach alpha had undergone thorough analysis and testing, making it a more reliable measure in the context of this research. It is worth noting that the empirical Cronbach alpha was tested with only six items.

This suggests that the theoretical Cronbach alpha may not be reliable, as it yielded a lower value even though it was tested with ten items. Additionally, the study did not consider the mean inter-item correlation for **Factor One** due to its higher empirical Cronbach alpha. The output tables for the SPSS reliability statistical tests can be found in Appendix C, providing additional details. Therefore, based on the reliability test, it can be concluded that the study has proven the reliability of the research instruments, and the results can be considered trustworthy.

5.9 Strategic leadership relationship with workplace engagement

The following sections provide an overview of the empirical and theoretical statistical reliabilities of the research instruments presented in Section C of Appendix B. This analysis focuses on exploring the relationship between strategic leadership and workplace engagement. Based on the results of the EFA discussed in the preceding sections, the relationship in question will be represented as **Factor Two**. It is worth noting that specific items were omitted during the EFA. This can be observed in the Cronbach's Alpha results presented in the subsequent sections and in table 5.41.

Table 5.41 Factor two empirical and theoretical findings

Empirical Cronbach Alpha	Empirical number of items	Theoretical Cronbach Alpha	Theoretical number of items	Inter-item correlation mean
0,672	4	0,625	7	**0,342**

**** Inter-item correlations will only be considered if the Cronbach alpha is below 0,70 and there are fewer than ten items.***

Table 5.41 provides a concise summary of both empirical and theoretical findings for **Factor Two**. The results clearly indicate that the empirical Cronbach alpha value is 0,672, which is below the acceptable threshold of 0,70. The theoretical Cronbach alpha also had an unacceptable value of 0,625, therefore they cannot be trusted. In this case, the inter-item correlation mean was considered based on the mentioned rules. Both the empirical and theoretical Cronbach alpha's were below the acceptable threshold, and the number of items tested in **Factor Two** was less than ten. The inter-item correlation mean value was 0,342, which falls within the acceptable threshold of 0,20 and 0,40. As a result, the reliability of **Factor Two** has been demonstrated to be high thanks to the inter-item correlation mean, as stated by (Larsson et al., 2021). Appendix D includes the detailed output tables for the SPSS reliability statistical tests **Factor Two.**

5.10 Digitalisation relationship with psychological well-being

The following sections offer a summary of the empirical and theoretical statistical reliabilities of the research instruments that are presented in Section D of Appendix B. The purpose of this analysis was to investigate the correlation between digitalisation and psychological well-being. Based on the results of the EFA discussed earlier, the relationship in question will be referred to as **Factor Three**. It is important to highlight that no items were omitted from section D, indicating that all questions within section D underwent both EFA to assess validity and reliability testing. This can be observed in the Cronbach's Alpha results presented in the subsequent sections and in table 5.42.

Table 5.42 Factor Three empirical and theoretical findings

Empirical Cronbach Alpha	Empirical number of items	Theoretical Cronbach Alpha	Theoretical number of items	Inter-item correlation mean
0,823	5			**0,493**

**** Inter-item correlations will only be considered if the Cronbach alpha is below 0,70 and there are fewer than ten items.***

Table 5.42 summarises both empirical and theoretical evidence linked to **Factor Three**. The findings clearly show that the empirical Cronbach alpha value is 0,823, which is greater than the minimum threshold of 0,70. Because the theoretical Cronbach alpha was not tested, it cannot be used.

This is owing to the shared common variance of all items in section D, which passed EFA tests because they evaluated the same thing empirically. With such a high empirical Cronbach alpha value, the inter-item correlation mean was likewise not considered. This results show that **Factor Three** items have a high level of reliability, indicating that the results may be trusted. Appendix E includes the detailed output tables for the SPSS reliability statistical tests of **Factor Three.**

5.11 Digitalisation relationship with workplace engagement

The following sections below provide an overview of the empirical and theoretical statistical reliabilities of the research instruments presented in Section E of Appendix B. This analysis focuses on exploring the relationship between digitalisation and workplace engagement. The relationship in question will be referred to as **Factor Four**, as determined by the results of the EFA discussed earlier. It is important to note that one item was omitted during the EFA, which is reflected in the Cronbach's Alpha results in the subsequent sections.

Table 5.43 Factor Four empirical and theoretical findings

Empirical Cronbach Alpha	Empirical number of items	Theoretical Cronbach Alpha	Theoretical number of items	Inter-item correlation mean
0,736	4	0,651	5	**0,423**

**** Inter-item correlations will only be considered if the Cronbach alpha is below 0,70 and there are fewer than ten items.***

Table 5.43 provides an overview of the empirical and theoretical evidence associated with Factor Four. The findings indicate that the empirical Cronbach alpha value is 0,736, which exceeds the acceptable threshold of 0,70. The theoretical Cronbach alpha yielded a value of 0,651, which falls below the acceptable threshold of 0,70. One item was omitted from the EFA because it had an MSA value lower than the minimum threshold of 0,60.

The inter-item correlation mean was not considered according to the aforementioned principles, because the empirical Cronbach alpha value was acceptable. The results indicate that Factor Four items exhibit a high level of reliability, suggesting that they can be trusted and relied upon. The detailed output tables for the SPSS reliability statistical tests of Factor Four can be found in Appendix F.

Before conducting EFA, the mean scores for each of these four factors were displayed at the beginning of chapter five in table 5.9, 5.10, 5.11, and 5.12. The results presented above for each of these four factors are consistent with those mean scores.

Table 5.44 Overall scores

Overall Scores							
Statistics							
	N						
	Valid	Missing	Mean	Median	Std. Deviation	Minimum	Maximum
Section B Strategic Leadership relationnship with Psycological Well-being	105	0	4,5365	4,6667	0,52501	2,67	5,00
Section C Strategic Leadership relationship with Workplace Engagement	105	0	3,3381	3,2500	0,87361	1,25	5,00
Section D Digitalisation relationship with Psychological Well-being	105	0	4,0362	4,2000	0,76750	2,20	5,00
Section E Digitalisation relationship with Workplace Engagement	105	0	4,5429	4,7500	0,60592	2,00	5,00

Table 5.44 presents the overall scores obtained from the statistical tests conducted in the study. Chapter six provides a detailed discussion of the overall scores.

5.12 Conclusion

This chapter provided a presentation of the statistical results in their unprocessed form, which were derived from the statistical tests that were carried out for the study. It presented the demographics data in tabular and diagrammatic representations respectively. In addition, this chapter established a baseline for the findings presented in each section, as seen in the study research instruments provided in Appendix B.

In conclusion, the findings presented in this chapter highlight the importance of the study and its implications in the context of digitalisation and automation. The conducted analyses have revealed the relationship between the main constructs of the study, providing new insights into previously unexplored aspects within the research area. These results are consistent with the initial hypotheses that were proposed.

CHAPTER SIX: DISCUSSION OF RESULTS

6.1 Introduction

The current chapter expands upon the literature discussed in chapter two and builds upon the findings presented in the previous chapter five. Since the study was unable to conduct regression analysis, the chapter compares the study results with the existing literature by utilising the average mean scores of each section of the research instruments. The aggregate mean score of each section, as presented in Appendix B, is shown in a table format in this chapter.

Additionally, the chapter discusses the theoretical and empirical implications of each section of the research instruments. In order to guide the discussion in this chapter, we presented a summary of the respondents' demographics. This summary serves as a starting point for building a representation of the categories of individuals who completed the survey.

6.2 Summary of respondents demographics

Figure 6.1 Summary of respondents demographics

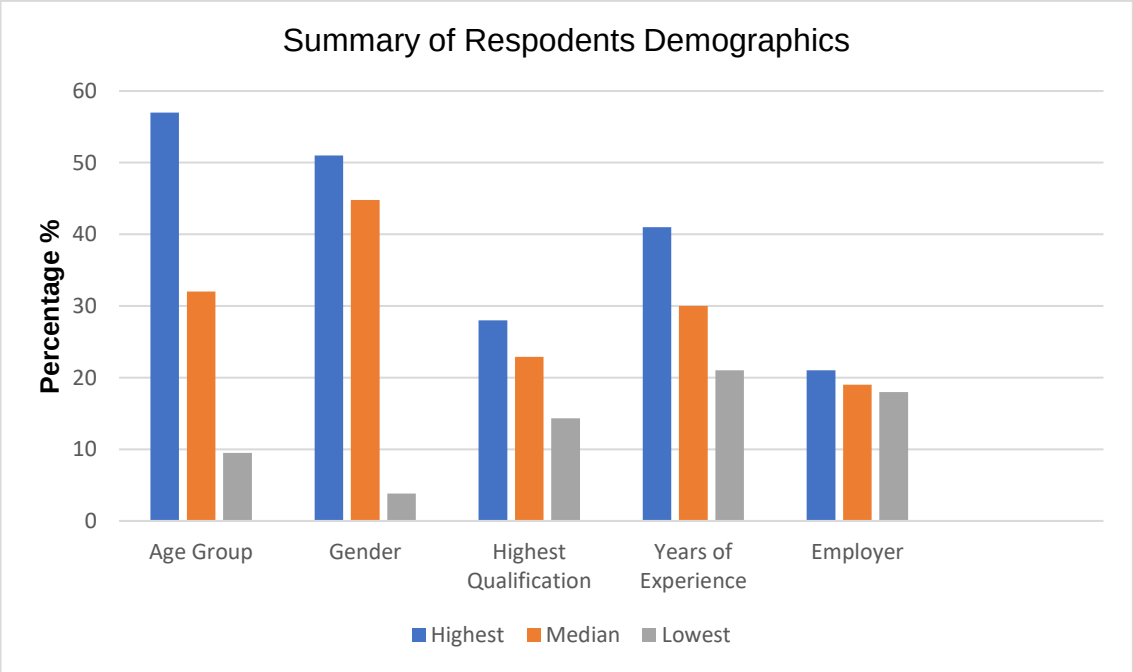


Figure 6.1 displays a summary of the demographic information of the key respondents. To understand the relevance of these figures, please refer to the corresponding tables in chapter five for more detailed information. Among the age group, the highest percentage of respondents was 57%. In terms of gender, the highest percentage was 51%. The category of highest qualification had a response rate of 28%, while the years of experience category received the highest response rate of 41%. The respondents from different banks were relatively evenly distributed, with the highest percentage of employer category being 21%. The results indicate that there is a fairly even distribution of respondents across these categories.

6.3 Strategic leadership relationship with psychological well-being

Table 6.1 Aggregated totals of section B

Section	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Average mean score	STD Deviation
B	4,3	13,2%	7,3	32,5%	47,7%	**4,54**	**0,53**

Out of a total of 105 respondents, the participants in section B, as shown in Appendix B, were asked ten questions. These questions were adapted from various literature sources and focused on exploring the relationship between strategic leadership and psychological well-being in the context of digitalisation and automation. 47,7% strongly agreed, and 32,5% agreed that there is a strong relationship between strategic leadership and psychological well-being. While the current study investigated a different context compared to the study by Riasudeen and Singh (2021), both studies investigated the relationship between strategic leadership and psychological well-being, both studies agrees that there strong relationship does exit.

Specifically, in section B, questions B1 and B5 inquired about whether respondents believe that strategic leaders are effectively establishing a clear vision for digitalisation and automation, and if they are actively encouraging a positive outlook on these advancements, respectively. 75,2% and 68,6% of respondents strongly agreed that strategic leaders are indeed setting a clear vision and promoting an optimistic perspective on digitalisation and automation. The results of the study confirmed that both

the TAM and JD-R models discussed in chapter two support the idea that leadership plays a crucial role in promoting the usefulness of digitalisation. Strategic leaders not only provide support for digitalisation initiatives but also create an environment where employees feel comfortable and willing to accept these initiatives.

Moreover, these results align with the findings of Alblooshi et al. (2020), highlighting the crucial role of leadership in promoting organisational innovation. Leadership is a vital factor that determines the level of support and encouragement for innovation within an organisation. According to Deshwal and Ashraf Ali (2020), effective leadership plays a crucial role in achieving successful results for organisations. They also emphasise that the leadership style used has a significant impact on employee behavior, which directly affects their productivity. These two studies strongly support the findings of the current study, which confirm that a leader plays a crucial role in driving change and influencing employee behavior towards accepting change. In the specific context of the current study, it is evident from figure 2.2 in chapter two that employees' intention to use digitalisation is undeniably influenced by the support of strategic leadership.

According to the overall statistical analysis scores presented in table 5.12 in chapter five, the study provides confirmation that both hypothesis one and research question one mentioned below have been proven correct. According to the data presented in table 5.12 in chapter five, the overall mean score for strategic leadership relationship with psychological well-being is **4,53**, with a standard deviation of **0,52**. These findings indicate that strategic leadership is successfully leading the way in the digitalisation and automation era.

RQ1: What are leaders in the banking industry doing to enable employees' psychological well-being in the workplace in the era of digitalisation and automation?

- ***Hypothesis 1 (H1):*** *Strategic leaders in the South African banking industry are enabling employees' psychological well-being in the workplace in the era of digitalisation and automation.*

The positive strength of this relationship is further emphasised and confirmed by the results of statistical tests conducted on section B research instruments, specifically the anti-image matrices in table 6.2 below. These tests reveal the highest scores of measures of sampling adequacy. One factor was extracted for section B, which had an eigenvalue of **3,334** and accounted for a total variance of **55,57%.**

Table 6.2 MSA results for section B results

Anti-image Matrices						
Anti-image Correlation	B1	B2	B3	B5	B9	B10
B1	,809[a]	-0,460	0,008	0,117	-0,194	-0,138
B2	-0,460	,734[a]	-0,599	-0,046	-0,085	0,063
B3	0,008	-0,599	,779[a]	-0,218	-0,174	-0,009
B5	0,117	-0,046	-0,218	,847[a]	-0,213	-0,159
B9	-0,194	-0,085	-0,174	-0,213	,875[a]	-0,246
B10	-0,138	0,063	-0,009	-0,159	-0,246	,824[a]
a. Measures of Sampling Adequacy(MSA)						

6.4 Strategic leadership relationship with workplace engagement

Table 6.3 Aggregated totals of section C results

Section	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Average mean score	STD Deviation
C	6,2	16,28	8,4	36,5	37,4%	**3,34**	**3,25**

This section presents and discusses the results obtained from section C of the research instruments in comparison with the existing literature. Based on the information provided in chapter five illustrated in table 5.10 and table 6.3 above, it can be observed that section C had a mean average score of 3,3381. This indicates that the majority of the responses for section C were concentrated between the neutral and agree categories. This score indicates that it has become challenging for the study to confirm the existence of a relationship between strategic leadership and workplace engagement within the context of the current study.

6.4.1 Theoretical implications from section C instruments

One of the key questions in section C asked respondents whether strategic leadership involve employees in the decision-making process regarding digitalisation and automation. According to the survey, 30% of the respondents expressed disagreement, indicating that employees are not being taken into consideration when it comes to

decisions about digitalisation and automation initiatives. According to Tucker's (2018) literature, it is essential for leaders to consistently demonstrate transparency and involve employees in decision-making processes related to change. However, the findings of the current study indicate a complete absence of employee involvement. The results indicate that there could be implications that may lead to resistance among employees, causing them to withdraw and become negatively engaged. Based on the average mean score of 3,3381 for section C instruments, it can be concluded that there is not enough evidence to confirm a relationship between strategic leadership and workplace engagement. Therefore, hypothesis two cannot be proven. Based on the results, the study assumes that discussions and decisions regarding digitalisation and automation are only made at the senior management level, without considering the impact on general employees.

6.4.2 Empirical implications from section C instruments

Empirically further studies should be conducted and rephrase the instruments and ask qualitative questions to ask respondents, of why they believe this relationship does not exist. Furthermore, a qualitative study could be conducted and aske strategic leaders and seniors managers on how they manage the decision making regarding digitalisation and automation initiatives. The below research question two and hypotheses two are thus cannot be proven correct. The study did not reveal any strategies that strategic leaders are implementing to ensure that there is a clear involvement of employees.

RQ2: What strategies are strategic leaders employing to ensure workplace engagement during the era of digitalisation and automation within the South African banking industry?

- ***Hypothesis 2 (H2):*** *Strategic leaders in the South African banking industry employ specific strategies that ensure employees' acceptance of digitalisation and automation initiatives to enhance workplace engagement.*

The negative strength of this relationship is further emphasised and confirmed by the results of statistical tests conducted on the research instruments in section C, specifically the anti-image matrices shown in table 6.4 below. These tests provide information on the measures of sampling adequacy with most of the MSA scores below the acceptable value of 0,70. Section C was analysed, and one factor was identified. This factor had an eigenvalue of 2,032 and explained 50,810% of the total variance.

Table 6.4 MSA results for section C results

Anti-image Matrices				
Anti-image Correlation				
	C2	C4	C5	C6
C2	,669[a]	-0,323	0,022	-0,254
C4	-0,323	,664[a]	-0,331	-0,136
C5	0,022	-0,331	,671[a]	-0,213
C6	-0,254	-0,136	-0,213	,731[a]
a. Measures of Sampling Adequacy(MSA)				

6.5 Digitalisation relationship with psychological well-being

Table 6.5 Aggregated totals of section D results

Section	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Average mean score	STD Deviation
D	2,8%	8,4%	10%	44%	39%	**4,034**	**0,77**

This section provides an analysis and discussion of the findings derived from section D of the research instruments, in relation to the current body of literature. Based on the data shown in table 5.11 of chapter five and table 6.5 above, it is evident that section C exhibited a mean score of **4,0362**. This finding suggests that a significant proportion of the responses in section D were concentrated within the range of agree and strongly agree categories. This finding suggests that the current study can equivocally confirm that there is a relationship between digitalisation and psychological well-being.

The majority of respondents in section D were concentrated between the agree and strongly agree options. It is important to mention that 53% of the respondents agree that they have a tendency to resist digitalisation and automation in their workplace. Additionally, 56,2% of the respondents stated that digitalisation has provided them with new skills by acquiring knowledge in emerging technologies. Additionally, 57,1% of respondents strongly agreed that their immediate manager provides support to help employees manage the stress and anxiety associated with digitalisation and automation. The results indicate that although there is some level of management support and skill

acquisition, employees continue to resist digitalisation changes. The study assumes that this resistance may be influenced by various factors, including wages, uncertainty regarding job security, and job quality.

6.5.1 Theoretical implications from section D instruments

According to Kortmann et al. (2022), the labour market has been significantly affected by the increased adoption of digitalisation and automation. As a result, occupational profiles have undergone substantial changes and will continue to evolve in the future. These changes have had and will continue to have significant and far-reaching impacts on the quality of jobs. According to Rainnie and Dean (2020), the integration of digital technologies with human work will be crucial. The goal of this integration should be to improve labor conditions and, whenever feasible, shift societies and economies away from the current practice of treating digital platforms as mere commodities. Instead, we should view digitalisation as a means to augment human capabilities rather than replacing humans altogether. Digitalisation has the potential to bring about significant positive changes in the way people work.

The study conducted by Genz et al. (2019) introduces an additional factor, namely wages, which acts as a catalyst for negative outcomes among employees. The study suggests that digitalisation and automation have both positive and negative effects on wages. Genz et al. (2019) further argues that skills play a crucial role in determining wages, particularly in the context of digitalisation and automation. However, Mönnig et al. (2019) present a counterargument suggesting that digitalisation and automation contribute to an increase in wage inequality. However, the current study presents different results from the existing literature by confirming that there is an equitable distribution of opportunities and benefits in digitalisation and automation among employees.

6.5.2 Empirical implications from section D instruments

Although the study did not specifically examine the influence of skills on digitalisation and automation, it is crucial to emphasise the need for further research to investigate and assess the connection between digitalisation, automation, and skills. This would help determine how these factors are impacting the quality of wages.

RQ3: What are the effects of digitalisation on employees' psychological well-being.

- ***Hypothesis 3 (H3):*** *Digitalisation has negative effects on employees' psychological well-being in the South African banking industry*

The positive strength of this relationship is further emphasised and confirmed by the results of statistical tests conducted on the research instruments in section D. Specifically, the anti-image matrices shown in table 6.6 below provide further evidence. These tests provide information on the measures of sampling adequacy. Most of the MSA scores are above the acceptable value of 0,70. Section D was analysed, and a single factor was identified. The eigenvalue of this factor was 3,010, which accounted for 60,194% of the total variance.

Table 6.6 MSA results for section D results

Anti-image Matrices

Anti-image Correlation

	D1	D2	D3	D4	D5
D1	,838[a]	-0,358	-0,148	-0,205	-0,187
D2	-0,358	,793[a]	-0,369	0,076	-0,100
D3	-0,148	-0,369	,746[a]	-0,548	-0,045
D4	-0,205	0,076	-0,548	,756[a]	-0,067
D5	-0,187	-0,100	-0,045	-0,067	,907[a]

a. Measures of Sampling Adequacy(MSA)

6.6 Digitalisation relationship with workplace engagement

Table 6.7 Aggregated totals of section E results

Section	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Average mean score	STD Deviation
E	8,8%	11%	5%	21,4%	58,8%	**4,54**	4,75

This section presents an analysis and discussion of the findings obtained from section E of the research instruments, in relation to the existing body of literature. Based on the data presented in table 5.12 of chapter five and table 6.5 above, it is clear that section E had an average score of **4,5429**. This finding indicates that a considerable portion of the

responses in section E were focused on the agree and strongly agree categories. This finding strongly suggests that the current study can definitively confirm the existence of a relationship between digitalisation and workplace engagement.

The majority of respondents in section E strongly agreed that there is a relationship between digitalisation and workplace engagement. On average, 58,8% of respondents strongly agreed that HR departments are making concerted efforts to prepare employees for the introduction of digitalisation and automation. Additionally, the respondent mentioned that HR departments are creating policies aimed at motivating employees through different approaches, such as offering bonuses, competitive salaries, and comprehensive benefits. These measures are designed to support the organisation's goals and objectives regarding digitalisation and automation. The respondents emphasised that HR departments are taking a crucial step by creating training frameworks to address the development of skills required for a workforce prepared for digitalisation and automation.

6.6.1 Theoretical implications from section E instruments

To succeed in today's knowledge-based and service-oriented economy, including the manufacturing sector, it is essential to have highly skilled and motivated employees who are willing to utilise their abilities for the success of the business (Oeij et al., 2019). Hence, it is crucial to prioritise employee engagement and involvement, along with digitalisation, automation, and business model innovation (Oeij et al., 2019). According to Hooi and Chan (2022), the introduction of digital technologies in the workplace leads to modifications in business systems, processes, and employee roles.

The digitalisation of the workplace offers several advantages. It helps employees by freeing them from hazardous and monotonous tasks, while also enhancing the efficiency and speed of work completion. Workplace digitalisation can bring about various challenges for employees, such as new job demands, job displacements, and a blending of work and social life. Consequently, effectively managing this process necessitates the implementation of different strategies and the active involvement of leadership (Hooi & Chan, 2022). While the literature clearly state the value of digitalisation in modern business, it does not say anything regarding training framework guided by HR departments to address skill discrepancies brought up by digitalisation and automation.

6.6.2 Empirical implications from section E instruments

The results from Section E clearly indicate that the majority of respondents strongly agree that HR departments play a crucial role in ensuring that employees' acceptance of digitalisation is not hindered.

RQ4: What is the role of human resources managers within the South African banking industry in terms of facilitating employees' acceptance of digitalisation and automation in the workplace?

- ***Hypothesis 4 (H4)**: Digitalisation and automation within the South African banking industry enhance communication and collaboration among employees, thereby fostering heightened workplace engagement*

The positive strength of this relationship is further emphasised and confirmed by the results of statistical tests conducted on the research instruments in section E. Further evidence is provided by the anti-image matrices shown in table 6.6 below. These tests provide information about the measures of sampling adequacy. The majority of the MSA scores exceed the acceptable threshold of 0,70. Section E was analysed, and a single factor was identified. The factor's eigenvalue was 2,281, representing 57,033% of the total variance.

Table 6.8 MSA results for section E results

Anti-image Matrices

Anti-image Correlation

	E1	E2	E3	E5
E1	,685[a]	-0,395	-0,372	-0,215
E2	-0,395	,736[a]	-0,062	-0,225
E3	-0,372	-0,062	,753[a]	-0,093
E5	-0,215	-0,225	-0,093	,810[a]

a. Measures of Sampling Adequacy(MSA)

6.7 CONCLUSION

In summary, the discussion that is carried out in this chapter brings together the empirical findings with the existing knowledge that has already been developed and discussed in chapter two, which contributes to developing a comprehensive comprehension of the role of strategic leadership on the effects of digitalisation and automation on employees'

psychological well-being and engagement in the workplace. A comparison of the findings with previously published academic works reveals both the expansions and the confirmations of the past information that has been accumulated in the field of digitalisation and automation.

However, it is important to recognise the limitations of this study. These limitations include the inability to perform regression analysis and test for normality. A detailed discussion of these limitations can be found in Chapter Seven below. These limitations indicate potential areas for future research efforts to expand upon and address the gaps identified in this study.

The research findings confirm the importance of strategic leadership and HR departments in promoting a collaborative culture during the era of digitalisation and automation, thus adding to the existing knowledge. The implications of this study extend beyond academic discussions. Additionally, these findings may have practical implications for strategic leaders and HR practitioners across different industries who are considering implementing digitalisation and automation initiatives.

CHAPTER SEVEN: CONCLUSION

7.1 Introduction

This chapter expands on the findings reported in chapter five, and the discussions presented in chapter six. The purpose of this chapter is to provide a concise summary of the study's findings and discuss their implications for both the existing body of knowledge and organisations considering the implementation of digitalisation and automation.

The chapter provides an overview of the limitations of the study and concludes by presenting recommendations for future studies.

7.2 Research statement

The main objective of the research was to examine the extensive adoption of digitalisation and automation in the South African banking industry, and its correlation with the adverse psychological well-being of employees in the IT departments and their respective business units. Additionally, the study aimed to explore the impact of these factors on workplace engagement. The study aimed to examine the impact of strategic leadership in the digitalisation and automation era. Specifically, it focused on how strategic leaders handle the processes associated with digitalisation and automation to prevent and address any negative effects on employees' psychological well-being which affects workplace engagement.

7.3 Summary of key findings

Throughout the study, several significant findings were discovered regarding the relationships between strategic leadership and psychological well-being, strategic leadership and workplace engagement, digitalisation and psychological well-being, and digitalisation and workplace engagement.

The first key finding, as presented in chapter five and illustrated in table 5.44, indicate a s*trong correlation between strategic leadership and employees' psychological well-being.* This implies that strategic leaders have a crucial role in ensuring that employees embrace digitalisation and automation with a positive attitude. These findings support the literature presented by Tucker (2018), which suggests that when leaders are transparent and involve employees in the change process, it fosters a sense of ownership among the respondents regarding the necessary changes and the specific actions that need to be taken. Additionally, it reveals the needs and perceived barriers of employees.

Another significant finding pertains to the *correlation between strategic leadership and workplace engagement.* There appears to be a lack of communication between those in leadership positions who make strategic decisions and the employees who are responsible for carrying out these strategies, resulting in a lack of engagement in the workplace., as depicted in chapter five and table 5.44. The cultivation of a healthy work-life balance in the context of digitalisation and automation have raised specific concerns. Furthermore, the study reveals that although there is a high level of communication, there is a lack of employee involvement in important decisions regarding digitalisation and automation. This lack of involvement is considered a crucial issue by the employees.

The study also examined the correlation between digitalisation and psychological well-being. The study reveals a noteworthy and robust *correlation between digitalisation and employees' psychological well-being.* According to chapter five and table 5.44, the study confirms that the increasing presence of digitalisation and automation have raised concerns among employees regarding job security, causing higher levels of stress and anxiety among employees. Despite these concerns, the study reveals that the employees view digitalisation and automation initiatives as inclusive, providing opportunities for individuals from diverse backgrounds. The assumption is that the respondents appreciate the opportunities presented by digitalisation and automation, but they are also concerned about potential job displacements and the need for new skills, resulting in higher stress and anxiety levels.

The last findings are derived from examining the correlation between digitalisation and workplace engagement. The findings indicate a clear and *positive correlation between digitalisation and workplace engagement*. This is supported by the respondents' feedback, which highlights the HR department's proactive efforts in preparing employees for the implementation of digitalisation and automation. Additionally, the HR department

is actively creating training programs to equip the workforce with the essential skills required for a successful transition to a digitalised and automated environment.

This summary provides a brief overview of the main findings uncovered in the study. The text briefly discusses the important connections between strategic leadership, digitalisation, psychological well-being, and workplace engagement. It provides a concise summary of the main findings without delving into excessive detail, as that is covered in the main body of the study. The findings were based on the average mean scores of the research instrument sections, which are presented in chapter five and table 5.44. The limitations of the study section explains the rationale and justification for basing these findings solely on the mean score.

Based on the findings presented in chapter five, as well as the information provided in table 5.44 and the discussions in chapter six, the study can draw the following conclusions:

Table 7.1 Hypothesis results

Hypothesis 1 (H1)	*Strategic leaders in the South African banking industry are enabling employees' psychological well-being in the workplace in the era of digitalisation and automation.*	**Supported**
Hypothesis 2 (H2)	*Strategic leaders in the South African banking industry employ specific strategies that ensure employees' acceptance of digitalisation and automation initiatives to enhance workplace engagement.*	**Rejected**
Hypothesis 3 (H3)	*Digitalisation negatively affect employees' psychological well-being in the South African banking industry.*	**Supported**
Hypothesis 4 (H4)	*Digitalisation and automation within the South African banking industry enhance communication and collaboration among employees, thereby fostering heightened workplace engagement.*	**Supported**

7.4 Implications of the study

The findings presented in this study have significant implications for understanding the role of strategic leadership and addressing the challenges that employees face in the era of digitalisation and automation. The clear connection between strategic leadership and negative workplace engagement outcomes highlights the importance for strategic leaders and HR departments to prioritise the development of an inclusive and collaborative culture in the age of digitalisation and automation.

In addition, it is important for HR practitioners and wellness consultants or representatives to work together in order to create specific interventions that can help reduce the negative impact of digitalisation and automation on employees' psychological well-being. Moreover, this study emphasises the importance of conducting continuous research to delve into the intricate aspects of digitalisation and automation. This will help researchers gain a more comprehensive understanding of how these advancements affect the psychological well-being of employees.

7.4.1 Key contributions of the study

This study provides valuable insights into the field of digital advancements in the workplace. It sheds light on the important roles played by strategic leaders and HR practitioners in managing the process of digitalisation. Additionally, it explores their involvement during the digitalisation process. The study not only presents empirical evidence that demonstrates the impact of comprehensive strategic leadership on the acceptance and success of digitalisation and automation initiatives, but it also emphasises the crucial role of HR departments. These departments play a key role in ensuring that not only are the practical aspects of digitalisation and automation implemented effectively, but also that the psychological effects on employees are taken into consideration.

7.5 Limitations

While this study has provided valuable insights, it is important to recognise and acknowledge its limitations. Firstly, the study primarily relied on data collected from a

specific industry and a limited number of firms within that industry. This could potentially introduce recall bias and subjective interpretation into the findings. Furthermore, the study specifically targeted a particular subset of employees in the selected industry, which may limit the generalisation of the results to a wider population. In addition, the ever-changing nature of digitalisation and automation presents a challenge in understanding the ongoing technology trends and how they affect the psychological well-being of employees as time goes on.

The acceptance or rejection of hypotheses is primarily determined by the average mean score, as shown in table 5.44 and discussed in the preceding sections. However, it is important to note that the study's limitation prevents the performance of regression analysis. The study initially aimed to conduct regression analysis and test for normality. However, during the process of data cleaning and analysis, it was discovered that the data was not suitable for regression analysis and testing for normality. As a result, the researcher with the guidance from the statistician decided to instead use EFA analysis for the statistical tests and analysis. Further research is necessary to determine whether the findings of the study can be confirmed or refuted, as the data collected for the study is not suitable for regression analysis.

Moreover, the ever-changing nature of digitalisation and automation presents a challenge not only for employees but also for businesses as a whole. It becomes crucial for businesses to keep up with the constantly evolving technological trends and understand how they affect their business models and organisational cultures. Future studies that utilise alternative research methodologies and include diverse samples, such as strategic leaders and HR practitioners, could provide a more comprehensive understanding of the intricate processes of digitalisation and automation and their effects on employees psychological well-being.

7.5.1 Reflecting on the research methodology

Upon reflection of the methodology utilised in this study, it is evident that the survey-based approach yielded valuable insights into the perceptions and behaviours of employees in the context of digitalisation and automation. However, it is important to acknowledge that this approach also had certain limitations. Future research endeavours could benefit from employing mixed-method approaches, which involve combining quantitative surveys with qualitative interviews or observational studies. This approach would allow for a more comprehensive understanding of the complex mechanisms that

underlie the relationships being tested in the study, and modify the research instruments so they are suitable to perform regression analysis and test for normality.

7.6 Recommendations for future research

In today's business environment, with the growing interconnectedness of the digital landscape and the ongoing digitalisation and automation efforts, it is crucial to recognise the impact of these initiatives on employees' psychological well-being and workplace engagement. This understanding is not only necessary but also morally imperative, especially considering the potential job displacements that may occur. This study serves as a testament to the power and risks associated with digitalisation and automation. It emphasises the importance for strategic leaders and HR practitioners to address these challenges with focused and coordinated efforts. By engaging in collaborative action and ongoing inquiry, strategic leaders have the ability to shape a digital environment that promotes positive growth and enhances the psychological well-being of employees.

Therefore, the study recommends conducting further research in industries other than banking, such as the retail industry. This recommendation is based on the assumption that the retail industry is less technologically advanced than the banking industry. It is clear that in South Africa, the majority of retail industry in-store operations and processes still rely heavily on manual labour. The assumption is further supported by a study conducted by Belle and Dyk (2019), which states that the retail industry in South Africa lacks understanding in the area of digitalisation. Furthermore, the concept of digitalisation is subject to mixed perceptions in the South African retail industry, as noted by Belle and Dyk (2019). Hence, conducting a study that utilises the modified research instruments employed in the current research could offer a fresh viewpoint on the impact of digitalisation and automation on employees' psychological well-being.

7.7 Conclusion

This chapter starts by restating the main research statement and presenting the purpose statement of the study. The study's key findings were then presented in a structured manner, following the research hypothesis outlined in chapter three. In addition, the

chapter delved into the implications of the study as well as its limitations. The study also discussed the reflection of the research methodologies that were adopted, as well as potential alternate methodologies that could be used for future studies. Finally, the chapter presented the recommendations for future studies.

REFERENCE LIST

Abu-Taieh, E., Hadid, I. H. A., & Mouatasim, A. E. (2020). *Cyberspace*. BoD – Books on Demand.

Adda, H., Natsir, S., & Putu Evvy Rossanty, N. (2019). Employee perceptions towards organizational change and leadership in the banking industry. *Banks and Bank Systems*, *14*(3), 113–120. https://doi.org/10.21511/bbs.14(3).2019.10

Ali., & Anwar, G. (2021). Strategic leadership effectiveness and its influence on organizational effectiveness. *International Journal of Electrical, Electronics and Computers*, *6*(2), 11–24. https://doi.org/10.22161/eec.62.2

Ali, N., Edi, I., & Supahar, S. (2019). Exploratory Factor Analysis Research Instrument Confidence Attitude Toward Students. *ICEST 2018*, 3–66. https://doi.org/10.18502/kss.v3i15.4355

Aubert-Tarby, C., Escobar, O. R., & Rayna, T. (2018). The impact of technological change on employment: The case of press digitisation. *Technological Forecasting and Social Change*, 128, 36–45. https://doi.org/10.1016/j.techfore.2017.10.015

Akter, S., Motamarri, S., Hani, U., Shams, R., Fernando, M., Mohiuddin Babu, M., &

Alblooshi, M., Shamsuzzaman, M., & Haridy, S. (2020). The relationship between leadership styles and organisational innovation: A systematic literature review and narrative synthesis. *European Journal of Innovation Management*, *24*(2), 338–370. https://doi.org/10.1108/EJIM-11-2019-0339

Almeida, F., Duarte Santos, J., & Augusto Monteiro, J. (2020). The challenges and opportunities in the digitalisation of companies in a post-COVID-19 world. *IEEE Engineering Management Review*, *48*(3), 97–103. https://doi.org/10.1109/EMR.2020.3013206

Asenahabi, B. M. (2019). Basics of Research Design: A Guide to selecting appropriate research design. *International Journal of Contemporary Applied Researches*, *6*(5), 2–14.

Asri, A. A. S. M. A. N., & Darma, G. S. (2020). Revealing the digital leadership spurs in 4.0 industrial revolution. *International Journal of Business, Economics & Managemen*t, 3(1), 93–100. https://doi.org/10.31295/ijbem.v3n1.135

Azizan, S., Ismail, R., Baharum, A., & Hidayah Mat Zain, N. (2021). Exploring the factors that influence the success of digitalisation in an organization's it department. *2021 6th IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE)*, *6*, 1–6. https://doi.org/10.1109/ICRAIE52900.2021.9704018

Azoeva, O. V., Yu Mikhalevich, L., Ostapenko, V. A., & Shim, G. A. (2020). The labor nature changes and its regulation challenge caused by global digitalization of business. *International Journal of Organizational Leadership*, 9, 170–183. https://doi.org/10.33844/ijol.2020.60504

Bakker, A. B., & De Vries, J. D. (2021). Job Demands–Resources theory and self-regulation: New explanations and remedies for job burnout. Anxiety, Stress, & Coping, 34(1), 1–21 https://doi.org/10.1080/10615806.2020.1797695

Banya, R., & Biekpe, N. (2018). Banking efficiency and its determinants in selected frontier African markets. *Economic Change and Restructuring*, *51*(1), 69–95. https://doi.org/10.1007/s10644-016-9200-3

Baptista, J., Stein, M.-K., Klein, S., Watson-Manheim, M. B., & Lee, J. (2020). Digital work and organisational transformation: Emergent Digital/Human work configurations in modern organisations. *The Journal of Strategic Information Systems*, *29*(2), 101618. https://doi.org/10.1016/j.jsis.2020.101618

Bell, N. (2022). A framework to implement academic digital badges when reskilling the it workforce. *Information Systems Education Journal*, *20*(1), 36–46.

Belle, J.-P. V., & Dyk, R. V. (2019). Factors Influencing the Intended Adoption of Digital Transformation: A South African Case Study. Proceedings of the Federated Conference on Computer Science and Information Systems, 18, 519–528. https://doi.org/10.15439/2019F166

Bhardwaj, A., Mishra, S., & Jain, T. K. (2021). Analysis of strategic leadership for organizational transformation and employee engagement. *Materials Today: Proceedings*, *37*(2), 161–165. https://doi.org/10.1016/j.matpr.2020.04.774

Blanka, C., Krumay, B., & Rueckel, D. (2022). The interplay of digital transformation and employee competency: A design science approach. *Technological Forecasting and Social Change*, *178*, 121575. https://doi.org/10.1016/j.techfore.2022.121575

Book, L., Gatling, A., & Kim, J. (Sunny). (2019). The effects of leadership satisfaction on workplace engagement, loyalty, and retention in the hospitality industry. *Journal of Human Resources in Hospitality & Tourism*, *18*(3), 368–393. https://doi.org/10.1080/15332845.2019.1599787

Borges, A. F. S., Laurindo, F. J. B., Spínola, M. M., Gonçalves, R. F., & Mattos, C. A. (2021). The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. *International Journal of Information Management*, *57*, 102225. https://doi.org/10.1016/j.ijinfomgt.2020.102225

Bouncken, R. B., Kraus, S., & Roig-Tierno, N. (2021). Knowledge- and innovation-based business models for future growth: Digitalized business models and portfolio considerations. *Review of Managerial Science*, *15*(1), 1–14. https://doi.org/10.1007/s11846-019-00366-z

Bryman, A., Harley, B., & Bell, E. (2019). *Business Research Methods* (Second International Edition). Oxford University Press.

Bueechl, J., Härting, R.-C., & Schröder, M. (2021). Influence of digitization on employee satisfaction in small and medium-sized enterprises. *Procedia Computer Science*, *192*, 2753–2760. https://doi.org/10.1016/j.procs.2021.09.045

Buil, I., Martínez, E., & Matute, J. (2019). Transformational leadership and employee performance: The role of identification, engagement and proactive personality. *International Journal of Hospitality Management*, *77*, 64–75. https://doi.org/10.1016/j.ijhm.2018.06.014

Bujang, M. A., Omar, E. D., & Baharum, N. A. (2018). A review on sample size determination for Cronbach's alpha test: A simple guide for researchers. *Malaysian Journal of Medical Sciences*, *25*(6), 85–99. https://doi.org/10.21315/mjms2018.25.6.9

Burr, C., Taddeo, M., & Floridi, L. (2020). The ethics of digital well-being: a thematic review. *Science and engineering ethics*, *26*(4), 2313–2343. https://doi.org/10.1007/s11948-020-00175-8

Busari, A. H., Khan, S. N., Abdullah, S. M., & Mughal, Y. H. (2019). Transformational leadership style, followership, and factors of employees' reactions towards

organizational change. *Journal of Asia Business Studies*, *14*(2), 181–209. https://doi.org/10.1108/JABS-03-2018-0083

Card, D., & Nelson, C. (2019). How automation and digital disruption are shaping the workforce of the future. *Strategic HR Review*, *18*(6), 242–245. https://doi.org/10.1108/SHR-08-2019-0067

Carreiro, H., & Oliveira, T. (2019). Impact of transformational leadership on the diffusion of innovation in firms: Application to mobile cloud computing. *Computers in Industry*, *107*, 104–113. https://doi.org/10.1016/j.compind.2019.02.006

Charles, L., Xia, S., & Shuting, A. P. (2022). Digitalisation and employment, a review [Publication]. *http://www.ilo.org/employment/Whatwedo/ Publications/WCMS_854353*/lang--en/index.htm

Chaudhuri, S., Park, S., & Johnson, K. R. (2021). Engagement, inclusion, knowledge sharing, and talent development: Is reverse mentoring a panacea to all? Findings from literature review. *European Journal of Training and Development*, *46*(5/6), 468–483. https://doi.org/10.1108/EJTD-01-2021-0005

Chodyniecka, E. (2022, March 28). Money can't buy your employees' loyalty. https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/the-organization-blog/money-cant-buy-your-employees-loyalty

Chouhan, V. K., & Mehta, Dr. M. (2022). Prevalent leadership styles and its traits in digitalized era: a case study on engineering colleges of Himachal Pradesh technical University. *Journal of Positive School Psychology*, *6*(11), 2139–2155.

Chygryn, O. Yu., Karintseva, O. I., Kozlova, D. D., & Kovaleva, A. V. (2019). HR management in the digital age: the main trends assessment and stakeholders. *Mechanism of an Economic Regulation*, *2*, 106–115. https://doi.org/10.21272/mer.2019.84.09

Cijan, A., Jenič, L., Lamovšek, A., & Stemberger, J. (2019). How digitalization changes the workplace. *Dynamic Relationships Management Journal*, 8(1), 3–12. https://doi.org/10.17708/DRMJ.2019.v08n01a01

Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A Review. *Frontiers in Psychology*, *10*. https://www.frontiersin.org/articles/10.3389/fpsyg.2019.01938

Dabić, M., Stojčić, N., Simić, M., Potocan, V., Slavković, M., & Nedelko, Z. (2021). Intellectual agility and innovation in micro and small businesses: The mediating role of entrepreneurial leadership. *Journal of Business Research*, 123, 683–695. https://doi.org/10.1016/j.jbusres.2020.10.013

Deshwal, V., & Ashraf Ali, Mohd. (2020). A systematic review of various leadership theories. *Shanlax International Journal of Commerce*, *8*(1), 38–43. https://doi.org/10.34293/commerce.v8i1.916

Dredge, D., Phi, G. T. L., Mahadevan, R., Meehan, E., & Popescu, E. (2019). Digitalisation in tourism: In-depth analysis of challenges and opportunities. Executive Agency for Small and Medium-sized Enterprises (EASME) (Research GRO-SME-17-C-091-A; pp. 1–38). Aalborg Universitet.

Dewi, R. K., & Sjabadhyni, B. (2021). Digital leadership as a resource to enhance managers' psychological well-being in COVID-19 pandemic situation in Indonesia. *The South East Asian Journal of Management*, *15*(2). https://doi.org/10.21002/seam.v15i2.12915

Eaton, P., Frank, B., Johnson, K., & Willoughby, S. (2019). Comparing exploratory factor models of the Brief electricity and magnetism assessment and the conceptual survey of electricity and magnetism. *Physical Review Physics Education Research*, *15*(2), 1–11. https://doi.org/10.1103/PhysRevPhysEducRes.15.020133

Farivar, F., & Richardson, J. (2021). Workplace digitalisation and work-nonwork satisfaction: The role of spillover social media. *Behaviour & Information Technology*, *40*(8), 747–758. https://doi.org/10.1080/0144929X.2020.1723702

Faupel, S., & Süß, S. (2019). The effect of transformational leadership on employees during organizational change – an empirical analysis. *Journal of Change Management*, *19*(3), 145–166. https://doi.org/10.1080/14697017.2018.1447006

Flores, E., Xu, X., & Lu, Y. (2020). Human Capital 4.0: A workforce competence typology for Industry 4.0. *Journal of Manufacturing Technology Management*, *31*(4), 687–703. https://doi.org/10.1108/JMTM-08-2019-0309

Frost, J. (2022). *Cronbach's alpha: definition, calculations & example*. Statistics By Jim. https://statisticsbyjim.com/basics/cronbachs-alpha/

Genz, S., Janser, M., & Lehmer, F. (2019). The impact of investments in new digital technologies on wages – worker-level evidence from Germany. *Jahrbücher Für*

Nationalökonomie Und Statistik, *239*(3), 483–521. https://doi.org/10.1515/jbnst-2017- 0161

Goswami, B. K., & Upadhyay, Y. (2019). An empirical study on digital transformation and its impact on workplace engagement. *SSRN Electronic Journa*l, *1*, 1022–1033. https://doi.org/10.2139/ssrn.3320668

Greener, D. S., & Martelli, D. J. (2018). *An Introduction to Business Research Methods* (3rd Edition). Sheffield Hallam University.

Grieder, S., & Steiner, M. D. (2021). Algorithmic jingle jungle: A comparison of implementations of principal axis factoring and promax rotation in R and SPSS. *Behavior Research Methods*, *54*(1), 54–74. https://doi.org/10.3758/s13428-021-01581-x

Guenzi, P., & Nijssen, E. J. (2021). The impact of digital transformation on salespeople: An empirical investigation using the JD-R model. *Journal of Personal Selling & Sales Management*, *41*(2), 130–149. https://doi.org/10.1080/08853134.2021.1918005

Gupta, S., Leszkiewicz, A., Kumar, V., Bijmolt, T., & Potapov, D. (2020). Digital analytics: modeling for insights and new methods. *Journal of Interactive Marketing*, *51*, 26–43. https://doi.org/10.1016/j.intmar.2020.04.003

Härting, R., Reichstein, C., Laemmle, P., & Sprengel, A. (2019). Potentials of digital business models in the retail industry – empirical results from European experts. *Procedia Computer Science*, *159*, 1053–1062. https://doi.org/10.1016/j.procs.2019.09.274

Heerden, C. van. (2022). How efficient is the south african banking sector? *International Journal of Economics and Finance Studies*, *14*(4), Article 4.

Heyns, M. M., & Kerr, M. D. (2018). Generational differences in workplace motivation. *SA Journal of Human Resource Management*, *16*(0). https://doi.org/10.4102/sajhrm.v16i0.967

Hooi, L. W., & Chan, A. J. (2022). Innovative culture and rewards-recognition matter in linking transformational leadership to workplace digitalisation? *Leadership & Organization Development Journal*, *43*(7), 1063–1079. https://doi.org/10.1108/LODJ-07-2021-0349

IBM, I. (2021, December 7). IBM documentation [SPSS Statistics]. *Exploratory factor analysis:Extraction*.https://www.ibm.com/docs/en/spss-statistics/beta?topic=analysis-exploratory-factor-extraction

Islam, M. N., Furuoka, F., & Idris, A. (2021). Mapping the relationship between transformational leadership, trust in leadership and employee championing behavior during organizational change. *Asia Pacific Management Review*, *26*(2), 95–102. https://doi.org/10.1016/j.apmrv.2020.09.002

Jackson, C. J. (2020). Transformational leadership and gravitas: 2000 years of no development? *Personality and Individual Differences*, *156*, 109760. https://doi.org/10.1016/j.paid.2019.109760

Joshi, S. (2022). Digitization in Banking. *Journal of Algebraic Statistics*, *13*(3), 367–373. https://publishoa.com

Kadur, M. P., & Dr Supriya, R. (2022). Digital transformation and banking sector workforce: an evaluation study. *International Journal of Scientific Research and Management (IJSRM)*, *10*(05), Article 05. https://doi.org/10.18535/ijsrm/v10i5.em11

Kaur, N., Sahdev, S. L., Sharma, M., & Siddiqui, L. (2020). Banking 4.0: "The influence of Artificial Intelligence on the banking industry & how ai is changing the face of modern-day banks." *International Journal of Management*, *11*(6), 577–585. https://doi.org/10.34218/IJM.11.6.2020.049

Kar, S., Kar, A. K., & Gupta, M. P. (2020). Talent scarcity, skill distance and reskilling resistance in emerging digital technologies—understanding employee behaviour. *Skill distance, reskilling resistance in emerging digital technologies*. Forty-first international conference on information systems, India 2020, India.

Kellogg, K. C. (2021). *Why workplace hierarchies matter in skill transformation* (MIT Sloan management review) [Special Collection].

Klus, M. F., & Müller, J. (2021). The digital leader: What one needs to master today's organisational challenges. *Journal of Business Economics*, *91*(8), 1189–1223. https://doi.org/10.1007/s11573-021-01040-1

Kortmann, L. K., Simonson, J., Vogel, C., & Huxhold, O. (2022). Digitalisation and employees' subjective job quality in the second half of working life in Germany. *Social Indicators Research*, *162*(2), 577–597. https://doi.org/10.1007/s11205-021-02854-w

Kuzior, A., Kettler, K., & Rąb, Ł. (2022). Digitalisation of work and human resources processes as a way to create a sustainable and ethical organization. *Energies*, *15*(1), Article 1. https://doi.org/10.3390/en15010172

Kwon, K., & Park, J. (2019). The life cycle of workplace engagement theory in HRD research. *Advances in developing human resources*, *21*(3), 352–370. Https://doi.org/10.1177/1523422319851443

Larsson, F., Engström, Å., Strömbäck, U., & Gustafsson, S. (2021). Development and psychometric evaluation of the feeling safe during surgery scale. *Nursing Open*, *8*(5), 2452–2460. https://doi.org/10.1002/nop2.1003

Lei, H., Leaungkhamma, L., & Le, P. B. (2020). How transformational leadership facilitates innovation capability: The mediating role of employees' psychological capital. *Leadership & Organization Development Journal*, *41*(4), 481–499. https://doi.org/10.1108/LODJ-06-2019-0245

Li, N., Huang, J., & Feng, Y. (2020). Construction and confirmatory factor analysis of the core cognitive ability index system of ship C2 system operators. *PLOS ONE*, 15(8), 1–23. https://doi.org/10.1371/journal.pone.0237339

Li, L. (2022). Reskilling and upskilling the future-ready workforce for industry 4.0 and beyond. *Information Systems Frontiers*. https://doi.org/10.1007/s10796-022-10308-y

Li, X., Seah, R., Wang, X., & Yuen, K. F. (2022). Investigating the role of sociotechnical factors on seafarers' psychological capital and mental well-being. *Technology in Society*, *71*, 102138. https://doi.org/10.1016/j.techsoc.2022.102138

Lichtenthaler, U. (2019). Extremes of acceptance: Employee attitudes toward artificial intelligence. *Journal of Business Strategy*, *41*(5), 39–45. https://doi.org/10.1108/JBS-12-2018-0204

Louw, C., & Nieuwenhuizen, C. (2020). Digitalisation strategies in a South African banking context: A consumer services analysis. *SA Journal of Information Management*, 22(1). https://doi.org/10.4102/sajim.v22i1.1153

Lord, R. G., Epitropaki, O., Foti, R. J., & Hansbrough, T. K. (2020). Implicit leadership theories, implicit followership theories, and dynamic processing of leadership information. *Annual Review of Organizational Psychology and Organizational Behavior*, *7*(1), 49–74. https://doi.org/10.1146/annurev-orgpsych-012119-045434

Luo, Y. (2022). A general framework of digitization risks in international business. *Journal of International Business Studies*, *53*(2), 344–361. https://doi.org/10.1057/s41267-021- 00448-9

Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital technologies and firm performance: The role of digital organisational culture. *Technological Forecasting and Social Change*, *154*, 119962. https://doi.org/10.1016/j.techfore.2020.119962

Modiba, M. M., & Kekwaletswe, R. M. (2020). Resource dependency framework for digital transformation in south african financial service providers. *International Journal of Computer Trends and Technology*, *68*(4), 107–125. https://doi.org/10.14445/22312803/IJCTT-V68I4P119

Mofokeng, M., & Mokoena, T. (2021). Measuring the impact of fourth industrial revolution on the modern operations management systems in the modern South African banking industry. *Proceedings of the International Conference on Industrial Engineering and Operations Management Rome, Italy, August 2-5, 2021*. Conference on Industrial Engineering and Operations Management, Rome, Italy.

Mönnig, A., Maier, T., & Zika, G. (2019). Economy 4.0 – digitalisation and its effect on wage inequality. *Jahrbücher Für Nationalökonomie Und Statistik*, 239(3), 363–398. https://doi.org/10.1515/jbnst-2017-0151

Moyo, B. (2018). An analysis of competition, efficiency and soundness in the South African banking sector. *South African Journal of Economic and Management Sciences*, 21(1). https://doi.org/10.4102/sajems.v21i1.2291

Muro, M., Maxim, R., & Whiton, J. (2019). Automation and automation intelligence. Metropolitan Policy Program. brookings.edu/metro

Nazareno, L., & Schiff, D. S. (2021). The impact of automation and artificial intelligence on worker well-being. *Technology in Society*, *67*, 101679. https://doi.org/10.1016/j.techsoc.2021.101679

Ning Shen, K. (2020). Building dynamic service analytics capabilities for the digital marketplace. *Journal of Business Research*, *118*, 177–188. https://doi.org/10.1016/j.jbusres.2020.06.016

Northouse, P. G. (2022). *Leadership: Theory and practice* (Ninth Edition). SAGE Publishing.

Nguyen, T., & Phuong Dang, T. (2018). Digital banking in Vietnam current situation and recommendations. *International Journal of Innovation and Research in Educational Sciences*, *5*(4), 2349–5219

Odu, D. N. (2021). Digital only banks the changing face of global banking: challenges, opportunities and AML/CFT implications for Nigeria. *CBN Bullion*, *45*(4), 3–12. https://dc.cbn.gov.ng/bullion

Oehlhorn, C. E., Maier, C., Laumer, S., & Weitzel, T. (2020). Human resource management and its impact on strategic business-IT alignment: A literature review and avenues for future research. *The Journal of Strategic Information Systems*, *29*(4), 101641. https://doi.org/10.1016/j.jsis.2020.101641

Oeij, P., Dhondt, S., Rus, D., & Hootegem, G. (2019). The digital transformation requires workplace innovation: An introduction. *International Journal of Technology Transfer and Commercialisation*, *16*, 199–207.

Olanrewaju, S. O., & Onyekachi, A. M. (2020). A comparison of principal component analysis, maximum likelihood and the principal axis in factor analysis. American Journal of Mathematics and Statistics, 10(2), 44–54. https://doi.org/10.5923/j.ajms.20201002.03

Osborne, J. W. (2015). What is rotating in exploratory factor analysis? *Practical Assessment, Research, and Evaluation*, 20(2), 1–7. https://doi.org/10.7275/HB2G-M060

Pandey, P., & Pandey, M. M. (2015). *Research methodology: Tools & techniques*. Bridge Center.

Pansini, M., Buonomo, I., De Vincenzi, C., Ferrara, B., & Benevene, P. (2023). Positioning technostress in the JD-R model perspective: a systematic literature review. *Healthcare*, *11*(3), 446. https://doi.org/10.3390/healthcare11030446

Park, Y., Pavlou, P. A., & Saraf, N. (2020). Configurations for achieving organizational ambidexterity with digitization. *Information Systems Research*, *31*(4), 1376–1397. https://doi.org/10.1287/isre.2020.0950

Parker, S. K., & Grote, G. (2022). Automation, algorithms, and beyond: why work design matters more than ever in a digital world. *Applied Psychology*, 71(4), 1171–1204. https://doi.org/10.1111/apps.12241

Peiró, J. M., & Martínez-Tur, V. (2022). 'Digitalized' competences. A crucial challenge beyond digital competences. *Revista de Psicología Del Trabajo y de Las Organizaciones*, *38*(3), 189–199. https://doi.org/10.5093/jwop2022a22

Pfaffinger, K. F., Reif, J. A. M., Spieß, E., & Berger, R. (2020). Anxiety in a digitalised work environment. Gruppe. Interaktion. Organisation. *Zeitschrift Für Angewandte Organisations psychologie (GIO)*, *51*(1), 25–35. https://doi.org/10.1007/s11612-020- 00502-4

Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E. (2018). Digitalization and its influence on business model innovation. Journal of Manufacturing Technology Management, 30(8), 1143–1160. https://doi.org/10.1108/JMTM-01-2018-0020

Raina, R. (2022). Moving Crisis to Opportunities: A corporate perspective on the impact of compassionate empathic behaviour on the well-being of employees. *International Journal of Global Business and Competitiveness*, *17*(2), 239–255. https://doi.org/10.1007/s42943-021-00040-w

Rainnie, A., & Dean, M. (2020). Industry 4.0 and the future of quality work in the global digital economy. *Labour & Industry: A Journal of the Social and Economic Relations of Work*, *30*(1), 16–33. https://doi.org/10.1080/10301763.2019.1697598

Rakovská, J. (2020). The Impact of digitization and automation of production on the role of the workforce in companies in Slovakia. *SHS Web of Conferences*, *83*, 01055. https://doi.org/10.1051/shsconf/20208301055

Rasool, S. F., Wang, M., Tang, M., Saeed, A., & Iqbal, J. (2021). How toxic workplace environment effects the workplace engagement: the mediating role of organizational support and employee wellbeing. *International Journal of Environmental Research and Public Health*, *18*(5), Article 5. https://doi.org/10.3390/ijerph18052294

Reddy, C. A. K., Swathi, G., Jyothi, S. S., & Navya, C. (2022). Effect of automation and digitization on occupational stress in automobile industry. *International Journal of Social Sciences*, *11*(3), 173–180. https://doi.org/10.46852/2249-6637.03.2022.5

Reisinger, H., & Fetterer, D. (2021, October 29). Forget flexibility. Your employees want autonomy. *Harvard Business Review*. https://hbr.org/2021/10/forget-flexibility-your- employees-want-autonomy

Reza, M. (2019). Components of transformational leadership behavior. *EPRA International Journal of Multidisciplinary Research*, *5*(3), 119–124.

Riasudeen, S., & Singh, P. (2021). Leadership effectiveness and psychological well-being the role of workplace spirituality. *Journal of Human Values*, *27*(2), 109–125. https://doi.org/10.1177/0971685820947334

Ricci, F., Scafarto, V., Ferri, S., & Tron, A. (2020). Value relevance of digitalisation: The moderating role of corporate sustainability. An empirical study of Italian listed companies. *Journal of Cleaner Production*, *276*, 123282. https://doi.org/10.1016/j.jclepro.2020.123282

Ritter, T., & Pedersen, C. L. (2020). Digitization capability and the digitalization of business models in business-to-business firms: Past, present, and future. *Industrial Marketing Management*, *86*, 180–190. https://doi.org/10.1016/j.indmarman.2019.11.019

Rodriguez-Bustelo, C., Batista-Foguet, J. M., & Serlavós, R. (2020). Debating the future of work: the perception and reaction of the Spanish workforce to digitization and automation technologies. *Frontiers in Psychology*, *11*, 1965. https://doi.org/10.3389/fpsyg.2020.01965

Sætra, H. S., & Fosch-Villaronga, E. (2021). Healthcare digitalisation and the changing nature of work and society. *Healthcare*, *9*(8), 1007. https://doi.org/10.3390/healthcare9081007

Sam, S., Mira, L., & Kai, S. (2022). The impact of digitalization and automation on horticultural employees – A systematic literature review and field study. Journal of Rural Studies, 95, 560–569. https://doi.org/10.1016/j.jrurstud.2022.09.016

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2016). *Research methods for business students* (Seventh edition). Pearson Education.

Sarc, R., Curtis, A., Kandlbauer, L., Khodier, K., Lorber, K. E., & Pomberger, R. (2019). Digitalisation and intelligent robotics in value chain of circular economy oriented waste management – A review. *Waste Management*, *95*, 476–492. https://doi.org/10.1016/j.wasman.2019.06.035

Schildt, H. (2022). The institutional logic of digitalisation. In T. Gegenhuber, D. Logue, C. R. (Bob) Hinings, & M. Barrett (Eds.), digital transformation and institutional theory (Vol. 83, pp. 235–251). *Emerald Publishing Limited*. https://doi.org/10.1108/S0733-558X20220000083010

Schreiber, J. B. (2021). Issues and recommendations for exploratory factor analysis and principal component analysis. *Research in Social and Administrative Pharmacy*, *17*(5), 1004–1011. https://doi.org/10.1016/j.sapharm.2020.07.027

Shamsi, M., Iakovleva, T., Olsen, E., & Bagozzi, R. P. (2021). Employees' work-related well-being during COVID-19 pandemic: An Integrated perspective of technology acceptance model and JD-R Theory. *International Journal of Environmental Research and Public Health*, *18*(22), 11888. https://doi.org/10.3390/ijerph182211888

Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, 9(1), 4–11. https://doi.org/10.12691/ajams-9-1-2

Siangchokyoo, N., Klinger, R. L., & Campion, E. D. (2020). Follower transformation as the linchpin of transformational leadership theory: A systematic review and future research agenda. *The Leadership Quarterly*, *31*(1), 101341. https://doi.org/10.1016/j.leaqua.2019.101341

Sibghatullah, A., & Raza, M. (2020). The impact of strategic leadership on competitive advantage: the mediating role of ambidexterity and information system: evidence from Islamic banks in Jordan. *International Journal of Informatics and Information Systems*, 3(2), Article 2. https://doi.org/10.47738/ijiis.v3i2.67

Smirnov, V. (2022). Digitalisation in banking: All against all? Finance and credit, 28, 1027– 1057. https://doi.org/10.24891/fc.28.5.1027

Spencer, D., Cole, M., Joyce, S., Whittaker, X., & Stuart, M. (2021). Digital automation and the future of work. *European Parliament*.

Stenson, J. F., & Kepler, C. K. (2019). Bias in prospective research and how to avoid it. *Clinical Spine Surgery*, *32*(6), 254. https://doi.org/10.1097/BSD.0000000000000767

Stofberg, L., Strasheim, A., & Koekemoer, E. (2021). Digitalisation in the workplace: the role of technology on workplace engagement and creativity teams. In N. Ferreira, I. L. Potgieter, & M. Coetzee (Eds.), Agile coping in the digital

workplace (pp. 231– 257). *Springer International Publishing.* https://doi.org/10.1007/978-3-030-70228- 1_12

Subramanien, J. L., & Sunjka, B. (2022). The impact of industry 4.0 on the workforce within a business banking: projects and operations environment. *Proceedings of the International Conference on Industrial Engineering and Operations Management Nsukka, Nigeria, 5 - 7 April, 2022*, 84–95.

Sulistianingtiyas, I., & Djastuti, I. (2022). The effect of digitalisation in the workplace on employee performance mediated by employee attachment (study on employees of the center for product processing research and marine and fisheries biotechnology, Central Jakarta). *Budapest International Research and Critics Institute-Journal*, *5*(2), 15121–15136. https://doi.org/10.33258/birci.v5i2.5387

Szalavetz, A. (2019). Digitalisation, automation and upgrading in global value chains – factory economy actors versus lead companies. *Post-Communist Economies*, *31*(5), 646–670. https://doi.org/10.1080/14631377.2019.1578584

Taherdoost, H., Sahibuddin, S., & Jalaliyoon, N. (2022). Exploratory factor analysis; concepts and theory. *Advances in Applied and Pure Mathematics*, 27(1), 375–382. https://hal.archives-ouvertes.fr/hal-02557344/document

Tao, W., Lee, Y., Sun, R., Li, J.-Y., & He, M. (2022). Enhancing employee engagement via leaders' motivational language in times of crisis: perspectives from the COVID-19 outbreak. *Public Relations Review, 48*(1), 102133. https://doi.org/10.1016/j.pubrev.2021.102133

Tucker, E. (2018). Engaging employees: Three critical roles for managers. *Strategic HR Review*, *16*(3), 107–111. https://doi.org/10.1108/SHR-03-2017-0018

Trenerry, B., Chng, S., Wang, Y., Suhaila, Z. S., Lim, S. S., Lu, H. Y., & Oh, P. H. (2021). Preparing Workplaces for Digital Transformation: An Integrative Review and Framework of Multi-Level Factors. *Frontiers in Psychology*, *12*. https://www.frontiersin.org/articles/10.3389/fpsyg.2021.620766

Tyagi, Dr. M., Avasthi, Ms. S., Yadav, Dr. S., & Sanwal, Ms. T. (2022). 2022 10th international conference on reliability, Infocom technologies and optimization (Trends and Future Directions) (ICRITO) Amity University, Noida, India. Oct 13-14, 2022. *Impact of Digitization in Banking Services on Customer Habits*. https://doi.org/10.1109/ICRITO56286.2022.9964770

Vermeulen, B., Kesselhut, J., Pyka, A., & Saviotti, P. P. (2018). The impact of automation on employment: just the usual structural change? *Sustainability*, *10*(5), Article 5. https://doi.org/10.3390/su10051661

Viana Feranita, N., Nugraha, A., & Andrean Sukoco, S. (2020). Effect of transformational and transactional leadership on SMEs in Indonesia. *Problems and Perspectives in Management*, *18*(3), 415–425. https://doi.org/10.21511/ppm.18(3).2020.34

Völker, L. (2017). *Report of the chair of the working group on the future size and membership of the organisation to council* (Meeting of the OECD Council at Ministerial Level, pp.1–22). OECD.

Walsh, S.M., & Strano, M.S. (2018).*Robotic systems and autonomous platforms: Advances in materials and manufacturing*. Duxford: Woodhead Publishing.

Watkins, M. W. (2018). Exploratory Factor Analysis: a guide to best practice. *Journal of Black Psychology*, 44(3), 219–246. https://doi.org/10.1177/0095798418771807

Wewege, L., Lee, J., & Thomsett, M. (2020). Disruptions and digital banking trends. *Journal of Applied Finance & Banking*, *10*(6), 15–56.

Winasis, S., Djumarno, Riyanto, S., & Ariyanto, E. (2020). Digital transformation in the Indonesian banking industry: impact on employee engagement. *International Journal of Innovation, Creativity and Change*, *12(4)*, 528–543.

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, *9*(2), 79–94. https://doi.org/10.20982/tqmp.09.2.p079

Zada, I. (2022). Organizational change management: leadership roles in adapting new norms. *European Journal of Business and Management Research*, *7*(4), Article 4. https://doi.org/10.24018/ejbmr.2022.7.4.1477

Zeike, S., Bradbury, K., Lindert, L., & Pfaff, H. (2019). Digital leadership skills and associations with psychological well-being. *International Journal of Environmental Research and Public Health,* 16(14), Article 14. https://doi.org/10.3390/ijerph16142628

Zemtsov, S., Barinova, V., & Semenova, R. (2019). The risks of digitalisation and the adaptation of regional labor markets in Russia. *Foresight and sti governance*, *13*(2), Article 2.

Zhou, Y., Liu, G., Chang, X., & Wang, L. (2021). The impact of HRM digitalisation on firm performance: Investigating three-way interactions. *Asia Pacific Journal of Human Resources*, *59*(1), 20–43. https://doi.org/10.1111/1744-7941.12258

Appendix A: Consent proforma

Introduction

Dear respondent,

I am conducting research on ***"The role of strategic leadership on the effects of digitalisation and automation on employees' psychological well-being and engagement in the workplace."*** To that end, you are asked to complete a survey relating to my topic because I believe that your experience of digitalisation in the banking environments will significantly contribute to the findings of this study. The survey should take no more than ***20 minutes***. Your participation is **voluntary,** and you can withdraw at any time without penalty. Your participation is **anonymous, confidential, and only aggregated data** will be reported. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Researcher details: 19390981

Email: 19390981@mygibs.co.za

Phone: 084 861 4194

Research supervisor name: Professor Alet Erasmus

Email: ErasmusA@gibs.co.za

Phone: 082 784 2467

Appendix B: Research instruments

Research instruments

(PLEASE CHOOSE THE APPROPRIATE OPTION)

Section A – Demographic Information

This section refers to the demographic information of the participants:

A1: Age group:

59 years and above	1
44 – 59 years	2
29 – 43 years	3
20 – 28 years	4

A2: Gender

Male	1
Female	2
Prefer not to disclose	3

A3: Highest Qualification:

Matric	1
Higher Certificate	2
First Degree	3
Honours of Postgraduate Diploma	4
Masters	5
Diploma	6
Doctoral Degree	7

A4: Manager / Supervisor

Yes	1
No	2

If the above question was answered with a “1”, the below question must be answered

A5: With Subordinates

Yes	1
No	2

A6: Employment Category:

Technical resource	1
Business resource	2

A7: Years of Experience

1 to 5 years	1
6 to 11 years	2
12 to 17	3
18 years and above	4

A8: Employer

Bank A	1
Bank B	2
Bank C	3
Bank D	4
Bank E	5
Bank F	6

Section B – Relationship between strategic leadership and psychological well-being

This section explores the attitude and perceptions of participants regarding how strategic leadership manages the relationship between digitalisation and employee's psychological wellbeing.

To what extent do you agree with each of the following statements. Please indicate your answer using the following 5-point scale where:

1. = Strongly disagree
2. = Disagree
3. = Neutral
4. = Agree
5. = Strongly Agree

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
B1. The strategic leaders in my organisation create a clear vision and set objectives that align with the successful implementation of digitalisation and automation initiatives in our institution.	1	2	3	4	5
B2. The strategic leaders in my organisation provide clear guidance and direction on the adjustments required in response to digitalisation and automation processes.	1	2	3	4	5
B3. The strategic leaders in my organisation reward employees for their ability to adapt to digitalisation and automation.	1	2	3	4	5
B4. Strategic leaders within my organisation offer resources and tools to support individuals in navigating the challenges associated with digitalisation and automation.	1	2	3	4	5
B5. The strategic leaders in my organisation actively promote an optimistic perspective on digitalisation and automation.	1	2	3	4	5

B6. The strategic leaders of my organisation ensure equitable distribution of digitalisation and automation opportunities and benefits among employees.	1	2	3	4	5
B7. The strategic leaders in my organisation actively encourage the development of new skills and competencies related to digitalisation and automation.	1	2	3	4	5
B8. Strategic leaders in my organisation proactively attend to the potential negative effects of digitalisation and automation on employees' psychological well-being.	1	2	3	4	5
B9. The strategic leaders in my organisation prioritise addressing employees' concerns about job security in relation to digitalisation and automation.	1	2	3	4	5
B10. My immediate supervisor supports employees in managing stress and anxiety related to digitalisation and automation.	1	2	3	4	5

Section C – Relationship between strategic leadership and workplace engagement

This section explores the attitude and perceptions of participants regarding how strategic leadership manages the relationship between digitalisation and workplace engagement.

To what extent do you agree with each of the following statements. Please indicate your answer using the following 5-point scale where:

1. = Strongly disagree
2. = Disagree
3. = Neutral
4. = Agree
5. = Strongly Agree

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
C1. The strategic leaders in my organisation effectively communicate the benefits of digitalisation and automation.	1	2	3	4	5
C2. The strategic leaders in my organisation involve employees in the decision-making process regarding digitalisation and automation.	1	2	3	4	5
C3. The strategic leaders in my organisation prioritise a culture that promotes continuous learning and development, specifically in the areas of digitalisation and automation processes.	1	2	3	4	5
C4. The strategic leaders in my organisation encourage employees to openly communicate their concerns and challenges regarding the processes of digitalisation and automation.	1	2	3	4	5

C5. The strategic leaders in my organisation ensure that employees receive timely and relevant feedback on their performance concerning digitalisation and automation.	1	2	3	4	5
C6. In the context of digitalisation and automation, the strategic leaders in my organisation cultivate a work environment that promotes collaboration that encompasses the sharing of knowledge.	1	2	3	4	5
C7. Strategic leaders in my organisation actively promote the cultivation of a healthy work-life balance in the context of digitalisation and automation.	1	2	3	4	5

Section D – Relationship between digitalisation an psychological well-being

This section explores the attitude and perceptions of participants regarding the relationship between digitalisation and employee's psychological wellbeing.

To what extent do you agree with each of the following statements. Please indicate your answer using the following 5-point scale where:

1. = Strongly disagree
2. = Disagree
3. = Neutral
4. = Agree
5. = Strongly Agree

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
D1. My immediate supervisor supports employees in managing stress and anxiety related to digitalisation and automation.	1	2	3	4	5
D2. The rise of digitalisation and automation has generated concerns among employees about job security, increasing levels of stress and anxiety among us.	1	2	3	4	5
D3. Digitalisation and automation have equipped me with new skills through the acquisition of knowledge in emerging technologies, thereby enhancing my preparedness for future employment.	1	2	3	4	5
D4. As an employee, I tend to resist digitalisation and automation initiatives.	1	2	3	4	5

D5. I perceive digitalisation and automation initiatives as inclusive, offering opportunities to individuals from diverse backgrounds.	1	2	3	4	5

Section E – Relationship between digitalisation and workplace engagement

This section explores the attitude and perceptions of participants regarding the relationship between digitalisation and workplace engagement.

To what extent do you agree with each of the following statements. Please indicate your answer using the following 5-point scale where:

1. = Strongly disagree
2. = Disagree
3. = Neutral
4. = Agree
5. = Strongly Agree

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
E1. My organisation's human resources department makes significant efforts to prepare our staff for the introduction of digitalisation and automation.	1	2	3	4	5
E2. The HR department of our organisation motivates employees through various methods such as bonuses, salary, and benefits that contribute to the achievement of our organisation's goals and objectives related to digitalisation and automation.	1	2	3	4	5
E3. The HR department in my organisation is consistently developing effective communication strategies to facilitate coordination among different departments in order to efficiently manage digitalisation and automation initiatives.	1	2	3	4	5
E4. The HR department in my organisation is promoting strategic alignment through the cultivation of an alignment culture in the context of digitalisation and automation.	1	2	3	4	5

E5. The HR department has created a training framework to address the development of the necessary skills associated with a workforce prepared for digitalisation and automation	1	2	3	4	5

Thank you very much for participating in the SURVEY.

Appendix C: Factor one Cronbach Alpa

Scale: Section B - Factor 1

Case Processing Summary

		N	%
Cases	Valid	105	100,0
	Excluded[a]	0	0,0
	Total	105	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,823	0,833	6

Appendix D: Factor two Cronbach Alpa

Scale: Section C - Factor 2

Case Processing Summary

		N	%
Cases	Valid	105	100,0
	Excluded[a]	0	0,0
	Total	105	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,672	0,676	4

Appendix E: Factor three Cronbach Alpa

Scale: Section D - Factor 3

Case Processing Summary

		N	%
Cases	Valid	105	100,0
	Excluded[a]	0	0,0
	Total	105	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,823	0,829	5

Appendix F: Factor four Cronbach Alpa

Scale: Section E - Factor 1

Case Processing Summary

		N	%
Cases	Valid	105	100,0
	Excluded[a]	0	0,0
	Total	105	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,736	0,746	4