

The influence of digitalisation on the changing nature of employment within the South African banking sector workforce

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ABSTRACT

Digitalisation, and the acceleration of technological innovations, is evolving at an unprecedented pace, and is resulting in the disruption of many industries across the world. The growing impact that digitalisation is having on existing skills and jobs is a cause for concern as this will potentially result in job displacement and a skills and talent shortage.

This research aims to better comprehend the influence of digitalisation on employment within the South African banking sector workforce to ensure that banks are ready for this impact. This will enable banks to act by designing and implementing informed plans of action for their employees as they drive towards a greater degree of digitalisation in their businesses, minimise potential job losses, and create new jobs. This research therefore seeks to investigate and understand the following research questions:

- How has digitalisation affected employment in the financial services sector, specifically banking?
- How has digitalisation changed the nature of jobs in banking?
- What type of new jobs have been created as a result of digitalisation?
- What can banks do differently when digitising as it relates to employees?

To answer these research questions, a qualitative research methodology was applied with a single case study being utilised. The case study was conducted on one of the big five major banks in South Africa on which the study was conducted. The primary data was collected via semi-structured interviews with 15 respondents (executives and senior managers) who have experience in the organisation and/or exposure to how digitalisation has influenced the changing nature of employment across the various levels of employment within the banking sector.

The key findings of this research are that:

- Digitalisation has resulted in a decrease in the demand for routine, mundane, clerical, and administrative jobs, and an increase in the demand for highly-skilled and more service jobs that need to be fulfilled by individuals who are

highly-skilled.

- The three key drivers that have impacted the changing nature of jobs in banking as a result of digitalisation have been identified as:
 - Prudent and robust cost management, improving business efficiencies, and growing revenues and profits.
 - The clients' influence on the changing nature of employment in banks.
 - The growing importance of the role of data in a bank's digitalisation journey.
- The new jobs that have been created as a result of digitalisation have been identified.
- The key focus areas for banks as they digitise have been identified as:
 - Change management.
 - The need to upskill, re-skill, and/or re-purpose employees so that they remain relevant as new skill sets and expertise are required, and to ensure the future readiness of employees as digitalisation becomes more embedded in the organisation.
 - Increasing support by banks for growing entrepreneurs through the creation of an entrepreneur ecosystem.

This research recommends that in order for banks to manage the impact of digitalisation on banking, they need to:

- Identify jobs at risk of no longer existing, and implement ways to re-skill, upskill, and/or re-purpose individuals in these jobs so that they can be transitioned into highly-skilled jobs or jobs that are becoming more in demand as a result of digitalisation.
- Upskill, re-skill and/or re-purpose employees to ensure that they have the skills to cope in the digital world. This can be done through a variety of initiatives such as learnerships, academies, mentorships, and partnering with Fintechs.
- Establish entrepreneurship support systems to decrease the dependency on formal employment.

KEY WORDS

Banking

Digital transformation

Digitisation

Digitalisation

Employment

South Africa

Technology

DECLARATION

I, Therusha Naidoo, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Therusha Naidoo

Signature: 

Signed at Johannesburg

On the 20th day of April 2020

DEDICATION

This paper is dedicated to my late grandmother whose strength and tenacity lives on in me, and for whose belief and investment in me from my under-graduate days has led me to studying a master's degree. Without her, none of this would have been possible.

I also dedicate this paper to my husband, Francois Benjamin, whose endless and unwavering love, support, and belief in me got me through the toughest of days, and for never allowing me to think that giving up was an option.

To our unborn baby girl, may this journey that you have shared with me inspire you to reach even greater heights and be the best version of you.

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LIST OF ACRONYMS

AI	Artificial intelligence
ALM	Autor, Levy and Murnane
BASA	Banking Association of South Africa
HC	Human Capital
IA	Intelligent Automation
OCR	Optical Character Recognition
RBTC	Routine-biased technological change
RPA	Robotic Process Automation
SBTC	Skill-biased technical change
USA	United States of America

CHAPTER 1: INTRODUCTION

1.1. Purpose of the study

The qualitative study will explore the influence of digitalisation on employment within the South African banking sector workforce: A case study of a South African bank.

1.2 Context of the study

Digitalisation and the acceleration of technological innovations is happening at an unprecedented pace and is resulting in the disruption of most industries across the world. This is referred to as the fourth industrial revolution (Bernstein et al., 2018).

According to Chisoro-Dube (2018), in 2017 the South African Reserve Bank made an unprecedented move in granting three new banking licences to TymeBank, Bank Zero, and Discovery Bank to operate alongside Absa, Capitec, First National Bank, Nedbank, and Standard Bank. The main differentiator between the three new entrants and the five major banks, is that the new banks will operate as full-service digital banks, without physical branches. This has been made possible by new technologies that enable easy, quicker, and more convenient banking services which aim to provide a superior customer service (Chisoro-Dube, 2018).

In 2017, there was a substantial turning point in the cell phone industry in South Africa, with 51% (19.9 million) of the adult population owning a smartphone. The expectation is that this number will grow (Casey & Abraham, 2017; Chisoro-Dube, 2018). Recent research suggests that digitalisation is supported and facilitated using smartphones, and that this rise in the use of smartphones in the South African economy will further drive digitalisation across all industries, including financial services (Chisoro-Dube, 2018; Coetzee, 2018).

This shows that banks will have to change how they operate in the era of the fourth industrial revolution and move from bricks and mortar to a more digital presence because of customers' evolving needs, preferences, and increasing

levels of digitalisation (Assensoh-Kodua, Migiro & Mutambara, 2016). In addition, digitalisation advances in artificial intelligence (AI), big data, robotics, automation of processes, biometrics, as well as virtual and augmented reality, will become the norm for banking. This confirms Coetzee's (2018) comment that a new era of banking has emerged.

Assensoh-Kodua et al. (2016) state that in order for organisations to survive and remain relevant in this digital era, they need to ensure the continued use of technology and digitalisation. In addition, technology-based skills are becoming a critical skill set for employees in the banking sector (Coetzee, 2018). This indicates that digitalisation will inevitably influence employment in the banking sector in South Africa.

1.3 Research problem

According to Zizzamia (2018), given that South Africa is characterised as a country with high unemployment rates and one of the highest levels of inequality with regards to income earned, for every job lost there are significant consequences.

Significant research has been done on the effect of digitalisation on employment in the United States of America (USA) (Autor & Dorn, 2013; Bartel & Sicherman, 1999; Frey & Osborne (2017), and Europe (Aubert-Tarby, Escobar & Rayna, 2018; Dirican, 2015; Van Roy, Vértessy & Vivarelli, 2018). There has, however, not been as much research on the impact of digitalisation on employment within the financial services sector in South Africa.

Philips, Seedat and Van der Westhuizen (2018) argue that South Africa has made great strides in its digital adoption journey; however, this has not contributed to significant growth in the country's economy, and specifically to the growth in employment. Banks are trying to remain competitive and relevant in an environment that is becoming known for increased competition from new banks with only an online presence, competition from Fintechs, and increasing pressure from keeping up with their customers' changing needs because of the increased use of technology (Assensoh-Kodua et al., 2016; Chisoro-Dube, 2018; Coetzee,

2018). This means that in order to be relevant to their customers, they must re-evaluate their current value propositions, physical distribution channels, online presence and channels, and operating and service models (Natsas & Roopnarain, 2018). This drive towards an increasing use of technology to serve one's customers implies that jobs will be lost as a result of digitalisation (Philips et al., 2018).

According to the World Economic Forum (WEF, 2020), the growing impact that the fourth industrial revolution is having on existing skills and jobs is cause for concern, as it believes that this will cause job displacement and a skills and talent shortage. This, in turn, will have an impact on organisational performance, and will also have socio-economic impacts across all industries. It further argues that there needs to be a more proactive, focused, and strategic approach on the part of all impacted stakeholders to drive and manage re-skilling and upskilling programmes for affected individuals, as this will go a long way in reducing job losses and managing skills shortages in this digital era.

There is a clear need to understand and investigate this knowledge gap of the effect of digitalisation on financial services, so as to ensure that banks are ready for this impact as it relates to:

- The impact on employment
- The changing nature of people's jobs
- Re-skilling the workforce to ensure relevance and avoid mass retrenchment
- The longevity of the organisation

It is imperative that banks understand the influence of digitalisation on employment, and that they act on it speedily (Philips et al., 2018).

1.4 Research questions

This research seeks to investigate and understand the following research questions:

1. How has digitalisation affected employment in the financial services sector, specifically banking?

2. How has digitalisation changed the nature of jobs in banking?
3. What type of new jobs have been created as a result of digitalisation?
4. What can banks do differently when digitising as it relates to employees?

1.5 Significance of the study

The significance of the study is multi-disciplinary and is supported by existing literature from the early 1900s (Allen, 2001; Autor, et al., 1998; Bartel & Sicherman, 1999; Bresnahan, et al., 2002; Goos and Manning, 2003; Goos & Manning, 2007; Keynes, 1933; Krueger, 1993; Peterson & Rajan, 2002). to more recent studies (Autor & Dorn, 2013; Brynjolfsson & McAfee, 2012; Coetzee, 2018; DeCanio, 2016; Frey & Osborne, 2017; Gartner, 2020; Goos, Manning & Salomons, 2010; Goos, Manning & Salomons, 2014; Swan, 2017; WEF, 2020) within developed and developing markets.

DeCanio (2016) noticed that many early classical economists were concerned about the displacement of human workers by machines and the increasing levels of automation. Recent focus has been on whether digitalisation will drive economic inequality through job losses and/or declining wages. He further elaborated that certain skills would become redundant, while new or different skills would be required to implement new and improved technology.

In the 1930s, John Maynard Keynes, suggested that there would a decrease in the number of hours that needed to be worked, as he believed that as economies grew and developed, the need for labour would start falling quicker than the ability to find new types of jobs (Swan, 2017). Swan also said that while it seems that we are experiencing technological unemployment, it is not bringing with it the utopia that was envisioned, and this is because only some benefit, which causes disparate economic consequences (Swan, 2017).

A study undertaken by Accenture illustrates that currently 35% (5.7 million) of all jobs in South Africa are at risk of being automated (Philips et al., 2018). Given the volatility and instability of the South African economy, supported by the statistics provided by Stats SA (2019) of a growing unemployment rate of 27.6% of which 50% is made up of the youth, and an economy that is shrinking by an annualised

rate of 3.2%, any additional job losses could have a devastating impact on the South African economy.

Philips et al. (2018), state that if South African organisations can double the rate at which they upskill their workforce for “human-machine collaboration” (Philips et al., 2018, p. 2), it could possibly reduce the predicted number of job losses from 20% (3.5 million jobs) in 2025 to just 14% (2.5 million jobs). They further argue that in order to reduce the risk of job losses as a result of digitalisation, and to be effective while doing this, the work must start now.

Aubert-Tarby et al., (2018) explained that delaying the adoption of and embracing digitalisation increases the probability of job losses, and while digitalisation seems to change the contractual nature of jobs being created from more permanent to contractual, accepting digitalisation as opposed to resisting it can determine whether an organisation remains in existence or not in the fourth industrial revolution.

Given the fourth industrial revolution, and the far-reaching impact of digitalisation on employment and the future survival of organisations, it is critical that organisations understand and are prepared for this impact. If they are not, it could have widespread consequences for the economy and the socio-economic well-being of all South Africans.

According to the WEF (2020), there is a compelling business case for organisations to invest in:

- Reskilling current employees regarded as “at-risk workers”.
- Upskilling the wider employee base.
- Ensuring that they develop programmes, academies, and learnerships.

This will ensure that organisations are adequately prepared for the short and long-term future of work.

A school of thought is emerging that leaders of organisations and industries need to drive and prepare their employees to become skilled for the workforce of the future. This would be a workforce that is highly involved and engaged with

digitalisation in a way that results in tangible value for the organisation and society.

A similar academic investigation has not yet been conducted on the South African banking sector, and this research will contribute to an academic body of knowledge on the effect of digitalisation on employment across various levels of jobs in banking.

1.6 Delimitations of the study

The study will only address the effect of digitalisation on employment in the financial services sector in South Africa, and will be specific to one of the main five banks.

It also only looks at the impact on the skill sets of employees, job polarisation, and the changing nature of jobs. It will not focus on the impact that digitalisation has on job offshoring. All other industries and markets will be excluded.

1.7 Definition of terms

Banking – can be referred to as an industry that provides banking services in the form of cash, credit, and other financial transactions. Banks provide a variety of accounts from savings to cheque accounts. They also provide loans to customers in the form of home loans, car loans, personal loans, overdrafts, and credit facilities via a credit card (Amadeo, 2019).

Employment – can be referred to as a state of being paid to work for an organisation (Cambridge, 2019).

Digitisation – can be defined as the conversion of analogue information into digital information. It can be referred to as doing the same things as has always been done, but using technology to make it easier, quicker, more efficient, and in certain instances cheaper (Finch, 2018).

Digitalisation – can be defined as creating new business and operating models, new revenue and value-adding opportunities through the use of digital technologies. It can also be categorised as moving to a digital business (Gartner,

2020).

Digital transformation – can be defined as the process of using technology to fundamentally progress the performance and/or influence of the organisation (Westerman, Calm  jane, Bonnet, Ferraris, & McAfee, 2011).

South Africa – is referred to as the southern-most country in Africa (Britannica, 2020).

Technology – can be referred to as the organisation and application of scientific knowledge for the achievement of practical purposes (Thierer, 2014).

1.8 Assumptions

- Respondents will agree to the interview and answer the questions honestly and accurately.
- The inclusion criteria for the respondents of the sample are appropriate.
- Respondents will reflect normal perspectives, and have adequate experience and/or information to answer the questions.
- Respondents may have been impacted on a personal level regarding the research topic, and this may bias their answers.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

For many years, there has been increasing interest and fascination in the ever-changing occupational structure of employment. There is also a school of thought that highlights the growing concern that digitalisation is replacing the need for human jobs and is creating a phenomenon of “technological unemployment” (Brynjolfsson & McAfee, 2012; Marchant, Stevens, & Hennessy, 2014). There is also the school of thought that digitalisation and technology will lead to a “utopian state” in which humans will have more time to spend on the things that they choose to enrich their lives as they will have to spend less time on manual and routine jobs and/or tasks (Marchant et al., 2014).

Frey and Osborne (2017) argue that there are existing frameworks that can be used to understand the impact of computerisation on employment and occupation composition, however these frameworks are not adequate to explain the impact of digitalisation beyond the computerisation of routine tasks.

Job offshoring is now no longer across physical geographies; rather jobs are being impacted or lost as a result of increasing levels of digitalisation (Philips et al., 2018).

Literature by Brynjolfsson and McAfee (2012) indicates that there needs to be a much better understanding of the impact of digitalisation on skills, wages, and employment, and that digitalisation or digital technologies must now be acknowledged as one of the most influential driving forces in the global economy today.

Fintech can be defined as “an industry that covers digital innovations and technology-enabled business model innovations in the financial sector”, and that these digital innovations will disrupt entire industries as they exist today (Philippon, 2017, as cited in Carbo-Valverde, 2017, p. 134). The entrance of Fintechs into the financial services sector is viewed as the catalyst for the digital transformation of the banking sector (Carbo-Valverde, 2017).

Carbo-Valverde (2017) suggests that the era of the fourth industrial revolution will bring with it new operating models for banks, an increased focus on big data and new channel options that the client can engage in with the bank. This new world will bring greater differences for customers and banks as they will have less face to face interaction (Peterson & Rajan, 2002). According to Carbo-Valverde (2017), this will also necessitate a change in the types of jobs and skills that will be required to usher banks into this new digital era.

Jatic, Ilic, Miletic and Markovic (2017) felt strongly that banks that have not started digitising their business, or do not have a digitalisation strategy, will no longer remain competitive or relevant within the banking and financial services sector.

2.2 Digitalisation and employment

Over the past few decades, it has been cited that computers have taken over several jobs and their functions; some of which include bookkeepers and cashiers (Autor, Levy, & Murnane, 2003; Bartel & Sicherman, 1999; Brynjolfsson & McAfee, 2012; Masocha, Chiliya, & Zindiye, 2011).) Ongoing debates in academia as to the main causes of the high rate of job losses, have tabled digitalisation as one the key contributors (Frey & Osborne, 2017). They further indicated that there is a possibility that 47% of the current jobs in the USA will become automated in the future.

There is well-documented literature that indicates that jobs that are routine in nature and can be performed by algorithms, robots, or can be easily automated, are declining. Charles et al., (2013); Jaimovich and Siu, (2012) respective studies (as cited in Frey and Osborne, 2017) explained that this is what is causing the declining rates of employment in the manufacturing sector.

Further literature by Autor and Dorn (2013) mentions that the introduction of digitalisation has led to a structural change in the manufacturing industry, where there is a decrease in the demand for middle to low-income employment. This is because manual intensive labour is less vulnerable to computerisation and digitalisation as it requires a higher level of human intervention.

2.3 The structure of employment and its evolution

Autor, Levy and Murnane's (ALM) (2003) hypothesis suggests that technology in general has the ability to replace human labour in routine tasks, irrespective of whether they are manual or cognitive, but is not yet able to have the same replaceability with non-routine tasks. This ALM hypothesis has been identified as an important factor in experienced and observed shifts in the employment structure across various industries (Goos et al., 2010). The ALM hypothesis is supported by evidence that industries that have adopted technology to take over routine tasks has led to a decrease in demand for routine skills.

2.4 Skill-biased technical change hypothesis

Goos and Manning (2003) also mentioned that the skill-biased technical change (SBTC) hypothesis suggests that when it comes to technology, it is biased in that skilled-base employees are favoured over non-skilled ones. The SBTC hypothesis predicts that there is a greater demand for skilled jobs, and a decreased demand for unskilled ones in the current labour force, where the ALM theory focuses on the impact of technology on the demand for a different or new skill type (Goos & Manning, 2003).

Acemoglu & Autor, 2011; Goos & Manning, 2003; further argue that if the SBTC and ALM hypotheses holds true, then the logical conclusion would be that the impact of technology and the fourth industrial revolution will result in the:

- increase in the numbers of lucratively paid jobs that will require non-routine and cognitive skills;
- increase in the number of non-lucratively paid jobs that will require non-routine and manual skills; and
- decrease in the demand of "middling jobs" that previously required routine, manual, and cognitive skills. This is also referred to as job polarisation.

However, Bartel and Sicherman (1999) provide a counter-argument to the SBTC hypothesis, and said that the reason employees in high-tech industries are able to command and get paid lucrative salaries is not because of technological change, but rather as a result of high-skilled employees positioning themselves

in these industries. Another theory by Allen (2001) found that in industries that were exposed to intensive digitalisation, the more highly educated and well-experienced employees earned higher salaries than their peers in less digitised industries.

2.5 Routine-biased technical change hypothesis

Goos et al., (2014) proposed another hypothesis called the routine-biased technological change (RBTC) that seeks to explain job polarisation. They state via this hypothesis that the recent changes in technology are pre-disposed towards replacing employment in routine tasks, and that job offshoring is also somewhat influenced by these advancements and progression of digitalisation. They elaborate further by saying that both these forces drive a decrease in the demand for middling relative to high-skilled and low-skilled occupations, and that this affects the structure of employment. This is also supported by other literature in this field of study (Autor, Levy, & Murnane, 2003; Bartel & Sicherman, 1999; Brynjolfsson & McAfee, 2012).

The RBTC hypothesis also indicates “between industry shifts in the structure of employment” (Goos et al., 2014, p. 2511). This means that if an industry is impacted by RBTC, it will use less employment input to produce an agreed level of output, and this will cause occupational employment numbers to polarise even if the output does not decrease. They further state that industries and organisations that have a level of routine tasks in their processes will see a decrease in the cost of production as well as output prices, and that this will result in an increase in the demand of their products and/or services.

This effect reduces between industry job polarisation, but does not eliminate it (Goos et al., 2014). The outcomes of the study undertaken across 16 European markets are in line with similar studies undertaken in the USA and the UK, where evidence supports job polarisation, and that job polarisation is now the norm and not the exception. It also indicates that the occupational employment structure in Western Europe is polarising, with increasing employment for lucratively paid professionals and managers, and for non-lucratively paid personal service employees. This increase in employment in these occupational structures is

followed by a decrease in employment in the manufacturing industry and with routine office workers (Goos et al., 2014).

Frey and Osborne (2017) explain that the increase in high-skilled employment can be attributed to the declining costs of executing routine tasks through computerisation. This means that there is an increase in the supply of routine informational inputs that has led to more efficient managerial decision-making. Goos et al. (2010) state that the above has resulted in an employment market that is progressively becoming more polarised, in which there is an increase in employment for lucratively paid cognitive jobs and non-lucrative manual employment. This is closely aligned to a decrease in middle-income routine jobs. They also highlight that this trend is not unique to just the USA, but also to many developing economies.

Aghion and Howitt research from 1990 (as cited in Frey and Osborne, 2017), shows that that digitalisation has two opposing effects on employment:

- The first effect is the “destruction effect”, that is, as technology replaces labour, it will result in a decrease in jobs which will then result in employees shifting their supply of labour to other employment markets. This view is also supported by Goos et al. (2010).
- The second effect mentioned is the “capitalisation effect”, that is, as certain industries begin to grow and more organisations move into those industries, it will lead to increased employment in these specific industries.

Goos et al. (2010) highlight that when looking at the changing occupational structure of work, one cannot ignore the equilibrium effects in which the change in demand for a certain type of employment will lead to a spill-over into all other types of employment. Research undertaken by Autor and Dorn (2013) on the USA supports the research done by Goos et al. (2010). They hypothesised that as digitalisation reduced the demand for employment for lower-skilled employees that perform routine tasks, there was an increase in demand for highly educated employees that could perform abstract, creative, problem solving, and co-ordination tasks.

Their research also indicates that as the salaries for low-skilled employees who

carry out routine tasks decrease, these low-skilled employees have moved into service jobs which are not as easy to automate because of the nature of the job. The authors further state that if there are no close substitutes for service-related employment, then a decrease in employment in routine tasks because of digitalisation can lead to an increase in the demand for low-skilled service jobs, and may also result in higher salaries (Autor & Dorn, 2013; Goos et al., 2010).

Carbo-Valverde (2017) argues that within the European Union, there has been a distinct reduction of hundreds of thousands of traditional branch-based jobs, however new jobs that are more technology and digitally related have been created. The new jobs created with digitalisation are in regulatory compliance and technology, with a massive focus on cyber-security (Carbo-Valverde, 2017).

2.6 Digitalisation in financial services and employment

Ten years after the ALM study was published, technology had advanced to such a degree that tasks that were considered non-routine and cognitive, and those that could not be done by a computer, are now possible through technologies such as machine learning and artificial intelligence (Nedelkoska & Quintini, 2018). They further explain that the self-driving car has now become a probable threat to employment for drivers of taxis, Uber, and Lyft, as well as bus and truck drivers and those who operate heavy machinery. Other technologies such as IBM's Watson, DeepMind Health, and apps such as Google Translate and Skype, indicate that the list of jobs that can be automated can now be expanded to non-routine and cognitive dominant occupations such as "drivers, translators, tax analysts, medical diagnostics, legal assistants, security guards, law enforcement officers, teachers, HR workers, financial analysts, and even software programmers" (Nedelkoska & Quintini, 2018, p. 34).

Brynjolfsson and McAfee (2012) recommend that one of the ways to minimise the impact of digitalisation on employment is "organisational innovation: co-inventing new organisational structures, processes, and business models that leverage ever-advancing technology and human skills" (Brynjolfsson & McAfee, 2012, p. 7). They firmly believe that digitalisation creates opportunities for entrepreneurs who can create new business models and digital technology with

the increasingly impacted middle-level skilled worker to create new or different value.

So, what does the evolution and progression of digitalisation mean for the future of employment? Frey and Osborne (2017) recently answered this question through their research, where their model predicted that instead of decreasing the demand for middle-income employment, which has been the identified trend in the past, that digitalisation will replace low-skilled and low-salary jobs in the future. They also indicate that the jobs that are least vulnerable to digitalisation are high-skilled and high-salary jobs. Their model also highlighted the growing need to improve the education and up-skilling of employees to ensure that they are able to perform these high-salaried and high-skilled jobs.

This is a different view from previous literature (Autor, Levy, & Murnane, 2003; Bartel & Sicherman, 1999; Brynjolfsson & McAfee, 2012; Goos et al., 2010) on the topic, where there is a clear and repetitive theme that there will be a decrease in the demand for middling jobs, an increase in demand for high-salaried, non-routine, and cognitive jobs, and an increase in demand for low-paid, non-routine, low-cognitive jobs.

According to the WEF (2020), the first major disruption within the financial services industry was seen in 1967 when the first automated teller machine (ATM) was installed. This resulted in a decrease in the number of bank tellers required by banks. Previous research has also indicated that within the banking sector, technology has been embedded in the products and services for the past thirty years, and was mainly focused on the automation of back-office operations (Masocha et al., 2011).

However, this view has now been challenged as there has been a significant increase in the use of technology in sales and client-facing business units, which has been primarily driven by customers' need to deal with their banks by using technology (Cairns, 2017, as cited in Coetzee, 2018). This further indicates that digitalisation has changed the banking landscape, and what this means for banks is that they have to re-define their customer value propositions in terms of the products and services they offer, the distributions channels via which they offer

these products and services, their current operating models, and to whom they offer it in order to remain competitive and relevant (Coetzee, 2018).

Carbo-Valverde (2017) writes that digital transformation of the financial services industry has been happening for decades in some shape or form. He adds that this has been on an upward trend since the 1980s, but has ramped up significantly since then. Even more digitalisation and innovation will become evident in the next decade within the financial services industry, and this will come with an increased focus on output and productivity. This implies an influence on jobs and salaries, which will mean that employment in banking will need to be transformed (Carbo-Valverde, 2017).

Hedley et al. research conducted in 2005 (as cited in Coetzee, 2018), indicated that non-traditional competitors such as Fintechs have the ability to become significant threats to traditional banks in the near future. However, they believed that there were three reasons why this would not happen:

- A high level of regulatory governance and scrutiny.
- The skills, footprint, and infrastructure that banks have available to them is a strong competitive advantage to compete with.
- They could not offer the same levels of confidentiality and security that a traditional bank can offer to customers.

Fast-forward to 2018, and these non-traditional competitors have fundamentally changed the landscape in which banks are operating (Coetzee, 2018). In addition Dapp 2015; Schwab 2015 respective studies (as cited in Coetzee, 2018), highlight emerging technologies such as “AI, 3D printing, humanoid robotics, autonomous vehicles, nanotechnology, biotechnology, quantum computing, mobile internet, self-learning algorithms, drones, holograms, and predictive analytics” (Coetzee, 2018, p. 11) that are transforming and revolutionising the financial services sector. He adds that banks will have to redefine and adapt to these environments or face extinction.

Silva and Lima’s (2017) research indicates that in more digital-intensive industries, highly-skilled employees have lower separation rates as there are more demanding human capital requirements in these industries. The other

contributing factor that they allude this lower separation rate to is because of the complementary relationship between technology and skills. Bartel and Lichtenberg's study in 1987 (as cited in Silva and Lima, 2017) explain that the impact for low-skilled workers in digital-intensive industries is that they will not be as productive when working with new and/or advanced technology as they receive less on-the-job training or training that is specific to the organisation.

This will also result in longer job tenures for highly-skilled workers in medium to highly-digitised organisations. This is due to the fact that these firms place a high priority on organisation-specific human capital, because as we move into the fourth industrial revolution and technology becomes more complex, it will be harder to find and recruit employees with digitalisation-specific skills, as indicated in the research undertaken by Silva and Lima (2017).

According to a survey undertaken by the WEF (2020), more than half of the financial organisations interviewed anticipate that their workforce will shrink, and a quarter anticipate that their workforce will have to be expanded as a result of digitalisation. In the same survey, most organisations said that their biggest barrier to digitising and to new technology adoption is the growing need for a workforce with new and different skills, as it relates to digitalisation and technology. This highlights the need for substantial re-skilling and upskilling initiatives, as well as increased and new efforts and strategies for the recruitment of individuals with new and different skill sets (WEF, 2020). They also state that re-skilling and upskilling efforts will enable organisations to achieve a positive cost-benefit realisation. The WEF (2020) also says that the top emerging jobs are:

1. AI Specialists
2. Cyber Security Analysts
3. Data Analysts
4. Digital Transformation Specialists
5. Innovation Specialists
6. Machine Learning Specialists
7. User Experience Designers

2.7 Digitalisation in financial services in South Africa

With the advent of the fourth industrial revolution, banks will be challenged by the fact that the way in which they currently operate will need to shift significantly. This is because digitalisation and increasingly changing consumer preferences and expectations are re-defining how they do business, the products and solutions they offer, and the channels through which they interact with customers. They need to implement these new strategies if they want to remain relevant (Camarate, 2017; Coetzee, 2018).

Maritz et al. (2018) state that the three major trends that are shaping the South African banking sector are:

- Offering digital solutions at lower prices by other financial services competitors.
- The entry of sector and industry-specific banks by non-financial services players.
- Continuous transformation of the big four banks to satisfy customers' changing needs, as well as regulatory and technology needs.

With the entry of new digital players such as Fintech and new digital banks (TymeBank, Bank Zero, and Discovery Bank) into the South African banking sector, it has led to traditional South African banks being faced with “non-traditional” competitors that are increasing competitiveness in the market, challenging the status quo, and driving unseen levels of digitalisation and innovation in the sector (Maritz, Natsas, & Grosskopf, 2018).

The five major banks (Absa, Capitec, First National Bank, Nedbank, and Standard Bank) have the competitive advantage of already having a significant market share of the banking population across various customer segments. They have responded to this by driving large-scale transformation programmes with the intention of “improving customer experience, digital transformation, new ways of working, and enterprise-wide cost reduction” (Maritz et al., 2018, p. 1).

The new entrants mentioned above will be offering mainly web and app-based services, and will have a more online presence versus a brick and mortar one

(Maritz et al., 2018). As mainly digital banks, they stand to benefit from the low-cost base and are not hindered by legacy IT system architecture (Grosskopf and Natsas, 2018).

According to Maritz et al. (2018), the future of the banking sector in South Africa is changing at a rapid rate, and is being faced with agile new entrants who have a differentiated value proposition in the form of app and web-based offerings, with a distinct online presence. It is critical that the big four banks realise and acknowledge that not all banks will continue to exist and be successful in this new world, but rather only those that can quickly adapt and use digitalisation to their advantage, which will result in them capturing a majority share of the future banking market (Maritz et al., 2018).

While four of the five major banks are focused on their major transformational programmes and strategic themes, including the digitalisation of legacy and/or manual processes through the use of robotic process automation, replacing and/or upgrading legacy IT systems architecture, and adopting channel and product innovation to improve and optimise the customer experience (Natsas & Roopnarain, 2018), there is no literature or information on how banks will deal with the upskilling and re-skilling of employees who will become displaced as a result of digitalisation.

According to BusinessTech (2019), there is a major shortage in digital skills in South Africa, and banks are now fighting to attract and recruit these individuals. It also says that banks have embarked on several initiatives such as differentiated hiring strategies and developing learning and training programmes. However, it still takes a significant amount of time to employ individuals with these skills, and their salaries come at a premium price (BusinessTech, 2019). Standard Bank Group's Chief Information Officer, Alpheus Mangale, said that his organisation is finding it difficult to recruit for positions that didn't exist a few years ago, such as Cloud Engineers.

In March 2019, Standard Bank confirmed that it would be closing 104 of its branches, impacting approximately 1,200 jobs, as part of its digitalisation journey for its retail and business bank (White, 2019). Levy, a labour economist, (as cited

by White, 2019) indicated that the impact of digitalisation on banks, and its significant change in business models to remain competitive and relevant to customers' preferences, is now leading to jobs being lost in the banking sector.

Absa also announced the re-structure of its retail and business banking division in early March 2019, with a total of 827 jobs impacted according to Cameron (2019). The Nedbank Group is also in the process of liaising with 1,500 employees over possible job cuts in its retail and business banking division.

Digitalisation illustrates the beginning of a new economic era, where organisations will not be competitive and will lose market share if they do not adapt to and adopt digitalisation (Philips et al., 2018). They further indicated that AI in particular could improve productivity by 40% by 2035, and that this could lead to phenomenal growth rates for the South African economy. However, in order to do this, there needs to be an environment in which there is “human-machine” collaboration. This will encourage higher rates of demand and consumptions as humans spend money and boost the economy.

Philips et al. (2018) state that if South African organisations can double the rate at which they upskill their workforce for “human-machine” collaborations (Philips, et al., 2018, p. 2), it could possibly reduce the predicted number of job losses from 20% (3.5 million jobs) in 2025, to just 14% (2.5 million jobs). If done correctly, this could have a significant impact on the South African economy and change the lives of millions of South Africans for the better.

2.8 Digitalisation and cost management

According to Jatic et al. (2017), digitalisation in banking has made it necessary for existing banks to review their existing operating models and channels, which has predominantly been through the traditional brick and mortar branches. This re-assessment of the existing operating models and channels has led to the realisation that it needs to be replaced with more digital or electronic channels and associated products and services.

They further state that digitalisation, which is the “application of modern technologies” (Jatic et al., 2017, p. 62), existing operating models, and channels

has enabled banks to improve business processes, increase efficiencies, manage costs better, gain competitive advantage, and as a result of this become more profitable. If banks choose not to digitise and change their operating models, they will miss out on the opportunity to reduce costs and improve productivity, as Fintechs are doing so (Carbo-Valverde, 2017).

According to Jatic et al. (2017), cost management is also becoming a key focus area for banks. They explain that the growing need to cut costs, increase efficiencies, and look for growth outside traditional sources and methods, has illustrated that banks need to review and change their existing operating models. Digitalisation of business processes can be used as a lever to reduce operational costs, and if banks do not digitise their business adequately and/or have a strategy for digitalisation, they will become uncompetitive, ultimately unprofitable, and will no longer exist in the medium to long-term (Jatic et al., 2017). The further use of AI will also result in the need for a reduced workforce which will attract costs.

2.9 Change management and the banking sector

According to Kohnke (2017), it is important for organisations to understand that digitalisation involves more than just technology. It also has a big influence on how organisations exist, and increases the rate and complexity of change that organisations are facing in this time of digital transformation. He added that digitalisation not only necessitates the need for new skills and proficiencies, but also a different leadership style and organisational dexterity in being agile. This will then result in shifting the culture of an organisation towards thinking and operating digitally. This view was supported by Jatic et al. (2017), who explain that when banks embark on a digital transformation journey, they need not only change their processes and procedures, but also the culture of the organisation and their normal way of thinking.

Kohnke (2017) also explains that organisational change management is a critical success factor for the adoption of digitalisation within an organisation, and can play a key role in reducing the resistance to change that may be experienced when an organisation digitises. He also refers to the fact that traditional change

management must be adapted because of the rapidly changing environments of organisations because of digitalisation.

According to McKinsey & Company (2020), good communication goes hand in hand with change management. It has always been regarded as a critical success factor in traditional change initiatives and plays an important role in the digital transformation of an organisation. It also states that when driving a digitalisation strategy, organisations will need to look at moving away from traditional mediums of communication such as “one-way communication” in the form of organisation-wide emails, and rather use more interactive mediums such as “internal social media”. This will encourage open and transparent conversation across the organisation.

2.10 Theoretical Framework

The purpose of this study is to understand the influence that digitalisation is having on the changing nature of employment within the South African banking sector. This is a phenomenon that is not unique to only the banking sector; most industries have been changed or influenced as a result of digitalisation. According to Swan (2017), this was suggested by John Maynard Keynes in the 1930s, where he stated that there will be a decrease in the number of hours needed to be worked. He believed that as economies grew and developed, the need for labour would start falling quicker than the ability to find new types of jobs.

The above view can be related to the school of thought emerging which highlights a growing concern that digitalisation is replacing the need for human jobs, and is creating a phenomenon of “technological unemployment” (Brynjolfsson & McAfee, 2012; Marchant et al., 2014).

According to Brynjolfsson and McAfee (2012), there needs to be a much better understanding of the impact of digitalisation on skills, wages, and employment, and that digitalisation or digital technologies must be acknowledged as one of the most influential driving forces in the global economy today.

The theories that have been identified to support this research are:

- **The ALM hypothesis:** The ALM (2003) hypothesis suggests that technology in general has the ability to replace human labour in routine tasks, irrespective of whether they are manual or cognitive, but are not yet able to have the same replaceability/replicability with non-routine tasks.
- **Skill-biased technical change hypothesis:** Goos and Manning (2003) say that the skill-biased technical change (SBTC) hypothesis suggests that when it comes to technology, it is biased where skilled employees are favoured over non-skilled workers. The SBTC hypothesis predicts that there is a greater demand for skilled jobs, and a decreased demand for unskilled jobs in the current labour force, where the ALM theory focuses on the impact of technology on the demand for a different or new skill type (Goos & Manning, 2003).
- **Routine-biased technical change hypothesis:** Goos et al. (2014) proposed another hypothesis called the routine-biased technological change (RBTC) that seeks to explain job polarisation. They say that the recent changes in technology are pre-disposed towards replacing employment in routine tasks, and that job offshoring is also somewhat influenced by these advancements and progression of digitalisation. They elaborate by saying that both these forces drive a decrease in the demand for middling relative to highly-skilled and low-skilled occupations, which affects the structure of employment as supported by other literature on this field of study.

The above-mentioned theories, as well as other theoretical views mentioned in the literature review, will be used as the basis for answering the research questions posed in this research.

2.11 Conclusion of the Literature Review

Brynjolfsson and McAfee (2012) suggest that digitalisation has increased the world's economy production capacity. This is, however, not an indication that all society will benefit from digitalisation and the continued progression of it. It has, in fact, resulted in wages becoming more disparate. One of the main issues that Brynjolfsson and McAfee (2012) attribute this to, is that skills and South African institutions are not keeping up with these rapid changes in technology. This means that the skills and institutions will have to evolve just as quickly as, if not

quicker than, digitalisation in order to lessen the impact of technological employment and lower incomes, wages, and salaries.

Coetzee (2018) also explains that some of the strategic implications of Fintechs and increasing digitalisation for banks is:

- Technology-based skills and experience are becoming more compulsory than optional for employees within financial services.
- The desired banks of the future will no longer require bricks and mortar branches, but rather they need to have an online presence.
- New competitors entering the market are basing their product and service offerings as digital and online offerings, which are most often cheaper than what traditional banks are offering to customers.
- Banks will have to become more strategically pre-emptive, and not only proactive in identifying new digital opportunities. They will also need to have the ability to take these new digital solutions to market before their competitors do.

According to Stats SA (2019), the growing unemployment rate of 27.6%, of which the youth made up over 50%, and an economy that is shrinking by an annualised rate of 3.2%, any additional job losses could have a devastating impact on the South African economy. The banking sector in South Africa employs approximately 158,000 people, and enables access to the formal economy (BASA, 2019). It is therefore imperative that banks, as a major employer in South Africa, need to understand the impact of digitalisation on employment in the financial services sector and the country as a whole.

Philips et al. (2018) state that digitalisation brings disruptions and fundamentally new ways of doing business and engaging with customers. If countries and organisations are prepared for this digitalisation, and have a workforce that is skilled, then digitalisation presents the possibility to unlock new value, generate and re-design new jobs at a rate quicker than those being lost, and increase growth rates meaningfully. Their counter-argument is that if countries and organisations are not prepared for this digitalisation, then it can create more job losses than it will create new ones. This can have far-reaching consequences for

the economy and the socio-economic well-being of the individuals of the organisation and the country.

The WEF (2020) state that the people in any organisation are its most valuable and important asset. In a time of ubiquitous digitalisation, it will be the employees' skills, along with their competencies, creativity, and capabilities that will be its competitive advantage. Therefore, a proactive and engaged stance in implementing programmes focused on re-skilling, upskilling, and teaching new skills that are, or will be, in demand is a critical investment for organisations, industries, and economies (WEF, 2020).

In conclusion, this research seeks to investigate and understand the following research questions:

1. How has digitalisation affected employment in the financial services sector, specifically banking?
2. How has digitalisation changed the nature of jobs in banking?
3. What type of new jobs have been created as a result of digitalisation?
4. What can banks do differently when digitising as it relates to employees?

CHAPTER 3: RESEARCH METHODOLOGY

According to Kaplan's research in 1964 (as cited in Jackson II, Drummond and Camara, 2007), methodology is the process of identifying and using the most appropriate method to address a problem, be it theoretical or practical. Jackson II et al. (2007) refer to methodology as the reason why data should be collected in a particular way.

This chapter focuses on the methodology used to examine the potential influence of digitalisation on the changing nature of employment in the South African financial services industry, specifically the banking sector, as outlined in the research problem and research questions.

The first part of this chapter relates to the research methodology, followed by the research approach selected, and then the chosen research design and data collection method. Following this, there will be an elaboration on the research strategy that addresses the research questions of this study, by outlining the target population, sample, sampling method, and research instrument. Thereafter, the selected approach for collecting and analysing data will be highlighted and discussed. The chapter is then concluded by addressing the transferability and credibility of the proposed research topic.

3.1 Research approach

The research approach selected for this study is a qualitative research approach. With qualitative research, the research has a deep sense of reliance on the respondents to offer comprehensive answers to the interview questions in terms of their experience and exposure from a personal perspective (Jackson II et al., 2007).

Qualitative research enables the researcher to collect "open-ended and emerging data that can then be used to develop themes" (Campbell, 2014, p. 3), and allows for a study of an exploratory nature.

Given that the purpose of this research is to explore and understand the influence of digitalisation across the various levels of employment in the banking sector in

South Africa, specifically for one South African bank, quantitative research would not yield the insights that will generate this impact.

3.2 Research design

The research design adopted for this research will be that of a case study. Case studies are used by researchers who want to explore in detail “a programme, an event, an activity, a process, or one or more individuals” (Creswell & Creswell, 2017). According to Harrison, Birks, Franklin and Mills (2017), case study research has gained in standing as an effective research design methodology to research, understand in-depth, and explore complex issues in real-world settings which are characteristic of this research project (Yin, 2014, as cited in Harrison et al., 2017), making the case study methodology an appropriate research design methodology to be used.

With a case study, the questions are in-depth and descriptive (Creswell, Hanson, Clark, & Morales, 2007). This is in line with the chosen research instrument of a semi-structured interview for this research project. The questions will be used to develop an in-depth understanding and provide insights into a subject or a unique case (Creswell et al., 2007). This case is looking to understand the influence of digitalisation on the changing nature of employment in the South African banking sector.

In addition, Yin’s study conducted in 2014 (as cited in Harrison et al., 2017), shows that a case study is differentiated from experimental research in that a case study is examined in context and in a real-world setting. Selection of the case for this research project is a South African bank and is as a result of the purpose of the research and how it is related to academic theory about the research topic, according to (Yin, 2014, as cited in Harrison et al., 2017). This is further supported by research conducted by Merriam in 2009 (as cited in Harrison et al., 2017), that case studies are used for generating reasoning and understanding by asking the how and why questions as some studies show (Yin, 2003, as cited in Baxter & Jack, 2008), rather than testing a hypothesis.

One of the disadvantages of using case study research is that identifying and

defining, as well as the bounding (setting and context) of the case, is not easy because of the many points of interest and variables that intersect and overlap when using this type of research design (Harrison et al., 2017). This complexity is evident in this research because of the size of the organisation and the differing jobs that the respondents hold. In addition, the complexity of the case study methodology also poses the challenge of finding an easy way of reporting the findings in a succinct manner that is easy to understand, while still being comprehensive enough to allow the reader of the report to understand the findings and decide whether the results of the study are applicable to their own purpose (Baxter & Jack, 2008).

Baxter and Jack (2008) explain that an advantage of using case study research is that it can provide incredible insights and understanding to a case. They add that it also allows for the gathering of data from various sources that can be connected to highlight and justify the case being studied and analysed.

3.3 Data collection methods

The data collection method used was semi-structured and individual interviews which was based on the literature review and research questions. A semi-structured interview was chosen as the preferred data collection method because the research is not being done to test a specific hypothesis (Kajornboon, 2005), but rather to explore the insights, observations, experiences, and opinions of the respondents on the effect of digitalisation on the changing nature of employment in the South African banking sector.

The use of the semi-structured interviews as a data collection method allowed for the collection of the type and amount of data that was required to answer the research questions of this research as it enabled:

- More fluidity and receptiveness to emerging themes for both the interviewer and respondent (Jackson II et al., 2007).
- The interviewer to explore any interesting insights that arose during the interview, and to also drive and manage the flow of responses received, even though the questions were pre-determined (Wilkinson & Birmingham, 2003).

- The formulation and posing of additional probing questions because the interactiveness of an interview allowed for the seeking of clarification of answers and changing direction as and when required (Opdenakker, 2006).

3.4 Population and sample

3.4.1 Population

This research was conducted within the premises of the selected bank. The population was made up of employees who have experience in the organisation and/or exposure to how digitalisation has influenced the changing nature of employment across the various levels of employment within the banking sector.

3.4.2 Sample and sampling method

The sample consisted of executives and senior managers who were selected for their knowledge and experience in digitalisation in the bank and/or financial services.

Interviews were conducted with 15 individuals across various genders, age groups, races, and functional areas within the bank. The interviews were done as face to face interviews, with requests to conduct them via email to the selected respondents. If the selected respondent was not available during the interview period, then a suitable alternate time was agreed and arranged.

Purposive sampling is commonly used as a sampling technique in qualitative research, and is generally used for the identification and selection of a sample that comprises of individuals or groups of individuals that are best placed with the knowledge and experience to answer the research questions (Palinkas et al., 2015). The sampling method for this research was purposive sampling, as the interviews were conducted with individuals within the selected bank who had experience and exposure to the impact of digitalisation in the bank and/or financial services.

Purposive sampling is a non-probability sampling technique, as the sample size investigated is deemed small when compared to the sample size used for probability sampling techniques (Palinkas et al., 2015). Hence, the sampling

method will be purposive sampling because of the size of the sample that will be used for the purpose of this research.

Table 1: Profile of respondents

Description of respondent type	Number to be sampled
Executives	9
Managers	6
Total number of respondents	15

3.5 The research instrument

Wilkinson and Birmingham (2003) explain that research instruments are tools that can be used to obtain information that is relevant to one's research project, and no single research instrument is superior to the other. However, the best quality research projects are achieved when the most suitable research instrument is used and applied for that research project in the most appropriate manner (Wilkinson & Birmingham, 2003). Hence, the research instrument used for the purpose of this research was a semi-structured interview conducted by the researcher as it was most suited the collection of the type and amount of data that was required to answer the research questions of this research.

The semi-structured interview guide has been included as Appendix A. The interview guide has been structured in such a manner that it will answer the research questions of this research:

1. How has digitalisation affected employment in the financial services sector, specifically banking?
2. How has digitalisation changed the nature of jobs in banking?
3. What type of new jobs have been created?
4. What can banks do differently when digitising as it relates to employees?

The researcher was also considered a research instrument for this research project, as it is the researcher's ability to describe, comprehend, and explicate

the opinions, perceptions, and experiences shared by the respondent. This is critical in the collection and analysis of data received from the interviews held (Maguire & Delahunt, 2017).

3.6 Procedure for data collection

The interviews were pre-arranged with the selected respondents. The interviews were conducted at either one of the bank's head offices. Interviews were held at the convenience of the respondent in a booked meeting room to ensure confidentiality and no interruptions. The interviews were conducted by the researcher, and were recorded with permission from the respondent. Notes were taken as and when necessary. Once the interviews were concluded, it was transcribed into text for analysis of the data.

3.7 Data analysis and interpretation

The selected data analysis method used was thematic analysis as it identifies themes as "the process of identifying patterns or themes within qualitative data" (Maguire & Delahunt, 2017, p. 3352). Furthermore, thematic analysis allows for the identification of themes emanating from the data collected, which are then used to answer the research questions. It goes beyond just summarising, and interprets, understands, makes sense of, and creates valuable insights from the data collection (Maguire & Delahunt, 2017).

Based on this, it was the most appropriate method of analysis to interpret the data collected from the semi-structured interviews and analyse the themes that emanated from there to create valuable insights that were used to answer the research questions of this research project.

3.8 Limitations of the study

The possible limitations of this study were:

- The assumption that the respondents would answer the interview questions honestly and candidly.
- The fact that there may have been unknown factors in the respondents'

personal and work life that could have biased their answers to the interview questions.

- Sample constraints was an issue as there was reliance on the availability of a small sample of individuals.
- The presence of the interviewer during the collection of the data may have influenced the respondents' answers.

3.9 Transferability and Dependability

3.9.1 Credibility

The credibility of a qualitative study is established when it depicts a true interpretation of the experiences and perceptions of the respondents, and that they would be able to acknowledge the content of the descriptions as a true reflection of their responses to the research questions (Munn, Porritt, Lockwood, Aromataris, & Pearson, 2014)

Research reports that are deemed to be credible are those that empower the confidence in readers, such that they are willing to make decisions that are aligned to the findings of the research report (Tracy, 2010).

Credibility was established for this research report by ensuring that the interpretation of the data received, and the formulation of the findings of the research project to answer the research questions, was a true reflection of the experiences and perceptions of the respondents that were interviewed. It was further established by ensuring that the bias of the researcher did not influence the deductions and presentation of the research findings.

3.9.2 Dependability

According to Shenton (2004), the dependability of a research project is established by using techniques that illustrate that if the research work was repeated in the same setting, using the same methods and respondents, then similar results will be achieved. This is further supported by Guba and Lincoln (as cited in Munn et al., 2014) who argued that dependability refers to the consistency of the outcomes of the research project. To promote the dependability of the

research project, the processes that were followed in terms of the research project must be documented and described in detail for the:

- Research design and its implementation.
- Process followed for data collection, the approach taken to collect, analyse, and interpret this data
- Reflective assessment of the research project and evaluating the efficacy of the research process carried out (Guba & Lincoln as cited in Munn et al., 2014; Shenton, 2004).

The dependability of this research project will be established by ensuring that the above is documented and described in detail as part of the final report, to enable the research to be repeated by another researcher to achieve the same results.

3.10 Demographic profile of the respondents

Given that there are a higher number of male executives versus female ones in the bank, there were more male executives as respondents than female ones. With regard to the managerial split of respondents, there was an almost even split of male and female respondents. The tenure of employment of the respondents also varied.

3.11 Ethical considerations

The ethical considerations that were undertaken were as follows:

- Confidentiality of the respondents' identity is guaranteed.
- The purpose of the research and the purpose of the interview was explained to the respondents before the interviews.
- The respondents were advised that if at any stage in the interview, they felt uncomfortable and did not wish to continue with the interview, then the interview would be stopped immediately or postponed as per their preference.
- The interviewer kept top of mind that the purpose of the interviews was to gather information and not to influence the respondents' answers or their opinions.

CHAPTER 4: PRESENTATION OF RESULTS / FINDINGS

4.1 Introduction

For the purpose of this study, a deductive research approach was used with the aim of addressing and answering the research questions of this research and testing it against existing theoretical framework or theories (Research-Methodology, 2020). According to Streefkerk (2019), the deductive research approach follows this process:

- It begins with the examination of existing theories and literature
- Collection of data then takes place to answer the research questions.
- Analysis of the results of the data collection then takes place, and this will either support or not support the outcome of the data analysis.

The above-mentioned process was followed for this research paper. The results of this study will be presented using direct quotations from the respondents which were highlighted during the data fragmentation process, and these are verbatim from the interview transcripts. Themes were then extracted, and views have been created per research question using thematic analysis across all respondents interviewed. A summary and conclusion are presented at the end of the chapter of the results as pertains to the emanated themes.

A total of 15 interviews were conducted with employees of the bank that this research is based on. These respondents were selected for the following reasons:

- Respondents were either:
 - Senior Executives, or
 - Senior Managers
- Respondents are, or were previously, in strategic positions that involved digitalisation in some shape or form within the bank
- Respondents have long-standing experience and/or knowledge within the bank across different business units ranging from human capital, legal, operations, business improvement and support, information technology,

digital, and risk and compliance

The key themes and associated sub-themes that emerged from the analysis and interviews were as follows:

1. Theme 1: The effect of digitalisation on employment in banking

1.1. The effect of digitalisation on routine, mundane, clerical, and administrative jobs

1.2. The effect of digitalisation on highly-skilled jobs

2. Theme 2: The changing nature of employment as a result of digitalisation

2.1. Key drivers changing the nature of jobs as digitalisation grows.

2.2. The clients' influence on the changing nature of employment in banks as their needs evolve.

2.3. The growing importance of data.

3. Theme 3: Emerging views on new jobs created through digitalisation

4. Theme 4: Key focus areas for banks as they digitise as it relates to employees

4.1. Change management as an enabler of digitalisation.

4.2. The role of banks in the changing nature of employment.

4.3. The growing role of entrepreneurship as digitalisation increases.

4.2 Theme 1: The effect of digitalisation on employment in banking

4.2.1 The effect of digitalisation on routine, mundane, clerical, and administrative jobs

There was an overwhelming response from all respondents that they have

witnessed and experienced a definite decreased demand in jobs for administrative data capturing, administration, clerical routine, repetitive, non-thinking, and jobs that have no ambiguity. The main reason for this has been the introduction of digitalisation. This form of digitalisation has been by way of increased automation, the introduction of the use of robotic process automation (RPA), optical character recognition (OCR), and a migration of repetitive manual tasks to automated or robotic assisted processing, thus creating extra human capacity.

“But the more clerical, the more administrative, the more routine jobs, those unfortunately, are going to be a thing of the past.”

“Any repetitive manual tasks that are the same no matter what you do will be the ones that will be focused on for digitalisation.”

In addition to this, there was a common view among the respondents that service fulfilment jobs will also become impacted as more functionality and capability is placed in the customers' hands. This was also accompanied by the view that branches are changing from offering a full suite of products and services to service centres with a limited offering because many banking services and even product fulfilment is now being offered on a digital platform. Routine and mundane service queries from clients can now be handled by a chatbot rather than a human, and this service can be available 24/7.

“I think in operations where there are repetitive actions done by humans, there is now opportunity for that to be done by a robot through the digitalisation process.”

“Any repetitive manual tasks that are the same no matter what you do will be the ones that will be focused on for digitalisation and positive and negative.”

Quite a few respondents stated that this impact in routine jobs spans across various business units, and not just operations environments. It also affects the reporting and finance functions of the bank, as a lot of the daily, weekly, and/or monthly reporting can now be automated with minimal human intervention. Within the legal function of the bank, robots can now be used to vet standard legal contracts and agreements. This is an indication that digitalisation is impacting not

just routine and non-cognitive jobs, but also routine cognitive ones. There was also a general view that call centre jobs will be impacted as less processing and capturing errors will occur because of automation, and this will mean that clients will not need to have with contact call centres as much because there will be fewer queries.

“Any role which requires manual, transactional level interaction. So basically, administrative jobs, data capturing jobs, jobs where we are putting more capability in the client space, those sorts of jobs, even service jobs where clients are being introduced with self-service. So, it can be across the spectrum, but it’s mostly your administrative types of jobs.”

“It’s the jobs that you can explain in one word. It’s the jobs that work the same way where there is no ambiguity at all. Those jobs would be eventually replaced by something that can do that.”

Another view that is worth mentioning, and that was raised by three respondents, was that most recent job losses that occurred outside of the closure of the branches was not in fact because of digitalisation, but rather because of other strategic priorities such as centralisation of services and capabilities. The reason for this is that banks, like most other organisations, are looking at seamless processing, increased accuracy, and higher productivity levels with either the same number of employees or fewer. This can only be achieved through digitising the organisation and the way it currently operates.

“If you think about it, where people have formally lost their jobs, it was a centralisation thing. Technology was involved, but it came from long before we even thought about digitalisation.”

“Where we’ve downsized has been for other reasons and not digitalisation.”

4.2.2 The effect of digitalisation on highly-skilled jobs

More than half of the respondents mentioned that as the demand for routine, mundane, clerical, and administrative jobs has declined, they have witnessed and experienced a parallel increase in demand for highly-skilled jobs that need to be

fulfilled by individuals that have a certain skill set. To be more specific, they said that it is a skill set that enables individuals to become more digital, and experts in this digital sphere.

“We are creating fewer junior or routine type jobs, and creating more senior, highly-skilled ones, and those that require creativity and thinking of all the things that a routine machine can’t do. So, it really is the most rewarding type of jobs, the jobs that you would want.”

“There will be a mind-shift change in operations from the mundane data capturing, validator type scenario, to more competency or skill of quality assurance.”

Several of the respondents also said that the demand for highly-skilled jobs is also accompanied by the requirement that the individuals that can be placed in these jobs are appropriately qualified, have problem-solving skills, are open to new ways of doing things, and are innovative, as this is what is required. It was also mentioned that employees will have to be technology savvy, think creatively, and be able to think out the box.

“There might be a few opportunities for continuous improvement and work dealing with exceptions, and data jobs. Cloud Computing and Data Scientists, Data Engineers, and Social Media Experts, and you know that those are people that are quite highly-educated, quite highly-skilled, and have a certain skill set.”

“So, I think the workforce of the future will be more technology savvy. I think they’ll be more literate in evolving technologies, more literate in data. I think, hopefully, there will be less mundane, repetitive, non-thinking processes that they have to do. So, if I describe the future techno savvy, innovative, mathematically, data-orientated and open to change and not do mundane tasks.”

Another comment which was mentioned often was that these new jobs are ones that did not previously exist in the banking industry, but have now become relevant as digitalisation becomes more prevalent in banking. The new highly-skilled jobs that were mentioned by several of the respondents are:

1. Data Scientists
2. Data Analysts
3. Data Engineers
4. Data Specialists
5. Data Security
6. Data Governance and other data-related jobs in general, but not data capturing jobs
7. Intelligent Automation jobs
8. Cyber Security
9. Digital Experts
10. Quality Specialist
11. Exception Management
12. Jobs that require the individual to be more literate in evolving technologies

4.3 Theme 2: The changing nature of employment as a result of digitalisation

4.3.1 Key drivers changing the nature of jobs as digitalisation grows

There was a majority sentiment among the respondents that prudent cost management (reducing costs and the cost to income ratios), improving business efficiencies, and growing revenues and profits were all drivers of digitalisation in banking. This was accompanied by the view of one respondent who is an executive that in order to do the above, the solution is not to throw more people at the problem, but to rather introduce digitalisation into the organisation and thereby leverage it. It was evident from the majority of the responses received that banks will not be competitive in the long run if they continue to use the same operating model of manual and traditional distribution channels and offer the same products and services. In summary, banks will be incurring more costs to do things manually when they could be doing things more cost effectively and quicker by doing them digitally.

“Now, it’s imperative that everything does get digitalised or digitised in some way, shape, or form. Also, we’ve got very stringent cost targets, and we can’t meet those with the traditional ways of improving processes.”

“We know that a lot of what we do as a bank is very manual, and there are lots of cost pressures. So, the only leverage that we really have is possibly how do we become more cost efficient? And the way to do that, unfortunately, is to reduce the number of people that we have. In order to do that, we need to understand it is an opportunity to use technology or digitalisation to take work that is being done by humans. But it’s not only cost efficiency, it’s also about channel efficiency, by introducing technology and robotics, the robots can do the work better than what the people used to do in the past. Mistakes will also be reduced, and you become quicker, ultimately providing a better and more efficient service.”

A few respondents mentioned that the new digital and online banks, such as TymeBank and Discovery Bank, are achieving desirable cost-to-income ratios as they do not have the costly, traditional brick and mortar branch distribution channels. They also do not have the burden of dealing with legacy systems and a large employee cost base while introducing digitalisation into their operating model and/or value chain. They felt strongly that these are challenges that traditional banks are faced with, and if they do not address them sooner rather than later, they will be faced with a further reality of increasing costs, and an aging infrastructure that is expensive to manage and maintain and irrelevant to clients. This also makes traditional banks uncompetitive with their pricing, which will result in a loss of clients as banking products and services are quite generic across banks, and clients will look for a cheaper alternative as the cost is ultimately passed onto them.

“You will get additional pressure on revenues, and you are going to lose clients that want to be digitally enabled. At the same time, your cost efficiencies are not going to be there because you have limited bandwidth. So, I think we will get squeezed on revenue, and costs are going to go up.”

Respondents also shared the view that the majority of the cost base for banks is made up of employees’ costs. So, it makes sense that banks will look at alternatives to reduce their employee base, or maintain their current base while ensuring that output and productivity increases, and that efficiencies are also improved. The only way to do this is via process improvements, and introducing new technologies and digitalisation as part of the bank’s new operating model.

This will ultimately result in more seamless processing and servicing, and reduced human interaction.

There was a shared sentiment among the respondents that their current jobs were either created as a result of digitalisation, or that their existing jobs have been impacted as a result of the organisation wanting to digitally transform its operating model and value chain. There was a view that when any new work is undertaken, or continuous improvement initiatives are embarked upon, that it is approached with a view to how it can be done more effectively, efficiently, and cost effectively by using technology and tools as enablers.

Respondents also shared a similar view across the board that in order to decrease costs, increase revenue and profits, maintain existing customers, and acquire new ones, the bank has to look at its current way of doing things and evolve; this has led to the start of its digital transformation journey. This, in turn, has meant that apart from offering customers new channels and products and services, it must fundamentally change the way it does things. This has led to the introduction and increasing use of:

- Artificial Intelligence (AI)
- Chatbots
- Data Science
- Machine learning
- Optical Character Recognition (OCR)
- Robotic Process Automation (RPA)

“Because of the manual nature of our processes, and the manual handovers inherent in our processes, it directly impacts our client experience. So, by us being able to use things such as OCR technology, or RPA, and so forth, we’re really enabling our customers to have that full-on experience without fundamentally changing operational structures in the business.”

This has inevitably had an impact on the nature of employment in banking, as it has resulted in a decrease in demand for routine, mundane, clerical, and administrative jobs. This also includes call centre jobs, as error rates decrease,

and processing can take place quicker and more frequently as robots are used for processing. This change has been most notably felt in highly operational and labour-intensive environments within banking where it is possible to automate tasks within a process, or automate an entire process, and where clients can be migrated to an automated channel. This migration of repetitive manual tasks to automated or robotic-assisted processing, or to an electronic channel, has created extra human capacity across the organisation.

The flipside of this is that it has been accompanied by an increase in demand for highly-skilled employees that have the skill set to digitise a business and manage the robots where they have been introduced in the bank's value chain. There was also mention of the fact that there has been an increase in the demand for exception management and exception resolution as a result of the robot or automated process not being able to effectively deliver on a process for various reasons, and this invariably causes an exception to the process being generated that will need to be actioned. If banks do not have defined exception processes to handle the actual exception, then it will fall through the cracks and there will be a negative client impact and client experience.

A quarter of the respondents did not express a view around costs or efficiencies.

4.3.2 The clients' influence on the changing nature of employment in banks as their needs evolve

All respondents referred to a crucial factor that banks need to consider in terms of their digitalisation journey. This is the clients' needs and the desired client experience that they want to provide in line with their client value proposition. In a nutshell, being client-centric in the bank's digitalisation journey is a critical success factor in this digital era.

"I don't think we've got that 100% right, but our intention is pure intention to do that and get the best result from being customer-focused and customer-centric."

"The simplest one for me is client centricity, right? If we are not going to get the client comfortable, on the end of this whole technology digitalisation journey, comfortable enough with what we've got, yeah, then it's pointless."

“If you do this properly and you get the client, right, the other stuff will fall into place.”

There was also a widely shared view that clients are changing the way they do business, and this has been significantly influenced by the growing rates of increased digitalisation and increased globalisation. The client's world and the client are becoming more sophisticated and digitised, and the bank's product and service offerings needs to be in line with this. Clients want to do their banking on-the-go and from anywhere they choose. The bank needs to be able to digitally evolve and transform as their clients' needs digitally evolve and transform.

“I think it's looking at the client journey holistically and identifying the benefits.”

“But I think the world is becoming more sophisticated, and our clients are becoming sophisticated and demanding digitalisation in the banking world, primarily saying that the nature of the client is managing their world entirely on-the-go. So, digitalisation is making a difference and providing the clients with an opportunity to manage their world more seamlessly.”

Most respondents said that banks need to enable their clients to use digital or mobile platforms so that they can transact or engage with the bank electronically or digitally, or their products and services will not be relevant or adequate. The respondents further stated that banks need to ensure that their client value propositions are aligned to their clients' needs and expectations. The next step is for banks to ensure that operating and distribution channels support these client value propositions.

“These customers have experiences elsewhere. They have experiences on Facebook or social media, and expect the same type of experience when they talk to our tellers. When they interact with us as a bank, so very much when we start talking about digitalisation, and we're empowering our frontline employees with this kind of tools, they are going to look smart in front of the customer.”

There was also a majority consensus that because this digital era and the fourth industrial revolution is moving and evolving at an increasing pace, banks will have to continuously anticipate their customers' needs and deliver electronic and

digital solutions accordingly. There was further consensus that banks need to enable self-service and digital channels and platforms in order for clients to do things by themselves. It becomes simpler, better, faster, seamless, more convenient, and cheaper for the client to do their banking in this manner.

“You will find client experience and user experience, you know, those kinds of jobs, making sure that whatever you are designing is relevant and is intuitive enough for the client.”

“It’s being digitally available to customers. It’s about being able to give a small creative footprint that is accessed by most of our clients, and prospective clients, anywhere in the world. And importantly, it’s about making us deliver promises to our clients in a more seamless, clearer, more concise, and speedy fashion.”

“So, digitalisation in the bank, it entails us looking at the current systems that we have, the current processes, and the client experience that we are committing to our clients and stakeholders, and then looking at ways in which we can make the lives of our clients easier.”

The respondents’ views were that given that the clients’ entire world is changing, and not just from a banking perspective, indicating that the stock-standard traditional banking products, services, distribution channels, and even fulfilment of clients’ requests and complaints, need to change and evolve. This implies that the current operating model of banks, and the traditional jobs that existed in banking, and may still do today, will either no longer exist, or there will need to be some change in the role going forward as certain products and services are no longer relevant to clients because of digitalisation.

“And if our client experience is actually inadequate, clients will walk out the door.”

“It’s what our customers are demanding. So, putting the customers’ needs at the centre of what we’re actually doing and building, it’s the only way.”

If banks can satisfy the clients’ needs, and provide a superior client experience, by default revenue and profits will fall into place as they will be able to better retain clients and easily acquire new ones. Only one of the 15 respondents did

not mention the client in their interview. The further ripple effect of this in terms of the new jobs that have been created as a result of digitalisation in banking will be discussed further on in this chapter.

“So, a good example is the marketplace under X, previously they were a product team, now they’re thinking with a different hat on to say, how do we digitise this world? And it’s always with a client journey in mind, and not necessarily the bank.”

“So, digitalisation, you can approach from two angles. You can say, this is my own bottom line, what’s the impact on the bottom line or what is impact on the client experience? My honest opinion is to say that client experience comes first. And then as a natural recourse, your own bottom line will follow suit and you will see a benefit in both customer retention and increased profits.”

There was also a strong view that if banks do not change and quickly adopt and adapt to digitalisation, then their longevity, relevance, and profitability will definitely be in question.

4.3.3 The growing importance of data

The rise of data as a theme came through strongly with 13 (87%) of the 15 respondents mentioning it in their interviews. This was not just around the importance of data in a digitalisation journey, but there was also a lot of focus on the various types of data jobs that have emerged as a result of digitalisation and the fourth industrial revolution.

“Data is imperative. Without it you can’t really digitise because then your business case falls out the window. So, it’s become more important than anything, especially insights.”

“I mean, data is becoming a lot more important than any other role. The importance of data is not going to end now, and I think it’s going to continue, because we think in order to make sure that we can do things, I mean, any automation now requires a lot more data and any type of digitalisation requires data.”

Respondents had a strong view that the monetisation of data, treating data as an

asset, and driving a data-driven decision-making organisation is critical for the digitalisation business case of any bank. The view was quite simple: without data, or rather without good, clean, quality data, a bank or any organisation for that matter cannot digitise successfully or achieve any of the benefits of digitalisation. Data that is not of an acceptable standard and quality will result in a large number of exceptions and errors in the process, and this not only impacts the client experience, but will also result in lower success rates of digitalisation initiatives and projects.

“You can’t get the benefit out of automation without quality data. And why is the data crap? The data is critical for people as well, not just for systems. So, I think data is an important part of optimising and transforming banking. And without it, it’s probably going to become obsolete.”

“So, I think for digitalisation to be a success, the data standards to be in place, the data quality needs to be in place as well as the controls and the back-end processes to support digitalisation.”

“Because now we have to cater for the quality of our data currently, as we automate and introduce digitalisation, until we get the quality of our data, right. There are always exceptions. And with exceptions, there’s a client experience that’s impacted.”

With this heightened focus on data, respondents also emphasised the increased focus and need for cyber-security and data privacy to protect clients’ data and strategic insights.

There was also a strong view by one of the respondents that the bank has access to information on clients’ behaviour, from individuals to small and medium enterprise clients, to big corporates, and that it was missing an opportunity to leverage this data and use it as a strategic asset to propel its digitalisation journey and progression forward. In addition to this view, quite a few respondents felt that there needs to be a shift from using data only from a reporting and risk perspective, to using it from an opportunity perspective, and leverage this further by using other technology such as AI, machine learning, and data science.

“The whole reality around data has fundamentally changed. People used to look at data from a reporting perspective, from a literary perspective, and from a mountain of risk perspective, but now, they’re looking at data from an opportunity perspective, and that entails us bringing in the industry using technology such as AI, machine learning, and data science.”

Banks need to identify the heavy reliance and dependency that digitalisation has on data. They need to gather the data, analyse it, understand it, create insights from it, and let it tell them where to go from there. This, coupled with the use of AI and data science, will become a game changer for banks.

Respondents also shared the view that leveraging data will ensure that the bank is not too internally focused, adopts a value chain approach to digitalisation, understands the clients’ needs end to end, and puts the client at the centre of this digitalisation journey. This will ensure that new operating models, digital channels and platforms, and products and services have been designed and implemented as per the relevancy of the clients’ needs and expectations.

“Because if you can understand from your data what your client is thinking, what your client is doing, and you can leverage that, and propel us into that predictive, prescriptive, world.”

“Taking a value chain approach to digitalisation, and also understanding what the client wants and not just being internally focused.”

“Now we are talking about data driven decisioning.”

4.4 Theme 3: Emerging views on new jobs created through digitalisation

The respondents were asked about what they perceived and viewed the new types of jobs that have been created as a result of digitalisation.

The list of jobs highlighted is as follows:

1. Data jobs:
 - a. Data Scientists

- b. Data Analytics Specialists
 - c. Data Privacy Jobs
 - d. Data Stewards
 - e. Big Data Engineer
- 2. Digital jobs
- 3. Digital transformation jobs
- 4. Intelligent Automation
- 5. Cyber-security
- 6. Cloud computing
- 7. Jobs involving new technologies, such as block-chain
- 8. Jobs involving exponential technology
- 9. Artificial Intelligence jobs
 - a. Machine Learning
 - b. Deep Learning
 - c. Natural Language Processing (NLP)
- 10. Exception management jobs – A lot more exception management and exception resolution as a result of the robot or automated process cannot effectively deliver on a process that would put up an exception
- 11. Client experience jobs
- 12. User experience jobs

“So, most definitely data analytics specialists, data scientists, intelligent automation jobs where people are programming robots and maintaining the robots.”

“We knew that there was a need for MIS, data science, etc., but the way that role has evolved or come into its own has been significant. Jobs that didn't exist before ... Robotics, Intelligent Automation and associated jobs.”

“We know that data science and AI is going to become a feature.”

In most instances, the above jobs were mentioned more than once by respondents. It is important to note that almost all respondents mentioned the increased demand for data jobs as a result of digitalisation. This will drive banks in the direction of the predictive and prescriptive world of data science. As the

use of data and the application of big data increases progressively, it will have a spin-off effect on jobs such as cyber-security and data privacy jobs, as banks will need to ensure that they protect their clients' data.

“The data jobs will have been elevated to a large extent to enable the digitalisation journey and client journey ownership.”

“So, I think the data scientists and people thinking about exponential technology, blockchain, those types of jobs. Big digital teams that never existed historically, every organisation you deal with currently has one of those teams.”

There was also a majority view that the demand for digital and AI jobs has increased, and there will be a continued increase in demand for these types of jobs as banks face increasing pressure to digitise in the face of increasing competition or face the risk of being put out of business. The respondents who mentioned innovation jobs, shared a similar view with regards to innovation jobs.

“There is a new Intelligent Automation Team and there’s a big Digital Team in the bank that has lots of people at various levels looking at the solution. So, things that sound like that belongs in an IT company, but it’s now part of the bank.”

Another shared sentiment among most of the respondents was around IA jobs. Earlier in this chapter, it was noted that one of the respondents had said that the increased and continuous use of RPA and AI was one of the biggest enablers of digitalisation for banks, especially in highly operational and labour-intensive environments within banking, where it is possible to automate tasks within a process, or automate an entire process and accelerate digital transformation.

“So, where a robot or automated process cannot effectively deliver on a process, that would put up an exception, and someone has to think through that exception.”

One respondent said that there are still a lot of jobs to be created, and that these jobs will require more human interaction and more empathy. Half of the respondents said that there will be an increase in exception management and exception resolution as a result of the robot or automated process not being able

to effectively deliver on a process, and that this would result in an exception. The exception could also be a result of a data quality or data standard issue.

“So, I think once we remove some types of jobs, we are creating different types of jobs, like data, exception handling, data governance, and risk.”

“We are going to be having jobs that don’t exist today, means that I think over time you are going to find that those jobs that will be created, they don’t exist today, and typically going to be jobs that require human interaction. It’s not just about the job, it’s about the skills and the human skills are going to be increasingly in demand skills like empathy.”

A few respondents mentioned client and user experience jobs, and their view was that banks should be building products and services around the clients’ needs and the desired client experience as they are the end-user or consumer of the product or service.

“The other jobs that I’ve seen emerging now is client experience and user experience jobs. It’s those kinds of jobs making sure that whatever you are designing is relevant and intuitive enough for the client.”

4.5 Theme 4: Key focus areas for banks as they digitise

4.5.1 Change management as an enabler of digitalisation

Most of the respondents mentioned change management in their interviews, and the importance of it for banks and their employees as banks are digitising. As banks digitise, re-evaluate, and evolve their operating models, the impact on employees cannot be underestimated. Change management is becoming more critical because of the magnitude, frequency, and complexity of change that banks are experiencing as a result of digitalisation and increasing competition.

“Systems are the easy part, but putting the systems in place and making sure that we embrace this journey from an IT perspective is easy, but to get people to embrace it and to take it up and to take full advantage of it is going to take massive change management. Change management is everything.”

“So, I think change management is a critical success factor. As making people more knowledgeable about the change, more aware of the change, and more capable of taking advantage of the change, will either make us succeed or make us fail.”

There was consensus that if banks are asking employees to help them digitise, and subsequently make their jobs redundant with no other viable employment options, then this will not drive the right culture and culture change required to drive digital transformation in legacy banks. Banks need to get buy-in from their employees as this will allay their fears of not having a job as banks digitise and automate, or they will experience great resistance to this change. This could result in delays or a lack of progression in the bank’s digitalisation journey.

“There was a big resistance to change from the migration teams and from the operational teams, because the sentiment that came out was that this is going to cut their jobs and the automation of the online integration is going to make them redundant and the person’s self-preservation kicks in, so they become unengaged. It’s creating the culture, the change, and driving more of that so that they start to feel a lot more comfortable with this journey, so articulate the story better.”

The respondents were confident in their perspective that banks need to create an environment that is conducive for individual and collective institutionalised resilience, and that managing change at the highest possible level is becoming important, not just at an initiative level. For this, respondents felt that banks need dedicated change people, and that if the leadership style of the bank does not embrace digitalisation and drive this change, it will stagnate, be slow to respond, and the client will move further away which will result in increased job losses, more so than what may be anticipated as a result of digitalisation.

“So, if the leadership culture is not receptive to this change, you’re going to be stagnated, and the slower you respond, the further away from the choice of the client we’re actually going to be. So, we need to be quick to respond.”

“Individuals also need to start owning their own jobs, their own careers, their own futures. Yeah, we need a cultural change in terms of how we see jobs in the

future.”

Individuals fear losing their jobs, especially those who have been in their jobs for extended periods of time. This is one of the major reasons that respondents felt that employees are resistant to the changes that come from digitalisation. Respondents felt that banks could articulate the story better. They mentioned instances where new platforms and technology were being implemented as part of digitalisation, and there was huge resistance to this change. This was because employees felt that their jobs and livelihoods were being threatened, and therefore self-preservation kicks in. Employees become unengaged, and do not want to participate, which makes it difficult as the change will still happen. As one participant stated, *“We are asking people to help us get rid of their jobs with no alternatives.”*

However, quite a few respondents said that if individuals are open to change, take initiative and ownership of their career, and are willing to be upskilled and/or re-skilled, then they will have a place in the workforce of the future.

“You need to be open to change. I think any employee if you’re adaptable, willing to change and you stand up, you get a chance to be very employable in the workforce of the future.”

“And I think it’s not for the organisation, it’s not solely for the leader to really change the culture. But I think as individuals, we are still stuck in the old way of thinking about jobs, and job security, and what it actually means to be in an organisation. And so maybe the culture changes from, you know, the value that an employee places on the skills that they have to want to have.”

Respondents stressed that banks need to ensure that there is no break in communication within the organisation, and that the culture and change that the bank’s leadership is driving from a digitalisation perspective is accordingly executed at ground level. Driving this culture of change, and the willingness to want to change, as the world and not just banks are changing, needs to be at every level of the organisation and not just the responsibility of the leadership of the organisation.

One respondent made a very poignant statement that the culture that needs to be driven is that of how banks embed the use of technology into their operating model and solutions to business problems, for the benefit of clients and employees.

“We can start with embracing the culture and mindset shift and investing a lot in actually allowing our employees to appreciate the rapid changing dynamics in the market into really upskilling them to be able to embrace the new technologies, the learning curve or the adoption curve to decisions will be much more rapid.”

4.5.2 Role of banks in the changing nature of employment

While trying to understand the influence of digitalisation on employment in banking, a theme emerged around the role of banks with regards to their employees as they digitise.

All the respondents referred to elements of this theme, with a lot of overlapping views. The common view shared was that banks and their leadership structures are accountable to all employees to provide employee engagement in the form of education, communication, exposure, and reinforcement around its digitalisation journey. This will help reduce fears that employees may have around digitalisation, and will also reduce the resistance to digitalisation currently experienced in the organisation. In a nutshell, it will articulate the digitalisation story a lot better. There needs to be active involvement in employee engagement, and banks should be considering bringing in outside assistance from people who are experienced in this kind of change to make the process more seamless and effective.

“Ensure that employees understand new technologies and how to best use them to leverage these new technologies. Enable employees to be more relevant.”

Respondents also felt strongly that banks need to be clear on what their strategy is, as well as the supporting and enabling digitalisation strategy that underpins it. This will provide a view where the impact will be on the organisation, and enable it to take a proactive view to re-purposing and re-skilling employees, and re-deploying impacted employees across the organisation, as there will now be an

organisational view rather than a business unit one of the digitalisation impact. This will then open organisation-wide opportunities for employees whose jobs have been made redundant as a result of digitalisation.

“So, re-skilling is probably the ideal way to go to maintain and repurpose a workforce that has a good understanding of, you know, all of the bank.”

“How do you upskill? How do you train people? How do you ensure the people that exist within the organisation are given the skills to cope in the digital world? This will be key.”

Some respondents said that Human Capital (HC) teams within the organisation need to play a more leading and proactive role in the digitalisation journey. They need to support employees better, and make them aware of new and alternate opportunities that are potentially available. They also need to educate employees on the courses and learning interventions they should be attending to make themselves qualified for any new jobs that are going to be needed.

“Because I think we do have individuals that are capable that can take up that mantle, but someone in a clerical role doesn’t necessarily know what courses to go on and how to make themselves eligible for the jobs that are going to be demanded. So, I think we need to see a far more aggressive start from an HC perspective.”

“Make it possible for employees to do some self-directed learning during working hours, build in some slack because there is no slack especially in the processing areas, which is where we want to automate, but if we are responsible and responsive, we shouldn’t leave it until retrenchment. Give people the opportunity to do some of that learning and create opportunities for them to go to master classes that are being provided.”

Most respondents said that banks need to upskill and re-skill employees to ensure that they remain relevant, because new skill sets, and expertise are required to ensure the future readiness of employees as digitalisation becomes more embedded in the organisation. They also emphasised that there was an accountability on the banks to ensure that employees understand new

technologies and how best to use and leverage these. This will ensure that employees become more relevant in this digital and technological era. It will also get teams to think differently and more innovatively when it comes to digitalisation.

“So, I think it’s future readiness, upskilling people is an important strategy to make sure they remain relevant as new skills become required. I think that’s a very big thing. I think the technology that the bank introduces becomes very important and making sure the employees are aware of how to use it.”

Another key point made by most respondents was that the re-purposing and re-positioning of jobs is critical, especially where there has been a shift from a demand in routine, administrative, and mundane jobs to a demand in highly-skilled ones. Where re-purposing and re-positioning of jobs has taken place already, they noticed that there had been a successful transitioning of people from routine and administrative jobs into IA jobs. The shift between these types of jobs has proven successful because there needs to be sustainability on new automated or robotics processes, and humans are needed to manage the robots who are doing work that was previously done by humans. Who better to do this than the people that used to do the work manually? It was, however pointed out that the upskilling, re-skilling and/or re-purposing of employees is an absolute must to minimise the negative socio-economic impact of digitalisation where it has led to job cuts or a decreased demand in employment in certain areas of banking, and that this should also be done sooner rather than later.

“So, again, it depends on how the banks apply themselves in terms of re-purposing and restructuring and this will definitely result in a reduction in certain jobs. It’s a given not just in the banking sector, but in any sector where automation is possible, or digitalisation is possible. I think that we should start looking earlier to re-skill or skill people differently if you want to not create any negative socio-economic issues.”

“Upskilling and training investment for people to understand the new digital world and have digital skill is a must. You hear some of the guys who’ve been successful in their jobs forcing the entire organisation every single individual to

learn new skills. So being very aggressive around upskilling is key”

Some respondents mentioned investments that banks should be driving to support employees better:

- Self-directed learning and, allowing employees time to do this during working hours.
- Creating learning opportunities and providing master classes.
- Introducing learnerships and academies that are directly linked to digitalisation.
- Offering programmes to assess individuals’ skill sets, and re-skill them into jobs such as cyber-security, Data Science, and Developers, or any other types of jobs that are going to be needed as a result of digitalisation.
- Allowing for networking opportunities across the organisation. This will provide for more employee exposure on new alternate opportunities that are available.
- Providing different or alternate types of opportunities such as opportunities to start their own business and become suppliers of services to the bank itself.
- Reducing the use of foreigners in certain areas such as Information Technology (IT), and partner with local companies to train impacted employees to do these jobs.
- When partnering with Fintechs, the bank should negotiate with Fintechs to use impacted employees when they have been contracted by the bank for the purposes of digitalisation.

“It doesn’t mean just developing the skills in the bank. It can be that the skills will be applied outside the bank as well. It could still be re-purposing use outside the bank.”

“We’ve already started with data science learnerships and behavioural economic learnerships. We have changed our learnerships from looking at matriculants to looking at graduates. We have to actually start building that workforce that is required by a digital organisation.”

“Okay, so first and foremost, I think it’s training, it’s upskilling and democratising

tools which empower people, so you know, I guess it's just the digital innovation hubs which is such a big undertaking. So, I think if the bank can rapidly move these peripheral digital innovation centres and infuse them with the employee market, within their own banking institutions, and they rapidly upskill their talent, they will be able to rapidly tap into this innovation market."

4.5.3 The future landscape of employment

Most respondents said that more jobs have been created since the advent of the fourth industrial revolution. However, they were quick to point out that they believe that this is only in the short and medium-term. They argued that more jobs will be created in the early and initial phases because new jobs that never existed before will be created, and jobs that can be automated will be phased out.

"So, that's interesting right, because at your initial phase, there will be more jobs required because you need a different set of skills that will bring those skills on. Well, as we develop in implementing the digitalisation process, we will see a downturn in terms of jobs. Whether we can take those people with a certain set of skills and transform them within the business is yet to be seen."

"So, right now, I think we're at a point where more jobs are being created but however, I think once we actually master what digitalisation is all about, I think there might be less jobs created or some of the previous jobs are going to be eternally redundant."

Some respondents mentioned that the size of project teams, technology teams, digital teams, and data teams has grown as the bank is creating its digital capabilities and deploying its digital solutions. However, as more and more technology gets deployed, there will be a reduction in routine, manual, and repetitive jobs, and there will not be an urgent need to ramp up the aforementioned teams. There was a further argument that respondents also do not yet know what types of jobs will be created in the next five years that do not exist today.

"I think that other types of jobs are going to come to the fore that don't exist today. I think either you believe that... You don't know what's going to happen five years

from now.”

“So, I think once we remove some types of jobs, we are creating different types of jobs, like data, exception handling, data governance, risk, the client service role changes significantly. While we are removing, we are introducing.”

While undertaking the interviews with the respondents, it emerged that about half of them referred to the fact that digitalisation will give rise to more entrepreneurs, and the pivotal role that banks will need to play in this. Creating more entrepreneurs can be used as a mechanism to manage the impact of digitalisation in instances where there will be a decreased demand for employment. Digitalisation will allow for this opportunity as individuals can now seriously see it as an alternative to formal employment.

“So, I think it creates opportunity for people to become business entrepreneurs themselves. There’s an opportunity for people to figure out what their true calling is in life.”

“But I think it’s great to create more entrepreneurs. So, more businesses, as opposed to be having more jobs, where people are running their own businesses, as opposed to being employed by a big corporate entity.”

“So, it’s not just about re-skilling people, but it’s about creating an environment for entrepreneurs to succeed.”

“And I think part of the bank’s responsibilities is to see how we don’t retrench, but rather see how we can set up those individuals in their own businesses because they have a skill.”

However, the above view was accompanied by the fact that these entrepreneurs need to be supported by the banks to ensure that their businesses are sustainable and successful. This will go a long way in alleviating the socio-economic impact of the growing unemployment rate in South Africa. Suggestions were provided on the need to support impacted employees by creating an entrepreneur ecosystem. The purpose of this ecosystem will be to not only equip impacted employees with alternate skills to become entrepreneurs, but

successful ones at that, and with sustainable businesses. If banks can create this type of economy where skilled employees create a platform for these employees as entrepreneurs, finance them, and assist with access to markets where individuals and businesses want to buy their products and services, they will be creating sustainable entrepreneurs.

“So, to me it’s an opportunity for us to impart skills to people who are leaving the organisation, as well as to young people that are coming through the ranks and saying, let’s equip you with the skills that you will require to become entrepreneurial.”

“But the real opportunities are for young entrepreneurial type is skills. And we also know that, when it comes to younger people, they are more naturally inclined towards entrepreneurial thinking. So, it’s an opportunity to create an entrepreneurial economy.”

“I think it remains a responsibility of the financial institutions, banks, to be able to continuously look for opportunities to them, you know, make sure that those people when they leave the bank, they are contributors into the economy.”

“Actually, we’re able to create even more opportunities for them to grow their own business by virtue of opening bank accounts for them by which you have, you know, assisted them with loans and financing on various transactions.”

4.6 Conclusion and summary of the results

From the very beginning of this research, it became evident that in most instances that respondents agreed with the fact that as banks embark on their digitalisation journey, there has been a decreased demand for routine, mundane, clerical, and administrative jobs. This is as a result of the introduction of increased automation, the use of RPA, OCR, and AI in labour-intensive and highly operational areas within banking. This has caused a migration of repetitive manual tasks to automated or robotic assisted processing, thus creating extra human capacity within these environments. However, this impact was not limited to just these labour-intensive and high-operation areas within banking, and spans across various business units.

The above view was accompanied and supported by a parallel view where respondents have witnessed and experienced an increase in the demand for highly-skilled jobs that need to be fulfilled by individuals that have a certain skill set. They felt that individuals that can be and should be placed in these highly-skilled jobs must be appropriately qualified, have problem-solving skills, are open to new ways of doing things, and are innovative, as this is what is required. These individuals will also have to be technology savvy and be able to think out the box. There was also a clear view on the new types of jobs that had emerged or are still emerging as a result of digitalisation in banking, of which the demand for data-related jobs, AI, and IA jobs became evident.

The interviews also highlighted the key drivers impacting the changing nature of employment in the digital era that we find ourselves in. These drivers identified by respondents were: prudent cost management, improving business efficiencies, and growing revenues and profits. These all mean that banks need to review and re-evaluate their operating models and distribution channels, or their longevity and relevance and competitiveness in the markets in which they operate will be in question. These drivers are especially important, as competitors are no longer limited to only traditional banks – there is now increasing competition from new online and digital banks and Fintechs. The only way to do this is to digitise.

Another overwhelming response from all respondents was that the client and the client's need has to be at the centre of a bank's digitalisation strategy and journey, as this is a critical success factor for banks. The sentiment shared was that if banks can meet the clients' expectations and get the client experience right throughout its digitalisation journey, everything else will then fall into place in terms of cost, profitability, and growth of the business.

Most respondents mentioned the burgeoning importance of data in a digitalisation journey, as well as a focus on the various types of data jobs that have emerged as a result of digitalisation and the fourth industrial revolution. These respondents all agreed that monetisation of data, treating data as an asset, and driving a data-driven decision-making organisation is critical for the digitalisation business case of any bank. This focus on data has also resulted in a heightened focus on cyber-

security, data privacy, and associated jobs in these fields, as they go hand in hand with each other.

With the banking landscape evidently changing for the reasons mentioned above, including digitalisation, it shows that new types of jobs will be emerging. These new jobs range from data science jobs, to AI jobs, to IA jobs, to exception management, to client experience jobs, and others.

The last theme that emerged was around the new focus area for banks as they digitise. The first was about the importance of change management as banks digitise, and the magnitude of the impact that it has on employees. Most of the respondents mentioned change management in their interview. The view was that change management is becoming more critical because of the magnitude, frequency, and complexity of change that banks are experiencing as a result of digitalisation and increasing competition. Change management will not just help reduce the resistance to digitalisation in the organisation but will increase the pace at which digitalisation is taking place.

The second focus area mentioned by all respondents was about the role of banks with regards to their employees as they digitise. They felt that banks are accountable to all employees to bring them along on the digitalisation journey, and allay any fears that they may have. Respondents also felt strongly that where employees were impacted in terms of role redundancy, that banks upskill and re-skill employees to ensure that they remain relevant as new skill sets, and expertise are required and to ensure the future readiness of employees as digitalisation becomes more embedded in the organisation. They also felt that the re-purposing and re-positioning of employees is critical, especially where there has been a shift from a demand in routine, administrative, and mundane jobs to a highly-skilled role. This will minimise the impact of digitalisation in instances where it results in a decreased demand for employment.

The third focus area that emerged was around the future landscape of employment in banking. Most respondents referred to the fact that more jobs have been created since the advent of the fourth industrial revolution, but it has been different types of jobs. They felt that this was a scenario only for the short

and medium-term, as digitalisation did cause a lag effect in employment. This is because as more technology gets deployed in the organisation, there will be a reduction in routine, manual, and repetitive jobs, and there will not be as urgent a need to ramp up the data, digital, AI, and IA teams as is currently being experienced.

Almost half (48%) of the respondents said that digitalisation will give rise to more entrepreneurs and referred to the role that banks will play in this. They believed that employees whose jobs have been impacted as a result of digitalisation could go on to be successful entrepreneurs, but that the bank needed to play a pivotal role in their success and create an entrepreneur ecosystem. The purpose of this ecosystem will be to not only equip impacted employees with alternate skills to become entrepreneurs, but successful ones at that, with sustainable businesses. This will go a long way in decreasing unemployment rates in South Africa and alleviating the socio-economic impact of this.

CHAPTER 5: DISCUSSION OF THE FINDINGS

5.1 Introduction

The purpose of this qualitative research was to investigate and understand the influence of digitalisation on employment within the South African banking sector workforce. In order to understand this, 15 senior members in the selected bank were interviewed over a period of a month, with the intention of receiving reliable and valuable insights in relation to the purpose of this research. This chapter looks at, and evaluates, the findings from the 15 qualitative, semi-structured interviews undertaken, and compares them to the theories that have been identified and discussed in the literature review. Each section that follows illustrates the relationship between the relevant literature and the results of the interviews.

The intention of this research was to understand these research questions:

1. How has digitalisation affected employment in the financial services sector, specifically banking?
2. How has digitalisation changed the nature of jobs in banking?
3. What type of new jobs have been created?
4. What can banks do differently when digitising as it relates to employees?

5.2 Discussion pertaining to Research Question 1: How has digitalisation affected employment in the financial services sector, specifically banking?

The first research question intended to understand the effect that digitalisation has had on employment in the financial services sector, specifically banking.

Most of the respondents agreed that digitalisation, and the increasing use of technology in the banking sector, has resulted in a decreased demand for routine, mundane, clerical and administrative jobs. The driver of this decrease in demand has been as a result of increased automation, the use of RPA, OCR, and AI in labour-intensive and highly-operational environments. However, it is not limited

to only these environments, and spans across various business units in banking such as legal, finance, and reporting functions. This highlighted the fact that digitalisation is impacting not only routine and non-cognitive jobs, but also routine-cognitive jobs. This finding agrees with Brynjolfsson and McAfee, (2012); Marchant et al., (2014), who explain that digitalisation is replacing the need for human jobs and is creating a phenomenon of “technological unemployment”.

It is also comparable to Goos et al. (2014) who proposed the routine-biased technological change (RBTC) hypothesis. This hypothesis seeks to explain job polarisation and says that the recent changes in technology is pre-disposed towards replacing employment in routine tasks. They elaborate further by saying that this also drives a decrease in the demand for middling relative to highly-skilled and low-skilled jobs, which affects the structure of employment as is supported by other literature in this field of study.

In 2003, a similar view is also provided by a hypothesis by ALM which indicated that technology in general has the ability to replace human labour in routine tasks, irrespective of whether they are manual or cognitive, but is not yet able to have the same replaceability with non-routine tasks. The ALM hypothesis is supported by evidence that industries that have adopted technology to take over routine tasks have had a decrease in the demand for routine skills.

The decrease in the demand for routine, mundane, clerical, and administrative jobs was accompanied and supported by a view where more than half of the respondents mentioned that they have witnessed and experienced a parallel increase in the demand for highly-skilled jobs that need to be fulfilled by individuals that have a certain skillset. This is aligned to Goos and Manning’s (2003) skill-biased technical change (SBTC) hypothesis that suggests that when it comes to technology, it is biased where skilled base employees are favoured over non-skilled workers. The SBTC hypothesis predicts that there is a greater demand for skilled jobs and a decreased demand for unskilled jobs in the current labour force. Silva and Lima’s (2017) research also indicates that in more digital-intensive industries, highly-skilled employees have lower separation rates as there are more demanding human capital requirements in these industries.

5.3 Discussion pertaining to Research Question 2: How has digitalisation changed the nature of jobs in banking?

The second research question was aimed at understanding how digitalisation is changing the nature of jobs within banking. The answers received highlighted the key drivers impacting the changing nature of employment because of the introduction of digitalisation within the bank.

The first driver mentioned was that of prudent cost management (reducing costs and reducing the cost-to-income ratios), improving business efficiencies, and growing revenues and profits. It was clear from the responses received that banks will not be competitive in the long run if they continue to use the same operating model of manual and traditional distribution channels and offering the same products and services. Banks will incur more costs to do things manually when they could be doing things more cost effectively and quickly by doing them digitally and adopting new technologies. This has led to the introduction and increasing use of RPA, machine learning, AI, OCR, and data science.

Recent research findings support the above view that as organisations automate more of their routine tasks, they will see a decrease in the cost of production and output prices (Frey & Osborne, 2017; Goos et al., 2014). This will result in an increase in the demand for their products and/or services, thus increasing their competitiveness in the market. Carbo-Valverde, 2017; Jatic et al.'s, 2017 views also support that of the respondents who said that cost management is also becoming a key focus area for banks, and that digitalisation has enabled banks to improve business processes, increase efficiencies, manage costs better, gain competitive advantage, and as a result become more profitable. If banks choose not to digitise and change their operating models, they will miss out on the opportunity to reduce costs and improve productivity as the Fintechs are doing this. They further state that digitalisation of business processes can be used as leverage to reduce operational costs, and if banks do not digitise their business adequately, and/or have a strategy for digitalisation, they will become uncompetitive, ultimately unprofitable, and will no longer exist in the medium to long-term.

The second driver highlighted was the clients' influence on the changing nature of employment in banks as their needs evolve as a result of globalisation and digitalisation. This has necessitated how the clients themselves have had to change the way they operate. It is critical that banks digitally evolve and transform as their clients' digital needs do the same. The sentiment shared was that if a bank can meet the clients' expectations and get the client experience right throughout the digitalisation journey, everything else will fall into place in terms of cost, profitability, and growth of the business, and will deal with increased competition from other banks and Fintechs.

This finding is in line with that of various studies which say that banks are trying to remain competitive and relevant in an environment that is becoming known for increased competition from new banks with only an online presence, competition from Fintechs, and increasing pressure from keeping up with their customers' changing needs because of the increased use of technology (Assensoh-Kodua et al., 2016; Camarate, 2017; Chisoro-Dube, 2018; Coetzee, 2018). A complementary view to this was provided by Natsas and Roopnarain (2018) who argued that for banks to remain relevant to their clients in this digital era, it is critical that they re-evaluate their current value propositions, physical distribution channels, online presence and channels, and operating and service models because of increasing digitalisation globally.

The above views are supported by the fact that the four of the five major banks in South Africa, which are Absa First National Bank, Nedbank, and Standard Bank, have responded to this by driving large-scale transformation programmes with the intention of "improving customer experience, digital transformation, new ways of working, and enterprise-wide cost reduction" as stated by Maritz et al., 2018, p. 1.

The third driver highlighted by most respondents was the growing importance of the role of data in a bank's digitalisation journey. They expressed a strong view that the monetisation of data, treating data as an asset, and driving a data-driven decision-making organisation is a must for the digitalisation business case of any bank. Dapp et al. (2014) support this view and said that for banks to be successful in their digitalisation journey, they need to seriously think about how they manage

their data and the value it can add to their business. To do this, they need to be able to collect the data, analyse it, and turn the insights produced into executable actions.

It became evident from the responses received that without data, or rather without good, clean, quality data, a bank, or any organisation for that matter, will not be able to successfully digitise or achieve any of the benefits of digitalisation. Some respondents said that there needs to be a shift from using data only from a reporting and risk perspective, to using data from an opportunity perspective. This is supported by Jenkin and Naude (2019) who argue that access to big data and advanced analytics can be used for more enhanced customer experience, real-time insights that can result in more accurate predictions of customer behaviour, and data-driven decision making.

Quite a few respondents also referred to the fact that the increased focus on data has led to a heightened focus on cyber-security and data-privacy to protect clients' data and the strategic insights produced. They also said that this will lead to an increase in demand for all data-related jobs within banking, especially those of Data Scientists. Jenkin and Naude (2019) supports this view and said that data jobs will expand as banks continue to digitise.

5.4 Discussion pertaining to Research Question 3: What type of new jobs have been created as a result of digitalisation?

The third research question focused on identifying the new types of jobs that have been created as a result of digitalisation. The answers received highlighted the key drivers impacting the changing nature of employment because of the introduction of digitalisation within the bank.

With the banking landscape evidently changing for the reasons mentioned during this research, including digitalisation, it shows that new types of jobs will be emerging. The jobs mentioned by respondents, as it relates to the research question, range from data science jobs, to AI jobs, to IA jobs, to exception management, to client and user experience jobs, to mention a few. This is a view supported by Coetzee (2018) who said that technology-based skills and

experience is becoming more compulsory than optional for employees within financial services. De Canio (2016) shared a similar view that certain skills will become redundant, while new and/or different skills will be required to implement new and improved technology.

It is important to highlight that most respondents mentioned the increase in the demand for data jobs is as a result of digitalisation, as it propels banks into the world of data science and data analytics. As stated above, as the use of data and the application of big data increases progressively, this will have a spin-off effect on jobs such as cyber-security and data privacy jobs, as the need to protect clients' data becomes more important.

A similar sentiment was shared about an increase in the demand for digital and AI and IA jobs. This is supported by the WEF (2020) where it mentions that the increasing use of technology as organisations digitise will result in several new jobs. The view from respondents was that the increased demand for these jobs was driven by the increased and continuous use of RPA and AI by banks in the digitalisation journey. These views were supported by Dapp et al. (2014), where they said that new jobs will be created in the form of data analysis, algorithm, AI, and RPA specialists. These jobs will be considered to be lucrative as they relate to digitalisation. The WEF (2020) supports the views on the new types of jobs that respondents identified: AI and Machine Learning Specialists and User Experience Designers, Digital Transformation Specialists and Innovation Professionals, Cyber-Security Analysts, and Data Analysts as the emerging jobs because of the global digitalisation trend.

5.5 Discussion pertaining to Research Question 4: What can banks do differently when digitising as it relates to employees?

The fourth research question focused on understanding what banks can do differently when digitising.

There were three main findings that supported the answering of this research question. The first was around the role of banks and the accountability they have

to their employees in the bank's digitalisation journey. All respondents felt strongly that where employees were impacted in terms of role redundancy, that banks upskill and re-skill employees to ensure that they remain relevant, as new skill sets, and expertise are required to ensure the future readiness of employees as digitalisation becomes more embedded in the organisation.

They also felt that the re-purposing and re-positioning of employees is critical, especially where there has been a shift from a demand in routine, administrative and mundane jobs to highly-skilled ones. This will minimise the impact of digitalisation in instances where it results in a decreased demand for employment. It was, however, pointed out by respondents that the upskilling, re-skilling, and/or re-purposing, of employees is an absolute must to minimise the negative socio-economic impact of digitalisation where it has led to job cuts or a decreased demand in employment in certain areas of banking. This should be done sooner rather than later. This is supported by the WEF (2020) as it argues that organisations will have to upskill and re-skill their employees to ensure that they are equipped and are relevant for the fourth industrial revolution. Jenkin and Naude (2019) share a similar sentiment, where they say that digital and technological skills will have to be nurtured in order to support the demand of low-skilled to higher-skilled jobs.

Respondents said that there are various upskilling and re-skilling programmes, academies, learnerships, and partnerships with Fintechs. Jenkin and Naude (2019) echo the same view, and said that banks will need to ensure that they provide opportunities for training to upskill and re-skill their employees through various opportunities.

The views of the respondents were aligned with the shared sentiment of the WEF (2020), where it highlighted the importance of organisations re-skilling and upskilling their employees. They also said that, if done correctly, re-skilling and upskilling efforts will enable organisations to achieve a positive cost-benefit realisation, so the benefits are far-reaching. This was further emphasised by Philips et al. (2018), who said that if South African organisations double the rate at which they upskill their workforce for "human-machine" collaborations (Philips et al., 2018, p. 2), it could possibly reduce the predicted number of job losses

from 20% (3.5 million jobs) in 2025 to just 14% (2.5 million jobs). If done correctly, this could have a significant impact on the South African economy, and could change the lives of millions of South Africans for the better. The WEF (2020) similar to Philips et al., (2018), argues that there needs to be a more proactive, focused, and strategic approach on the part of all impacted stakeholders to drive and manage re-skilling and upskilling programmes for affected individuals, as this will go a long way in reducing job losses and managing skills shortages in this digital era.

The second finding that emerged was the growing need and importance of change management as banks digitise and digitally transform. This was highlighted by most respondents who said that the extent of this change, and the impact that it has on affected employees, must not be underestimated or downplayed. The respondents felt strongly that change management will not only help reduce the resistance to digitalisation in the organisation, but will increase the pace at which digitalisation is taking place, and could be a deal-breaker for the success of a bank's digitalisation journey. This is supported by recent research findings that organisational change management is a critical success factor for the adoption of digitalisation within an organisation, and can play a key role in reducing the resistance to change that may be experienced when an organisation digitises (Jatic et al., 2017; Kohnke, 2017).

The third, and final, finding that emerged was around the future landscape of employment in banking. Most respondents referred to the fact that more jobs have been created since the advent of the fourth industrial revolution, but emphasised that it has been different types of jobs that have been created. They did, however, say that they believed that this was only for the short and medium-term because of the fact that as more technology gets deployed in the organisation, there will be a reduction in routine, manual, and repetitive jobs. There will not be as urgent a need to ramp up the data, digital, AI, and IA teams that is currently being experienced. A similar view in support of the respondents' view was shared by Aubert-Tarby et al., 2018; Jenkin and Naude, 2019; Philips et al., 2018.

Another important point highlighted was that digitalisation will give rise to more

entrepreneurs. They said that employees whose jobs have become redundant as a result of digitalisation could become successful entrepreneurs, but this would not be possible without the bank playing a pivotal role in their success. This view is supported by Brynjolfsson and McAfee (2012), who believe that digitalisation creates opportunities for entrepreneurs who can create new business models with the increasingly impacted middle-level skilled worker and digital technology to create new or different value. Banks could assist by creating an entrepreneur ecosystem that will not only equip impacted employees with alternate skills to become entrepreneurs, but successful ones at that, with sustainable businesses. This will go a long way in decreasing unemployment rates in South Africa, and alleviating the socio-economic impact of the growing unemployment rate.

5.6. Conclusion

Through the data analysis of the interviews, four main themes were identified, as well as subthemes that were linked to these main themes. These themes and sub-themes were then linked to answering the four research questions of this research project:

5.6.1 How has digitalisation affected employment in the financial services sector, specifically banking?

The results from the interview questions, as it relates to the effect of digitalisation on employment within banking, is aligned to the literature and theories available on the impact that digitalisation has had, and continues to have, on employment not just within banking, but in other sectors too. The main argument is that digitalisation is causing a decrease in the demand for mundane, clerical, and administrative jobs. There is, however, a corresponding increase in the demand for highly-skilled jobs that need to be fulfilled by individuals who have a certain skill set (Frey & Osborne, 2017). Dapp et al. (2014) support other literature on this view, indicating that less-skilled workers will decline as organisations start to digitise. There was no counter-argument in both the interviews and the literature reviewed to say otherwise.

5.6.2 How has digitalisation changed the nature of jobs in banking?

Respondents aligned with the theory regarding the three drivers of digitalisation influencing the changing nature of employment identified from the interviews:

- Prudent and robust cost management (reducing costs and reducing the cost-to-income ratios), improving business efficiencies, and growing revenues and profits. This was supported by Carbo-Valverde, 2017; Jatic et al., 2017 who explain that that cost management is becoming a key focus area for banks as digitalisation can be used as a tool to not only improve business processes, increase efficiencies and gain competitive advantage, but also to manage costs better and to become more profitable.
- The clients' influence on the changing nature of employment in banks. Several authors supported this view, and advised that for banks to remain relevant to their clients in this digital era, they need to re-evaluate their current value propositions, physical distribution channels, online presence and channels, and operating, business and service models because of increasing digitalisation globally. This includes their strategies as well.
- The growing importance of the role of data in a bank's digitalisation journey. This view was also shared by Dapp et al., 2014; Jenkin and Naude, 2019 who argue that banks need to think about how they manage their data and the value that it can add to their business across its value-chain and enable data-driven decision making.

It was evident that the respondents' views were supported by evidence of actual experiences and events that had occurred or were occurring at that point in time within the bank. The theory studied and investigated for the purpose of this research was aligned and supportive of the respondents' views around the changing nature of employment in banks as a result of digitalisation.

5.6.3 What type of new jobs have been created as a result of digitalisation?

The respondents were aligned around the fact that several new jobs were emerging as a result of digitalisation in banking, and this agreed with the theory found in existing literature. There was also alignment between the respondents and the theory in terms of what these emerging new jobs are, however the

information extracted from the interviews was very specific around the new jobs being created as compared to the information found in the existing literature when it was researched. Examples of these new jobs are data science, AI, IA, exception management, client experience jobs, and others. There was extensive research by Coetzee, 2018; Dapp et al., 2014; De Canio, 2016; WEF, 2020, that supported this view.

5.6.4 What can banks do differently when digitising?

The sentiment of the respondents, and the views expressed in the literature, are aligned as it relates to all three findings which supported the answering of this fourth research question:

- The role of banks in the changing nature of employment which highlights the responsibility that banks have to upskill and re-skill their employees to ensure that they are equipped and are relevant for the fourth industrial revolution. This includes the nurturing of digital and technological skills to support the migration in demand of low-skilled to higher-skilled jobs. These views were specifically supported by Jenkin and Naude, 2019; Philips et al., 2018; WEF, 2020.
- Change management as an enabler of digitalisation was a view that was expressed quite strongly, and will not only help reduce the resistance to digitalisation in the organisation, but will increase the pace at which digitalisation is taking place, and could be a deal-breaker for the success of a bank's digitalisation journey. This was also highlighted in the recent literature by Jatic et al., 2017; Kohnke, 2017.
- The growth role of entrepreneurship as digitalisation increases also came out as a significant theme, and this was also explained by Brynjolfsson and McAfee (2012) where they believe that digitalisation creates opportunities for entrepreneurs.

There was, however, not as much literature on the growing role of entrepreneurship as digitalisation increases as there was for the other sub-themes identified.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarises and concludes the findings of the research study as it relates to the research questions listed in Chapter 2. It then offers recommendations to banks and other financial institutions as it relates to digitalisation and its influence on employment in the South African banking sector workforce.

Chapter 6 concludes with recommendations for further research that could enrich and add to the existing body of knowledge as it relates to digitalisation.

6.2 Conclusions related to research questions

6.2.1 Conclusions regarding Research Question 1: How has digitalisation affected employment in the financial services sector, specifically banking?

The research and the literature indicate that the growing introduction and use of digitalisation in banking has affected employment in this sector. This is supported by the evidence of a decrease in the demand for routine, mundane, clerical, and administrative jobs. This is as a result of the increasing use of digitalisation which has resulted in increased automation, the use of RPA, OCR, IA, and AI in labour-intensive and high-operation areas within banking. However, it is not limited only to these environments, and spans across various business units in banking such as legal, finance, and reporting functions. This highlights that digitalisation is impacting not only routine and non-cognitive jobs, but also routine cognitive jobs. This view was also accompanied and supported by a parallel view where there has been an increase in the demand for highly-skilled jobs and more human face to face related jobs that need to be fulfilled by individuals who have a certain skill set. This means that the individuals who are identified to do these highly-skilled jobs must be appropriately qualified, have problem-solving skills, be creative, open to new ways of doing things, innovative, technology savvy, and able to think out the box.

6.2.2 Conclusions regarding Research Question 2: How has digitalisation changed the nature of jobs in banking?

Both the literature and the research identified three key drivers that have impacted the changing nature of jobs in banking as a result of digitalisation:

- Prudent and robust cost management (reducing costs and reducing the cost-to-income ratios), improving business efficiencies, and growing revenues and profits.
- The clients' influence on the changing nature of employment in banks.
- The growing importance of the role of data in a bank's digitalisation journey.

The drivers indicated above imply that if banks do not digitise, become better at cost management, consider their clients' needs as the increasing use of technology and digitalisation grows, their relevance and longevity will be in question. This then indicates that banks cannot continue to operate in the traditional way, still be profitable and be guaranteed of their longevity in the future. Given that operating models, distribution channels, product and services, and client needs are changing, as is the growing importance of the use of data, it makes logical sense that the nature of jobs in banking will have to change to support digitalisation, especially given that employees' costs are the biggest cost for all traditional banks.

6.2.3 Conclusions regarding Research Question 3: What type of new jobs have been created?

With the banking landscape now evidently as a result of increasing levels of digitalisation, it makes sense that new types of jobs will be emerging. The list of new jobs that was highlighted in both the research and literature is as follows:

1. Data jobs:
 - a. Data Scientists
 - b. Data Analytics Specialists
 - c. Data Privacy Jobs
 - d. Data Stewards
 - e. Big Data Engineers
2. Digital jobs

3. Digital transformation jobs
4. Intelligent Automation
5. Cyber-security
6. Cloud Computing
7. Jobs involving new technologies, such as block-chain
8. Jobs involving exponential technology
9. Artificial Intelligence jobs
 - a. Machine Learning
 - b. Deep Learning
 - c. Natural Language Processing (NLP)
10. Exception management jobs – A lot more exception management and exception resolution as a result of the robot or automated process cannot effectively deliver on a process that would put up an exception
11. Client experience jobs
12. User experience jobs

6.2.4 Conclusions regarding Research Question 4: What can banks do differently when digitising as it relates to employees?

The research found that there are three key focus areas for banks as they digitise:

The research found that because of the magnitude, frequency, and complexity of change that banks are experiencing as a result of digitalisation and increasing competition, change management is a key focus area for any bank as they start, and continue to digitise. Change management will not only help reduce the resistance to digitalisation in the organisation, but will increase the pace at which digitalisation can take place.

The next important point for banks is that they need to upskill, re-skill, and re-purpose employees to ensure that they remain relevant as new skill sets and expertise are required, and to ensure the future readiness of employees as digitalisation becomes more embedded in the organisation. This is especially critical where there has been a shift from a demand in routine, administrative, and mundane jobs to a demand in highly-skilled jobs. This will go a long way in ensuring the job security of employees whose jobs may become redundant, and

thus not contribute to the increasing unemployment rates in South Africa. This can be done through a variety of initiatives such as learnerships, academies, mentorships, and partnering with Fintechs.

In some instances, digitalisation has resulted in more entrepreneurs being created. However, these entrepreneurs need to be supported by the banks to ensure that their businesses are sustainable and successful. This will go a long way in alleviating the socio-economic impact of the growing unemployment rates in South Africa. The research indicated that banks could support these growing entrepreneurs by creating an entrepreneur ecosystem.

The purpose of this ecosystem will be to not only equip impacted employees with alternate skills to become entrepreneurs, but successful ones at that, with sustainable businesses. If banks can create this type of economy where skilled employees create a platform for these employees as entrepreneurs, finance them, and assist with access to markets where individuals and businesses want to buy their products and services, then they will be creating sustainable entrepreneurs.

6.3 Recommendations

6.3.1 Recommendations for banks

1. As the banking sector is responding to the fourth industrial revolution by increasing their levels of digitalisation, they will have to take a proactive and value chain view across the organisation. This would entail identifying the jobs at risk, and ways to upskill, re-skill, and/or re-purpose these individuals so that they can be transitioned into highly-skilled jobs that are becoming more in demand as a result of digitalisation. This will also improve the job security of these individuals and reduce unemployment within the banking sector.
2. To support the above process:
 - a. Banks can make use of a skills matrix as a tool in this process.
 - b. Upskilling, re-skilling and re-purposing employees to cope in the digital world can be done through a variety of initiatives such as learnerships, academies, mentorships, and partnering with Fintechs.

- c. The use of internal innovation hubs and design-thinking workshops are also tools that can be used to drive a culture of digitalisation.
- 3. Banks must position themselves as employers of choice so that they can attract appropriately skilled individuals.
- 4. In instances where there is a shortage of digital skills, banks can then look at partial outsourcing strategies for these skills to ensure that they do not put their digitalisation strategy at risk because of insufficient human capabilities.
- 5. Reduce the use of foreigners in technology-intensive business units, and partner with relevant South African companies to train South Africans with these skill sets. This is one way of minimising the impact of digitalisation on employment in South Africa.
- 6. Identify and understand the importance of understanding clients' needs to evolve operating models, services and products, and distribution models to ensure relevancy and longevity.
- 7. Manage costs and efficiencies by using digitalisation as a mechanism to do this.
- 8. Have a rigorous and robust change management strategy to support the digitalisation strategy.
- 9. Establish entrepreneurship support systems inside and outside the banks to better support employees who have become entrepreneurs as a result of losing their jobs because of a digitalisation initiative. This can also be expanded to other entrepreneurs in the future.

6.3.2 Recommendations for banking employees

- 1. If employees resist the change and digitalisation journey, they will be at a high risk of becoming redundant. They will need to embrace new technologies and new ways of working.
- 2. Employees need to keep up to date with the skill sets needed to remain relevant in this world of digital evolution, because it is not going to stop. They need to understand that the world is changing and to adapt with it, and that if they want to remain employable, they must stay relevant and know how to stay relevant.
- 3. Continuous learning.

4. Have a willingness to adapt and be comfortable to work with ambiguity.
5. Be open-minded and have a constant willingness to learn new things.

6.4 Suggestions for further research

Further research can be conducted to investigate and understand:

1. How to drive and support entrepreneurship to create more successful entrepreneurs and reduce the reliance on formal employment as digitalisation grows?
2. How to manage the long-serving banking employee community who are now part of the aging population and cannot be, upskilled, re-skilled or re-purposed?
3. How does South Africa and the banking sector deal with the demand for a more highly-skilled and educated workforce in this increasing digital era, especially with its low education rates?
4. If digitalisation in banking contributes to the increasing unemployment rate, how do you solve the socio-economic dynamics experienced in South Africa?

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APPENDIX (A) Interview Questions

1. What type of jobs will be the most impacted by digitalisation in banking?
2. What type of strategies can the bank deploy to minimise the impact of digitalisation on the decreased need for employment?
3. What do you believe it means for banks if they do not digitise?
4. Has your current role or your previous role been impacted as a result of digitalisation? If yes, please elaborate?
5. What are the critical success factors that banks need to make the digitalisation journey a success?
6. What are the types of jobs that exist in banking today that did not exist 0 to 3 years ago?
7. The banking sector currently employs approximately 158,000 people in South Africa. What do you believe is the socio-economic impact that digitalisation is having on employees in this sector?
8. What has been the impact of digitalisation on the leadership style in the bank?
9. Looking at the sub-sets of digitalisation, what do you believe has had the biggest impact on employment in banking?
10. What type of investments does the banking industry need to make today to minimise the possible negative impact of digitalisation on employment in banking?
11. Describe the workforce of the future versus the current workforce.