Analysing the influence of people and culture risk on risk management in the banking sector

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DECLARATION

I, Makiri Lancelot Monama, declare that:

"**ANALYSING THE INFLUENCE OF PEOPLE RISK AND CULTURE RISK ON RISK MANAGEMENT IN THE BANKING SECTOR**"

is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references, and that this thesis has not previously been submitted by me for a degree at any other university.

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Makiri Lancelot Monama

November 2023

Vanderbijlpark

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Philippians 1.6: I am certain that God, who began a good work in you, will carry it on to completion until the day of Christ Jesus

ABSTRACT

Keywords: Operational risk management, People risk, Culture risk, banks, Risk management perception, COVID-19 pandemic, Demographical factors, Banking sector, South Africa

One of the main determinants for banks to overcome financial and reputational challenges is to manage operational risk to an acceptable level. Banks have been exposed to various operational risks, such as people risk and culture risk. Moreover, this has been exacerbated by employees' lack of positive perceptions about the importance of managing or mitigating people risk and culture risks within the banking sector. Therefore, analysing the influence of people risk and culture risk on risk management in the banking sector is crucial for banks to provide better risk strategies to enhance their employees' perception of operational risk and overall risk management. Operational risks such as people risk and culture risk have impacted other major risks in the banking sector, especially during the COVID-19 pandemic. The COVID-19 pandemic has impacted the banking landscape and changed the usual day-to-day operation of banks by adopting hybrid models that may have impacted culture, how employees used to work, more dependence on banking apps (less contact with people), and increased levels of risk. In South Africa, very few studies focus on people risk and culture risk in the banking sector. Therefore, a gap was found in conducting this research study. The main objective of this research study was to analyse the influence of people risk and culture risk on risk management in the banking sector.

The literature review and empirical objectives of the research study were achieved by establishing quantitative research approaches in conjunction with a positivist research paradigm. This research study's target population consisted of South African banking sector employees. The sample frame included the top five South African commercial banks, namely ABSA, FNB, Nedbank, Capitec Bank, and Standard Bank. They were chosen based on market share, number of branches, and profit maximisation. The non-probability purposeful and snowball sampling methods were chosen for this research study as the best methods to gather large amounts of information from limited parameters effectively. Participants who met the inclusion criteria of being 18 years or older with matriculation as a minimum level of education and having more than six months of work experience in the banking sector were obtained as a representative sample. A sample size of 391 employees was considered satisfactory for quantitative data analysis. Quantitative data was collected using a self-administered online questionnaire and validated and pre-tested by seven researchers in the field of risk management. Various statistical analysis tools such as EFA, correlation coefficient, ANOVA,

T-test, hypothesis testing, and SEM were used to model the influence of people and culture risk on risk management.

The main contributions of the research study are based on the achievement of the empirical objectives and the creation of a model for how people and culture risk (as components of operational risk) influence risk management in the banking sector. For the first empirical objective, a significant difference was found in how individuals perceived risk management and operational risk. The demographic factors (age, ethnicity group, types of employment, and position or role held) were statistically significant, while gender (females) had a greater understanding of operational risk management. For the second empirical objective, it was found that there was a medium-positive linear relationship between operational risk management and risk management perception. Further, operational risk management and risk management perception positively correlated with people risk and culture risk during the COVID-19 pandemic.

Lastly, the SEM demonstrated significant results that contributed to achieving the primary objectives. The SEM allows banks to predict factors that influence people risk and culture risk, which are likely to be the most valuable intangible assets of the bank. Consequently, this will help banks develop mitigation strategies and action plans to manage these operational risks. Managing any operational risk will allow banks to strive for more profit, competitive advantage, a better working environment, a strong reputation, an enabling culture, a better perception of risk, and ensure that risk is within acceptable risk appetite levels. Considering this research study's theoretical and empirical findings, limitations will always be part of any research study, as they are used to improve the current study. Future researchers can use this research study as a basis to improve the study by choosing a larger sample size and expanding the range of demographic factors. As this research study focused on people risk and culture risk as part of operational risk, future researchers may consider other types of risk such as reputational risk, market risk, credit risk, financial risk, information communication and technology risk and strategic risk with a focus on the banking sector.

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LIST OF ABBREVIATIONS

ABSA	Amalgamed Bank of South Africa
AI	Artificial Intelligence
AIG	American International Group
AL	Lending Assets
ANOVA	Analysis of Variance
AO	Other bank assets
BCBS	Basel Committee on Banking Supervision
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
COSO	Committee of Sponsoring Organisations of the Treadway Commission
EFA	Explanatory Factor Analysis
e-forms	Electronical Forms
ERM	Enterprise Risk Management
e-Views	Electronic Views
FA	Factor Analysis
FAIS	Financial Intermediary and Advisory Services Act
FIC	Financial Intelligence Centre
FNB	First National Bank
FSCA	Financial Conduct Sector Authority
GFC	Global Financial Crises
G10	Group of Ten
HMDA	Home Loan and Mortgage Disclosure Act
ICAAP	Internal Capital Adequacy and Assessment Process
IoT	Internet of Things
IRB	Internal Rating-Based
IRM	Institute of Risk Management
ISO	International Organisation for Standardisation

KMO	Kaiser-Myer-Olkin
MRC	Minimum Requirement Capital
NCA	National Credit Act
NCFFR	National Commission on Fraudulent Financial Reporting
NGO	Non-Governmental Organisation
NWU	North-West University
PA	Prudential Authority
POPIA Act	Protection of Personal Information
PwC	PriceWaterhouseCoopers
RMF	Risk Management Framework
RMSEA	Root Mean Square Error of Approximation
RWA	Risk Weighted Assets
SARB	South African Reserve Bank
SC	Senior Council
SCR	Solvency Capital Requirement
SD	Standard Deviation
SEM	Structural Equation Model
SPSS	Statistical Package for Social Sciences
SREP	Supervisory Review and Evaluation Process
STC	New Securitization Framework
TLI	Tucker-Lewis Index
UK	United Kingdom
USA	United States of America

CHAPTER 1
INTRODUCTION AND BACKGROUND TO THE STUDY

1.1. INTRODUCTION

One of the responsibilities of banks is to fully identify, analyse, measure, manage, and monitor risks that could negatively impact their operational and strategic objectives. According to Praxiom Research Group Limited International (2018), a risk is an uncertainty surrounding an event's outcome. Strachnyi (2012) mentioned that risk originates from not knowing or being confident of what you are doing. Risks such as market risk, operational risk, financial risk (liquidity risk, solvency risk, credit risk), as well as black swan risk (COVID-19), if not adequately and efficiently managed, are the main risks that impact a bank's survival (Suryaningsih & Sudirman, 2020:259).

The banking sector faces daily exposure to operational risk (Neha, 2017:1). This exposure occurs due to the ever-changing environment in the banking sector that comes with new risks. New technologies, shifting ways of serving customers, using new data, and various catastrophic risks, such as the COVID-19 pandemic, are evident enough to witness the change in the banking environment (Eceiza *et al*., 2020). According to the Basel Committee on Banking Supervision (BCBS) (2011:3), "operational risk is the risk of losses resulting from an inadequate or failed internal process, people, systems or from external events. This definition includes legal risk but excludes strategic and reputational risk". According to Chapelle (2019:1), operational risk is everything that is not black swan events and market risk. Chapelle (2019:1) further categorised operational risk by defining it as a non-financial risk, which are risks that are not purely financial. On the other hand, de Jongh *et al.* (2013:267) defined operational risk as a risk that usually involves losses from operations, which is different from market risk, which considers the downside (losses) and upside (profit) that arises from the market movements.

Operational risk can be categorised into four components: people, processes, systems, and external factors. These components of operational risk are also interconnected to each other. One operational risk component may cause significant risk to another component (Alobaidi & Raweh, 2018:12). The impact of a severe operational risk has a probability of decreasing banks' profits due to these unexpected events causing more operating expenses (Fadun & Oye, 2020:25). Alobaidi and Raweh (2018:12) highlighted that operational risk is the result of people's responsibilities, the financial system in place, processes and procedures applied and external events that can negatively affect the financial institution.

Furthermore, operational risk arises in different ways, and the impact of this risk causes operational or financial losses to any bank. The losses emerging from inadequate management of operational risk can be significant enough to bring the bank to its knees and cause long-term reputational damage (Robertson, 2016:1). Compliance in the banking sector is also important to monitor whether banks comply with all BCBS regulations in terms of operational risk management (Fadun & Oye, 2020:27). However, since operational risk consists of four categories, the focus will be given to people risk (Alobaidi & Raweh, 2018:12).

People risk is the first category of operational risk. Evans (2019) mentioned that people risk arises from the risk associated with the behaviour of employees that negatively impacts the organisation in meeting its goals. This could come from employees' work overload, incompetent employees, key man dependency, or employee theft. Evans (2019) further mentioned that people risk might also arise from the risk of unintentional errors or mistakes as most employees get tired due to the numerous daily operational tasks.

Employees are the most essential assets in the banking sector; however, they can also be the biggest risk that could impact the banks' operations (Jackson, 2015). Banks and other financial institutions should, by all means, ensure that adequate and effective controls are in place to manage the people risk that could potentially have a low frequency of occurrence yet a higher severity of impact. These risks could be managed by allocating resources aside for unexpected losses, training employees, and competitive staff compensation (Fadun & Oye, 2020:27). The importance of employees in a bank goes together with the culture of the organisation (Blunden & Thirlwell, 2013:296).

Culture brings common goals and standards to the employees and helps them work well together to achieve specific goals. Furthermore, culture is a tool that establishes precedents on how an organisation approaches, communicates and manages risk (Jackson, 2015). Culture is what an individual does and how the individual does something without being managed or supervised (Jackson, 2015). Carretta *et al*. (2017:16) highlighted that culture is seen as a positive symbolic communication to the banks, and if taken seriously, it can guarantee the achievement of complex issues or tasks. Culture is the result of shared beliefs, assumptions, business experiences, behaviour, and strategic decisions within an institution as an aggregate (Carretta *et al*., 2017:12). Banks need to build a positive relationship with their employees and the culture that is enabling as it helps in reducing operational risk and adding value to assist in meeting the needs of the customers. Without a clear culture, organisations lack direction on how work should be done and lack values, beliefs, standards, and norms, which cause culture risk (Schmitt, 2019:3).

According to Landy (2016), developing employees with internal and external learning programs remains an important tool to upskill staff and contribute to helping banks achieve their operational and strategic objectives. It is about taking care of employees first, giving them some sense of togetherness, upskilling them, and making banks an attractive organisation of choice with a great working environment that benefits the employees. People and a positive culture create an environment that is family-like and is encouraged by good work ethics within the bank (Landy, 2016). Culture in the banking sector surrounds everyone with a common belief and goal and positively impacts people's work habits and how they work well together. Although financial institutions and other organizations had a positive culture before the COVID-19 pandemic, lockdowns and less physical interaction negatively impacted organizational culture. They disrupted how employees used to go to work and do their work.

Cherrington (2021) asserted that the unprecedented COVID-19 pandemic came with risks associated with people risk and culture risk, which may remain more prolonged than usual. People work from home; there is high absenteeism, and most things are automated, which poses a more operational risk to the banks. As banks operate through the current COVID-19 pandemic, it is more important than ever that people risk and culture risk becomes a priority. One of the challenges banks faces is managing people and culture risks in an ever-changing environment, especially during the COVID-19 pandemic (Cherrington, 2021). This is because the COVID-19 pandemic has changed how people work and negatively impacted the banks' corporate culture. Smit (2021) highlighted that during this time (the year 2021), banks and other organisations are exposed to a negative or decline in corporate culture as most of the work is done virtually, where employees tend to work in silos.

According to Carretta *et al*. (2017:22), corporate culture is not static; instead, it is a formal and informal process repeated and renewed by the employees. Building a solid corporate culture enables an organisation to strongly support its employees and give them a sense of belonging. Carretta *et al*. (2017:22) further mentioned that in order to encourage an excellent corporate culture, financial institutions should consider having solid and effective communication, training and development, succession planning, better incentives, and a robust recruitment and selection process. These will contribute to the financial institutions' mitigating possibilities of a weak corporate culture. Middleton (2018) stated, "Take care of your employees, and they will take care of the customers" - Richard Branson. The consequences of people risk show its effect on the corporate culture of the organisation, which may result in culture risk.

Culture risk results from misalignment between a company's values, norms, beliefs, and standards and employees' conduct, behaviour, ethics, morals, and company systems (Oven,

2020). Culture risk arises from the possibility of failing to adapt company practices across all functions. An enabling organisational culture can positively impact management's decisions and employees' daily operations if the company practices are adapted accordingly and managed adequately (Schmitt, 2019:3). Good culture in the banking sector has a tradition to fit in the banks' knowledge and expertise that contributes to great institutional culture.

For a bank to achieve its strategic objectives, operational risk should be given more attention to be adequately and effectively managed. The success of all the banks relies on proper management of all the risks to an acceptable level, and this will promote public interest and investor confidence (Rose & Hudgins, 2013:486).

1.2. PROBLEM STATEMENT

One of the main determinants for banks to overcome financial and reputational challenges is to manage operational risk to an acceptable level. Banks have been exposed to various operational risks, such as people risk and culture risk. Moreover, this has been exacerbated by employees' lack of positive perceptions about the importance of managing or mitigating people risk and culture risk within the banking sector.

People risk, and culture risk has not been in the limelight as top risks that could potentially impact the banking sector (Cherrington, 2021). People risk, and culture risk are interconnected and pose a threat to banks to adapt to the new culture, which may arise with new risks. The impact of people risk, and culture risk can put banks in an unfavourable financial position. Due to an immature culture, people may unintentionally commit huge errors that could financially impact the banks. This is constituted by the reality that people risk, and culture risks have not been given more attention as top focus risk areas. However, these risks are now regarded as one of the core risks within the banking sector, primarily since the COVID-19 pandemic in the 2021 period, where organisational culture declined tremendously due to employees working remotely with no or less room to improve culture and changing the traditional way of work and clients accessing banking services.

However, this raises the importance of implementing effective and adequate controls strategies to ensure that people risk, and culture risk are less risky to the bank's operations and that there is good organisational governance. This will further promote sound and proactive management of people risk and culture risk and encourage positive and robust risk management practices within banks. Although banks have faced people risk and culture risk as part of operational risk, creating the right risk management environment will be beneficial to managing people risk and culture risk. This will guarantee extensive management of the

risks that would go far beyond protecting banks against unpredictable losses. Therefore, the research question “is there relationship between people risk, culture risk and risk management in the banking sector”? The aims to analyse people risk and culture risk on risk management in the banking sector to ensure that banks manage or mitigate the impact of inadequate management of employees and the risk of negative culture that could harmfully affect the success of the banks.

1.3. RESEARCH OBJECTIVES

The following objectives were identified and outlined for this research study.

1.3.1. Primary objective

The primary objective of this research study was to analyse the influence of people risk and culture risk on risk management in the banking sector.

1.3.2. Theoretical objectives

In order to achieve the primary objective, the following theoretical objectives were formulated for the study:

- Contextualise the South African banking sector;
- Define culture risk and its relation to people risk;
- Discuss a theoretical framework for culture risk as a component of operational risk;
- Discuss the importance of good corporate culture in the banking sector; and
- Establish the opportunities and challenges banks face to mitigate people risk and culture risk.

1.3.3. Empirical objectives

In order to achieve the primary objective of the study, the following empirical objectives have been identified:

- Determine the perception of operational risk management practises within the banking sector based on demographic factors;
- Determine the relationship between people risk, culture risk and risk management during the COVID-19 pandemic and
- Analysing the influence of people risk and culture risk on risk management in the banking sector.

1.4. RESEARCH DESIGN AND METHODOLOGY

This study comprised a literature review and applied a quantitative research method. Primary data was gathered through the distribution of an electronic questionnaire, which was distributed to employees in the banking sector. The remainder of this section addresses the proposed outline for the research study's methodology.

1.4.1. Study design and context

The following objectives have been identified and outlined for the study.

1.4.2. Empirical study

The study was conducted using primary data through online questionnaires distributed to participants.

1.4.3. Primary data

The primary data comprises the sections below:

1.4.3.1 Population

A target population must be appropriately selected since researchers make inferences regarding the whole population based on a selected sample. Target populations will be based on employees in the South African banking sector. The study will also comprise various banks impacted by operational risks, such as the top five South African commercial banks: Amalgamated Bank of South Africa (ABSA), First National Bank (FNB), Nedbank, Standard Bank, and Capitec Bank. These South African commercial banks were chosen based on net assets, income, market share, and the number of branches and employees (Opperman, 2020).

1.4.3.2 Sample Size

The sampling frame consists of 400 individual employees in the banking sector. This study used purposive and snowball sampling to identify individual employees who met the sample criteria. The criteria encompass participants from the following top five South African commercial banks: ABSA, FNB, Nedbank, Standard Bank, and Capitec Bank. This includes employees/participants who have been employed for more than six months in any of the banks mentioned above, are 18 years of age and above and have some form of education (a minimum of matric - Grade 12/certificate).

1.4.3.3 Process of obtaining informed consent

All participants were requested to complete an online consent form before starting the online questionnaire. The purpose, role, and objectives of the study were also explained. The compliance and ethical clearance processes were outlined to demonstrate to participants that all ethical and compliance processes and procedures had been followed. The informed consent form was added to the questionnaire for participants to consider ethical considerations.

1.4.3.4 Data collection

The study used an online questionnaire distributed electronically to individual employees in the banking sector. No hard copy (paper-based) questionnaire was distributed to individual employees due to COVID-19 guidelines of less physical interaction. An introduction was used to explain the significance of the study to the individual employees and their participation. The questionnaire outlined the importance of the study and their participation in it. The questionnaire includes the following sections: Section A contains demographic information, Section B contains risk management questions, Section C contains culture risk questions, and Section D contains people risk questions.

The first section, Section A, comprises various demographical factors such as age, gender, ethnicity group, and education level. Demographic questions were asked as part of the inclusion criteria for this study to capture the correct sample, and it was not required to achieve the research study's objectives. The education levels were also asked as participants needed specific financial knowledge about the importance of overall risk management within the banking sector.

Section B comprises risk management questions to determine the perception of risk management in the banking sector. Section C includes culture risk questions that would assist in determining the perception of culture risk in the banking sector.

Section D, the last section of the questionnaire, encompasses people risk questions that would assist in determining the perception of people risk in the banking sector. The questionnaire was constructed based on literature and previous studies on risk management and risk maturity assessment (Newby, 2016; National Treasury of South Africa, 2020).

1.5. ETHICAL CONSIDERATIONS

The study was conducted in alignment with the North-West University (NWU) ethical guidelines and principles (NWU, 2016:13). The questionnaire was treated with high confidentiality, and employees did not include their details or other personal information. Employees were instructed not to mention or include any information that could be used to identify them or their employer, as they would remain anonymous. Employees were not forced to participate in this study as their participation was voluntary, and they were welcome to decline to participate. All the responses from the individual employees were treated as highly confidential information and were only used for this research study.

1.6. CHAPTER CLASSIFICATION

The study consists of the following chapters:

Chapter 1: Introduction

The section introduced the study, its objectives, an overview of the methods intended to be employed, and a summary of the sections that have been planned. The overall research objectives and theoretical and empirical objectives were explained, and the research methodology used in the study was described.

Chapter 2: Analysis of the banking sector

This chapter provides an analysis and overview of the banking industry. Its benefits and drawbacks were mentioned as part of the discussion. Various banking regulations, along with solvency requirements, were included and analysed. This section also discusses measures banks could take to reduce risk and raise awareness.

Chapter 3: Overview of operational risk, people risk and culture risk

This chapter will provide a theoretical overview of operational risk and examine the theoretical link between people risk and culture risk. The factors influencing people and culture risk in the banking sector were outlined and analysed. The impact of people risk and culture risk on the 2007/08 Global Financial Crisis (GFC) and the COVID-19 pandemic was discussed and compared, and international frameworks and guidelines such as the Basel Accords, ISO 31000, and the King IV Code were highlighted.

Chapter 4: Research design and methodology

This chapter provides information regarding the research design, methodology, and data collection techniques. Different research approaches and designs were discussed, and the most appropriate ones for this research study were chosen. Sampling procedures were outlined, including explanations of the sample size, choice of sample, and the data collection process. Pre-testing of data was also conducted. The model used in the simulations was explained.

Chapter 5: Statistical analysis and discussion of the results

A simulation of the statistical data was conducted. The data were analysed to provide a clear conclusion about the people risk and culture risk in the banking industry. The results were analysed using statistical tools and interpreted to give possible solutions and findings.

Chapter 6: Recommendation and Conclusion

An analysis of the influence of people risk and culture risk on risk management in the banking sector was recommended and concluded. The conclusion pointed out the importance of the study and measures to focus more on mitigating people risk and culture risk.

CHAPTER 2
THEORETICAL BACKGROUND: ANALYSIS OF THE BANKING SECTOR

2.1 INTRODUCTION

The focus of this chapter is to provide an in-depth analysis or review of the banking sector, which includes a revision of its definition and identifying and differentiating between the different types of banks. Moreover, it is crucial to contextualise banks' current compliance and regulation. The last section will focus on measures banks could put in place to manage the ever-changing risk environment in the banking sector.

This chapter aims to achieve the following theoretical objective mentioned in chapter 1: contextualising the South African banking sector. This can be achieved by discussing the following components:

- Review the South African banking sector, its definition, and types of banks;
- The roles, responsibilities, and purpose of a bank to the economy and society;
- Definition and discussion of risk and risk management;
- The risks inherent in the South African banking sector;
- The regulation and legislation governing South African banks; and
- The global regulatory and governing bodies, including the Basel Accords, King reports, Committee of Sponsoring Organisations of the Treadway Commission (COSO) and ISO standards.

Banks play an essential role as financial intermediaries where financial transactions are facilitated, and they are also the core engine of the economy. Developed and developing economies depend on banks as financial intermediaries to facilitate and safeguard financial transactions (Akrani, 2011). The following section will define a bank and its role as a financial institution.

2.2 DEFINITION OF A BANK

According to Ozsoy and Sayfullin (2006:75), the word bank originated from the Middle French '*banque*' derived from Old Italian '*banca*' meaning '*table*'. In Old High German, bank meant '*bench counter',* which is a place where bankers used benches as makeshift exchange counters (Akrani, 2011). Different authors and economists define banks according to what it does as a financial institution.

According to AL-Shatnawi *et al*. (2021:3), a bank is a financial institution that allocates and transfers money by issuing loans, holds clients' deposits for a fee and withdraws to individuals, businesses, companies and governments. A bank is defined as a financial institution according to the nature of its business as well as how it conducts its financial services in the economy (Heffernan, 2017:1). Gobat (2012:38) further mentioned that a bank is a financial institution by nature of its operation that matches up depositors and borrowers to help ensure that the economy and financial transactions function smoothly. There is no single definition of a bank; however, it is described according to the nature of its business, which it provides as a financial service to its customers (Gobat, 2012:38). Hull (2018:25) highlighted the traditional financial services that a bank provides include the following but are not limited to:

- Deposits and withdraws;
- Issuing of loans to individuals and businesses;
- Offering home mortgage loans;
- Offering financial advice and related financial services, such as insurance;
- Issuing credit; and
- Currency exchange (bureau de change).

Hull (2018:25) asserted that the traditional role of banks has been to provide financial services, such as deposits, withdrawals, and making loans, in return for receiving interest from loans or withdrawals. Most banks provide services in both commercial and investment banking. Commercial banking services include deposits and lending, whereas investment banking helps businesses raise debt and equity and provides financial advice on mergers and acquisitions and other corporate finance decisions (Hull, 2018:25). Large corporate banks often engage in stock or securities trading. The following section will discuss the purpose and role of a bank as a financial institution.

2.3 THE PURPOSE OF A BANK

South African banks play a crucial role in the economy by maintaining financial stability and facilitating financial transactions between two or more parties (Maredza & Ikhide, 2013:553). Banks act as financial intermediaries and serve as the purses of individuals, businesses, government, and other economic role players (Mishra, 2010:20). Although South African banks operate in an unpredictable environment that is faced with numerous risks, they have managed to avoid the financial meltdown that arose from the 2007/08 GFC. Maredza and Ikhide (2013:553) asserted that this resulted from the South African banking sector being protected by solid macroeconomic policies and prudent regulation. This implies that the South African banks had enough capital in reserves to help them survive tough macroeconomic

challenges. South African banks' ability to identify, measure and manage risks comprehensively has benefited and contributed towards a stable banking sector (Stavroula, 2009:13).

One of the essential roles of a bank is to connect and align with creditors and borrowers, as well as play a vital role in smoothing domestic and international transactions (Gobat, 2012:38). Munyai (2020:12) explains that banks were established for commercial purposes and to facilitate financial transactions. According to Heffernan (2017:1), customers usually prefer banks with immediate liquid cash because lenders, depositors, and borrowers all have different liquidity appetites. Customers want access to funds from their accounts at any time without a hassle (Heffernan, 2017:1).

According to Allen *et al.* (2019:1), banks similarly perfect their role as intermediaries between investors and borrowers by ensuring that depositors' funds are saved and used to offer loans to customers. Furthermore, banks also provide insurance to customers against unexpected macroeconomic challenges. They do this by putting aside some of the depositors' funds to sustain them during the tough economic meltdown. Various banks differ according to their roles across different sectors and countries. However, they remain an important key to the financial system (Bollard, 2011:2). Table 2.1 below represents an overview of a bank's roles and responsibilities.

Table 2.1: Roles and responsibilities of a bank

Role	Responsibilities
Credit provision	Provision of credit to individuals and businesses.
Liquidity provision	Deposits can be withdrawn at any time when a financial need arises.
Risk management services	Banks allow businesses and households to pool their risks from financial market exposure and commodity price risks. Much of this is provided by banks through derivatives transactions.
Remittance of money	Easy transfer of money from one person to another and also offer credit facilities, which include credit cards, cheques, drafts, and real-time gross settlement.
Rapid economic development	Issue loans to different sectors and industries for economic development. Facilitate foreign or local direct investment in industrial sectors. Also, provide financial/commercial consultancy.
Promotion of entrepreneurship	Promote entrepreneurship by making loans available to customers.

Source: Adapted from Bollard (2011:2); Sanderson (2019)

As shown in Table 2.1, banks play different roles in society and the economy, serving as an intermediary between people, governments, and other institutions by facilitating financial transactions (deposits and withdrawals), issuing loans, and maintaining financial stability through quantitative easing in the banking system.

2.3.1. The role of a bank as a financial intermediary

Banks are known as the middlemen where the transfer or exchange of money between individuals, organisations and businesses takes place, as well as deposits and borrowing by the public and other companies (Redda, 2015:18). Dawd (1996:115) explained that the role of financial intermediary is to allow a third-party organisation to smooth the transfer of financial information or financial transactions between two individuals or organisations. Van der Merwe *et al*. (2014:42) further highlighted that a financial intermediary is a financial institution that transfers funds from savers to borrowers intending to make a profit from the interest gained. Financial intermediaries connect investors to borrowers and make financial markets more efficient in the process. Van der Merwe *et al*. (2014:42) further stated that borrowers include any customer (who needs to finance day-to-day expenses), company or organisation (that needs to expand their operations or for investment purposes), and government (that needs to finance deficits and provide public services). On the other hand, lenders are domestic and international role players in the financial system that save their income, intending to lend it to other individuals or organisations to meet their financial needs (Van der Merwe *et al*., 2014:42).

Financial intermediation is a fundamental process within an economy that facilitates the financial cycle from one who is not currently using the money to another one in need of the money (Redda, 2015:18; Ferreira, 2019:15). This builds the economy to be more efficient with a smooth distribution of funds between hands. To build resilient financial systems, financial intermediaries continue to hold appropriate capital for sustainability purposes, especially during harsh macroeconomic conditions such as the 2007/08 GFC, and to maintain their financial stability and reputation (Munyai, 2020:13).

Ferreira (2019:16) and Munyai (2020:13) pointed out that financial intermediaries comprise the depository and liquidity functions. Depository functions include using bank payment facilities to transfer or save money. In contrast, liquidity functions relate to customers' current and future financial needs and the ability to convert assets that are temporarily invested into cash (Ferreira, 2019:16). Financial intermediaries charge lower costs of the transaction to customers and provide cheaper financial services than other financial institutions as a result of their massive contribution to the economy (Van der Merwe *et al*., 2014:42).

A bank, as a financial intermediary, helps customers save their funds and provides credit to those customers who need financial relief (Van der Merwe *et al*., 2014:42). Van der Merwe *et al*. (2014:42) further mentioned that various financial intermediaries provide a broad range of financial services. In contrast, others are more focused on a niche market. The following section focuses on different types of banks and their services to society and the economy.

2.4 TYPES OF BANKS

Previously, South African banks were focused on financial products to help secure more outstanding market share (Strauss & Mfongeh, 2016:62). Nowadays, South African banks are more focused on rendering financial services to their clients, playing a vital role in the economy through growth and development, and ensuring efficient movement of money from savers to borrowers (Maredza & Ikhide, 2013:553). Banks are categorised according to the nature and services rendered to the economy. However, this study will focus on commercial, investment, retail, and cooperative banks that guard, exchange, and accept deposits. This results in commercial, investment, retail, and cooperative banks providing extensive economic services and having a high percentage of market share in terms of clients. Table 2.2 lists different types of banks with their respective core functions.

Table 2.2: Different types of banks

Type of bank	Services rendered
Affiliated bank	Banks that a holding company partially or wholly owns.
Agri bank	Offer loans to small and emerging farmers.
Banker's bank	Offer cheque clearing and trading of securities to other banks, and services are not offered to the public.
Central bank	Overseeing the monetary system and financial sector of the country.
Commercial bank	Offer or accept deposits, withdrawals, personal loans, and savings accounts to individuals and small and emerging businesses.
Community bank	Locally centered commercial and savings bank.
Cooperative bank	Mutual society banks promote savings among their customers and provide ownership to the customers who make deposits.
Development bank	Offer loans to promote development and sustainable economic development, growth, and regional integration through infrastructure finance and development.
Insured bank	Reserve deposits, which are backed by deposit insurance plans.
International bank	Commercial banks are present in numerous nations.

Type of bank	Services rendered
Investment bank	Offer underwriting issues of securities and oversee large and complex financial transactions.
Merchant bank	Offering debt and equity to corporate clients
Mortgage bank	Provide mortgage loans to clients.
Retail bank	Offer financial services to households and small and emerging businesses.
Saving bank	Accept deposits, withdrawals, and loans to individuals.
Universal bank	Provides various banking services to customers and non-banking financial services under one authorized or legal entity.
Virtual bank	Banking services that are solely offered over the Internet or online platform.
Wholesale bank	Major commercial banks that are offering services to big corporations, businesses, and governments/states.

Source: Adapted from Rose & Hudgins (2013:3); Heffernan (2017:1); Hull (2018:26); Ferreira (2019); Mukhopadhyay & Vaidya (2021)

The South African banking sector has increased sharply with the number of banks entering the market and attracting more customers. These types of banks mentioned above dominate the South African market by the financial services they provide to the people, governments, organisations, and other institutions (SARB, 2021c). The following section will discuss South African prevalent banks in detail.

2.4.1. Commercial Bank

As defined in Table 2.2, commercial banks make a profit by earning interest from loans issued to customers and other financial transactions (Mishra *et al*., 2021). Farhan *et al.* (2019) mentioned that commercial banks combine numerous types of contingent guarantees with financial derivatives such as forwards, futures, swaps, and other loans, including financial loans and mortgages. Commercial banks do not usually depend on unstable wholesale funding like brokerage institutions. Commercial banks often fail due to significant investment in non-household real estate loans and issue loans to the riskiest borrowers without background checks or collateral, resulting in defaults (Antoniades, 2017).

2.4.2. Investment Bank

An investment bank, as defined in Table 2.2., assists clients by providing financial services to raise debt and equity financing for large corporations and governments (Rose & Hudgins, 2013:3). Hull (2018:32) mentioned that one of the functions of an investment bank includes

originating securities, underwriting of currencies, investing securities and offer funding to qualifying investors in the market with the hope of receiving investment returns. According to (Hull, 2018:32), the following financial services are offered by investment banks to their clients:

- Underwriting;
- Mergers and acquisitions;
- Trading – equities, fixed income (bonds), proprietary;
- Fund management;
- Consultancy;
- Global custody;
- Assets management;
- Wealth management, and
- Capital raising.

2.4.3. Retail Bank

A retail bank is also known as a consumer bank, and its primary function is to facilitate financial transactions of individual customers and small businesses directly rather than corporate entities (Rose & Hudgins, 2013). Retail banking is also known as customer-centric services offered by commercial banks (Anandalakshmy *et al*., 2020:1691). The term 'retail' (from a retail bank) specifies the services that are almost like storefront shopping or the over-the-counter nature of commercial banking. According to Kumar (2017), retail banks usually have a head office and many branches in different locations to provide services closer to customers. All branches provide the same services that serve the customer's needs.

According to Kumar (2017), the services offered by retail banks include, but are not limited to:

- Personal loans;
- Mortgage loans;
- Debit and credit cards;
- Savings and transactional accounts; and
- Certificate of deposits.

One of the core services that retail banks offer is accessible technology to clients to do their transactions using online banking applications (Apps) (Anandalakshmy *et al*., 2020:1691). Retail banks depend on technology to facilitate their transactions, and customers frequently expect digital solutions that are reliable and easy to use to access their bank accounts. Product differentiation and customer choices between retail banks are usually influenced by access to

technology (online banking) and technological capacity (Makhaya & Nhundu, 2016:112).This implies that customers' preference for retail banks highly depends on the ease of access technology enables.

2.4.4. Cooperative Bank

According to Kumar and Srivastava (2020), cooperative banks are small-sized financial institutions that offer financial services to their customers, and those customers are the bank's owners. A cooperative bank is formed and administered by the depositors, entitled to vote in the shareholders' meetings and receive dividends. Kumar and Srivastava (2020) further mentioned that the depositors who are cooperative bank members are the bank's customers. The control of a cooperative bank is typically democratic, with each member (customers) having an opportunity to vote once.

Kumar and Srivastava (2020) explained that a cooperative bank is different from any other bank in how it conducts its business by issuing small amounts of loans to customers, the client base, and geographic area. Cooperative banks play a huge role in providing banking services and meeting the financial needs of retail, small, and medium-scale businesses and borrowers within geographical proximity and local communities (Kumar & Srivastava, 2020). Cooperative banks have always been conservative in their investments, allowing them to remain financially stable and operational during tough macroeconomic challenges such as the 2007/08 GFC. Although cooperative banks do not provide large-scale economic services like commercial and investment banks, they are essential to communities as they serve many clients with low to medium household incomes (Kumar & Srivastava, 2020).

However, all banks face particular risks in the financial sector, and they need to identify, analyse, and manage these risks. For banks to mitigate or manage risks, there is a need to understand risk and risk management to help ensure the operational efficiency of the banks where risks are managed to the appropriate level. The following section will focus on in-depth discussions on risk and risk management.

2.5 RISK AND RISK MANAGEMENT

All organisations, from non-profit to profit-making companies, including banks, function in an ever-changing economic and financial environment where risk is inevitable and may impact the organisation's strategic objectives. Each risk the organisation faces originates from an internal or external source (Toma *et al*., 2012:976). Toma *et al*. (2012:976) further highlighted that risk management is an essential tool to safeguard organisational processes and can add and create value in an organisation. According to Soin and Collier (2013:83), risk is defined

as the uncertainty of the outcome of an event or decision, whereas risk management is the process of managing risk. Risks are managed through adequate and effective risk management. Management of risks guarantees smooth operations, a favourable financial position, attracts investors and clients, and a better public perception of the organisation (Young, 2014:15; Aldasoro & Park, 2018:2).

Furthermore, Soin and Collier (2013:83) mentioned that the link between risk and risk management had been given little attention in the past. However, this concern has been addressed as an after-effect of the 2007/08 GFC. Organisations have since adopted proactive Enterprise Risk Management (ERM) strategies and response plans to manage or mitigate risk through identifying, analysing and effectively monitoring the risk to achieve their strategic objectives (Vasvári, 2015:29).

2.5.1. Risk and the Source of Risk

According to Ivascu and Cioca (2015:2), risk is the uncertainty of an event that can negatively affect a business to achieve its strategic objectives. Praxton Research Group Limited (2018) stated that risk is formed from three elements, which start with a future potential event combined with probability (likelihood) and potential severity (impact). Risk is best defined as an unknown or uncertain area. However, Duong (2013:10) argues that uncertainty encompasses a broader term, while risk is only part of it.

According to Toma *et al*. (2012:976), risk originates from history associated with economic theory, where there was an evaluation of the good or the bad related to economic activities. According to Vasvári (2015:29), risk comes from a source, the root cause. Abdirad *et al*. (2012:90) mentioned that the source of risk is a primary condition that creates a possible risk event. Abdirad *et al*. (2012:90) further highlighted that where there is a risk (uncertainty), there is a source or root cause of that risk. According to Baud and Chiapello (2017), there are three sources of risks outlined in Table 2.3 below:

Table 2.3: Source of risk

Source of risk	Description
Uncertainty-based risk	Uncertainty-based risk is a business risk that cannot be qualified or quantified, and its consequences cannot be foreseen or insured against. Uncertainty is also based on beliefs, and not only randomness or haphazardly. Examples include natural disasters, black swan events, macroeconomic factors, and operational and financial risks.
Opportunity-based risk	Opportunity-based risk is based on taking risks that banks are guaranteed to profit or capitalise on the opportunity. This risk is taken when companies aim at maximising their profit

Source of risk	Description
	without facing any uncertainty. Examples include selling new products or services, relocating the business to a new location to attract new customers, and creating new opportunities.
Hazard-based risks	Hazard-based risk is a risk associated with the occupational health and safety of the company. This risk arises from damage, safety concerns, potential harm, and adverse health effects on employees. Examples include fire, storm, gas, smoke in the premises, and abandoned old buildings.

Source: Author's compilation; Wang *et al*. (2014:90); Baud and Chiapello (2017); Msomi (2018:12)

Table 2.3 above shows three different sources of risk which can be used in risk assessment in any organisation to identify the origin of the risk (root cause). The source of risk comes from the traditional risk management approach, also referred to as a reactionary method of managing risk. The traditional risk management approach is applied after a risk has occurred and is concerned with the types of risk that an insurer can insure or a third party (Lundqvist, 2015:442).

Every sector is exposed to different types of risks. The banking sector is exposed to (but not limited to) operational risk, reputational risk, credit risk, market risk, country risk, people risk, and compliance risk (Mazars, 2020). Risk can have a positive or negative impact on the banking sector. For example, positive risk (favourable fluctuation of currency, emerging positive change in regulations) can help banks to open new branches in different locations and make a profit. In contrast, negative risk (political instability, unfavourable local economy, credit default from clients) could ultimately force the bank to close (Stulz, 2014).

Moreover, risk is the uncertainty that banks cannot avoid due to the complex banking sector in which they operate. Banks face almost the same systemic risk resulting from the breakdown or collapse of the entire banking system. However, the severity (impact) of systemic risk may differ amongst banks due to the exposure faced (Nasa, 2020:21). The following subsection discusses risk management.

2.5.2. Managing Risk

According to Blunden and Thirlwell (2013:5), risk management entails taking measures to manage or mitigate the likelihood and impact of a possible risk. Although there is always a potential that something could go wrong due to human error, process failure, or an unpredictable external factor, putting controls in place to mitigate the risk is a way for banks to gain public trust and regulatory intervention. Nasa (2020:19) mentioned that for banks to

mitigate the potential risks they could be exposed to, effective risk management and controls should be implemented.

The criticality of risk management is one of the processes that helps banks and other organisations identify and manage any potential risk that could financially and operationally harm the banks and other organisations. Inadequate risk management impacts the bank's image and financial position (Muriithi & Waweru, 2017). Effective risk management enables banks to identify, analyse, assess, and manage risks they are faced with, including emerging risks, which are risks that have been identified but not yet occurred, as well as those risks that banks do not have knowledge of or experience in managing (Fadun & Oye, 2020:25). The next section will further discuss the risks (operational risk, credit risk, market risk, reputational risk, liquidity risk as well as solvency risk) that banks face.

2.6 RISKS FACED BY BANKS

A wise man once said that high risk equates to high reward and that profit is a reward for taking all the risk exposure (Richardson, 1970:88). This statement is apparent in the banking sector as banks are exposed to numerous types of risks. According to Suresh and Paul (2014:6), a successful bank can manage and mitigate the risk it is exposed to, as well as make a significant profit from all financial transactions. Mitigation of the risks faced by banks starts with establishing context, identifying the risks, assessing the risks, analysing the risks, evaluating the possible impact, and monitoring the movement of the risks (Venter, 2020). Anginer *et al*. (2014) stated that risks such as operational risk, credit risk, reputational risk, systemic risk, systematic risk, market risk, liquidity risk, and regulatory risk are some of the risks that pose a severe threat to the banking sector if they are not adequately and effectively managed. These risks mentioned above will be discussed below.

2.6.1. Operational Risk

Operational risk, as defined above in Chapter 1, consists of potential losses stemming from the operation of a bank. Operational risk sources include people, processes, and internal and external factors and are different from market risk, which involves upside (profit) or financial movements caused by adverse market movements (BCBS, 2006). Some examples of operational risk include losses from inefficient processes, unintentional employee errors or mistakes, employee misconduct, occupational health and safety risk, cyber risk, disruption of information technology systems, natural disasters as well as black swan events like the COVID-19 pandemic, Spanish flue, and monkeypox viral disease (Mare, 2019; Hughes & Marzouk, 2021:174; Kozlov, 2022).

Operational risk is linked to one of the root causes of the 2007/08 GFC that impacted banks since it is connected to the risk of the issuance or approval of loans to risky customers who did not qualify and failure to identify potential risks (Nasa, 2020). de Jongh *et al*. (2013) asserted that the 2007/08 GFC was caused by the issuing of loans and mortgage bonds to unqualified customers, which resulted in banks failing to manage operational risk. Furthermore, banks failed because they did not put funds aside as a cushion to help them overcome unexpected customer defaults. As a result, banks were still operating under the guidance of the Basel II Accord, which did not make room for unexpected losses (Larsson & Soderberg, 2017).

For banks to guarantee their success in the current changing risk climate, operational risk should be managed constantly and continually. Britain's oldest investment bank, Barings Bank, suffered from operational risk (internal losses) due to a massive loss sustained by one of its derivatives traders (Elliott, 2020). This shows how it is vital for banks to manage operational risk as it has brought Baring Bank to its knees. The fundamental requirement for managing operational risk in any organisation is to ensure that risk takers are separated from risk controllers (Chapelle, 2019:222). Operational risk comprises four categories, which are illustrated in Table 2.4 below:

Table 2.4: Categories of operational risk

Categories	Examples of root causes
People	Harassment, discrimination, employee errors, great resignation, key man dependency, lack of succession plan, ethics, organisational culture.
System	Technical and technological failures include inadequate information systems, data governance, business continuity management and plans, outdated software, and power backup.
Process	Inadequate frameworks and policies, Standard Operating Procedures (SOPs), and ineffective internal controls and tools.
External events	Poor services by third parties, social and political unrest, black swan events (COVID-19, Spanish flu, Swine flu), social and geographical factors (racism, tribalism), and natural disasters (earthquakes, typhoons, tremors, draught).

Source: Author's compilation; Matthews (2008); Matthews & Thompson (2008:128); Hughes & Marzouk (2021:174)

Table 2.4 above demonstrates four categories of operational risk. These components contribute towards banks' exposure to financial, reputational, and operational loss, which can, in turn, lead to bankruptcy if not managed adequately and effectively. By mitigating these

components of operational risk, smooth operations of banks are guaranteed, as well as quality products and services to the customers (Suryaningsih & Sudirman, 2020:253).

2.6.2. Credit Risk

Suresh and Paul (2014:276) mentioned that credit risk is defined in relation to "financial failure", which means bankruptcy, default, or liquidation of a bank or organisation. The definition sets aside the possibility of credit quality or creditworthiness of a loan that could be downgraded or upgraded (Suresh & Paul, 2014:276). Credit risk is defined as the risk resulting from customers' failing to pay back a loan or financial commitment to a bank based on agreed payment arrangements (Chance & Brooks, 2016:537). An inclusive definition would include value risk, which is the risk of losing a significant amount of funds without defaulting (Saleh & Afifa, 2020:3).

Banks are not only formed to accept deposits and withdrawals; they also issue loans and provide smooth credit facilities. Although lending is one of the primary sources of income for banks, they are ultimately exposed to several risks that could impact the bank if not assessed, analysed, and managed adequately and effectively (Saleh & Afifa, 2020:4). This makes them unavoidably exposed to credit risk. The success of banks relies on proper and efficient management of credit risk, which has a positive impact on the profitability and reputation of the bank (Garr & Awadzie, 2021:4). This can be accomplished by putting in place adequate risk management measures that banks can use to control or manage the negative effects of credit risk on their balance sheets.

2.6.3. Market Risk

Apart from issuing loans and holding deposits from customers, banks also facilitate a significant portion of the securities that are traded in a bank as a means of receiving short-term money (Allen *et al.*, 2019:2). Market risk is the risk resulting from the loss of financial investment due to exchange rate fluctuations, price movements, or interest rate movements (Chance & Brooks, 2016:557). Market risk sources range from commodities to cryptocurrencies and any other financial instruments. Killian (2019) asserted that market risk is also referred to as a systematic risk, which is undiversified since it is a universal risk that affects the entire market or economy.

Market risk can be managed by hedging the risk. According to Killian (2019), hedging refers to purchasing assets to reduce the risk of losses from other assets. Hedging is a strategy used to offset the risk of uncertainties. Traders understand that certain risks are needed to bring higher returns on investment. On the other hand, hedging allows traders to take the risks they

have an appetite for while being protected (Shin & Soydemir, 2018:3). Banks usually use hedging contracts such as swaps, forwards, and options to manage market risk. Table 2.5 below lists the types of market risk with a detailed explanation:

Table 2.5: Types of market risk explained

Type of market risk	Description
Interest rate risk	Interest rate risk is associated with an adverse consequence resulting from unexpected changes or movements in interest rates. Interest rate risk is linked to fixed-income assets, such as mortgage bonds, and has an inverse relationship with bonds. As interest rates increase, the bond price decreases.
Equity price risk	Equity price risk is the risk resulting from losses or not achieving predicted income from unexpected changes in the prices of financial assets in the market.
Commodity price risk	Commodity price risk is the risk resulting from changes in commodity prices due to adverse external market movements. This risk may be caused by unstable political interference and regulatory or seasonal change.
Exchange rate risk	Exchange rate risk results from the fluctuation of currency prices. When the price of a foreign currency changes, it spills over to the local currency by becoming more or less expensive to acquire foreign assets—for example, the movements of the dollar against the rand.

Source: Author's compilation; Treapăt & Anghel (2016); Gray (2019)

Table 2.5 explains the different types of risks that make up market risk. Market risk is unavoidable; however, banks usually put measures in place to manage this risk by allocating resources specifically for adverse market movements. The repercussions of market risk tend to be severe and hurt the entire global economy, including the banking sector and could bring any organisations and institutions to their knees. However, budgeting for market risks to be in a better financial and operational position when they arise is crucial.

2.6.4. Reputational Risk

Reputational risk is regarded as one of the top risks (one that they pay the most attention to) in the banking sector. According to Chapelle (2019:221), reputational risk results from damage to a bank's image or negative perception. Ferreira (2019:56) further described the reputational risk as the risk associated with the brand and other related stakeholders' (customers, public, investors) perception of the bank. Reputational risk can affect the image of any business or organisation, regardless of its size, industry, or sector; however, it is difficult to quantify the damage it causes. According to Blunden & Thirlwell (2013:323), reputational risk results from a control failure because of an operational risk event.

A good reputation can build a bank, whereas a bad reputation can similarly damage a bank. Young (2014:15) stipulates that the more a bank depends on public confidence, the greater the risk of reputational damage, as it negatively affects the entire bank and not just the function where the risk event occurred. Msomi (2020:19) further mentioned that some possible effects of reputational risk on banks include but are not limited to downgrades in credit ratings, loss of key stakeholders, non-compliance with regulation, litigation, or loss of funding. Negative perception potentially negatively impacts a bank's earnings and capital, also known as reputational risk.

According to Blunden and Thirlwell (2013:335), reputational risk can be mitigated through preventive or detective measures to provide positive stakeholder expectations. This can be done through a stakeholder survey as a detective control for reputational risk management. Another control for managing reputational risk is through corporate or bank communication functions that assist in providing assurance to all stakeholders via communication platforms. The importance of managing reputational risk in a bank is shown when employees, potential employees, clients, and regulators have confidence in the bank and positively contribute towards its success, from financial to operational, as well as attracting new markets (Hoy, 2012:14). Table 2.6 below provides examples of reputational damage that could impact a bank:

Table 2.6: Examples of potential reputational damage

Reputational problem	Example of poor reputational handling
Losing key employees	Poor internal communication and lack of succession plan.
Loss of suppliers and customers	Poor marketing communication.
Difficulty in raising capital	Poor investor relations.
Non-compliance and litigation	Inadequate controls over operational risk.
Financial loss	Poor service delivery to stakeholders.

Source: Author’s compilation; Blunden & Thirlwell (2013: 335)

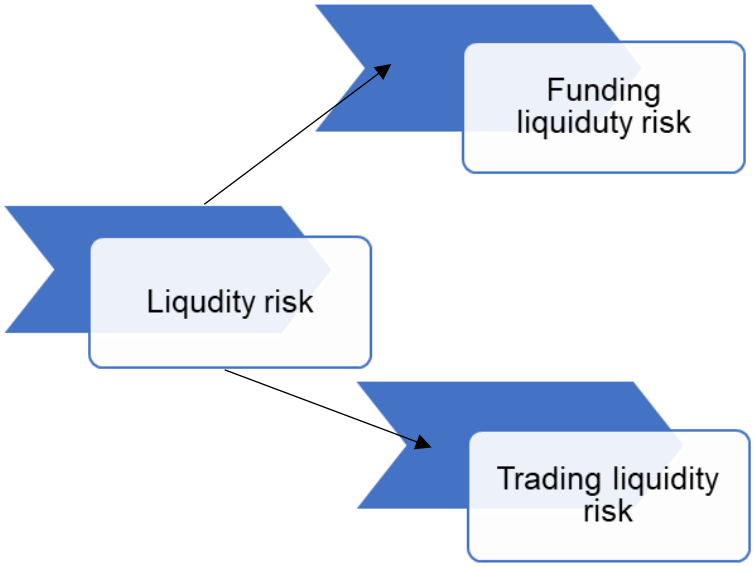
Table 2.6 depicts root causes that could possibly cause reputational risk events that can damage a bank's brand. Reputational risk is one of the crucial risks to banks and other corporate entities as it is associated with people’s perceptions and opinions (Ferreira, 2019:52).

2.6.5. Liquidity Risk

Liquidity has been the centre of attention for banks to shield themselves from the risk of inefficient liquidity management. This is due to the fact that banks should always have a liquid amount of money available for rainy days (Iraci, 2021). Gupta (2020) stated that the 2007/08 GFC exposed banks and financial institutions to liquidity risk, including Lehman Brothers and American International Group (AIG). According to Saleh and Afifa (2020:3), liquidity risk arises from a bank failing to meet its short-term obligations, such as payment to creditors or payment of salaries and bills. Liquidity risk arises as a result of a bank being unable to quickly convert assets into cash when required (Saleh & Afifa, 2020:3). Iraci (2021) asserted that the extending of lines of credit, securitizations, and money market activities are a few methods that banks and other financial institutions can use to manage liquidity risk and provide guidance for banks to hold enough liquid cash to overcome severe macroeconomic challenges.

Although banks may be technically solvent, inadequate liquidity may lead to a collapse even if assets are more significant than liabilities. Liquidity is at the heart of a bank's operations, and illiquidity may result in a lack of immediate capital as the customers are always in need of their money (Iraci, 2021). Liquidity risk comprises asset liquidity risk and funding liquidity risk. According to Brunnermeier and Pedersen (2005:2), trading (or market) liquidity risk is the risk resulting from the position of a bank that cannot be efficiently offset at short notice without significantly impacting the market price. On the other hand, funding liquidity risk is the risk arising from a bank’s inability to raise the necessary funds to cover liabilities, margins, meet cash requirements, and capital withdrawals (Drehmann & Kleopatra, 2009:8).The size of the transaction and its availability are also factored in funding liquidity risk. Figure 2.1 below shows two types of liquidity risk.

Figure 2.1: Types of liquidity risk



Source: Adapted from Drehmann & Kleopatra (2009:8); Crouhy *et al.* (2014:114)

Liquidity risk is one of the main risks at the centre of attention for any organisation, including banks, to maintain financial stability. Banks are primarily impacted negatively by liquidity risk on their balance sheet and from the systemic viewpoint. Diversification of funds usually helps banks mitigate liquidity risk associated with investing in concentrated investment portfolios (Van Greuning & Bratanovic, 2020). Van Greuning and Bratanovic (2020) further mentioned that banks must develop a liquidity policy that includes both risk management structure and liquidity management to limit liquidity risk exposures and have a strategy for managing liquidity risk during unfavourable economic conditions. Grundke and Kühn (2020:168) mentioned that liquidity policy improves resilience in banks' short-term risk liquidity profile and guides organisations to quickly convert liquid assets into currency when required.

According to Ruozi and Ferrari (2012:3), measuring and managing a bank's liquidity risk is difficult as it depends on different factors, including cash management, balance sheet management, stress testing and scenario analysis. Risks such as reputational, credit, interest rate, operational, and transactional risks may affect a bank's liquidity position. If these risks are not adequately managed, they will negatively impact the bank's liquidity position. Furthermore, banks must ensure they have enough cash immediately available to meet short-term obligations and client demand (Hull, 2018:562).

2.6.6. Solvency Risk

Solvency risk is the risk that arises from a bank being unable to meet its long-term financial obligations as they are due after the disposal of its assets (Aldasoro & Park, 2018:2). Solvency risk can be a result of banks writing off loans to customers, which leaves banks' financial positions unfavourable to covering long-term liabilities. The impact of solvency risk is very high as the bank's insolvency may lead to bankruptcy. Nasa (2020:23) contended that solvency risk could be managed through banks having adequate capital buffers to absorb potential losses. In the event of an economic meltdown, the capital buffer would help banks maintain their financial position and flow of credit in the economy (Sakouvogui, 2020:887).

Iyer *et al*. (2018) mentioned that a high solvency risk shock occurs when a bank becomes insolvent due to the absence of a depositor's response. In contrast, a low solvency risk shock has no financial impact on the bank's solvency. A high solvency risk shock is one of the risks that impacted the banking sector during the 2007/08 financial meltdown.

2.6.7. Other Risks Faced by Banks

The risks explained above are not the only risks exposed in the banks. Risk is associated with any financial transaction, although it may occur due to other operational events or external factors. According to Ghosh (2012), risks in the banking sector have two measurements, namely, whether the risk is going to take place (probability of occurrence) and the financial impact of the risk (severity of the risk). Table 2.7 below lists and defines other risks that may impact banks:

Table 2.7: Other types of risk

Risk	Description
Regulatory	Regulatory risk results from changes in laws or regulations that could potentially impact the banks or banking sector. Risk resulting from a bank's license to operate being withdrawn by the regulator due to non-compliance with specific regulations or standards.
Compliance	Compliance risk is the risk resulting from non-compliance with certain laws and regulations in the banking sector that lead to penalties or sanctions.
Country	Country risk is the risk resulting from social, political, sovereign default, and economic conditions in a country that may potentially have a negative impact on the banks. Banks need to implement adequate controls to manage the inherent risks related to the country's risk profile. Country risk is closely related to strategic risk.

Risk	Description
Concentration	Concentration risk is the risk resulting from exposure that may produce significant losses that impact a bank's financial health or capacity to continue operating. Concentration risk arises from investing a high percentage of investment in one portfolio. The loss usually reflects the size of the bank or financial institution.
Money laundering	The money laundering risk may arise due to a bank's failure to comply with local and global anti-money laundering laws and regulations.

Source: Author's compilation; Ghosh (2012); Office of the Comptroller of the Currency (2016)

Table 2.7 shows other risks that could possibly impact banks differently according to their intensity. The financial impact of these risks is felt through capital loss, the decline in asset value and revenue losses. In contrast, brand damage is felt through peoples' perceptions and thoughts and character assassination (Ghosh, 2012).

2.7 THE SOUTH AFRICAN BANKING REGULATORY STRUCTURE

South Africa's banking system is a well-established and strict banking system that is used by most developed countries around the world, such as the United Kingdom (UK), Switzerland, Germany, France, etc. (Moloi, 2014:2). South African banking sector's regulatory requirements have been changed numerous times in the past few years with new and updated regulations to suit the current environment (Moloi, 2014:3). The 1990s came with the merger of Allied Building Society, Volkskas and United Building Society that formed ABSA as well as the proposed failed merger of Nedcor and Stanbic (Jones**,** 1991:152; Pearce, 1996;). The banking sector regulation promotes credibility and maintains financial and operational stability and economic growth. The Banks Act No. 94 of 1990 is the leading banking regulation aiming to achieve these objectives in the banking sector (Moloi, 2014:3).

Calice *et al.* (2017:183) asserted that the 2007/08 GFC had impacted the financial sector by exposing the weaknesses in the regulations or guidelines used to safeguard the financial system. According to Hill (2018:286), bank regulation refers to laws or guidelines that aim to maintain banks' solvency positions by avoiding risks. Bank regulations differ depending on the industry size, bank services, country restrictions, official supervisory powers, and insurance design (García-Meca *et al*., 2018). Bank regulation aims to control or protect the banking sector by implementing measures to ensure that banks operate in a lower-risk environment (Stiroh, 2019). Although banks face various risks, banking regulations must be followed and complied with to promote the safety and soundness of banking operations and the protection of customers. The banking regulations serve as guidelines and requirements that banks

should comply with to align with the solvency, capital, and operational requirements (García-Meca *et al*., 2018).

Bank regulation and supervision essentially encompass governing the creation, operations, and management of banks' risk. Supervision of banks is aimed at protecting customers' interests in conducting financial transactions, providing advice on financial products and/or services to customers, fair treatment of customers, and ensuring that banks maintain financial stability (Hill, 2018:286). Supervision of banks is performed on an ongoing basis by the central banks in each country. Supervision of banks and other financial institutions is an essential part of providing oversight that carries out a sound banking system (Hesse, 2021). The following section will focus on the role of the South African Reserve Bank (SARB) and the banking regulations and legislations that South African banks should comply with.

2.7.1. The role of the South African Reserve Bank

The SARB, also known as the central bank of South Africa or the purse of the government, plays a vital role in regulating and supervising the banks in South Africa. According to Van der Merwe *et al*. (2014:44), the SARB is constituted to have a monopoly power to execute its functions in South Africa. The SARB was established according to Section 9 of the Currency and Banking Act (Act No. 31 of 1920) (SARB, 2021a).

The main objectives of the SARB are to safeguard the value of the South African currency, reduce unemployment, and prevent inflation through the issuing of coins and notes as well as maintaining financial stability (Van der Merwe *et al*., 2014:45). The SARB is mandated to monitor, conduct, regulate and supervise payments, clearing or settlement systems and registration of new banks (Moloi, 2014:4). The SARB is also mandated with regulating and maintaining minimum capital reserves that banks hold on account with the central bank.

The SARB needs to be autonomous in performing its duties and has a clear distinction between state interference and that of the central bank (Fabricius, 2020). Although the SARB operates as fully constitutionally independent, carrying out its duties is difficult as it must comply with the state legislation on central banks (Padayachee, 2015:4).

2.7.2. Banking Legislation in South Africa

The South African banking sector is one of the sectors that has enforced strict governance legislation. South African banking regulations are intended to provide supervision of banks to ensure financial stability, issuance of licenses to new banks and the protection of customers against unfair treatment. This ensures that customers are protected, treated fairly, and make

informed financial decisions (Moloi, 2014:4). Below are some banking regulations that South African banks should comply with.

The Banks Act, 94 of 1990
The Banks Act governs the establishment of banks, the security of the investments of depositors, and the protection of the integrity of banks in the interest of the South African financial system. The Banks Act establishes the registrar's supervisory role by making registration a requirement for doing banking business in South Africa. Furthermore, the Banks Act outlines prudential requirements intended to manage banking risks adequately and efficiently (Moloi, 2014:4).

National Credit Act, 34 of 2005 (NCA)
The NCA Act aims to provide consumers with fair and non-discriminatory access to credit, provide regulation for consumer credit and strengthen the standard of consumer information, and prohibit forms of unfair credit to consumers as well as credit marketing practices (BASA, 2021). Three types of credit agreements are differentiated by the National Credit Act: credit facility, credit transaction, and credit guarantee (Deloitte, 2018).

The Financial Intelligence Centre Act (FICA)
The FICA Act aims to assist in identifying illegal and unlawful activities, combating money laundering, and combating terrorism financing and associated activities. The Act further assists with clients' identity verification and recordkeeping procedures after conducting financial transactions, reporting processes, and compliance requirements (Financial Intelligence Centre (FIC) 2021). The FICA Act also aims at supervision and compliance with the Act, sharing information with the authorities, intelligence services, the South African Revenue Services (SARS), and other supervisory bodies (FIC, 2021).

The Financial Intermediary and Advisory Services Act (FAIS)
The FAIS Act aims to regulate the provision of advice, the rendering of intermediary services to customers, and ensure that consumers are provided with adequate information about the financial products or services they use (Sanlam, 2021). This Act aims to protect the financial services industry, customers (who receive the financial product and/or service advice) and intermediaries (Sanlam, 2021).

The Competition Act
The Competition Act aims to promote competition throughout the organisation and companies through efficiency, ease to adapt, consumer preference, product and service choice, competitive choice, and economic development. Moreover, the Act guard's freedom of competition towards entities participating in the market (Munyai, 2020:25).

National Payment System Act 78 of 1998
The National Payment System Act is mandated to provide administration, facilitation, operation, management, settlement and a clearing system to organisations and consumers. The Act further provides regulation and supervision of financial payments (Zorgani, 2014).

The Home Loan and Mortgage Disclosure Act
The Home Loan and Mortgage Disclosure Act (HMDA) mandates financial institutions to maintain, report, and publicly disclose their financial lending patterns in terms of geographic location and income levels of the consumers. The disclosure requirements should be done annually (Moloi, 2014).

The above-mentioned South African banking regulations were adopted to make rules and regulations and serve as a guiding principle crucial to financial institutions offering financial services to customers. Moreover, the next section will focus on the recent financial sector regulations.

2.7.3. The Twin Peaks Regulation

South Africa's financial services regulatory system has changed to bring two new financial regulators into operation to promote an efficient financial sector. The Financial Sector Conduct Authority (FSCA) and the Prudential Authority's (PA) implementation into the financial sector were introduced as the new Twin Peaks (National Treasury of South Africa, 2018). The Twin Peaks regulation is a complete system for regulating the financial services industry. The purpose of the Twin Peaks model is to ensure that the financial sector is safer and operates efficiently to prioritise all South Africans by mitigating potential risks that may impact financial stability and protecting and promoting fair treatment of customers (Institute of Bankers South Africa (IOBSA), 2018).

The Twin Peaks model is intended to strengthen the weaknesses in regulations that regulate banks and other financial services industries. According to Schmulow (2018), before the approval of the Twin Peaks model, South Africa used a financial sector model that differentiated the regulation of banks from financial firms like insurers. The financial sector model was replaced due to failure to address the reality of different institutions forming mergers from different sectors (Schmulow, 2018). The setback opened the idea of adopting the Twin Peaks model, which name was adopted by Dr Michael Taylor in 1995 (Schmulow, 2018).

The two tables below entail the responsibilities of the Twin Peaks regulation to the financial services sector:

Prudential Authority (PA)
The PA is responsible for regulating and supervising the operation of financial institutions in South Africa and ensuring compliance by banks with the Banks Act. Furthermore, the PA is responsible for ensuring the safety and financial soundness of all financial institutions (SARB, 2021b).

Financial Sector Conduct Authority (FCSA)
The FSCA supervise how financial institutions conduct their business and treat customers. The FSCA is furthermore responsible for protecting customers in the financial sector and ensuring that customers are provided with adequate financial advice to make an informed decision. Moreover, the FSCA aims to provide efficiency and integrity of financial markets (National Government of South Africa, 2021).

The Twin Peaks model safeguards all financial institutions' (including banks, insurers, and brokers) market conduct to ensure that customers are treated fairly and offered adequate advice on products and services (Schmulow, 2018). The Twin Peaks model is currently (in 2023) being used in South Africa to regulate financial institutions for the present and future of the financial services industry (van Heerden, 2018). Although the Twin Peaks model is used in South Africa, banks and financial institutions may implement various global regulations and frameworks to encourage good governance.

2.8 GLOBAL STANDARDS AND REGULATIONS

The implementation of international standards and regulations has not been in the limelight before the 2007/08 GFC. The effects of the 2007/08 GFC compelled banks and other financial institutions to adopt international standards and regulations to manage unpredictable shocks. Wuermeling (2021) stated that global standards such as the Basel Accords, COSO framework and ISO 31000 are some of the most effective standards implemented worldwide. Supervision of banks is an excellent example of global regulation, and it is regarded as a framework for the banking sector as the rules tend to be consistent across the countries (Wuermeling, 2021). Different international standards and regulations will be covered and discussed in this section.

2.8.1. Basel Accords

The Basel Accords (Basel I, Basel II and Basel III) are the principles and guidelines to improve the banking laws and regulations developed by the BCBS (Goodhart, 2011). The BCBS was established by the Group of Ten (G10) central banks and supervisory bodies worldwide from the United Kingdom, Belgium, Sweden, France, Germany, Japan, Italy, Canada, Netherlands, and Switzerland (BIS, 2020). The BCBS later expanded to Twenty-seven countries, which include Brazil, Canada, Germany, Australia, Argentina, China, France, India, Saudi Arabia, Netherlands, Russia, Hong Kong, Japan, Italy, Korea, Mexico, Singapore, Spain, Luxembourg, Turkey, Switzerland, Sweden, South Africa, the United Kingdom (UK), the United States of America (USA), Indonesia, and Belgium (BIS, 2020). The purpose of the BCBS is to strengthen international banking regulation and supervision by suggesting

principles, guidelines, and recommendations for effective regulation and supervision of international banking (Pham & Daly, 2020:2).

The BCBS held its first meeting in February 1975 and proposed to meet quarterly throughout the year at their headquarters in Basel, Switzerland (Goodhart, 2011). The committee started with 10 members and has increased to 45 members worldwide, including South Africa. The BCBS provides banking guidelines and a framework to improve capital adequacy requirements (Brown & Haque, 2017:273). Before the adoption of the Basel Accords, countries around the globe, including South Africa, were using their own regulatory and supervisory frameworks, which were too broad in identifying and mitigating potential risks (Ferreira, 2019:16). In order to understand further the Basel Accords, the following subsection will discuss in detail Basel I, Basel II, Basel III, and Basel IV.

2.8.1.1 Basel I Accord

The BCBS established the first Basel Accord, or Basel I, in 1988 to propose a minimum capital requirement of 8% for risk-weighted assets (RWAs) for international banks to protect against credit risk (BIS, 2001). Basel I focused on the effective minimum capital ratio of the overall assets on a risk-adjusted basis. Furthermore, the committee adopted the notion of regulatory capital, which requires banks' net worth and appetite to manage adverse losses (Tahtamouni & Al Qaisi, 2016:36). The Basel I Accord was adopted to set a foundation to build on. In order to meet the foundation, banks were required to have sufficient capital set aside to manage unforeseen or unexpected losses. However, the BCBS revised the Basel I Accord in 1996 to include capital requirements to cover market risk, and the revision was implemented by the end of 1997 (Shor, 2019).

Central banks in some countries were worried about banks that were not liquid enough to cover unexpected losses. Basel I was criticised for its limitations by focusing only on credit risk and exposing banks to massive financial losses (Munyai, 2020:13). Jayadev (2013:116) contended that Basel I was challenged by a one-size-fits-all method without risk sensitivity in predicting capital requirements as banks were operating in a riskier environment. Moreover, Basel I also ignored operational and market risks and provided the banks with an inadequate risk management system (Ramona, 2013). The capital requirements of the Basel I Accord include Tier 1 and Tier 2, which are associated with capital security. Tier 1 deals with higher-quality capital, which includes equity and preferred stock. In contrast, Tier 2 consists of lower-quality capital, which is additional or supplementary capital (Tahtamouni & Al Qaisi, 2016:37). Table 2.8 below shows capital tiers.

Table 2.8: Capital tiers of the Basel I Accord

Basel I	
Tier 1	**Tier 2**
• Capital (high-quality) • Common equity • Preferred stock • Shareholders' equity • Retained earnings	• Capital (low quality) • Supplementary capital • Revaluation reserves • Hybrid capital instruments • General loan-loss reserves

Source: Tahtamouni & Al Qaisi (2016:37)

Basel I's weaknesses, as mentioned above, led to the adoption of a new Accord in the banking sector – the Basel II Accord. This was also a result of the failure to accept a single definition of Tier 1 and Tier 2 capital (Tahtamouni & Al Qaisi, 2016:37). Additionally, Tier 2 was regarded as less dependable than Tier 1 in the sense that it was more complicated and more complex to calculate liquidity.

2.8.1.2 Basel II Accord

In response to the weaknesses of the 1988 Basel I Accord, BCBS implemented the Basel II Accord to strengthen and establish new capital adequacy requirements. Basel II was introduced in 1999 and implemented in 2004 with a new approach aimed at improving regulatory capital requirements and providing additional guidelines for financial institutions to be protected against unexpected risk (BCBS, 2001). Basel II developed a more inclusive framework for financial institutions to manage credit, operational, and market risk, unlike Basel I, which focused only on credit risk (Rose & Hudgins, 2013:185). According to the Corporate Financial Institute (2021), it was compulsory for financial institutions to implement these measures to control minimum capital requirements.

Basel II focused more on operational risk and market risk as one of the drawbacks of Basel I. When analysing and assessing the credit exposure of financial institutions, Basel II focused on market values rather than book values as it is linked with profitability, future growth, and market capitalisation. This encompasses three pillars of Basel II, namely, the Minimum Capital Requirement (MCR), Supervisory Review, and Market Discipline (Tahtamouni & Al Qaisi, 2016:40). The purpose of these pillars is to enhance how banks measure and manage risk through lending activities and the trading of assets (Shor, 2019). Table 2.9 below depicts three pillars under Basel II.

Table 2.9: Pillars of the Basel II Accord

Pillar I Minimum capital requirement	Pillar II Supervisory review	Pillar III Market discipline
• Credit risk, Market Risk and Operational Risk; • Capital adequacy ratio, which includes the notion of global risks. • Minimum Capital Requirement (MCR); • Solvency Capital Requirement (SCR)	• Assessment of risks and capital adequacy of the individual banks; • Internal Capital Adequacy and Assessment Process (ICAAP); • Supervisory Review and Evaluation Process (SREP); • Conducting stress and scenario analysis by ERM function	• Disclosure and transparency of capital requirement to the regulator (yearly or half-yearly)

Source: Tahtamouni & Al Qaisi (2016:40)

Although Basel II was viewed as a comprehensive framework for risk management in financial institutions, it was criticised for failing to mitigate risks associated with the global financial meltdown that impacted the banking industry in 2007/08. One of the critiques of Basel II was that the Accord failed to adequately address liquidity risk in the framework on both the individual asset liquidity and the financing side (Dănilă, 2012:129). Basel II was regarded as having too much leverage and inadequate liquidity buffers to overcome tough economic challenges (Shor, 2019). Several financial institutions closed as a result of having illiquid assets that could not be converted into cash immediately when a need arose or during a financial meltdown. Inadequate risk management and governance caused these weaknesses and affected the liquidity and solvency of the banks during the 2007/08 GFC (BCBS, 2015).

Basel II consists of two capital models: the ICAAP and the SREP. The capital model meets the solvency and liquidity requirements and ensures that banks remain solvent and liquid at all times, including during stressful economic times (BCBS, 2015).

2.8.1.2.1 Internal Capital Adequacy Assessment Process

ICAAP is a Supervisory Review model under Pillar II of the Basel II Accord, which was implemented to measure the capital adequacy of banks. According to Mazars (2018), ICAAP is a model that allows banks to assess their internal capital adequacy requirements and have appropriate risk management to identify, assess, and manage current and potential risks during different stress scenarios. ICAAP is the engine of the bank's capital adequacy management (Mazars, 2018).

Furthermore, ICAAP is an internal model that ensures banks assess their risks and hold adequate capital annually or when the risk profile changes (KPMG, 2019). Continuous review of the ICAAP model allows the regulator to evaluate the banks' ability to identify, assess, manage, and report on risks. This measure allows the allocation of capital to top risks (that have the most significant negative effect) and to conduct stress-testing and scenario analysis for knowable and unknowable risks through stressing the balance sheet, as well as informing and advising the governance body to be vigilant of any expected or unexpected capital shortfall (Mazars, 2018).

2.8.1.2.2 Supervisory Review and Evaluation Process

SREP is a supervisory tool that is used to determine capital and liquidity requirements in order to manage and mitigate specific weaknesses of banks (Bejan, 2019:273). The SREP tool assesses and evaluates each risk threatening the bank's financial flow. The SREP is used to review the bank's ICAAP to assess weaknesses under reverse stress testing and scenario analysis (Prudential Regulation Authority, 2020). It is a comprehensive and forward-looking assessment conducted by the supervisory body to assess the viability of financial institutions and examine the risk profile from different angles (Banco de Portugal, 2020). The SREP applies to all banks, regardless of size, complexity, or nature of their operations.

According to Bejan (2019:273), the aspects of a financial institution's financial viability are discussed in the SREP framework to cover the organisation's business model, internal governance, capital adequacy, and liquidity adequacy. At the end of the process, the supervisory process will answer some of the questions to assess the feasibility of the financial institutions. The questions may concern the long-term viability of the financial institution's business strategy, the governing bodies' proper risk management, the sufficiency of the bank's capital, and the adequacy of the bank's solvency and liquidity to meet short- and long-term objectives (Bejan, 2019:273). The goal of the SREP is to evaluate the scores of the banks on a scale of one (best) to four (worst), which shows the financial institution's risk profile and viability levels (Deloitte, 2016a). Table 2.10 below shows the elements that the supervisory tool takes into consideration when assessing the financial viability of the bank:

Table 2.10: Elements of the SREP

Element	Description
Business model	The SREP assesses the sustainability of the banks to examine whether the financial institution will survive a wide range of stress events.

Element	Description
Governance and risk management	The SREP focuses on the bank's governance, oversight bodies and risk management to examine whether risks are appropriately managed.
Risk to capital	The SREP examines the bank's capital and analyses whether it is sufficient to absorb losses from various risks.
Risk to liquidity and funding	The SREP inspects the bank's ability to cover short-term obligations and how the bank converts its assets into cash to avoid liquid risk.

Source: Adapted from European Central Bank (2017); Bejan (2019:273)

The SREP elements contribute towards the financial sustainability of the banks and feed into strategic and operational planning. Each bank is different, and the SREP is tailored to each bank's risk profile and financial sustainability. This implies that each bank should comply with the minimum capital requirements tailored for it, and it must have enough liquid cash to remain operational during stressful economic conditions (European Central Bank, 2017).

2.8.1.3 Basel III Accord

The introduction of the Basel III Accord in 2009 was to strengthen Basel II's three pillars and respond to the 2007/08 GFC that brought various financial institutions to their knees. The BCBS also implemented stricter controls on minimum capital requirements (BIS, 2020). In 2019, Basel III requirements were implemented, including, but not limited to, stricter regulatory capital requirements for banks, additional capital buffers, additional layers for common equity, and revised liquidity capital requirements (Shor, 2019). The Basel III Accord has set a standard for minimum capital requirements that banks worldwide follow.

The 2007/08 GFC has impacted most financial institutions due to inadequate capital levels and a low appetite to absorb shocks. Basel III brought improved liquidity requirements and the quality of capital in reserves (BIS, 2011a:3). Basel III sets aside reputational risk and limits lending due to the high leverage ratio. Slovik and Cournède (2011:5) asserted that as of 2015, the Basel III agreement had raised capital requirements from 2% to 4.5% of RWAs and Tier 1 capital from 4% to 6%. Furthermore, fully effective as of 2019, banks will be obligated to add 2.5% of their capital buffer towards Tier 1 capital (Slovik & Cournède, 2011:5).

According to Slovik and Cournède (2011:5), Basel III employed two categories of bank assets, which are (i) bank lending assets (AL) and (ii) other bank assets (AO), when considering lending spreads. The lending spread is the difference between the interest rate charged on the lending rate and the new deposit rate (FE Bureau, 2021). AL include bank credit to

customers and non-financial corporations (retailers, manufacturer) on the banking books. In contrast, AO consists of assets in the trading books (government bonds, interbank assets, loans) (Chun *et al*., 2012:14). Slovik and Cournède (2011:5) mentioned that under Basel III, banks have the potential to influence AL by increasing its lending spread, rather than AO that is based on market movement.

2.8.1.4 Basel IV Accord

The introduction of Basel IV seeks to improve the shortfalls of Basel III and provide a framework for prudential banking regulation (Parchimowicz & Spence, 2020:1). Basel IV, introduced in 2017, was initially meant to be implemented in January 2022. However, due to the COVID-19 pandemic, it was then postponed to 1 January 2023. Basel IV aims to improve the banks' capital requirements, use a standardised approach to credit and operational risk, enhance the leverage ratio framework, and finalise the output floor (Deloitte, 2017). According to McKinsey (2017) and Feridun and Ozun (2020:9), implementing Basel IV will be significant for the banking sector to comply with the adjusted regulations and require banks to meet capital ratios by issuing new capital or retaining earnings or reducing RWAs. McKinsey (2017) further explained that the adjusted regulation of Basel IV would, however, affect Pillar I and Pillar II indirectly.

Basel IV suggested using an Internal Rating-Based (IRB) approach based on credit risk, which implies that banks should only focus on modelling credit risk (probability of default). On the other hand, the IRB approach to operational risk is no longer considered when calculating regulatory capital requirements (Feridun & Ozun, 2020:9). With the planned implementation of Basel IV in January 2023, banks will be required to seek supervisory approval to use an internal model or regulator's model when measuring solvency requirements. In addition, Basel IV further introduced a New Securitization Framework (STC) to support loan provision from banks (Oyetade *et al*., 2020:96). The STC will be used to improve banks' resilience and risk management (BCBS, 2016). Additionally, the table below illustrates the summary of the Basel Accords according to the date they were introduced and some adopted.

Table 2.11: Summary of the Basel Accords

Basel I	Basel II	Basel III	Basel IV
Introduced 1988	Introduced in 1999, fully implemented in 2004	Introduced in 2009, fully implemented in 2019	Introduced in 2017, to be implemented in January 2023
Focused on credit risk	Focused on credit and market risk	Focused on credit risk, market risk and operational risk	Focusing on improving credit risk approaches

Basel I	Basel II	Basel III	Basel IV
The credit risk ratio introduced 8% for risk-weighted assets	Improved credit risk calculation and included market risk and operational risk calculations	Improved liquidity standards and quality of capital kept liquid	Enhancing the leverage ratio framework and finalisation of the output floor (set of lower limits)
• Minimum capital ratio of the overall assets on a risk-adjusted basis • Updated in 1996 to include market risk	• Three pillars are: - Minimum capital requirements (MCR) - Solvency Capital Requirements (SCR) - Supervisory review - ICAAP - SREP - Solvency Assessment and Management (SAM) - Market discipline	• Strict regulatory capital requirements for banks • Included capital buffer • Revised liquidity requirements	• Enhancing output floor between 70% to 75% of capital requirement • New Securitization framework (STC)

Source: Author's compilation, Rose and Hudgins (2013); Crouhy *et al.* (2014); Ferreira (2019)

2.8.2. King Committee on Corporate Governance

The South African banking sector has been maintaining a King Committee on Corporate Governance, where the first King report (King I) was published in 1994 by the former High Court Judge Mervyn King Senior Council (SC) (Cliffe Dekker Attorneys, 2002). The first King report aimed to encourage good corporate governance in South African organisations. The importance of good corporate governance contributes towards preserving governance that complies with the policies, ethics, standards, dynamics, and transparency of reporting (Spedding, 2014:1). Four King reports have been published to date (2023), namely King I (1994), King II (2002), King III (2009), and the latest King IV (2016).

2.8.2.1 King I Code

The main objective of King I was to encourage good corporate governance standards within organisations in South Africa, including banks (Cliffe Dekker Attorneys, 2002). According to Keeble (2021), corporate governance is vital to the success of an organisation in a way that governs and promotes core principles of fairness, responsibility, accountability, and transparency. Corporate governance aims to enhance the efficiency and effectiveness of

organisations and the economy as it contributes towards a higher level of trust and honesty in the market economy (Vukevi, 2020:148).

2.8.2.2 King II Code

King II came into effect in 2002 to enhance the shortcomings of the King I report (Cliffe Dekker Attorneys, 2002). The King I report was criticised for lack of transparency and the introduction of technology that changed organisations. The King II report concentrated on identifying the operational, technological, market, credit, compliance, and human resource risks, primarily when directed at the banking sector (Cliffe Dekker Attorneys, 2002). Its purpose was to implement a comprehensive method for corporate governance to contribute towards the success of companies and organisations (Vukevi, 2020:150).

Coetzee and De Beer (2016:70) mentioned that the banking sector had adopted seven characteristics for good corporate governance under King II: independence, fairness, transparency, discipline, accountability, responsibility, and social responsibility. These characteristics of good corporate governance assist banks in improving their governance and retaining control over the bank.

2.8.2.3 King III Code

King III was introduced in 2009, focused on all business entities, and operated as an inclusive guideline that benefited and improved corporate governance (King Committee on Corporate Governance, 2009). King III developed six changes from King II, which included information, insight, incentives, instinct, independence, and interconnectivity and are aimed at improving the inadequacies of King II (Ferreira, 2019:26). These changes from King II to King III entail that the governance body should be aware of and be able to identify knowable and unknowable risks that could impact the organisation in achieving its strategic objectives (King Committee on Corporate Governance, 2009). The knowledge of these risks will help the governing body fully and clearly understand the risks within the sector or industry and guide by providing solutions to control the risks.

2.8.2.4 King IV Code

King IV is the latest King report that was adopted in 2016 in order to enhance the shortcomings of the King III report. According to PricewaterhouseCoopers (PwC) (2016), the King IV report is described in one word – transparency. The King IV report positioned itself to promote good governance to the companies, which is a crucial component of King IV and includes transparency of the board and board members. Furthermore, Deloitte (2016c) mentioned that

the King IV report on transparency means that the board and the board members are accountable to stakeholders and liable for the performance of the organisations in terms of values, ethics, norms, and culture. Good corporate governance entails an organisation not operating in an empty space, as nature does not allow a vacuum. It is an essential part of society, and accountability lies with the board, board members and other organisation stakeholders (PwC, 2016).

The Institute of Directors South Africa (IoDSA) (2016:24) mentioned that the King IV report lays out the principles, philosophy, outcomes, and practices that are regarded as fundamental to good corporate governance in South Africa. The King IV report applies an outcome-based approach where it has moved from “apply or explain” to “apply and explain” (Natesan, 2020:156). This indicates that the governing body should see corporate governance not as an Act of compliance but as something that will benefit organisations with more extraordinary results if implemented effectively and correctly (Natesan & du Plessis, 2019). The King IV report advocates for the governing body to make informed decisions and to use a proactive approach to enhance corporate governance. This will prove that the organisations will reap the rewards of implementing the King IV report (Natesan & du Plessis, 2019). Table 2.12 below summarises and differentiates between the King reports:

Table 2.12: Summary of the King reports

KING I (1994)	KING II (2002)	KING III (2009)	KING IV (2016)
• Recommended principles of conduct for the board, banks and state-owned enterprises. • King I was involved in financial and regulatory aspects. • It was comprehensively involving all stakeholders.	• Implement an inclusive approach for successful governance of companies, organisations and non-profit organisations; • It encompasses seven characteristics of good corporate governance that the banking sector has adopted.	• Serves as a comprehensive framework of global corporate governance. • Applied to all entities (public, private, non-profit organisations (NGOs)).	• It described the "transparency" of the Board. • Set out the principles, philosophy, outcomes, and practices. • Moved from “apply or explain” to “apply and explain”.
• 15 principles followed to integrate risk management within entities - Role and responsibility of the Board and its mandate; - Sub-committees of the Board; - Frequency of Board meetings; - Code of conduct and code of ethics of a company; - Effective audit and risk management	• Principles focused on: - Board’s responsibilities; - Risk management; - Internal audit; - Integrated sustainability reporting and - Accounting and auditing.	• 18 Principles on corporate governance for all entities: • Key changes from King II: - Insight; - Information; - Incentives; - Instinct; - Independence; and - Interconnectivity.	• 16 principles apply to any organisation, plus one principle to institutional investors only. • Changes from King III: - Apply to explain; - More transparent; - Outcome-based approach • Leadership continuity • Enhanced credibility and reputation

Source: Cliffe Dekker Attorneys (2002); King Committee on Corporate Governance (2009); IoDSA (2016:24); Ferreira (2019:27); Natesan & du Plessis (2019)

2.8.3. International Organisation for Standardisation

The International Organisation for Standardisation (ISO) is an international NGO with different standard bodies that govern organisations worldwide (Steele, 2018). Members of the ISO around the world work together to enhance and promote international standards to improve technology, process testing, working conditions, risk management, and societal issues (Steele, 2018). The ISO aims to make organisations, companies, and governments more efficient with their products and services and improve business operations in response to market needs (Weedmark, 2019:02). The ISO standard comprises core principles that organisations have adopted and implemented this standard. Table 2.13 below shows the core principles of ISO.

Table 2.13: Core principles of the ISO

ISO Principle	Explanation
Response to needs	The ISO develops standards in response to the needs of a consumer group, industry, NGO, or other stakeholders seeking assistance regarding their activities. The standard provides guidelines to improve the quality of the operation, products that are being sold, and services that are being rendered.
Global expert opinion	The ISO's technical committees worldwide discuss, develop and adopt standards proposed by groups of experts. The objective is to provide expert knowledge regarding the standards that can be adopted or used in any country.
Stakeholder involvement	The ISO's goal is to continue developing standards by including all interested parties, including (but not limited to) NGOs, consumer groups, academics, government bodies, and industry representatives.
Consensus	The ISO standards are developed and adopted in agreement with all the stakeholders, and comments or queries are always taken seriously by the technical committee before the finalisation of the standard.

Source: Markgraf (2019); Weedmark (2019)

ISO is a generic guideline that applies in every sector. ISO 31000 is one of the standards that the ISO committee has developed. ISO 31000 is a guideline focused on risk management in any organisation in all sectors that has adopted the standard (Venter, 2020). ISO 31000 is a guideline or a set of principles for managing risk, helps identify opportunities and threats, and provides guidelines to allocate resources for risk mitigation. The standard is tailor-made for any organisation, company, government, or Non-Government Organisation (NGOs) regardless of size, industry, or core business. It aims to reassure organisations regarding economic resilience and professional and safety outcomes (Venter, 2021).

According to Lalonde and Boiral (2012:276), ISO 31000 provides guidelines that critically review risk management processes and help to manage the exposure of all the risks. The ISO

31000 standard does not enforce instructions on managing and treating certain risks. Any guideline or advice on risk management remains at a generic level (Institute of Risk Management (IRM), 2018). However, the most critical goal of ISO 31000 for risk management is to help organisations meet their objectives and manage risk to their acceptable levels (Sheedy & Lubojanski, 2018:904).

2.8.4. Committee of Sponsoring Organisations of the Treadway Commission

The Committee of Sponsoring Organisations of the Treadway Commission (COSO) ERM framework is one of the globally accepted risk management standards or frameworks that organisations (private, public, government or NGO) can implement to help manage their respective risks to achieve desired business objectives. Five private associations and institutions established COSO in the USA in the mid-1980s, led by Mr James C. Treadway, Jr, to form part of the National Commission on Fraudulent Financial Reporting (NCFFR) (Williams, 2019). The COSO committee was named the Treadway Commission to honour the committee's first chairman, Mr James C. Treadway, Jr.

COSO is a framework that focuses more on the risk related to fraudulent financial reporting and issues associated with corporate governance in organisations (Graham, 2015:2). The COSO committee has decided to improve the quality of financial reporting of financial statements after a period where inadequate financial reporting of fraud and various qualified audits were in the limelight. This has motivated the COSO committee to enhance the quality and reliability of reporting fraudulent activities (Janvrin *et al*., 2012:191). The original objectives of the COSO framework were to pay attention to financial reporting and make recommendations to prevent fraudulent activities.

The COSO framework comprises five components of internal control, which can be applied in all organisations that have adopted this framework. These components were adopted in 1992, updated in 2004 and linked to each other. It is vital to understand and know how these components coincide (Graham, 2015:2). As a result, these components of the COSO framework have been known to support corporate governance and financial reporting of fraud. The COSO framework includes tone from the top, helping organisations achieve their strategic objectives, offering a common language and more effective communication that ensures that corporate governance is achieved in an organisation (Rae *et al*., 2017:29). Fourie and Ackermann (2013:496) mentioned that the board of directors should take charge of the internal controls and must ensure that there is effective communication to stakeholders with regards

to any breaches in the controls. Table 2.14 below details the five components of the COSO framework and their explanations to organisations.

Table 2.14: Components of the COSO Framework

Component	Description
Control environment	The control environment includes the board of directors and sub-committees of the board, which are regarded as an ethical environment to mitigate and manage risks. The control environment is the heart of the other internal environment. It contributes towards controlling the organisation to ensure competent employees act with integrity and mindfulness to set the tone from the top.
Risk assessment	Risk assessment is about evaluating risk and key controls mitigating those risks and their effectiveness. Risk assessment includes an overview of the broader strategic, operational and third parties' risks. This is based on the probability of occurrence and impact if it occurs.
Control activities	Control activities such as policies, procedures, and standards should be developed and implemented to ensure that day-to-day operations run smoothly and are aligned with what the policies are saying. Control activities that can be adopted may be preventative, detective, directive, or corrective in nature and may be implemented at all levels of the organisation.
Information and communication	Transparency, openness, and accuracy of the information, as well as quality and effective communication, determine the communication flow of the information and the organisation's internal control systems. Information quality and reliability help employees and management speak a common language and understand what needs to be done to achieve the objectives. Information and communication comprise both internal communication (employees, management, third parties) and external communication (shareholders, investors, clients).
Monitoring	Monitoring consists of ongoing evaluation of all components of internal controls. This entails controlling (or keeping an eye on) the internal controversy of the organisation to ensure that they are doing what they are intended to be doing. Monitoring is usually performed by management within organisations.

Source: Adapted from Johnstone *et al*. (2011:35); Graham (2015:2); Rae *et al*. (2017:29)

The five components of the COSO framework work well together as they are interrelated. Each component has a relationship with one another and similarly influences the other (Graham, 2015:3). Moreover, if all five components of the COSO framework are adopted and implemented correctly, internal controls can identify potential setbacks that could impact the organisation negatively.

The new COSO framework was updated in 2017 with the purpose of including the strategy and importance of ERM in developing and executing an organisation's strategy. Furthermore, the new COSO framework is aimed at improving ERM and the performance of the organisation by providing room for governance and oversight bodies (Prewett & Terry, 2018:18). According to Perera (2019:213), the new framework demonstrates how ERM can improve the growth and skyrocket the performance of the organisation as well as be applied in the formulation of the organisational strategy. The new COSO framework is essential to the board of directors, management, supervisory board, other general partners, and owners of businesses when using ERM to develop a suitable strategy for their organisation (Perera, 2019:214). Table 2.15 below outlines the improved COSO 2017 framework:

Table 2.15: Five components of the COSO (2017) framework

Governance & culture	Strategy & objective setting	Performance	Review & revision	Information, communication & reporting
• Exercise risk oversight • Defines the desired culture • Establish operation structure • Commitment to the core values	• Defines risk appetite and tolerance • Evaluate alternative strategies • Formulation of business objectives	• Identifies risk • Assess the severity of the risk • Rank or prioritise risk • Implement risk-response	• Assess sustainable change • Review risk and performance • Pursues risk improvement	• Communicate risk information • Report risk, culture and performance

Source: Adapted from Perera (2019:214)

According to Rubino (2018:204), the new COSO framework also helps management identify, understand, and rank the risks their organisation is exposed to and measure the possible impact on performance. The COSO committee has approved the new COSO framework as it offers more insight and improvement in risk appetite, tolerance, and risk-response strategies. This new COSO framework was also acknowledged for incorporating risk assessment, objective setting, corporate governance, and reporting processes across the organisational structure and not using a silo-based approach (Prewett & Terry, 2018:18).

The new COSO framework may be proclaimed a comprehensive tool that helps organisations manage risk and ensure adequate financial reporting to the governing bodies. Williamson (2007:49) noted that the old COSO framework (2004) inadequately identified ERM effectiveness. The effectiveness of ERM benefits organisations by proactively identifying emerging risks, adding value, and protecting the institutions. Furthermore, Williamson

(2007:49) mentioned that the framework diverted ‘risk’ from opportunities and uncertainties, which did not fall under a rational systems perspective.

2.9 SYNOPSIS

Banks play a crucial role in all sectors, including the financial sector and the economy at large. A bank’s role is to ensure smooth financial transactions between two or more individuals (or other economic units). Another vital role of a bank in the economy is acting as a financial intermediary. Financial intermediaries act as a middleman between two or more people, businesses, government institutions, or other financial institutions that perform financial transactions. Banks allow borrowers (individuals or companies) to have an opportunity to request financial assistance in return for interest, and that process of facilitating transactions is called financial intermediation.

The South African banking sector comprises a large pool of types of banks that provide different services to different customers. As of 2023, South Africa has five big banks (commercial banks) dominating the banking sector: ABSA, FNB, Nedbank, Standard Bank, and Capitec Bank. These banks dominate the sector due to their market share, number of clients and branches and profit maximisation. The South African banking sector is known to be proactive and well-governed by strict regulations, which is essential for maintaining the economy's financial stability. However, any change in the financial sector tends to impact other sectors.

Although banks function as financial intermediaries, they often face several risks that may negatively impact them in achieving their strategic objectives. South African banks face several risks, such as operational, market, reputational, solvency, and liquidity risks. These are some of the main risks banks face in the banking sector. Risk disrupts the operation of any bank or banking sector and needs to be managed or mitigated to be at acceptable levels. However, with all the risks that banks face, there are strict frameworks and regulations (local and global) developed to protect and govern banks from harm.

Banks face many risky encounters, given the reality of operating within the banking sector. The banking sector is one of the most volatile sectors requiring more attention as it is at the heart of many global economies. If not effectively managed, these risky challenges have the potential to impact the operational and financial sustainability of the banks. Developing strict regulatory and supervisory frameworks with effective ERM helps manage these risks. Management of the risks helps to overcome situations of insolvency and liquidation of the banks. It contributes towards achieving a sound financial sector and protecting the customers' interests in the banking sector.

It is crucial for banks to effectively manage all the risks to acceptable levels in order to stay operational, maintain financial stability and improve their reputation. Risk management implies complying with all the local and international frameworks and regulations to improve the governance of South African banks. It is also essential that South African banks constantly adapt to new market developments or trends to remain competitive within the banking sector and continue to comply with local and international regulations to be protected against unexpected risks. By doing this, banks can remain operational amid a financial crisis or pandemic and attract new clientele. Chapter 3 will focus on the overview and in-depth discussion of operational risk, people risk, and culture risk and how they impact the banking sector.

CHAPTER 3
OVERVIEW OF OPERATIONAL RISK, PEOPLE RISK AND CULTURE RISK

3.1 INTRODUCTION

Chapter 3 of the study provides a theoretical overview of operational risk, people risk, and culture risk. People risk and culture risk will be defined and discussed, and the link between the two concepts in the banking sector will be emphasised. The concept that people risk and culture risk can be expressed as categories of operational risk has gained more traction due to the COVID-19 pandemic, specifically during the national lockdown periods experienced by most countries. During the lockdown periods, people had to change how they did things (which caused culture risk), and this also affected people in both personal and professional capacities (which caused people risk).

Banks must understand and know the reasons behind the perceptions about culture and the daily operations that people perform within the banking sector. Negative perception can develop negative thoughts, create risks, and damage the corporate culture; positive perception can improve work ethics and standards and build the bank's image. It is also vital for banks to recognise the factors that influence culture risk, which will change the good moral character of their employees. This will further improve the corporate culture of the banks and build on traditional norms, values, and standards.

A good corporate culture gives organisations, including banks, an advantage as it is a magnet for skilled talent, ethics, positive organisational culture and employee retention. The importance of good corporate culture is an investment in banks and guarantees and contributes to a direction that proactively and effectively manages the risks.

The effect of the COVID-19 pandemic has changed the traditional way of working and living due to less interaction with people to minimise the spread of the virus. The COVID-19 pandemic came with new risks that negatively impacted the culture of the banks. The impact of the COVID-19 pandemic on the banking sector will be analysed to determine its influence on people risk and culture risk. As outlined in chapter 1, this chapter aims to achieve the following theoretical objectives:

- Contextualise the South African banking sector;
- Define culture risk and its relation to people risk;
- Discuss a theoretical framework for culture risk as a component of operational risk;

- Discuss the importance of good corporate culture in the banking sector; and
- Establish the opportunities and challenges banks face to mitigate people risk and culture risk.

3.2 OPERATIONAL RISK

Operational risk can be classified as a broad and significant risk that affects the operations of all organisations if not managed adequately. Banks should adopt a risk-based approach to proactively identify top (high impact and high probability) operational risks and ensure that adequate and effective strategies are in place to reduce the highest risks to acceptable levels (Sheedy *et al*., 2017:104). Operational risk was similarly identified as a consequence of the 2007/08 GFC due to inadequate risk governance, lack of robust risk identification process, inexperience and suitable people with risk management skills and knowledge and an immature culture in the banking sector (Bianchi *et al*., 2016). To ensure that operational risks such as culture risk and people risk are fully understood and manageable, it is crucial for banks and other organisations to fully contextualise and understand operational risk with its components as the first step. The subsections below will fully contextualise people risk and culture risk as components of operational risk and analyse the relationship between people risk and culture risk.

3.2.1. People risk as a component of operational risk

The definition of people risk is broad due to its diverse nature. It is heavily linked to human behaviour (Kunz & Heitz, 2021:6). People risk is defined as the risk associated with employees' behaviour and conduct, such as discrimination, lack of succession planning, poor planning, unethical behaviour, unintentional employee errors or mistakes, non-compliance with regulatory and legal requirements (The Institute of Operational Risk, 2015). It is impossible to avoid people risk; however, banks' proactive strategies and responses can aid in managing it. One of the biggest challenges for banks is to manage the anticipation of people risk as it arises from human factors such as employee errors, key man dependency, excessive leaves, unethical behaviour, and conduct (Dunivan, 2019).

People risk is one of the most critical operational risks as employees are the organisation's core assets and can make or break any organisation. Banks operate in an industry that is highly regulated by laws and regulations. It is always advisable for banks to be one step ahead in managing operational risk, mainly people risk (McConnell, 2013:24). According to AON Risk Solution (2018), employees are exposed to different choices and circumstances during the workday and how they conduct themselves and behave can build or introduce new risks to

the banks. AON Risk Solution (2018) further mentioned that there are two causes of people risk, which include the composition of the workforce (location, background or demographics, experience) and the employee's conduct (employees' engagement, action, and management commitments). These two causes of people risk cannot be eliminated; however, they can be managed with adequate controls in place. Table 3.1 indicates the inherent people risk that could affect any organisation. Inherent people risk refers to pure or raw people risk, or people risk without controls (AON Risk Solution, 2018).

Table 3.1: Inherent people risk

Inherent people risk	Explanation
Digital reediness from employees	This relates to the digital changes to change the original way by introducing artificial intelligence (AI) and robotic systems, which also changed the pace of how work is done. This will cause job shedding and fewer job opportunities. Strategic planning or forecasting of the future is needed to ensure readiness for digital changes.
Recruitment or hiring	Risk assessment of potential recruits is one of the most important strategies to mitigate organisational risk through background and psychometric checks. Every hire is significant to the organisation, and it is crucial to identify key roles that have a big impact on the organisation and assess them carefully on how those key roles are filled.
Diversity and inclusivity	Diversity and inclusivity relate to organisational rewards programmes that are not inclusive, do not consider all employee demographics, and do not align employees' needs with the organisation's values. This further speaks to the risk of a one-size-fits-all programme without considering the needs of specific employees.
Attrition	Although losing employees is part of organisational change, organisations should always identify and evaluate which employees they are losing. Not every employee leaving an organisation is a big loss of skill and institutional knowledge. However, the continuous loss of critical skills and institutional knowledge with a succession plan causes an attrition risk that affects the productivity and profitability of the organisation.
Flawed incentives	Market-related incentives are key to an organisation's ability to drive performance, employee engagement, and employee retention. A flawed or biased incentive would create a situation where a group of employees are underpaid (risk of losing employees) or overpaid (risk of impacting the balance sheet). Both approaches can hurt any organisation. However, the organisation should analyse the pay ratio for essential employees against all other employees to manage differences. This will assist in managing or mitigating the risk related to flawed incentives.

Source: Author's compilation; AON Risk Solution (2018); Evans (2019)

All organisations, including banks, must identify and assess inherent people risks and other risks that could impact their businesses. People risk is a crucial risk in any organisation as employees drive the success of an organisation and are the most critical assets to assist in achieving the strategic objectives outlined. Although other organisations may regard people risk as a minor concern, it is critical to raise awareness about the seriousness and importance of managing or mitigating people risk (Evans, 2019). The above-mentioned inherent people risk (in Table 3.1) falls under the components of operational risk as they directly impact the daily operations of any organisation or company.

People risk is categorised as a component of operational risk. People risk arises from inadequacies in employees performing their daily operations, mistreatment of employees, power hunger employees, unappreciated employees by the employer, and culture that is not enabling, which affects organisations in achieving operational objectives (Woods & Lewis, 2018). Before the 2008/09 GFC, banks paid little attention to most of the operational risks as they were regarded as insignificant or low-risk exposure; specifically, people risk (AON Risk Solution, 2018). However, this type of risk was one of the risks that affected the financial sector during the 2008/09 economic meltdown. This risk should be managed effectively to avoid situations where companies or banks end up bankrupt, insolvent or liquidated due to this people risk. The following subsection will focus on contextualising culture risk as an operational risk component.

3.2.2. Culture risk as a component of operational risk

According to Woods and Lewis (2018), culture risk arises from the aggregate of the strategy, organisation, processes, systems, standards, and people's thoughts, feelings, conduct, or behaviour in a way that could cause a risk. Furthermore, Woods and Lewis (2018) mentioned that Protiviti Incorporated, a global consulting firm, explained that culture risk is more than a component of the Risk Management Framework (RMF) and is not independent of the company's culture. According to Sheedy and Griffin (2016:4), culture risk originates from a set of norms, values, beliefs, knowledge, and understandings of risk management and risk-related practices and behaviours in an organisation. Culture risk refers to a bank's RMF, strategy, policies, processes, and practices that have not been properly adopted and implemented within the organisation (Coluccia *et al*., 2017:34).

Kunz and Heitz (2021:5) mentioned that culture has essential core elements to support and enhance corporate culture, which includes setting the tone by executives, adequate and effective communication, and resource allocation within banks. These characteristics comprise a comprehensive management concept that is part of a bank's internal processes,

management and control systems. This includes the awareness, attitudes, behaviours, ethics, and values of all stakeholders (Board of directors, executives, senior management, and employees) within a bank that works well together towards managing culture risk (International Finance Corporation (IFC), 2015). Table 3.2. below portrays core elements of culture risk that can be used to enhance the knowledge of managing culture risk within banks.

Table 3.2: Core elements used to enhance culture risk

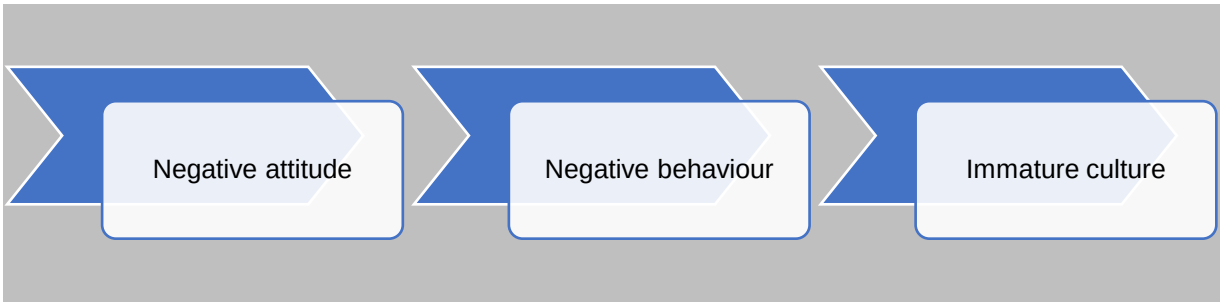
Definition	Characteristics for Enhancing Culture
Culture risk	Incentives
	Awareness
	Better communication
	Better decision-making
	Enhanced governance
	Greater accountability
	Better risk management
	Good regulatory relationships
	Adherence to rules and policies

Source: Adapted from Woods & Lewis (2018)

In order to reduce culture risk within banks, these core elements should be enhanced continuously in order for culture risk to be at a residual level. These core elements should be adopted from a board level throughout the whole organisation to ensure that a sound culture is a holistic approach that is at the centre of the organisation. Sheedy and Griffin (2014:7) highlighted that culture should be organisationally approved by adopting these elements and allocating more resources to risk management to enhance the culture within the bank. Sheedy and Griffin (2014:7) further mentioned that investing in risk management to manage culture risk is not an easy exercise as it may take some time to become a reality.

Culture is not a once-off activity; however, an ongoing enhancement of the current activity (Wood & Lewis, 2018). Corporate culture poses as one aspect that contributes towards a broader organisational culture within banks and helps to avoid culture risk between departments or divisions (Sheedy & Griffin, 2014:4). Moreover, continuous development of culture within the banking sector contributes towards the success of a bank's daily operations. Attitudes and behaviour contribute towards the good culture of a bank or any company, as they are at the heart of operations (Kunz & Heitz, 2021:5). Figure 3.1. below depicts the negative formation of culture risk:

Figure 3.1: Culture risk formation



Source: Adapted from Bostanci (2013)

Every bank has its own culture that is different from that of other banks, and how it is communicated to stakeholders is very important to convey the same message to all stakeholders (Coluccia *et al*., 2017:34). The difference comes from how banks treat or manage culture risk and how effective controls are in ensuring that stakeholders are doing work without supervision, have the same values, behaviour, norms, and attitudes that contribute to forming the right culture (Widjaya, 2018).

Furthermore, it is also essential to understand the structure of a bank depending on its size, as large banks tend to have a more favourable, managed, and mature culture compared to smaller banks (Sheedy, 2016:5). Sheedy (2016:5) mentioned that large banks manage culture risk better by applying two of the four dimensions of culture risk, which are proactive and managing. In comparison, smaller banks do better by applying the dimension of avoidance. Proactive refers to the ability to control a situation before it has happened, while managing entails managing a situation or keeping things as they are. Culture is different in every organisation; however, it is motivated by employees' behaviours and norms (Sheedy & Griffin, 2014:6). Understanding the importance of culture, attitude, and behaviour is the first step to establishing comprehensive risk awareness to manage the impact of culture risk in a bank.

Culture risk is an unperceived type of operational risk as it usually originates from internal employee misconduct and dissatisfaction, lack of ethics and morals, and standard operating procedures. However, it affects the employees' ethics, behaviour, norms, and morals. Bostanci (2013) stated that paying more attention to culture risk assures success and improves the effectiveness of a bank's ERM. Banks should quantify culture risk given that it is related to the risk appetite of all stakeholders due to employees' ability to take operational risks within a bank at any given time and situation (Bostanci, 2013; Tysiac, 2020). Quantifying culture risk estimates operational losses related to negative culture that can impact banks (Gai & Vause, 2006:168). Culture risk is an important operational risk component that should be considered part of ERM within banks and should be managed and improved continuously.

Furthermore, the importance of culture risk is labelled differently in theoretical RMFs (Bostanci, 2013). The ERM RMF should be viewed as an essential part of the culture in the banking sector and should be included in daily operations and decision-making processes (Pan *et al*., 2017:2330).

RMFs can sometimes be complex, especially when risk management processes are not considered when identifying culture risks. The culture risk framework consists of processes or practises that promote sound culture risk management within the bank from the top-down approach (Financial Stability Board, 2014):

- Tone from the top: The tone of the Board of directors (governance) and executives is where the foundation of a bank's core values, norms, behaviour and beliefs for culture is found and should be reflected in the culture of daily operations. The most important value is the expectation of what employees do right when they express the financial institution's culture. Bank management assesses, monitors, and promotes the culture and advises when changes are required;
- Effective communication and challenge: A sound culture promotes and influences an environment with open communication and the ability to challenge decisions to allow different views. Open communication implies the ability to challenge the status quo without fear or favour and the ability to promote constructive debate with all the stakeholders and
- Incentives: Incentives to encourage, motivate, and improve bank objectives to reach a maturity level.

According to Hovarth (2020), the importance of the RMF encourages a proactive way to help banks select adequate controls that protect and add value to the culture of the whole organisation. In addition, an operational risk framework is an integral part of a bank's control management and helps to express the tools, processes, practises, and procedures of a bank's risk management. An adequate operational risk framework is shown when the risk behaviour aligns with the bank's business model (Kunz & Heitz, 2021:3). The framework includes strategies for managing risk and how the organisation responds to risk and mitigates those factors that could cause a risk. People risk and culture risk may seem closely related as they involve human and human behaviours that may lead to risks if not managed to an acceptable level.

3.2.3. The Relationship Between People Risk and Culture Risk

The goal of a successful organisation is to have a culture created by shared values, beliefs, and the right people in the proper position supported by the organisation's governance and strategy (Silva & Moreira, 2016). Culture is an organisation's most crucial component and strategy that employees articulate from top to bottom level (Zamini *et al*., 2011:1964). Culture may lead to culture risk if not understood and managed adequately continuously, as it is not a one-off or tick-box exercise (IFC, 2015). Culture risk contributes to people risk and vice versa due to their positive relationship. According to the Society for Human Resource Management (2022), three things happen when a bank has a strong culture and the ability to manage culture risk:

- Employees respond effectively to any situation that arises;
- Employees believe and trust that their responses are appropriate to address the situation, and
- Employees understand that there is value and reward in demonstrating the organisation's core culture.

Negative or poor culture pervades the organisation and poses culture risks due to a lack of identity or standard operating procedures to manage its risks. This results in cause culture risk, which arises from misalignment of organisational values, beliefs, goals, and norms. A negative culture causes employees to resign, hurts productivity and impacts the organisation from attracting or retaining skills (Wood & Lewis, 2018). However, a positive culture brings success to employees, positively improves the reputation of an organisation and helps to overcome strategic and operational challenges (Lubis & Hamun, 2020:89). When top-level management aligns with lower-level employees and vice versa, through sharing common beliefs and values, it can be assumed that the organisation has a strong relationship between culture and people (Zamini *et al*., 2011:1964). This is because organisations adopt a particular culture that people (employees) instil when speaking, embracing, or living those organisational values.

The positive relationship between people and culture is shown in an organisation with strong governance, a risk management process to identify risks, a healthy environment, good incentives, and long-serving employees. The positive relationship between people and culture further contributes positively to the success of an organisation and instils a family-like relationship in the workplace (Zamini *et al*., 2011:1964). Sarhan *et al*. (2020:183) emphasised that poor culture has been seen to have a considerable impact on people, how employees view their organisation, and their commitment to the values. The right culture combined with

the right people has a positive and crucial relationship and determines an organisation's effectiveness, competitiveness, and resilience (Sarhan *et al*., 2020:183). Additionally, this combination works well in identifying potential employees and assisting in managing the impact that may arise with people risk and culture risk. Table 3.3. below depicts factors that may positively and negatively impact the relationship between people and culture.

Table 3.3: Impact on the relationship between people and culture

Positive impact	Negative impact
Greater communication	Less productive employees
Help to solve complex issues	Lack of succession plans
Positive reputation	Reputational damage
Better incentives	Poor incentives
Improved productivity	Ineffective controls and systems in place

Source: Author's compilation

Table 3.3. above depicts the positive and negative factors contributing towards causing people risk and culture risk. The relationship between people risk and culture risk goes a long way and reflects a negative picture of the organisation. According to Pathiranage (2019:4), ensuring and maintaining a healthy relationship between people risk and culture risk is vital to improving the vision of excellence within an organisation. It is also critical for organisations to lessen the negative impacts and focus more on the positive impacts to build solid and sound risk management methodologies. Sound risk management methodologies can be implemented through effective governance and with stakeholders.

Moreover, it is critical to simultaneously manage the relationship between people risk and culture risk, as these two types of risks are linked. This can be done by employing strategies aligned with the norms and values of the banking employees (PwC, 2021). Building a strong culture requires strict alignment of employees' values, norms, and behaviour, which will mitigate the risks that may arise from people and culture. A strong culture also encourages employees to speak up, agree or challenge the company's actions that are not aligned with the values and strategic objectives (Baumgartner, 2020). This results from a practical framework on culture risk that entails comprehensive operational risk management processes and procedures within banks. Moreover, the following section focuses on overall operational risk in the South African banking sector.

3.3 OPERATIONAL RISK IN THE SOUTH AFRICAN BANKING SECTOR

Although operational risk has not been given much attention and was not regarded as a significant risk until the 1990s, the banking sector still faces it and is exposed to it (Soprano *et al*., 2009:31). Operational risk, as defined in Chapter 2, also became well known after it impacted the banking sector, and the investigation found a root cause of failure or inadequacies in operational risk management (Siminyu *et al*., 2017:511; Peter *et al*., 2018:5). Operational risk is caused by an organisation's operational failures (internal and external), and has been neglected and regarded as a mere residual risk with minor impact, unlike financial risks (market risk, liquidity risk, solvency risk and credit risk), which were the focus area for the banking sector (Hussain & Shafi, 2014:29).

The banking sector plays a pivotal role in the economy by facilitating financial services, and this sector has always been faced with operational risks that impact banks' strategic and operational objectives. Operational risks such as people risk and culture risks were regarded as minor risks that could have a high impact if not managed adequately. The banks' perceptions of managing these risks have not been as significant as that of other risks (Muriithi & Waweru, 2017:44). Inadequacies in operational risk management can lead to negative perception that could affect the achievement of a positive corporate culture in the banking sector. However, the people and culture in the banking sector would ensure that people risk and culture risk are well understood and are at a residual level to avoid having different perceptions about these risks (Lai & Samad, 2010).

The COVID-19 pandemic has negatively impacted the status quo and has changed the direction of living and working. This was due to the risk associated with the pandemic, which came with a new way of working and affected the original way of doing things and the way of living. The following subsection will discuss the perception of people risk and culture risk, the importance of corporate culture, and the COVID-19 pandemic's influence on people risk and culture risk in the banking sector.

3.3.1. The perception of operational risk and risk management

Risk management is understood as the tool that serves to guard or protect banks when exposed to negative risks that can destroy the value of the bank. Rahmana and Adnana (2020:168) defined risk management as a process of identifying, assessing, analysing, mitigating and managing risks that could potentially impact an organisation to achieve its strategic objectives. Risk management aims to lessen the impact of control failures and develop mitigation strategies and adequate controls to reduce exposure to risk (Mañez *et al*.,

2021). A good perception of risk management by all stakeholders in a bank creates and adds value and contributes to the achievement of strategic objectives. Martins *et al*. (2020:439) further mentioned that positive perception and effective risk management methodologies could place stakeholders in a comfortable position and help to manage and mitigate risk before taking place.

BIS (2011b:3) highlighted that banks are exposed to inherent operational risk in all banking products, processes, systems, and activities, and adequate and effective management strategies implemented help to manage the risk exposure. Comprehensive operational risk management portrays an image of the effectiveness of solid governance, frameworks, processes, and administration in establishing a good perception of how employees perceive risks (BIS, 2011b:4). Vasvári (2015) mentioned that risk perception is an inherent risk that is forms part of the decision-making process. It is crucial to pay more attention to it to avoid situations where the exposure is still high. The perception of an employee's operational risk plays an enormous role in influencing the behaviour and judgement of other stakeholders when faced or exposed to risk (Chaswa *et al*., 2020).

The perceptions, thoughts, and attitudes of stakeholders within banks are critical during disaster risk management. Mañez *et al*. (2021) emphasised that in a scenario where stakeholders have a poor risk perception, low-risk maturity, and poor culture, their behaviour and attitude might lead to high exposure to operational risks. Furthermore, in a scenario where stakeholders have a favourable risk perception associated with past events, risk assessment, scenario analysis and good culture, employees are usually vigilant and prepared to mitigate potential operational risks. Wauters *et al*. (2014:401) mentioned that risk perception influences operational risk management and ascertains success in mitigating unknown and known risks and vulnerabilities.

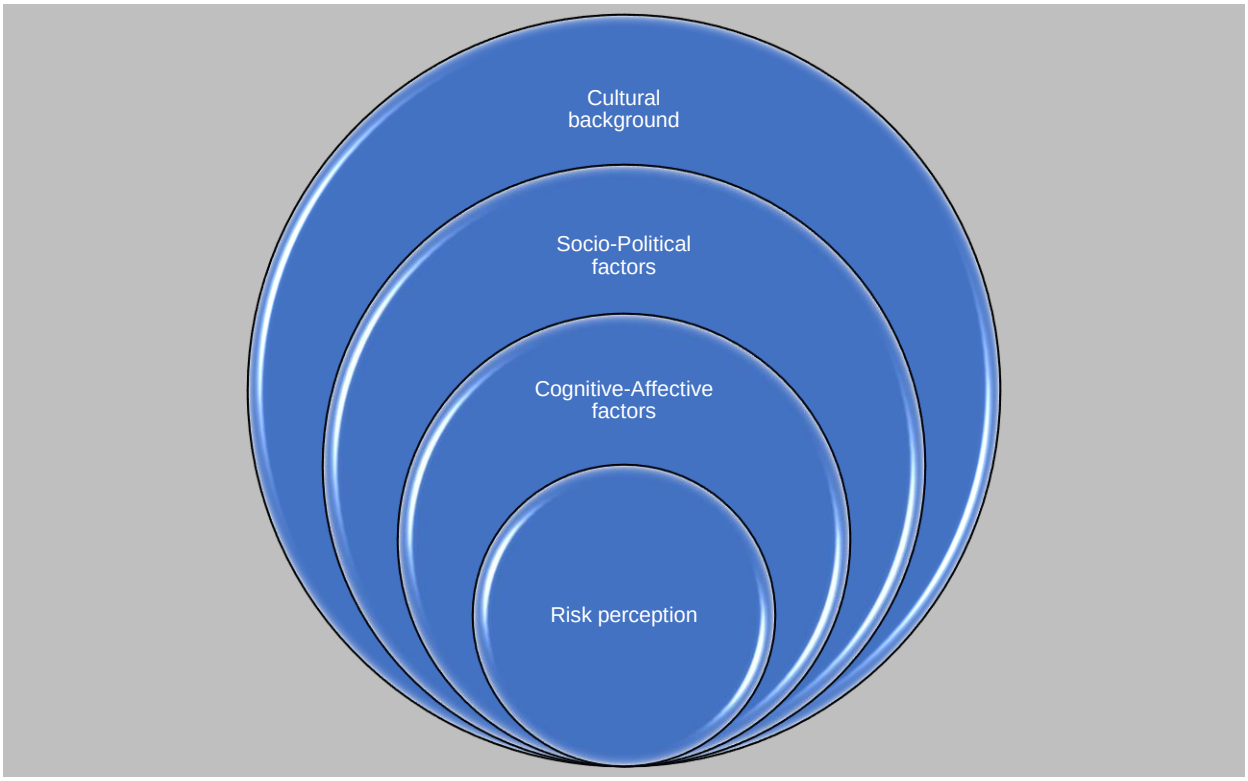
Perception is people’s thoughts and opinions about something, products or services, and/or interpretations of something (Cherry, 2020). The negative judgment of employees can influence operational risk and change how they perceive risk within the banking sector. Rohrmann (2018) declared that the perception of risk arises when people’s judgement, interpretation, and thoughts negatively impact the reputation of a bank and the possibility of causing financial loss. Perception of operational risk directs risk decisions about the appetite, tolerance, and acceptability of the risks. It is the primary influence on employees’ behaviour before, during, and after a risk event (Kirikkaleli *et al*., 2020:2). People risk assessments and evaluations are usually complex as a result of risk characteristics and individual viewpoints that contribute to a particular perception of operational risk in the banking sector (Rohrmann,

2018). However, perceptions and attitudes towards operational risk should not be considered as employees' actual behaviour on operational risk within the banking sector.

According to Kirikkaleli *et al*. (2020:2), positive risk perception is a type of control function for certain operational risks, improving the banking culture and educating all stakeholders about the importance of managing risks. The positive perception of operational risk is a function of personal experience and knowledge about risk, the availability of information on risk-related matters, unexpected losses over time, root cause analysis, and the impact of the risk event (Rohrmann, 2018). Grima *et al*. (2021:4) mentioned that a better way to improve people's perception of operational risk is to understand how employees think, act, and feel about risk, which is directed by their behaviours and attitudes and determined by ethics, morals, culture, regulatory and psychological factors.

The negative judgment of stakeholders on operational risk and risk management can negatively impact the operations of any bank, organisation, or company. Negative perception is one of the risks that leads employees to respond in a risky way. When the risk is perceived to be moderate, stakeholders are usually exposed to a risky situation due to inadequate control monitoring (Chaswa *et al*., 2020). One of the effects of the perception of operational risk is the positive strategy implemented to understand how to communicate effectively and how employees receive risk information within banks. Chaswa *et al*. (2020) further mentioned that some of the effects of negative perception are aligned with an ineffective risk message, source of the risk message (credibility and trust) and targeted audience to convey the risk message (risk target). Ineffective communication and communication platforms can lead to negative views about the message of the risk conveyed. Figure 3.2. below shows factors that influence people’s perceptions.

Figure 3.2: Factors influencing perception



Source: Adapted from Mañez *et al*. (2021)

These factors mentioned above influence perception positively, which contributes positively to the brand and reputation. Perception of operational risk can be influenced through collective awareness or workshops to proclaim common knowledge about the importance of risk management (Vasvári, 2015).

The perception of operational risk and risk management is enhanced by the manner in which decision-making processes are formulated and effectively communicated to various stakeholders. Vasvári (2015) explained that it is crucial for banks to understand perception, judgement, or thoughts on operational risk and risk management as a risk and control strategy used and adopted to achieve the common goal of risk management, which is managing risk to an acceptable appetite level. Furthermore, the adequacy and effectiveness of controls depend on the accessibility and reliability of risk information provided to stakeholders to mitigate the risk (Vasvári, 2015). The following section will focus on the perception of people risk and culture risk within banks.

3.3.2. The perception of people risk and culture risk

People and culture play a significant role in any organisation and are regarded as the most critical assets at the centre of the organisation. The significance of managing the perception of people risk and culture risk is understood as a foundation or tradition that establishes the behaviour of an individual or group of people within a bank that determines how risk is

identified, understood, and mitigated (Agarwal *et al*., 2019:771). Culture risks (ineffective diversity management, working in silos, failing to adapt to management practise) may include people risks (such as key man dependency, dissatisfaction of employees, lack of ethics and morals, employee misconduct, health and safety risk) as a root cause in a way that the perception of people in the banking sector may influence the direction of the organisation. McConnell (2013:24) mentioned that the analysis of people risk and culture risk from both internal and external sources is crucial to assessing and evaluating the perception of culture in conjunction with people in the banking sector. This can be an implicit and explicit analysis of governing the organisation's behaviours, ethics, and morals (Bianchi *et al*., 2016:3). However, it is advisable to analyse perception, as this could lead to reputational damage or reputation building.

A negative perception of both people risk and culture risk is created when employees have personal agendas, attitudes and opinions (that are against the best interest of the organisation) that may impact the reputation of the bank (IRM, 2018a:17). This usually occurs when employees experience a negative culture that is surrounded by pessimists, which is not inspiring, and a culture of not showing care about the internal processes of a bank. According to Deloitte (2016b:3), banks have considered cultural immaturity and inadequacy major setbacks affecting employee morale. Furthermore, another setback of a negative perception of people risk and culture risk is unhealthy cultural norms, rules, and standards, which has led to a loss of employee confidence and trust (Deloitte, 2016b:3). Negative perception of people risk and culture risks cannot be traced to one event, as it is rooted deep within banks if not managed effectively and adequately. Table 3.4 below summarises the causes of the negative perceptions of people risk and culture risk in the banking sector.

Table 3.4: Causes of negative perception

Ineffective diversity management	Fraudulent activities	Mis-selling financial products
Improper financial advice to customers	Dissatisfaction of employees	Inaccurate financial and regulatory disclosures
Non-inclusive culture	Ill-disciplined stakeholders	Reputational damage
Silo-based approach	Uninspiring environment	Power hunger stakeholders

Source: Adapted from Deloitte (2016b:4)

The above elements perpetuate the cause of the negative perception of people risk and culture risk within banks. The negative perception of people risk and culture risk hinders the progress

of a bank's operations in a way that causes poor or negative culture. However, it is crucial for banks to establish a better or positive perception of people risk and culture risk not only to manage or mitigate these risks however, to create an environment where culture is embedded from top to bottom (Deloitte, 2016b:4).

However, banks must transform negative perceptions into positive perceptions of culture to ensure that the working environment is conducive, allowing and motivating for employees. According to IRM (2018b:4), banks can employ strategies to drive a positive perception of people risk and culture risk in organisations. This can be done by describing and clearly understanding the current culture and its impact on people and the desired culture. The change to a positive perception of culture requires the realisation that this is key to transforming the environment and requires discipline to see change (IRM, 2018a:18).

According to Bianchi *et al*. (2016:4), to improve the perception of people risk and culture risk within organisations, employees who articulate and encourage positive culture should be motivated through incentives, better remuneration and other forms of motivation. The incentive system needs to align with risk performance, which comprises all employees from top to bottom. The incentive system should not be based solely on monetary value; however, instead on offering training or bursary, extended leave days, or employees of the month accolades to improve culture through employee appreciation (Bianchi *et al*., 2016:5). According to IRM (2018b:4), better company benefits and employee retention at all levels of the organisation are also seen as an important contribution to encouraging good culture.

Improving the perception of culture risk should not be treated in isolation, as it is a project on its own that involves a change in the whole organisation. It is imperative for banks to look at culture and people risk as a change project that has its own objectives and to review the progress regularly (IRM, 2018a:19). Perception can also be changed by having risk champions and risk training and awareness sessions to ensure that issues related to culture risk and people risk are addressed. Furthermore, the BCBS has also advised financial institutions to highlight culture risk as a focus area in the institution's strategies (Alexander, 2019:6). This will enhance and bring a positive perception of risk management within banks and ensure that all the employees are aware of the impact that risk may have. This will further improve a good corporate culture aligned with the banks' norms, values, and beliefs.

3.3.3. The Importance of Good Corporate Culture

A good corporate culture is a crucial tool that enables stakeholders to contribute effectively towards helping banks achieve their strategic goals. A good corporate culture is a well-thought-out approach to managing employees and maintaining effective norms and values

within a bank (Dimitrios, 2015:16). According to Mowat (2018), corporate culture is defined as a bank's personality and identity, or the norms, beliefs, and values that it has adopted to conduct its operations. This implies that the culture of one bank, company or organisation may differ from the culture of another bank, company, or organisation in the same or different industry. Amah (2013:43) emphasised that corporate culture is the basic patterns, norms, values, and behaviours employees have developed and adopted to manage internal or external organisational challenges. Good corporate culture connects employees to the common goal, which in turn adds value and protects the value of banks.

The banking sector views culture as the quality of excellent genetic material that is powerful and not visible, although it defines and directs what happens in the workplace (Triplett III, 2018). Good corporate culture empowers two critical functions in the banking sector:

- Aligning with employees to ensure that they have standard norms, values, and behaviour and know how to engage with one another; and
- Assisting banks to adapt to external and market factors (Amah, 2013:43). This internal collective identity measure enables employees to work well together. External adaptation denotes banks' having the capabilities to meet their goals and having dealt with outsiders. A good corporate culture guides banks' daily operations to achieve their strategic and operational objectives (Morcos, 2018).

The importance of good corporate culture is seen when banks' overall operations come together towards a common goal. According to van Hoorn (2017:453), culture in the banking sector is made up of a higher percentage of personal values of employees who work for banks rather than individual employees. Firstly, good corporate culture in the banking sector supports the implementation of the strategy to ensure that banks' culture is spread towards all parts of decision-making, and it is more about the employees' moral and ethical behaviour (Simon, 2016). It starts with how employees are recruited and hired, benefits and dismissals, how resources are allocated, and the methods and processes for managing risks and seeking opportunities.

Secondly, van Hoorn (2017:453) asserted that good corporate culture is a connecting device that connects banks with employees with the same values and beliefs about the opportunities and risks in the market. Thirdly, good corporate culture can lead to positive employee identity, and this will ensure that banks do not spend more money on workshops to encourage ethical behaviour and conduct (Phillip, 2021). Lastly, Wiwanto (2020) mentioned that a good corporate culture operates like a magnet that attracts and retains talented employees in a bank that values a healthy working environment and reduces the risk of unethical behaviour and staff movements. Regulators can assist banks in managing such risks by promoting a

growth-focused culture, which could raise capital and solvency requirements and reduce the probability of banks becoming insolvent or subject to regulatory scrutiny (Simon, 2016).

The culture within banks usually changes when new challenges arise. It is crucial to allocate resources to improve culture and enhance communication of desired values and behaviours. This should be implemented so that the culture in banks does not become contradictory or clash with the norms to demonstrate a completely different set of values (Triplett III, 2018). A strong culture requires good leadership, suitable communication structures and the availability of resources and incentives. Moreover, if firm values guide culture, decisions and actions will contribute towards the reinforcement of corporate culture (Coluccia *et al*., 2017:35). Good culture prevailed when the world was hit by the COVID-19 pandemic (during the lockdown in 2020 and after the lockdown in 2022) as employees resorted to working from home, which did, however, not affect the firm, the inspiring and effective culture of some banks (Darjana *et al*., 2022:1). In the next section, the influence of the COVID-19 pandemic on culture risk and a comparison with the 2007/08 GFC will be discussed.

3.3.4. The influence of COVID-19 on people risk and culture risk

The impact of the COVID-19 pandemic has changed people's lives worldwide and changed the usual way of doing things, such as running a business, socialising, working and attending events. Smit (2021) mentioned that the pandemic came as an unprecedented macroeconomic challenge that disrupted the operations of banks through the imposition of national lockdowns and forced a new way of providing banking services to clients. The strict lockdown measures and social distancing guidelines imposed to control the spread of the COVID-19 pandemic have changed the traditional way of living as people relied on wearing masks indoors and outdoors during the period of lockdown, which included changes in consumer or employee behaviour as well as the culture within the banking sector (Organisation for Economic Co-operation and Development, 2020a). Although Basel II's recommendation for banks to hold an additional capital buffer to bear an economic meltdown was a practical guideline, banking culture was affected as the traditional method of employees working and organisational culture changed tremendously (Smit, 2021). These changes in how work was done before the COVID-19 pandemic came with a new risk and increased (high exposure) the current risks, which previously rarely impacted people and culture in the banking sector.

The COVID-19 pandemic influenced the people and culture of banks in such a way that employees have developed a new norm of working that brought about both positive and negative effects. Darjana *et al*. (2022:1) highlighted that the positive effect is that it allows employees to work remotely by using online platforms (such as Microsoft Teams, Zoom, and

TeamViewers) to reach other colleagues and not be expected to interact with others at the workplace physically. Even though the new normal came with both good and bad news, banks continued to be resilient in their daily operations. They have introduced new ways of working (hybrid working), accessing branches by limiting walk-in clients and encouraging online banking applications and online self-services by customers.

The mitigation of COVID-19 on people risk and culture risk is the enhanced digitalisation of the banking system. However, the importance of innovation has always been the core factor of banks, even before the coronavirus (Marcu, 2021:205). According to Al-Ajlouni and Al-Hakim (2018:2), digital platforms such as the Internet of Things (IoT), 5G telecommunication networks, big data analytics, Artificial Intelligence (AI), and blockchain technology have gained traction in the banking sector and are gradually disrupting existing structures. This is due to the reality that people have opted to use technology more to allow for the creation of solid digital ecosystems (Ting *et al*., 2020:459). Furthermore, the use of digital platforms has strengthened banks' objectives to permanently rely on the use of online platforms and stakeholders to slowly change the culture of walking into a bank when in need of banking services.

During the pandemic, the use of online systems had increased more than before as banks implemented strict measures to limit in-person visits to branches and temporarily or permanently close branches, which also affected employees in head offices to work on a rotation basis (Faccia *et al*., 2020:309). The pandemic has (somehow) made it a requirement for people to rely more on the use of digital platforms than ever before and for banks to rethink and cement their new strategy to fit the needs of employees and stakeholders due to lockdowns that prohibited physical contact (Nicola *et al*., 2021:3). This has negatively affected how things used to be done; however, the positive side of it is that the world is moving towards the direction of digitalising all the sectors of the economy.

On the other hand, one of the adverse effects is that the COVID-19 pandemic has caused the organisational culture to deteriorate as employees feel less connected to others, as well as a negative impact on productivity due to fatigue, anxiety, and worrying about their livelihood (Darjana *et al*., 2022:1). Furthermore, the negative influence of COVID-19 on people risk in the banking sector has increased, which has led to people losing their lives, jobs, and experiencing deteriorating health statuses.

The pandemic and prolonged lockdowns have brought massive job losses and haphazardly forced non-essential employees to stay at home while others were working on a rotation basis (Debata *et al*., 2020:2). The job cuts have specifically affected client-facing employees, other than employees that can work remotely (Montenovo *et al*., 2021:2). The results of the job cuts

have put remaining employees under immense pressure to meet their targets with fewer resources and support to get through the COVID-19 pandemic, which has led to a rise in people risk in the banking sector. Social distancing has affected the entire banking sector and its culture, as employees became socially and emotionally drained (Marcu, 2021:206).

As the pandemic is expected to continue for the next few years, even though the national state of disaster was scrapped in April 2022, people need to remain strong and resilient and adapt to the new culture introduced during these challenging times (Nicolson, 2022). During the hard lockdown in 2021, mitigating strategies such as social distancing, vaccinations, wearing masks, regularly washing hands, and working from home have been made mandatory in the banking sector to ensure that employees remain safe and curb the spread of COVID-19 (Demirguc-Kunt, 2020). Furthermore, banks have been working hard to improve culture positively, ensuring employees live and articulate the bank's values and maintain the culture in mind.

In April 2022, after 750 days of a national state of disaster, COVID-19 restrictions were lifted, and most things could return to the traditional way (before COVID-19) of living and working or performing daily activities. It is vital to note that the lockdown has impacted employees and the culture of banks for more than two years at different levels (Nicolson, 2022; The Presidency, 2022). Seal (2022) highlighted that lifting restrictions will positively impact employees and the bank's culture through more physical interaction and bringing back a sense of togetherness after the lockdown. According to Seal (2022), employees who maintained social communication and interacted with others virtually during the lockdown had a better chance of becoming the best performers in their occupations than those who have been living and working in silos. A motive behind this is that a sense of togetherness creates standard norms and values and inspires other employees.

Physical interaction of employees is an effective way that can be utilised to improve and rebuild culture, which employees articulate within banks (Seal, 2022). Different backgrounds and cultures inspire different talents, exposure, and experience. They could help overcome any complex or challenging work activity that needs to be completed when working together as a team (Hargett-Robinson, 2021). This will also give employees a feeling of belonging when working well together in the office and contributes towards sustaining an organisational culture that will, in turn, manage the impact of people risk and culture risk. However, since COVID-19 pandemic was recent in 2020, not a lot of studies had focused on the influence that COVID-19 had on people risk and culture risk or have had time and resource to conduct sufficient research on COVID-19 and its relation to people risk and culture risk. The following section focuses on opportunities and challenges faced by banks.

3.4 OPPORTUNITIES AND CHALLENGES FACED BY BANKS

Banks should manage and mitigate risks by developing and implementing effective mitigation strategies to reduce risks to acceptable levels. This is regarded as a better strategy for managing existing and emerging risks within banks (Strom, 2017). There are several opportunities that banks could implement to overcome the risk arising from people and banking culture. Some of the opportunities that benefit banks from mitigating the risk that originates from people and culture are outlined below (Smith-Bingham, 2015; Accenture, 2019):

- Better decision-making: A good culture in a bank supports better decision-making by influencing banks to enter a new market, introduce new financial products, or take any strategic decision to improve their financial position. This also helps by ensuring that better decision-making is reflected in the bank's culture risk;
- Increased customer and staff retention: Customers usually choose a bank that provides good service, treats customers fairly and has a good reputation for high-quality standards. Employees also prefer banks that have established a great culture that is inspiring, focused on the values and set of norms, and communicated throughout the entire organisation. Moreover, employees stay where they feel appreciated and included in decisions, and this limits the risk of seeking to work for competitors due to unreasonable demands from managers, unethical behaviour, or reputational damage;
- Better regulatory compliance: Compliance with regulations in the banking sector is a crucial part of meeting all the minimum regulatory requirements, especially concerning critical roles that are required to be associated with the regulator;
- Risk awareness: Conducting a risk awareness training and workshop to educate all the employees about the culture within a bank and provide clear communication on what was expected and
- Solve complex operational practices: A good culture helps overcome the risks that accompany complex processes, often those from technological advancement or new internal processes within the banking sector. It can also improve employees' productivity and limit massive liabilities resulting from unintentional errors or mistakes.

The opportunities to mitigate the risk of people and culture are essential to guaranteeing a bank's success through employee retention and good culture. However, there is always room to showcase the drawbacks or consequences of these risks in the banking sector (Smith-Bingham, 2015).

Although the opportunities faced by banks regarding people risk and culture risk have been discussed above, there are also drawbacks involved with poor culture and mismanagement of employees. Firstly, Smith-Bingham (2015) mentioned that negative culture is shown by the bank's poor performance or immature risk management that is comfortable with unwelcome events. This results from problems that often increase when the bank is under strategic and operational stress. When emerging pressures kick in, it turns into business-as-usual risk. Secondly, the reactive culture of senior managers, often overwhelmed by the demand to solve the bank's internal processes, puts measures in place to mitigate the challenges accompanying people risk (Menzies, 2020). Employees may have less faith in supporting risk management and pretend to follow the rules, processes, and procedures, resulting in a risk arising from inadequate internal process. Thirdly, poor governance, a culture of fear, and unprotected whistle-blowers affect the culture's maturity within a bank and, at times, lead to employees being vulnerable and unwilling to share information (Menzies, 2020).

The advantages and disadvantages of mitigating people and culture risks provide a better practice to manage and identify gaps related to employees' behaviour and conduct and the cultural dynamics within banks. This provides practical examples and perspectives on how banks should effectively manage people and culture risk to attract skilled talent and improve risk maturity (Evans, 2017). However, organisations need to practice a good corporate culture that assures better risk management and embeds culture throughout the organisation.

3.5 SYNOPSIS

This chapter focused on operational risk, people risk, and culture risk. The initial objectives of this chapter were to contextualise and discuss operational risk and its relation to people risk and culture risk. Operational risk was defined, and its four components were briefly discussed. People risk and culture risk were defined and discussed comprehensively, each as an operational risk component.

The objectives of this chapter were achieved through a discussion on the theoretical overview of operational risk and an examination of the theoretical link between people risk and culture risk. The perception of operational risk and risk management was discussed, and it was evident that they both function as collective and individual risk assessments with the desire to manage existing and emerging risks. Moreover, in terms of negative perception, it was mentioned that it aligns with ineffective communication about risk. The positive perception was stated to be influenced by the way people understand and perceive risk as something that can impact the objective set. The factors that determine and influence culture risk in the banking sector were also analysed and discussed, showing that it is pivotal to manage these factors

to maintain a positive and effective culture. Positive culture influences employees to do the right things and follow the traditional way. Culture is how things are done within a bank or organisation, and it may differ from other banks or organisations of the same size and nature.

Furthermore, the relationship between people risk and culture risk was also presented in this chapter. It was found that the relationship goes together, and one spills over or affects the other, and vice versa. People articulate culture by following the norms and standards and following certain cultural traditions that existed before their arrival. This proves that both culture and people risk have a positive relationship. Another theoretical objective that was achieved was theoretically analysing operational risk and its influence on people risk and culture risk. The importance of correctly developing both culture and people is essential to banks because they are interrelated and set the standard for banks' risk management.

The influence of the COVID-19 pandemic on people risk and culture risk in the banking sector was outlined and analysed. It was highlighted that the COVID-19 pandemic had brought a mixture of positive and negative influences to the banking industry that comes with new risks. Banks managed the pandemic by allowing their employees to work remotely and encouraging their customers to rely more on digital platforms when they required financial services. Although this strategy worked well, it has impacted the culture of togetherness and physical interaction among employees and increased people risk and culture risk. People and culture risks are well managed with effective strategies after the lockdown restrictions were lifted in April 2022, and the lifting of restrictions meant that things are now slowly returning to normal (prior to COVID-19). People are now using hybrid working models, and banks and other organisations are encouraging employees to return to the office to rebuild culture through physical interaction and coming together as a team. Therefore, these strategies have been working (through 2022) and can potentially manage people risk and culture risk.

Chapter 4 focuses on the research design and methodology used in this research study to achieve the primary objectives outlined in Chapter 1.

CHAPTER 4
RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

Chapter 4 focuses on the research design and methodology used in this research study. In order to achieve the primary objectives of this research study, this chapter will outline all the methodological strategies adopted. According to Rajasekar *et al*. (2013:5), a research methodology is a framework used to describe the practicality of any research study to achieve the primary research objectives. The primary objective of this research study is to analyse the influence of people risk and culture risk on risk management in the banking sector.

This chapter will explain the target population and sampling method used for this research study. The type of data and method used to collect data from participants will be discussed, and the data analysis procedures adopted. Lastly, the researcher followed and implemented ethical guidelines and principles to ensure the study participants were not harmed. The following empirical objectives were formulated to achieve the primary objective of the study:

- Determine the perception of operational risk management practices within the banking sector;
- Determine the influence of the COVID-19 pandemic on people risk and culture risk in the banking sector; and
- Analyse the influence of people risk and culture risk on risk management in the banking sector.

In order to meet the empirical objectives of this research, a comprehensive research design and method were developed. Section 4.2 provides the research design of this research study, which involves discussing and differentiating four different world views: positivist, constructivist, participatory, and pragmatic. Furthermore, different methodological approaches or strategies are also discussed in detail in this section. Section 4.3 will describe the chosen research design and methodology. This will be followed by Section 4.4, which discusses the sampling procedures of the study. Sampling procedures include the target population, sampling frame, sampling method (probability and non-probability sampling methods to choose the most relevant method), and sampling size of the study. Data collection procedures, which include ethical consideration, pre-testing, a pilot study, and the management of the information collected for the study, will be described in Section 4.5.

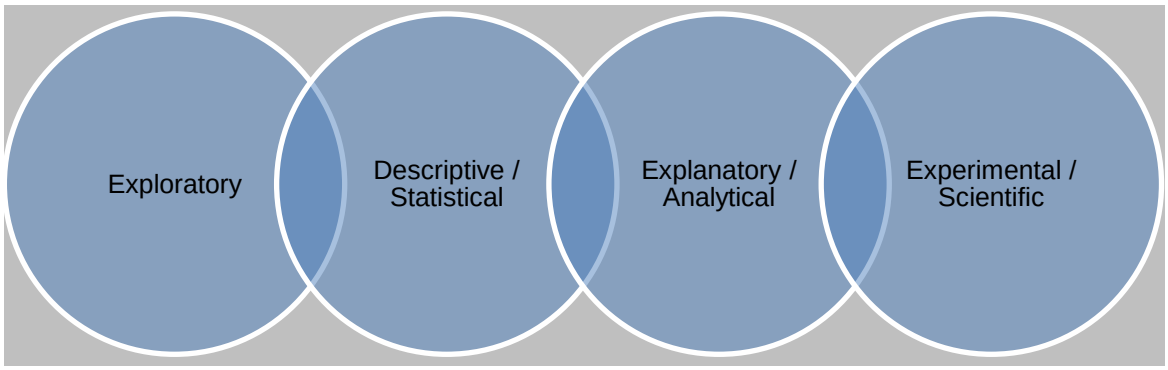
Moreover, the preliminary data analysis of the study, for which data will be collected through a questionnaire, will be discussed in Section 4.6. This will include the design, format, and

management of the data collected, as well as the layout of the questionnaire. Lastly, Section 4.7 will present a statistical analysis of the study. Various statistical tools will be utilised, such as descriptive statistics, factor analysis, validity and reliability, regression analysis, Correlation coefficient, Analysis of Variance (ANOVA), and Structural Equation Modelling (SEM).

4.2 RESEARCH DESIGN

A research design is the blueprint of a study that will be conducted (Malhotra, 2010:102). Answering the research question is the primary purpose of all researchers and is supported by the available information about a specific focus area (Dulock, 1993:154). According to Akhtar (2016:72), a research design that minimises biases and has sufficient and adequate data collected is often considered good. A research design that produces the slightest experimental error is thought to be the best. A research design that shows the most information on various aspects of a problem is thought to be the most accurate (Sekaran & Bougie, 2013:95). The researcher should select a research design that would increase the feasibility of the study using professional resources that are economical and yield maximum information with less time and money. A research design that focuses on the study's research question consists of four research designs shown in Figure 4.1 below.

Figure 4.1: Types of research design



Source: Akhtar (2016:73)

Figure 4.1 above depicts the types of research design that the researcher may select when conducting a study. These types of research designs differ in the process each follows; however, their goal is to reach a particular research conclusion (Kumar, 2014:122). Table 4.1 below briefly explains the different research design types shown in Figure 4.1 above.

Table 4.1: Explanation of the types of research design

Research design	Brief explanation
Exploratory	This research design aims to achieve a new understanding of a phenomenon. It is a type of study in which little or no prior research and references to historical information can be made.
Descriptive/statistical	This research type usually describes the existing circumstances and is applied to identify and attain information about the characteristics of specific issues, such as demographics. Moreover, this research type answers questions like what, whom, where, when, and how. Researchers use descriptive or statistical research to conduct studies of the current situation.
Explanatory/analytical	An explanatory or analytical research design is concerned with exploring a new universe that has never been researched before. This research design is often called "formulative research" since it formulates problems for detailed investigations. It is generally concerned with the "why" aspect of the relationship between two or more variables or causes of some phenomenon. Additionally, it focuses on a set of concepts that lead the researcher to look for the truth.
Experimental/scientific	An experimental research design is also known as a scientific research design, which means "to try". This type of research design tests the origin of the relationship between two or more variables in a controlled environment (where one factor remains constant while others are flexible in the experiment).

Source: Sekaran & Bougie (2013:96); Akhtar (2016:73); Thomas (2021:94)

The above-mentioned Table 4.2 describes the types of research designs that can be selected when conducting a research study. According to Saunders *et al*. (2012:170), it is crucial for a researcher to understand the selected design in detail, including the nature and objective of the research design. Selecting the appropriate research design is crucial as it channels the researcher to follow the plan drawn at the beginning of the research study.

Therefore, an explanatory/analytical research design has been selected as the most suitable and appropriate research design for this research study. This is because explanatory/ analytical research design is the most efficient and inexpensive method of collecting data through questionnaires (online and hard copy) with the aim of exploring new territories through statistical methods (Sekaran & Bougie, 2013:96).

4.2.1. Research Paradigm

A research paradigm, also referred to as the research worldview or how researchers look at the research world and the reason for the research, is referred to as the first phase of conducting research (Welman *et al*., 2005:13). Creswell (2014:35) mentioned that a research paradigm is a guideline of the research study that is concerned with the research design,

methodology, and methods. Van den Bergh (2019:65) mentioned that the research paradigm focuses on how researchers observe and understand information or data about the research study and ways to conduct research. A research paradigm encompasses four theories, which include ontology (realistic theory), epistemology (knowledge theory), methodology (inquiry theory), and axiological (theory of value) (Margarete, 2000:247; Scotland, 2012:9).

According to Ritchie *et al*. (2013:5), researchers can apply different research paradigms to influence the strategy or approach of the research, especially in the social sciences. Tracy (2013:38) and Ngulube (2015:130) mentioned the following research paradigms that can be adopted for research study, namely positivism, constructivism, participativism and pragmatism. Paradigms do not provide answers to questions; however, they are critical in pointing the researcher toward where the answers may be found (Rubin & Babbie, 2005:32). The different research paradigms are discussed in Table 4.2 below.

Table 4.2: Research paradigms

Research paradigm	Positivist	Constructivist	Participativism	Pragmatist
Method	Quantitative studies and can also be applied to qualitative studies.	Mainly qualitative studies, however, can also be quantitative studies.	Mainly focused on mixed (qualitative and quantitative) research studies. However, it is more qualitative.	Mixed (qualitative and quantitative) research study. It also depends on the research purpose and research question.
Focus areas	Focus on evidence and theory testing. Apply the scientific method.	In-depth investigation of small samples. Acquired knowledge based on experience.	Focus on politics and liberation of people from oppressive and marginalised practices.	Focus on factual ideas from an independent mind. Emerge as a result of the situation.
Approach	Top-down approach.	Bottom down approach.	Participant approach.	Question/ interview approach.
Values	Unbiased values.	Biased values.	Biased values that are negotiated.	A mixture of unbiased and biased and/or unbiased or biased values.
Tools	Experimental, scale, and	Interviews, data analysis, review	Involvement of participants to	Use both tools of the positivist

Research paradigm	Positivist	Constructivist	Participativism	Pragmatist
	empirical testing from previous theories.	of documents, experience.	form collaborative results.	and constructivist research paradigms.

Source: Adapted from Mackenzie & Knipe (2006:195); Creswell & Plano Clark (2011:73); Strang (2015:23); Le Roux (2016:56); Lawrenson (2020:68)

4.2.1.1 The Positivist Research Paradigm

The positivist research paradigm relates to scientific methods of research. According to Creswell and Plano Clark (2011:72) and Le Roux (2016:56), it focuses on various theories of testing, expectations of knowledge, and the notion of causation, which is based on one factor influencing another to determine the outcome, as well as the independence of social factors that contribute to the research. Strang (2015:22) mentioned that the positivist paradigm uses past theories based on facts to determine the hypothesis that will be tested. This research paradigm describes a research study through measurement, scale, experiment, and observation of large samples (Munyai, 2020:84). Consequently, a setback about the positivist research paradigm is that it does not consider human behaviour as it cannot be fully explained using a scientific approach (Berliner, 2002:20).

Nickerson (2022) mentioned that positivists believe scientists have no beliefs and values that could impact the findings and should remove personal feelings and interpretations. Furthermore, positivists believe it is critical to study society naturally to create social facts that govern society through observation and analysis (Nickerson, 2022). This is done by gathering data about the world through scale and analysis, and this method is referred to as inductive reasoning. Positivists try to understand the laws of nature and express those laws by means of a previous theory (Park *et al*., 2019:691). The data gathered can help to form and verify theories. However, the theory can be revised if the results or findings do not reflect the actual value of the theory (Saunders & Tosey, 2013:58). These theories of explanation and predictions of nature are based on hypothetico-deductive models, which are also referred to as scientific models (Park *et al.,* 2019:691).

4.2.1.2 The Constructivist Research Paradigm

The constructivist research paradigm is a research approach that shows that individuals make use of their own understanding by experiencing things and making conclusions based on those experiences (Honebein, 1996; Dickson *et al*., 2016:2). Moreover, constructivist

paradigms follow a constructive method, which is learning research. This means that learning happens when the researcher learns new knowledge through experiments and doings, not through the traditional way of teaching or lecturing a class (Kalender, 2007:5). Moreover, constructivist research adopts individuals' views and interactions to establish innovative theories with the inclusion of participants to ensure that the research process flows without any difficulties (Goulding, 2005:294; Schulze & Kamper, 2012:132).

The constructivist research paradigm makes use of qualitative research methods, which are constructed using secondary sources, including interviews, literature reviews, theories, journals, dissertations, and theses, for research (Dickson *et al*., 2016:5). This involves reading much information to understand and get an idea of a particular field of study or phenomena. In this research paradigm, the researcher assesses what has been said to discover the truth (Dickson *et al*., 2016:5). Creswell and Poth (2017:21) contended that one of the disadvantages of the constructive research paradigm is that it does not support ideas from compromised participants as the information would not provide adequate results.

4.2.1.3 The Participatory Research Paradigm

The participatory research paradigm is a type of research method in which individual participants play an important and active role in the study as it is more of a qualitative approach (Myers, 2013). The participatory research paradigm states that cultural differences and backgrounds of participants influence political issues (Creswell & Plano Clark, 2011:73). Moreover, participatory research deals with issues that are usually related to oppression, suppression, marginalisation, inequality, discrimination, as well as empowerments (Creswell, 2003:11). In this research paradigm, participants use their voice to be heard and ensure that the message is delivered to improve their standard of living. The participatory research paradigm focuses on changing the status quo to benefit and improve the political consciousness of the participants (Creswell & Poth, 2017:22).

4.2.1.4 The Pragmatist Research Paradigm

The pragmatist research paradigm is a type of research that is conducted based on actions, current situations, and consequences (Creswell, 2014:10). Pragmatist research is concerned with the idea that problems should be addressed in a real manner rather than based on the assumption that theories can be measured by how well they perform in real-world situations (Denscombe, 2008:23). Pragmatist researchers concentrate on the "what works" and "how it works" of research and do not concentrate on one theory or philosophy (Creswell, 2013:18). Furthermore, researchers place emphasis on the problem and all other possible and available

methods that can be used to understand the cause of the problem (Morgan, 2007:60). Pragmatic research uses mixed methods of both qualitative and quantitative research by pointing out that research involves imagination, intentions, and interpretation and is also grounded on empirical experience to understand the problem (Tashakkori *et al*., 2003:54; Willig & Stainton-Rogers, 2017:400). Although the pragmatic research problem is centred, the data collection and data analysis methods identified provide significant information to the questions in an unbiased manner (Willig & Stainton-Rogers, 2017:403).

4.2.2. Research Approach

A research approach consists of three different approaches to consider, namely a qualitative, quantitative, or mixed-method approach (Kothari, 2004:33; Creswell, 2013:41). The difference between qualitative and quantitative research is that qualitative research uses words and denotations, whereas quantitative research uses numerical figures and statistics (Creswell, 2009:25). On the other hand, a mixed method approach uses a combination of qualitative and quantitative research (i.e., words, denotations, numerical figures, and statistics) (Creswell, 2013:41). According to McMillan and Schumacher (2001:463), there is no single and correct research approach; however, researchers prefer the approach that will assist in achieving the goals of the type of research study chosen. In the following sections, the three types of research approaches will be discussed in detail.

4.2.2.1 Qualitative Research Approach

Novikov and Novikov (2013:75) define the qualitative approach as an approach in which the researcher uses interpretative practises to translate and describe information to reach the world through natural phenomena. Atieno (2009: 13) also mentioned that the qualitative approach is based on an ethnographic study and is interpretative in nature. This research approach uses words, interviews, surveys, and questionnaires with open-ended questions to gather more information to be used in a research study (Marczyk *et al.*, 2005:17). Qualitative research relies on the words used and interprets the denotation or meaning of those words with the participation of humans as a means for data collection (Irwin, 2013:296). Moreover, it is crucial to note that qualitative research involves a process of developing a theory about a phenomenon, not testing the theory (Walliman, 2016:33).

However, given that the qualitative method is based on interpreting words to create a new theory, it cannot use quantitative figures to predict the research study (Irwin, 2013:296). Furthermore, qualitative research methods are also concerned with the small scale of the target population since the research study results cannot be generalised to other people

(Szyjka, 2012:112). This means that some individuals will remain different from each other. According to Apuke (2017:42), some scholars or administrators found qualitative research methods not credible enough and produced biased results. However, for this research study, no qualitative information was obtained since the qualitative research method is not concerned with statistical analysis and mainly focuses on non-numerical information (photos, observation, and interviews). Open-ended questions are not suitable for this research study.

4.2.2.2 Quantitative Research Approach

The quantitative research approach is a type of research approach that is based on measurements of quantities or amounts to reach a particular conclusion about a phenomenon (Goundar, 2012:7). Moreover, this approach applies to a study that is expressed in numerical data and uses statistical tools to measure and analyse data (Goddrard & Melville, 2001:36). According to Dawson (2009:127), a quantitative research approach uses established research questions as well as historical data to provide answers and formulate new hypotheses. Marczyk *et al*. (2005:17) further mentioned that this approach is about measuring the relationships between two or more variables using statistical analysis tools with the objective of making an informed and quantified conclusion. The researcher must contain sufficient, well-structured, and reliable research information to reach a particular conclusion.

The results of a quantitative approach depend on the sample and population chosen when conducting the research (Marczyk *et al.*, 2005:17; Keele, 2011:38). Some of the benefits of the quantitative research approach is that it explains and determines the consequences of the variables that have been selected for the study (Sogunro, 2002:4). This approach helps the researcher to quickly gather data from a targeted population through a snowball technique. The data results after applying statistical tools are independent of the researcher (Castellan, 2010:7). This shows that the researcher does not influence how participants respond to the questionnaire, as they are unknown. Caruth (2013:114) highlighted that those researchers who apply this approach are known as positivists. A quantitative research approach is applied when the study or investigation is based on factors that influence an outcome and need to be identified and understood to make a conclusion (Creswell, 2009).

On the other hand, the drawback of this research approach is that it measures wonders or phenomena at a particular point in time (Amaratunga *et al*., 2002:23). However, this is based on the notion that a quantitative research approach cannot produce results at a particular time when needed. Another consequence is that it can be realistic and pragmatic by including an inductive approach that uses data to establish a theory (Saunders *et al*., 2012:162). This

approach can be challenging to understand and interpret when the collected data do not meet the research requirements to draw conclusions. However, a quantitative research approach is a suitable method to provide precision of results between two or more variables to meet the set objectives. Johnson and Onwuegbuzie (2004:19) further mentioned that this approach is realistic to generalise the findings and is the best way to quickly collect data from participants.

4.2.2.3 Mixed Methods Research Approach

The mixed methods research approach is a type of research that comprises a mixture of the components from quantitative (numerical, figures, statistics, graphs) and qualitative research (questionnaires, interviews) that are used to understand and validate the study (Creswell & Plano Clark, 2018:3). The notion of mixed methods research is that the researcher adopts a combination of the two research approaches to address a problem rather than choosing either quantitative or qualitative research. According to De Vos *et al*. (2011:436) and van den Bergh-Lindeque (2020:126), a mixed methods research approach seeks to legitimise two approaches to answering the research questions through statistical and questionnaire formats. Furthermore, researchers use this approach when a single approach would not cover the whole scope or help the researcher achieve the primary objectives of the research study (Morgan, 2007:48).

A mixed methods research approach allows for extensive knowledge, providing better understanding and findings. In order to adopt this approach, the researcher needs to fully understand both qualitative and quantitative approaches and be able to use them in one research study or investigation (Onwuegbuzie & Leech, 2006). The advantage of this research approach is that the collection of different types of information (both numerical and non-numerical) from participants can help in reaching quantitative and qualitative conclusions about a phenomenon (Creswell, 2003:22). The mixed research method is not ideal in a research study where the sample is smaller due to the complexity of analysing qualitative and quantitative data. In this method, qualitative and quantitative information results can be compared to form what is called triangulation (Yin, 2003). Triangulation refers to the inclusion of a mixture of qualitative and quantitative methods in a study that investigates one phenomenon.

However, the consequences of this research approach are that it is more expensive and time-consuming to use when gathering and analysing information from two approaches (Gorard, 2004:7). According to Creswell and Plano Clark (2018:4), the adoption of a mixed methods research approach can be very complex, and the researcher can still use this approach when

there are unlimited funds. This can be due to the researcher having to apply two or more approaches simultaneously to reach the research study's conclusion. For this research study, a mixed method approach is not suitable as it is complex, expensive, and requires the use of many resources (Creswell, 2003:22). The next section will focus on the research paradigm and research approach chosen for this study.

4.3 CHOSEN RESEARCH DESIGN AND APPROACH

In order to achieve the empirical objectives of analysing the influence of people risk and culture risk on risk management in the banking sector, a positivist paradigm was selected as the most appropriate research paradigm. This paradigm allows one to identify and describe the relationship between variables to obtain a scientific or statistical understanding of the phenomena. It is essential to highlight that positivist and scientific research paradigms are used interchangeably, and both rely on the empirical objectives of this research study.

In addition, a quantitative research design has been adopted for this research study. This is as a result that quantitative research design investigates the current status quo and the existence of a particular phenomenon by using the questionnaire method and statistical tools such as the Statistical Package for the Social Sciences (SPSS) and Electronic Views (e-Views) (Williams, 2007:66; Scotland, 2012:10). According to Slevitch (2011:76), quantitative research methods arise from the positivist research paradigm that is based on prediction and generalisation of the results and involves the collection of data from a targeted population. This is based on the idea that the data collected from individual employees is independent of the researcher and has not been altered or compromised to produce incorrect findings. Moreover, the positivist research paradigm is chosen as a result that it provides genuine knowledge about the worldview from what is measured, observed, and recorded (Guba & Lincoln, 1994:164).

4.4 SAMPLING PROCEDURES

A sample selected for the research study must be grouped into the population on which the research will be based. This helps researchers, as it is time consuming and expensive to gather information from a large population (Walliman, 2011:93). A sample is a small number of participants carefully and selectively selected to participate in the study from an overall population (Stagnor, 2015:112). According to Marshall (1996:522), one of the reasons that researchers use samples is to overcome the challenges of obtaining and gathering data from the entire population due to issues arising from ethical considerations. In addition, sampling

procedures involve a target population, sampling frame, sampling size, and sampling methods described in the following sections.

4.4.1. Target population

Taherdoost (2016:19) stated that it is crucial to define the target population of a study, as it is the first step of the sampling process. A population is also referred to as a large number of people grouped together (Murphy, 2016:6). For research purposes; a target population is defined as the group of individuals, entities, or units that are the focus area of the research study (Welman *et al*., 2005:52; Brooks, 2014:62). The researcher should select a target population carefully so that it provides results that are not skewed or biased (Dickason, 2017:81). The target population involves specific features of the information that is carefully selected and required by the researcher to be included in the research study (Quinlan, 2011:206; van den Bergh-Lindeque, 2020:130).

Therefore, the target population for this research study consists of individuals employed in one of the top five South African commercial banks, namely ABSA, FNB, Nedbank, Standard Bank, and Capitec Bank. The ranking of these banks was based on the year 2020 (Opperman, 2020). The target was chosen since these banks are among the top five commercial banks in South Africa with a vast market share, number of branches, employees, and profit maximisation.

4.4.2. Sampling frame

A sampling frame consists of a list of all participants with suitable elements or characteristics of the target population that will take part in the research study (Unrau *et al*., 2007:279; Iacobucci & Churchill, 2010:284; Quinlan, 2011:210; Taherdoost, 2016:20). Researchers focus on the sampling frame instead of the entire target population to ensure that the research study is more efficient and feasible (Marshall, 1996:522; Strydom, 2005:194). Hence, the sampling frame makes the research study more practical and achievable (Unrau *et al*., 2007:279; Strydom, 2011:224).

Therefore, as mentioned in Chapter 1, the following criteria form the sampling frame for this research study:

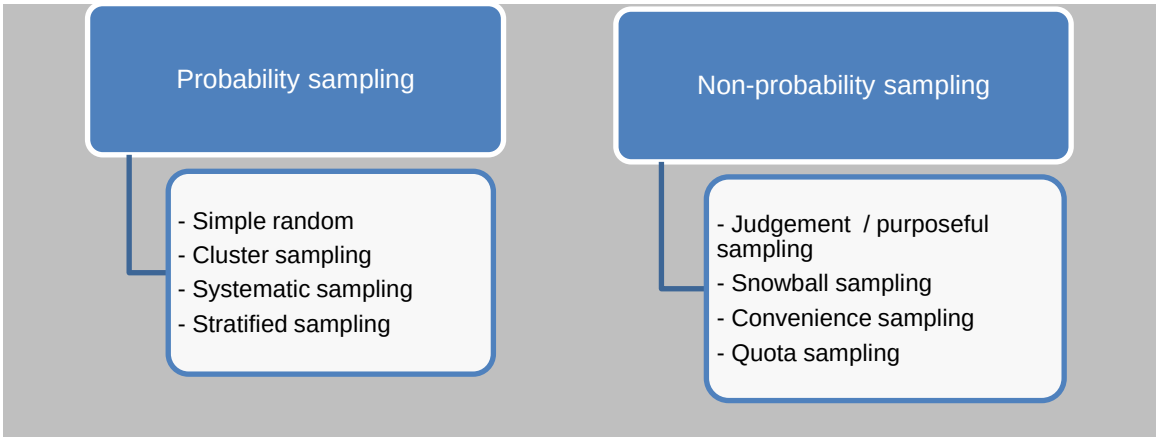
- Employed in one of the top five banks in South Africa, which are specified ABSA, FNB, Nedbank, Standard Bank and Capitec Bank;
- 18 years and above;
- Employed for more than six months in the banking sector; and
- Have some form of education (a minimum of matric - Grade 12/certificate).

Participants must be 18 years of age or older with a minimum educational level of a matriculation certificate or grade 12 and a current employee in the banking sector with experience of more than six months and an understanding of risk management. Due to the number of banks providing different services to their clients in the South African banking landscape, participants were chosen from the top five South African commercial banks. Individual employees chosen to participate in this research study were selected to contribute to achieving the primary objectives (Babbie, 2010:193).

4.4.3. Sampling methods

The sampling methods consist of the methods that the researcher uses to select individuals, entities, or participants from a target population that are part of the sample frame (Novikov & Novikov, 2013:53). The sampling method comprises two main categories, which are probability sampling and non-probability sampling (de Vos *et al*., 2011:228). The two sampling categories are further divided into subcategories (Quinlan, 2011:209):

Figure 4.2: Two types of sampling methods



Source: Adapted from Quinlan (2011:209); Maree, (2012:172); Taherdoost (2016)

Figure 4.2 above shows the subcategories of probability and non-probability samples that will be discussed below. Researchers use these two sampling methods from the target population to determine which method is best suited for the type of research.

4.4.3.1 Probability Sampling Method

The probability sampling method is based on the view that an individual, entity, or unit from the target population has an equal chance of being selected for a sample (DePoy & Gilson, 2008:234; Quinlan, 2011:209). Kirk (1999:367) and Strydom (2011:228) mentioned that the probability sampling method is formed based on randomisation. The probability sampling

method is more complex, expensive, and time-consuming since the target population is randomly selected, and the probability of an individual or unit can be measured alongside the sampling frame (Strydom, 2011:228). As shown in Figure 4.2., the probability sampling method comprises four types of methods or categories outlined in Table 4.3 below.

Table 4.3: Probability sampling methods

Method	Description
Simple random	This method entails participants from a population where the sample was chosen randomly and has the same probability or chance of being selected. This method includes a complete list for the selection of participants.
Cluster	Cluster sampling is used when participants in a sample are clustered or grouped together, where there is no list of participants. The entire population is divided into groups, and a sample will be randomly drawn from the groups to be used in the sample.
Systematic	Systematic sampling involves randomly selecting the first participant from the sample after starting, while other participants are selected from the complete list in an orderly manner. Systematic sampling is similar to random sampling if participants are randomly selected.
Stratified	This method divides the sample frame into subdivisions or strata, and the divided subdivisions have been considered homogeneous to a list of characteristics.

Source: Barreiro & Albandoz (2001:5); Struwig & Stead (2001:112); Zikmund *et al.* (2013a:396); Stagnor (2015:114)

Table 4.3 shows the types of probability sampling methods that researchers can select to direct the research study. These methods can be used in any research study to reach certain conclusions.

4.4.3.2 Non-probability Sampling Method

Non-probability sampling method states that participants, entities or units do not have an equal chance to be selected from the sample frame (Etikan *et al*., 2016:1). This method is adopted by researchers based on its convenience and cannot be generalised from the sample frame (Walliman, 2011:96; Zikmund *et al.*, 2013a:392). This method can be adopted in both qualitative and quantitative research (Quinlan, 2011:214). Table 4.4 below describes the four types of non-probability sampling methods or categories that can be adopted for a research study.

Table 4.4: Non-probability sampling methods

Method	Description
Judgement / purposeful	The sampling method where the selection of the participants is according to a prearranged category, and the participants are chosen on purpose based on the research study. Participants are selected intentionally to provide important information that other methods cannot provide.
Snowball	This sampling method is where a few participants or entities that are first identified are used to motivate and encourage other participants to participate in the research study. This snowball method process is used to its total capacity until the data is gathered. Snowball sampling is sometimes used when the population is not easily accessible.
Convenience	Sampling method where sample selection is easily accessible and available for the researcher's convenience and to access the participants easily. The sample is selected based on the most accessible participants, entities, or units.
Quota	Quota sampling is a non-probability sampling method where the participants from a sample frame are selected from a specific subgroup. The subgroup involves requirements that participants must comply with, which can be in any form, from economic status to age group, as well as cultural background. In this method, participants refer researchers to other potential participants who can contribute to the research study.

Source: Atkinson & Flint (2001:2); Breweton & Millward (2001); Struwig & Stead (2001:111); Mack *et al*. (2005:5); Ritchie *et al*. (2013:113)

For this research study, non-probability purposive and snowball sampling methods were adopted to collect information from participants in the banking sector. These sampling methods were chosen because the researcher purposefully chose participants for this research study and knew that the participants were not easily accessible.

4.4.3.3 Sampling Size

A sample size is defined as the number of participants, entities, or units that will be sampled and included in a research study to represent a target population (Malhotra, 2010:374). The sample size comprises observational or experimental participants drawn carefully from the target population (Lenth, 2001:187). This is due to the reality that it is not efficient and practical to survey the entire population (Marshall, 1996:522). The sample size shows the overall number of respondents in the research study, and the number is sometimes broken down into subgroups in terms of demographics and location to ensure that the sample is representative of the entire population (Kibuacha, 2021). Furthermore, the researcher needs to consider factors such as the characteristics, time, costs, and relevant information that are needed to

assist in conducting a survey, as well as the homogeneity of the population (Bryman & Bell, 2011:177; Chawla & Sondhi, 2011:231).

The sample size for this research study consists of 400 participants from the top five banks in South Africa, namely ABSA, FNB, Nedbank, Standard Bank and Capitec Bank, and the sampling criteria mentioned above in Section 4.4.2. The sample size is based on the required number of questionnaires completed to meet the objectives and the required statistical analysis for this research study.

4.5 DATA COLLECTION METHOD AND PROCEDURES

The data collection method is a process employed by the researcher to collect or gather data for the research study (Boyce, 2002:544; Walliman, 2016:120). The notion of data collection is to adequately collect raw data from targeted participants to answer research questions to achieve a better understanding and reach a particular research study conclusion (Creswell & Plano Clark, 2018:173). The importance of choosing a suitable data collection method lies in the type of research method adopted to achieve the empirical objectives (Hair *et al*., 2008:140).

Researchers adopt different data collection methods to gather all the information available for research studies. A quantitative data collection method employs observation and questionnaires, whereas a qualitative data collection method employs interviews and action (Leedy & Omrod, 2005). The questionnaire method is cheaper to use in order to gather a large amount of quantitative information than observations and interviews, which may be time-consuming and expensive (Sekaran & Bougie, 2013:147). Sekaran and Bougie (2013:147) also mentioned that electronic questionnaires can be administered through different distribution channels, such as communication and social media platforms. A self-administered questionnaire is a type of questionnaire that participants can complete on their own time without the presence of the researcher (Mitchell & Jolley, 2012:262). Sekaran and Bougie (2013:147) highlighted that the questionnaire method is usually used to collect data from a large, targeted population for the use of a quantitative study. The questionnaire method is an inexpensive alternative to physical or electronic interview methods or observation methods; however, there is a risk of no response from individual employees from the targeted population, which makes it difficult to draw a comprehensive conclusion (Delport & Roestenburg, 2011:188).

This research study used electronic questionnaires as a data collection tool. It was distributed to participants from the top five commercial banks in South Africa, namely ABSA, FNB,

Nedbank, Standard Bank and Capitec Bank. These top five commercial banks were chosen based on their market share, profit maximisation, and number of branches and employees. The use of the questionnaire method is the most appropriate tool to gather information from participants in the sample used from the target population. The target population comprises participants from the top five South African commercial banks. The questionnaire helps collect and filter raw data and answer the research question and primary objective, which is to analyse the influence of people risk and culture risk on risk management in the banking sector. The following section provides in-depth insight into the questionnaire design, format, layout, ethical considerations, pre-testing, and pilot study and administration of the questionnaire.

4.5.1. Questionnaire design

Tan (2018:86) states that a questionnaire is a list of questions or items aimed at gathering information by asking participants questions related to the research study. According to de Vos *et al*. (2011:186), most questionnaires consist of well-organised questions with limited options for answers and ratings and, at times, ask the participants' views to provide reasons or explanations as part of the previous limited answer question. Designing the questionnaire is essential to help the researcher collect accurate data from the participants (Malhotra *et al*., 2012:325). The questionnaire design should portray a positive image to attract participants and provide significant information required for the research study (Ferreira, 2018:100). However, a poorly designed questionnaire may result in reluctance in the eyes of participants (as it is usually not appealing) as it may lead to the provision of inaccurate information (Lacobucci & Churchill, 2010:221). Additionally, a cover letter or introduction is vital in the questionnaire to provide guidelines, objectives of the research study, and reasons for participants to complete the questionnaire as honestly as possible (Monette *et al.*, 2013).

For this research study, the questionnaire was formed from a mixture of questions from previous studies and others adopted from risk management platforms (Newby, 2016; National Treasury of South Africa, 2020). The questionnaire meets all the requirements of this research study for participants in the banking sector. These requirements are not limited to the age, level of education, and work experience of the participants. The questionnaire had an introduction for the participants' attention and described the study's purpose. The introduction highlighted the importance of participants' participation and requested their responses by completing the questionnaire. The questionnaire was designed in plain language that is easy to understand and avoids technical jargon. In order to avoid non-response errors, participants were asked and required to answer all questions in the questionnaire completely. The questionnaire consists of 50 scaled items and could be completed within 15 minutes.

4.5.2. Questionnaire format

The questionnaire format depends on the administration and the target population that will complete the questionnaire (Delport & Roestenburg, 2011:193). The questionnaire format is as important as the content or questions asked of the participants (Babbie & Rubin, 2008). The questionnaire can be in qualitative or quantitative format, where the qualitative (the use of interviews) format entails open-ended questions, whereas the quantitative (the use of scales) format consists of closed-ended questions from predetermined response scales (Parasuraman, 1991:367; Chawla & Sondhi, 2011:179). The use of a questionnaire method involves the target population or participants responding to questions using a rating scale (from strongly disagree to strongly agree) (Creswell & Plano Clark, 2018:179).

For this research study, the chosen questionnaire format is closed-ended questions (i.e., the quantitative method), which uses the structured question format and requires participants to rate their responses according to the questions and scale provided by the researcher. The questionnaire format entails different types of scales that can be used for structured questions. Not every scale is appropriate for all research studies; however, a specific research study should be aligned with a specific rating scale for the questionnaire format. Quinlan *et al.* (2015:105) mentioned four types of rating scales: nominal, ordinal, interval, and ratio level scales, which are presented in Table 4.5 below.

Table 4.5. Rating scales

Scale	Description
Nominal	A nominal scale is a type of scale or data that can be used to spot variables without providing any quantitative measures. This scale cannot be measured, ranked, or organised in any order. Examples include gender, marital status, religion, race, and country of birth.
Ordinal	An ordinal scale can be ranked or compared based on its importance, which entails ranking variables orderly or according to ranking, such as strongly agree to strongly disagree.
Interval	An interval scale consists of both nominal and ordinal characteristics. It is a quantitative scale where comparisons between two variables are meaningful, have an order, and can be ranked. The scale provides a degree of difference between ranked and ordered values.
Ratio level	This type of scale has a true zero or zero origin and is ranked higher or better than all other scales. A true zero on this scale means it has a real meaning for the variables.

Source: Velleman & Wilkinson (1993:66); Welman *et al*. (2005)

Table 4.5 above shows the different rating scales that can be adopted for a research study. According to Rattray and Jones (2007:235), different scales and response styles can be used

when developing a questionnaire to suit a particular study. However, for this research study, both nominal and ordinal rating scales were used. Nominal consists of items that cannot be measured, including demographic factors, whereas ordinal consists of items that can be ranked according to order of importance or significance to achieve specific results (Welman *et al*., 2005).

Furthermore, for this research study, a 6-point Likert scale was implemented for the questionnaire. A Likert scale is an ordinal scale used to assist participants in choosing options that better suit their views, and responses are ranked orderly (Rattray & Jones, 2007:235; Joshi *et al.,* 2015:399). Likert scales also aid in conducting analyses of the participants' responses and grouping them according to their level of importance (Boyle *et al.*, 2015; Joshi *et al.,* 2015:399). All questions in the questionnaire were formed and custom-made to meet the research question and the objectives of this research study.

4.5.3. Questionnaire layout

The layout of a questionnaire is crucial to ensure that the information is collected and captured accurately (Brace, 2018:141). Therefore, it is vital to ensure that the questionnaire is spaced, well-structured, and well-written to make it easy for participants to answer questions (Babbie, 2016:254). A well-presented questionnaire layout attracts participants, and it is important to ensure that the questions are presented orderly (McDaniel & Gates, 2001). Google Forms (e-forms) was used to distribute and collect data through the questionnaire of participants who were not close to the researcher and to avoid physical interaction with participants due to the COVID-19 guidelines on social distancing. Participants from the target population related to the research study were asked specific questions, and the e-form questionnaire was self-administered. Table 4.6 below indicates the layout of the questionnaire used to collect information.

Table 4.6: Layout of the questionnaire

Section	Description	Sources	Objective	Question type and measurements
A	Demographic information (A1 – A10)	Derived from the theory.	To collect background information from participants concerning gender, ethnic group, age, nationalities, educational level, current role, and	Closed-ended questions and responses were provided for participants to select.

Section	Description	Sources	Objective	Question type and measurements
			professional membership.	
B	Operational risk management (B1 – B15)	BCBS (2001), Boyle *et al*. (2015), Newby (2016)	To test the understanding of participants' perception of operational risk management.	Closed-ended questions; 6-point Likert scale [(1) Strongly disagree, (2) disagree, (3) slightly disagree, (4) slightly agree, (5) agree, (6) strongly agree].
C	Culture risk (C1 – C15)	Newby (2016); National Treasury of South Africa (2020)	To determine the perception of culture risk in the banking sector.	
D	People risk (D1 – D15)	Derived from theory, Landy (2016), Evans (2019)	To determine the perception of people risk in the banking sector.	

Source: Author's compilation

4.5.3.1 Section A: Demographic information

Section A consists of demographic questions that help understand and collect participant information about their demographic background. This information includes age, gender, ethnic group, level of education, nationality, number of years of banking experience, current role, risk management frameworks and guidelines that participants are familiar with, and professional membership. This information helps establish whether the demographic background influences people risk and culture risk in the banking sector.

Demographic information was asked, and it was found that there was a difference between demographic groups, which was reported in order to adhere to the Protection of Personal Information Act (POPIA Act). Furthermore, the sources of the questions come from previous studies and the National Treasury of South Africa website focusing on risk management and maturity (BCBS, 2001, National Treasury of South Africa, 2020).

4.5.3.2 Section B: Operational risk and Risk management

Section B consists of self-structured questions based on the theoretical analysis that focused on overall operational risk management in the banking sector, which is outlined in Chapter 2 of the research study. Moreover, this section comprises of 10 operational risk management

and risk management questions (BCBS, 2001; Boyle *et al*., 2015; Newby, 2016). A six-point Likert scale was used that included the following answer options: (1) strongly disagree, (2) disagree, (3) slightly disagree, (4) slightly agree, (5) agree and (6) strongly agree.

4.5.3.3 Section C: Culture risk

Section C consists of self-structured questions based on the theoretical analysis focused on culture risk in the banking sector and is outlined in Chapter 3 of the research study. This section consists of 15 questions focusing on the culture risk in the banking sector (Newby, 2016; National Treasury of South Africa, 2020). Of the 15 questions, 10 were on culture risk, and 5 were related to the COVID-19 pandemic to enable analysis of whether the COVID-19 pandemic influenced culture risk in the banking sector. A six-point Likert scale was used that included the following answer options: (1) strongly disagree, (2) disagree, (3) slightly disagree, (4) slightly agree, (5) agree and (6) strongly agree.

4.5.3.4 Section D: People risk

Section D also includes self-structured questions based on the theoretical analysis of people risk in the banking sector, detailed in Chapter 3 of the research study. This section consists of 15 questions focusing on the people risk in the banking sector (Landy, 2016; Evans, 2019). Of the 15 questions, 10 were related to people risk, and 5 were related to the COVID-19 pandemic to enable analysis of whether the COVID-19 pandemic influenced people risk in the banking sector. A six-point Likert scale was used that included the following answer options: (1) strongly disagree, (2) disagree, (3) slightly disagree, (4) slightly agree, (5) agree and (6) strongly agree.

4.5.4. Ethical considerations

The research study aligns with NWU's academic research and ethical guidelines and principles concerning the gathering of data (NWU, 2016:13). The questionnaire was treated with high confidentiality, and participants were requested not to include their personal information. Participants were not forced, paid or compensated to participate in the questionnaire, as it was voluntary. The researcher received raw and relevant information from the participants with no prior personal knowledge or identification of the participants.

This research study was approved by the Economic and Management Sciences Research Ethics Committee of the Faculty of Economic Sciences of the NWU with the following ethical number: NWU-01273-21-A4. Table 4.7 below indicates the ethical considerations that were followed for this research study:

Table 4.7: Ethical Consideration

Considerations	Description
Voluntary participation	Participants were notified that their participation in the research questionnaire was voluntary and that no participant would be forced to participate in this study. Furthermore, participants were also advised that they were free to decline or withdraw from participating in this research study at any time.
Guaranteed confidentiality and anonymity	Confidentiality is defined as the guarantee that the information provided will remain confidential and will not be made public. Anonymity is defined as a guarantee that participants will remain anonymous or unidentified and that their participation is private in all ways. This was applied by asking participants not to disclose their personal details or any form of identification when completing the questionnaire.
Informed consent	Individual employees in the banking sector gave their consent letter and permission to participate in the research study, and the researcher agreed to keep the confidentiality of the information.
Information truly represented	The information in the questionnaire presented to the participants was true and correct, and there was no deception or misrepresentation of facts. The participants were presented with true, clear, and easy-to-understand information.
True representation of findings	The true representation of the findings means that the research study's results will be made available to the public in research form. The research findings will be presented and reported to the academic research study.
Data management	Information collected electronically using the Google Form (eForms) will be stored in a safe and secure place for five years.

Source: Hakim (2000:143); Struwig & Stead (2001:69); Rubin & Babbie (2005:71); Strydom (2011:119); Quinlan (2011:79)

4.5.5. Questionnaire pilot study

Any research questionnaire (in any field of study) must be pre-tested by a small sample of the target population before distribution to the larger sample (Brace, 2018:163). A pilot study is a pre-test of the measurements, the language used, questions, wording, and error identification of the research study (Reynolds *et al*., 1993:1). Pre-testing is a trial run conducted by the

researcher on a smaller group of individuals or experts in the field to evaluate and identify any mistakes, errors, or unclear questions in the questionnaire before distributing to a larger population (Burgess, 2001:15). Pre-testing is conducted on a newly formulated questionnaire for the new research study (Burgess, 2001:15). Delport and Roestenburg (2011:195) further mentioned that the fundamental purpose of pre-testing is first to improve the design, layout, and content of the data collection tool and secondly to measure the estimated time that individual participants will require to complete the questionnaire.

For this research study, the pilot study was conducted by seven experienced researchers in the field of risk management to identify any errors, concerns, or confusing statements. However, no errors or mistakes were identified during the pre-testing phase.

4.5.6. Administration of the questionnaire

The final questionnaire was distributed to the targeted population in April 2022 after the pre-testing was completed. A sample of 400 participants was used, and the questionnaire took up to 15 minutes to complete. Of the 400 participants, 391 completed the questionnaire, which constituted 97% of the respondents. Moreover, non-probability purposive sampling and the snowball sampling method were adopted to gather information from the sample selected from the top five South African commercial banks. The data collected from the questionnaires were well captured and analysed.

4.6 PRELIMINARY DATA ANALYSIS

Preliminary data analysis involves a process in which raw data is cleaned, prepared, and analysed to avoid errors or flaws and to improve the research design (Creswell & Plano Clark, 2011:240). Preliminary data analysis is based on the notion of transforming and analysing collected data to ensure that it answers the objectives of the research study (Lacobucci & Churchill, 2010:31). Interpretation, assumptions, and data analysis form part of the preliminary data analysis process (Munyai, 2020:74). This process encompasses editing, coding, and tabulating the data to make it clean and easy to analyse using statistical measurements (Cant *et al.*, 2005:188). Subsequently, no errors or mistakes were discovered in the data captured in the questionnaire and electronically coded. Annexure C at the end of the research shows the code book.

4.7 STATISTICAL ANALYSIS

Statistical analysis involves the statistical tools (such as SPSS eViews) that are employed to organise, present, and analyse data in order to make sense of it (Landau & Everitt, 2004:11; Fisher & Marshall, 2008:95). Furthermore, Monette *et al*. (2008:364) and Hinton (2014:7) mentioned that statistical analysis is the process and procedures for analysing, categorising, and summarising quantitative data with the aim of reaching a particular conclusion. This research study analysed quantitative data using SPSS, version 27 for Microsoft Windows (IBM SPSS, 2022). The following section discusses the statistical measures adopted for this research study.

4.7.1. Descriptive statistics

Descriptive statistics is a statistical method that is used to analyse, summarise, describe, and present data to make it easy to understand and interpret (Conner & Johnson, 2017:52). Descriptive statistics are a measure used by researchers to summarise data gathered from a specific population or sample (Holcomb, 2017:2). Mean, median, mode, variance, standard deviation, skewness, and kurtosis are common characteristics of descriptive statistics (Bodie *et al*., 2001:172; Turner & Houle, 2019:301). Table 4.8 briefly describes descriptive statistics:

Table 4.8: Descriptive statistics

Central tendency measurements	
Mean	The numerical value that indicates the average number of the sample.
Median	The numerical value that is in the middle after arranging the data in an orderly manner.
Mode	The numerical value that appears the most within the sample
Dispersion measurements	
Variance	The difference between the data value and the mean of the data
Range	The difference between the highest value and the lowest value.
Standard deviation	The average number of the variable of each score to the mean. It is measured based on the square root of variance.
Shape measurements	
Skewness	Asymmetric measure of the data distribution. The curve is usually skewed to the left or right.
Kurtosis	Measure the flatness or peakedness of the distribution curve.

Source: Fisher & Marshall (2008:95); Babbie (2010:429); Holcomb (2017:43); Turner & Houle (2019:301).

Table 4.8 above describes different types of descriptive statistics that the researcher can employ when analysing quantitative data. Descriptive statistics are also used to convert raw data into meaningful information that contributes towards the research study's conclusion (Fisher & Marshall, 2008:95).

Ordinal and nominal scales were adopted to provide meaningful information for conducting descriptive statistics (Byrne, 2007:36). This research study used ordinal scales such as the range, median, mode and frequency as well as a nominal scale, which includes demographic information such as race and gender (Byrne, 2007:36; Quinlan *et al.,* 2015:107). Ordinal and nominal scales provide important information based on attitudes, choices, and behaviours to which participants responded. However, in this research study, the mean, standard deviation, and variance were calculated using an interval scale.

4.7.2. Inferential statistics

Inferential statistics is the use of statistical measures to gather data from a sample of a target population with the aim of reaching a particular conclusion about the population (Welman *et al*., 2005:236). Furthermore, Quinlan (2011:399) and Zikmund *et al*. (2013b) added that inferential statistics is a tool used to analyse quantitative data to infer, forecast, or make predictions from the subcategories of a sample of the whole population. Inferential statistics are based on the chosen sampling method to give the best representation of the population. Núñez (2007:91) stipulated that the primary purpose of inferential statistics is to assess the probability or improbability of data that the researcher has tendencies to generalise. Table 4.9 below summarises the types of inferential statistics used.

Table 4.9: Types of inferential statistics

Inferential statistics	Description
Chi-square analysis	This statistical tool is concerned with the independence of comparing two variables from a random sample into categories to determine the differences in fitness between expected and observed results and to see if they have a relationship.
T-test	This statistical tool involves measuring whether significant differences exist between the means of two groups or variables with which they may have a relationship. The T-test is also used for hypothesis testing.
Linear regression	This statistical method is used to measure and predict the outcome of a dependent variable based on an independent variable. It is about the relationship between dependent and independent variables along a straight line.
Analysis of Variance (ANOVA)	This statistical tool explores or determines significant differences in arithmetic mean scores on more than two groups of dependent variables.

Inferential statistics	Description
Multiple regression	This statistical method measures and predicts the outcome of one dependent variable based on two or more independent variables. It is also known as an extension of linear regression and is used to determine the variation of the model. The relationship between two variables can be linear or non-linear (dependent and independent variables do not follow a straight line).
Correlation	This statistical tool measures and uses a single number to explain the direction of a relationship between two variables. This measure also predicts the direction in which the dependent variable follows from the independent variable.

Source: Welman *et al*. (2005:236); Bryman (2016:348); Teo (2013:71); Kim (2015:540); Gravetter & Forzano (2016:458); Lee & Peters (2016)

Table 4.9. The above indicates and briefly explains the types of inferential statistics that the researcher could employ in this research study. Inferential statistics help researchers explain a phenomenon by making estimations of the size of a sample from a population (Urdan, 2011:2). Inferential statistics was assumed to ensure that data help with the testing of hypotheses and probabilities (Allua & Thompson, 2009:168). Furthermore, the inferential statistics assisted in analysing whether the collected data produced the correct hypothesis (Kothari, 2004:185; Kumar Sahu *et al.*, 2015:1).

4.7.3. Reliability Analysis

According to Flick (2011:200) and Heale & Twycross (2015:66), reliability is aligned with the consistency of the quantitative results, which prove to be credible and accurate in the measurement. This is done using Cronbach's alpha, which is the method used to measure reliability (Maree & Pietersen, 2007:147). Reliability is the analysis of producing consistent results that are trustworthy and correct in the same environment in terms of representing the population of the research study (Joppe, 2000:1). It is focused on the results of an investigation or research that provides creditable and accurate conclusions (Welman *et al*., 2005:145).

Quinlan (2011:306) emphasised that reliability analysis can be used to test if the results are accurate or have sample errors. Higher reliability arises from the use of measuring instruments that produce the same results even if the results can be tested again using the same sample, while lower reliability arises from inconsistencies from the sampling error (Welman *et al*., 2005:145; Maree & Pietersen, 2007:147). However, reliability can be achieved without random errors in the data. Table 4.10 below shows the types of reliability measures that could be adopted.

Table 4.10: Reliability measures

Measures	Description
Test-retest reliability	This method tests the reliability of the scale or measurements by requiring two separate measurements from the same participants at two different points in time to test the stability measurement.
Alternative form reliability	This method involves measuring the reliability of the measurement or scale that requires two separate measurements from the same participants at two different points in time. This method is similar to the test-retest method.
Internal consistency reliability	This method involves measures of the internal consistency of the results that show how they correlate or relate with each other. This method also uses the reliability of the summated items to form a total scale score. Moreover, this is also called the split-half method, and it is the most straightforward measure of internal consistency reliability.

Source: McDaniel & Gates (2001:254); Lacobucci & Churchill, (2010:259); Malhotra (2010:319); Heale & Twycross (2015:66)

Table 4.10 above shows three different methods to measure the reliability of the results. It is important for researchers to choose a reliable measure suitable for the type of research study. This would also impact the accuracy and completeness of the quantitative data obtained from the target population.

According to Quinlan *et al.* (2015:113) and Golafshani (2003:598), most researchers use internal consistency reliability as it is commonly used and provides more accurate and reliable results when measuring Cronbach's alpha. Cronbach's alpha is presented by α, which is the average of all coefficients divided by half, which is different depending on the scale of items (Bonett & Wright, 2015:3). The α measures the closeness of a group of items when they are together. The α represents the differences between zero, which represents a random error, and one, which does not represent a random error. Furthermore, greater reliability is significant when values are closer to 1 (Quinlan, 2011:401; Tavakol & Dennick, 2011:53).

4.7.4. Validity analysis

The validity of the result implies that the measurement, scale or results reflect reality and the true conclusion of the investigation of a research study (Babbie, 2007:146; Heale & Twycross, 2015:66). Validity is the degree to which quantified results can be validated and produce the correct outcomes that reveal precisely what is happening in an event (Leedy & Omrod, 2005:28). To test the validity of the results, the researcher requires a reliable instrument that will assist in validating the accuracy and correctness of the results (Kimberlin & Winterstein,

2008:2278). There are two types of validity methods (construct and criterion validity) of validity methods that can be used to validate the result. Table 4.11 below briefly explains the two types of validity and the respective sub-measures of each.

Table 4.11: Validity measures

Measures	Description
Construct validity	This validity method involves measuring variables that are supposed to be measured, as it does not only consider validation of the tool used to measure the fundamentals of the tool. Moreover, this method is considered the most challenging validation method as it is also concerned with the tool's accuracy in measuring the variables.
Face validity	This validity method is concerned with measuring what it is supposed to measure or whether the measures are taken at face value. This measure is the most straightforward scientific measure of validity in that it is based on measurement procedures at face value.
Content validity	This validity method measures the degree to which the variables indicate correctly the issue they are supposed to be measuring.
Convergent validity	This validity method is used when measuring variables that are correlated or related to each other with the purpose of measuring theoretical variables in a research study.
Criterion validity	This validity method concerns whether the measure or scale performs according to the criteria set by comparing an external criterion to measure a phenomenon being researched or investigated.
Predictive validity	This criterion validity method concerns self-reporting measures that predict future outcomes.
Concurrent validity	This criterion validity method focuses on self-report measures that correlate and can be assessed simultaneously to prove validity.

Source: Delport & Roestenburg (2011:174); Flick (2011:204); Hair *et al.* (2013:166); Sekaran & Bougie (2013:227); Heale & Twycross (2015:66); Quinlan *et al*. (2015:115)

Table 4.11 above briefly describes the types of validity measures that researchers can choose to validate the results of a research study. Validating research data is crucial and helps to ensure that data gathered from a sample are essential in helping to achieve the intended phenomenon. This will be done by selecting the type of validity method used to validate the questionnaire before distribution to the target population.

The researcher needs to validate the data obtained from the participants using accurate and correct measurement methods. The face validity method was used for this study by distributing

the questionnaire to senior and experienced researchers and study promoters before it was distributed to the target population. This ensured that the results were free of sample errors or errors and contributed to the validity of the study (Flick, 2011:204; Salavati *et al*., 2017:39). Content validity was adopted in the questionnaire to ensure that all theoretical variables were included (Neuman, 2011:214). Moreover, construct validity was utilised to determine the correlation between Cronbach's alpha and inter-item to ensure that causes, effects, and participants are included in the research study to measure what it is supposed to measure. Furthermore, concurrent validity was also used to measure variables that have a relationship concurrently to achieve criterion validity.

4.7.5. Factor Analysis

Factor analysis (FA) was used in this research study. FA is a statistical technique that reduces a large set of variables to a small number to ensure that the information or data is simple and easier to work with (Brown & Moore, 2012:2; Hair *et al.*, 2013). FA comprises Exploratory Factor Analysis (EFA) (variables that have a relationship with any factor) and Confirmatory Factor Analysis (CFA) (which focuses on any variable that correlates to a specific factor by using existing theory) (Brown & Moore, 2012:2). Pallants (2013:185) recommended that a quantitative study have a sample size of at least 150 participants to be able to draw a statistical conclusion from a research study. On the other hand, Malhotra and Birks (1999:120) suggested that a quantitative study should include at least five items as variables for statistical requirements. However, for this research study, FA was applied in Chapter 5 with the required sample size that meets statistical requirements, which consists of 391 participants from the top five South African commercial banks.

4.7.6. Correlation coefficient

A correlation coefficient was adopted for this research study to analyse the quantitative data. Correlation is a statistical method used to analyse how two or more quantitative variables are related (Wetzels & Wagenmakers, 2012:1057). The correlation coefficient is denoted by *r*, which measures the correlation or relationship between two factors and identifies whether there is a positive or negative correlation (Lind *et al*., 2006:375). A positive linear correlation or relationship is shown when $r = 1$ (one variable increases as another variable increases), while a negative linear correlation or relationship is indicated when $r = -1$ (one variable increases as the other decreases) (Pallant, 2020:140). Moreover, $r = 0$ represents no linear correlation or relationship (Bewick *et al.*, 2003:451).

However, various measures can be used for the correlation, including the well-known Pearson's correlation and Spearman's rank-order correlation (Maree, 2012:238–241). Pearson's correlation is used to determine if there is a linear correlation between two variables and works with raw data values (Zhang, 2008:1007). Spearman's rank correlation is also known as the non-parametric version of Pearson's correlation and is based on ranking order (Takeuchi, 2010:1832). Keith (2015:551) highlighted that Spearman's correlation coefficient concerns the strength and direction of two variables that can be ranked on an ordinal scale. The following are used to determine the relationship between variables:

- r = 0.10 to 0.29: Small/weak relationship,
- r = 0.30 to 0.49: Medium relationship and
- r = 0.50 to 1.00: Large/strong relationship.

This research study has applied Pearson's correlation to determine the linear relationship between two or more variables.

4.7.7. Structural Equation Modelling (SEM)

Structural Equation Modelling (SEM), also known as multivariate statistical analysis, was adopted for this research study to assist in achieving the primary objectives. SEM is a statistical modelling tool used to explain the theory of phenomena and establish the theoretical relationships between two or more independent variables (Hair *et al.*, 2008:210; Ullman & Bentler, 2012:661). SEM includes the participation of different statistical tools or techniques (such as EFA) and allows for the determination of relationships between variables (dependent and independent) that can be measured or observed and variables that cannot be measured or observed (Hox & Bechger, 1998:354; Hoyle, 2012:3). According to Urdan (2011:182), SEM helps to evaluate the set of dependent relationships simultaneously and identify how variables can assess and test the fitness of the observed data.

For this research study, the SEM model was used to analyse the structural relationships between variables and latent values (unobserved). Furthermore, it is essential to note that when employing the SEM technique, the relationship between two or more variables will be free of errors based on the model's ability to remove all the mistakes or errors (Hardy & Bryman, 2004:434). According to Bowen and Guo (2011:8) and Malhotra *et al.* (2012:870), the following are the six steps or processes used to perform SEM:

- Define individual constructs;
- Construct and identify measurement model;

- Evaluate measurement model validity;
- Indicate structural model;
- Assess structural model validity and
- Model conclusion and recommendation.

According to Hox and Bechger (1998:361) and Weston and Gore (2006:738), when considering the sample, a sample size of 200 participants is satisfactory for performing multivariate analysis of standard data. In contrast, a sample of at least 400 participants is adequate for non-normal data. Regarding the estimation of maximum likelihood, which involves multivariate normal data, the sample size of 391 participants from the banking sector was considered adequate for conducting SEM using IBM SPSS Version 27 and Amos (IBM SPSS, 2022).

4.7.8. Statistical measures

The following descriptive and inferential statistics used for this research study in order to achieve the empirical objectives are shown in Table 4.12 below:

Table 4.12: Descriptive and inferential statistics adopted.

Objectives	Statistical tools/measures	Coding
Determine the perception of operational risk management practices within the banking sector based on demographic factors.	ANOVA T-test	(B1-B10)
Determine the relationship between people risk, culture risk and risk management during the COVID-19 pandemic.	Correlation	Covid culture risk (C8, 11-15) Covid people risk (C11-15)
Analysing the influence of people risk and culture risk on risk management in the banking sector	Correlation, SEM	C1-C15, D1-D15, B1-B10) (C1-C15, D1-D15, B1-B10) + Demographics

Source: Author's compilation

4.8 SYNOPSIS

Chapter 4 discussed the different research designs and methodologies adopted for the empirical section of this research study. An empirical study is a systematic process in which a researcher collects and analyses data to arrive at a particular conclusion of an investigation or research. However, it is important and helpful for the researcher to comprehensively

understand the research design and methodologies to ensure that the study is accurate and meets the objectives.

This chapter started by describing the research design and methodologies, including research paradigms, research approaches, sampling procedures, data collection methods, and statistical analysis. Different research paradigms and approaches were thoroughly discussed. A positivist research paradigm and the quantitative explanatory research approach were selected as the most appropriate research paradigm.

This research study used a target population of the five largest South African commercial banks for sampling procedures. Different sampling methods were discussed and analysed, and a non-probability purposeful sampling method was selected as the most accurate method, with a sample size of 400.

Quantitative data for this research study was collected from individual employees from the five largest South African commercial banks through a structured and self-administered questionnaire. Before distributing the questionnaire, experts in the study field verified the reliability and tested the validity of the quantitative measures in the questionnaire.

Statistical analysis plays a vital role in a quantitative research study, as it allows raw data to be analysed to make a meaningful interpretation. Statistical analysis measures were also comprehensively discussed in this chapter. Quantitative data was analysed using various statistical measurements or tools, such as descriptive statistics, factor analysis, ANOVA, correlation analysis, and SEM. SEM was adopted to model factors influencing people risk and culture risk in the banking sector.

Furthermore, Chapter 4 reported on the theoretical part of Chapter 5, which will focus on the quantitative analysis of this research study. Chapter 5 reports on the analysis and interpretation of the study results.

CHAPTER 5
STATISTICAL ANALYSIS AND DISCUSSION OF THE RESULTS

5.1. INTRODUCTION

The primary purpose of this chapter is to present the statistical analysis and empirical results of this research study. The primary objective of this research study was to analyse people risk and culture risk in risk management in the banking sector. This chapter interprets the results following the empirical objectives outlined in Chapter 1 of the research study.

- Determine the perception of operational risk management practises within the banking sector based on demographic factors;
- Determine the relationship between people risk, culture risk, and risk management during the COVID-19 pandemic and
- Analyse the influence of people risk and culture risk on risk management in the banking sector.

The next section of this chapter will consist of the statistical results of the empirical objectives mentioned above. Section 5.2 starts with an analysis of demographic information to establish the demographic influence on people risk and culture risk in the banking sector. Section 5.3 follows with descriptive analysis and interpretation of the results. Section 5.4 further discusses the factor analysis (FA) of the research study using questionnaire responses from participants. Section 5.5 focuses on the analysis of variance (ANOVA) test and the T-test adopted to assess significant differences in demographic factors. Section 5.6 provides information on using correlation coefficients to analyse the relationship between variables. Section 5.7 interprets the SEM model to achieve the last empirical objective. Section 5.8 provides a synopsis, which is a summary of the chapter. SPSS, Version 27, was used to analyse the statistical data presented in this chapter.

5.2. ANALYSIS OF DEMOGRAPHICAL INFORMATION

Table 5.1 provides an overview of the demographic information analysis obtained from a sample of 391 participants from the target population in the banking sector. The demographic information of this research study consists of a statistical analysis of gender, ethnic group, nationality, age, educational background, banking experience, current role, employment

status, risk management frameworks, and professional memberships held. Table 5.1. presents the demographic analysis of the sample.

Table 5.1: Descriptive analysis of the sample

Item	Demographic	Category	Frequency	Percentage (%)
1.	Gender	Male	224	57
		Female	167	43
		Others	0	0
2.	Ethnic group	African	219	56
		Coloured	71	18
		Indian	37	9.5
		White	54	14
		Asian	10	2.6
		Others	0	0
3.	Nationality	South African	369	94
		Others	22	5.6
4.	Age	18 - 24	48	12
		25 - 34	189	48
		35 - 49	140	36
		50+	14	3.6
5.	Level of education	Matric	2	0.5
		Higher certificate	6	1.5
		Diploma	40	10
		Undergraduate degree	107	27
		Honours degree	148	38
		Master's degree	83	31
		Doctoral degree	4	1
		Others	1	0.3
6.	Banking experience	Up to 1 year	44	11
		More than 1 year up to 3 years	110	28
		More than 3 years up to 5 years	107	27
		More than 5 years up to 10 years	75	19
		More than 10 years up to 20 years	51	13
		More than 20 years and above	4	1
7.	Current role / position	Junior	114	29
		Supervisor/Coordinator	80	20
		Junior management	67	17
		Middle management	88	23
		Senior management	36	9.2
		Executive management	6	1.5
8.	Employment status	Full-time employment	300	77
		Contract Employment	51	13
		Full-time freelancing	11	2.8

Item	Demographic	Category	Frequency	Percentage (%)
		Graduate / Learnership employment	29	7.4
9.	Risk Management frameworks/guidelines	COSO Framework	277	71
		King III and King IV on Corporate Governance	235	60
		Basel Accords	249	64
		ISO 31000	202	52
10.	Membership holds	IRMSA	129	33
		IIA	62	16
		SAICA	35	9
		CISA	22	6
		Others	87	22

Source: Author's compilation

5.2.1. Gender distribution of participants

Participants were asked to disclose their gender when they completed the research study questionnaire. The gender distribution of the sample comprises 57 per cent of males and 43 per cent of females who participated in the research study.

5.2.2. Ethnic group of participants

Most participants in the sample of the targeted population are African, with 56 per cent, followed by Coloured participants at 18 per cent and White participants at 14 per cent. Indian participants accounted for 9.6 per cent, followed by Asian participants with 2.6 per cent of the sample. However, the distribution for African, Indian and Asians is similar to what South African population is currently.

5.2.3. Age distribution of participants

Participants in the sample, which is the South African banking sector, were asked to choose their age from four age categories. The age categories presented in the questionnaire comprise (i) 18 to 24 years, (ii) 25 to 34 years, (iii) 35 to 47 years, and (iv) 50 years and older. Category (ii) 25–34 years) scored the highest with 48 per cent, followed by category (iii) (35–49 years) with 36 per cent. Category (i) (24 to 24 years) came in third with 12 per cent, and the last is category (iv) (50 years and older), which is sitting at 4 per cent of the sample.

5.2.4. Level of education of participants

Participants were asked to reveal their level of education as one of the demographic questions. Most participants had an honours degree with 38 per cent, followed by a master's degree with

31 per cent and an undergraduate 27 per cent. Participants with a diploma came fourth with 10 per cent, and close to 2.5 per cent of the sample comes from a higher certificate, a doctorate, a matric and other forms of education. This is similar to the banking sector status quo as most employees have honours degree, followed by master's degree and undergraduate degree.

5.2.5. Banking experience of participants

Participants were also asked to indicate the number of banking experiences that they have had to establish their level of understanding of people risk and culture risk. Participants with more than 1 year to 3 years scored the highest number of experiences with 28 per cent, followed by participants with more than 3 years to 5 years' experience, who scored 27 per cent. This was followed by participants with more than 5 years up to 10 years with 19 per cent, which came closer to participants with more than 10 years up to 20 years with 13 per cent and participants with up to 1 year of experience with 11 per cent. The lowest number of banking experience comes from participants over 20 years and older.

5.2.6. Current role/position

For the current role/position held, most participants in this research study were Juniors with 29 per cent, Middle Management with 23 per cent, and Supervisors/Coordinators with 20 per cent. 17 per cent went to junior management, followed by 9 per cent from senior management, and the lowest was 2 per cent, which arises from executive management that participated in this research study.

5.2.7. Employment status

Most participants are full-time employees in the banking sector, with 77 per cent, followed by 13 per cent of contract employees. Fewer participants were hired on graduate/apprenticeship employment, which was 7 per cent, and lastly, 3 per cent of participants were Full-time freelancers in the banking sector. However, the distribution is similar to what the banking sector is currently as more employees are hired on full-time basis.

5.2.8. Risk management framework/guideline

For this section of the risk management framework/guideline, participants were asked to choose more than one framework/guideline so that employees in the South African banking sector may be familiar with more than one framework that has been implemented. 29 per cent of participants are familiar with the COSO framework, followed by 26 per cent who are aware

of the Basel Agreement. King III and King IV on corporate governance came third with 24 per cent, and ISO 31000 with 21 per cent is the least familiar framework to participants. However, the difference in percentages from all the frameworks is clustered, which means that participants may be familiar with a framework/guideline that is not implemented in the current bank. However, the distribution is similar to what the banking sector is currently as more employees are familiar with COSO framework because it is not industry or sector specific. Employees who were previously employed in other sectors are familiar with it.

5.2.9. Membership holds

Due to the nature of the profession in the banking sector, participants were asked to choose more than one professional membership they hold. As a result, one participant may have two professional memberships. A total of 39 per cent of participants hold IRMSA membership, and 26 per cent of participants have other memberships than the ones in the figure below. The IIA is represented by 18 per cent of participants, followed by 10 per cent of SAICA and 7 per cent of CISA. Participants hold a membership different from those mentioned, and the banking sector employees are affiliated with diversified memberships.

5.3. DESCRIPTIVE ANALYSIS AND INTERPRETATION

This section of descriptive statistics provides a snapshot of the descriptive information of the participants from the data sample. It is essential to understand the purpose of descriptive statistics, which is to describe and summarise the collected information from a data sample of the targeted population using a questionnaire (online or physical) (Creswell & Plano Clark, 2011:30). This will help the researcher ensure that the information is presented understandably and simplify the explanation of the data (Fisher & Marshall, 2009:95). Section B of the questionnaire will be interpreted through descriptive and inferential statistics, and this consists of 391 samples from the targeted population. Moreover, Section B uses a 6-point Likert scale to ask participants how likely it is that they understand overall risk management, ranging from strongly disagree (1), disagree (2), slightly disagree (3), slightly agree (4), agree (5) and strongly agree (6). Table 5.2 below shows descriptive statistics from a six-point Likert scale for risk management questions.

Table 5.2: Descriptive statistics of section B – Risk Management

Item	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	Mean	Standard deviation
B1	5 (1.3%)	3 (0.8%)	25 (6.4%)	42 (11%)	113 (29%)	203 (52%)	5.21	1.06
B2	44 (11%)	26 (6.6%)	26 (6.6%)	80 (20%)	101 (26%)	114 (29%)	4.30	1.64
B3	3 (0.8%)	2 (0.5%)	3 (0.8%)	49 (13%)	130 (33%)	204 (52%)	5.34	0.86
B4	8 (2.0%)	3 (0.8%)	11 (2.8%)	65 (17%)	126 (32%)	178 (46%)	5.13	1.06
B5	5 (1.3%)	7 (1.8%)	6 (1.5%)	55 (14%)	125 (32%)	193 (49%)	5.22	1.01
B6	0 (0%)	1 (0.3%)	1 (0.3%)	17 (4.3%)	172 (44%)	200 (51%)	5.46	0.62
B7	1 (0.3%)	2 (0.5%)	5 (1.3%)	23 (5.9%)	173 (44%)	187 (48%)	5.37	0.74
B8	0 (0%)	4 (1.0%)	4 (1.0%)	21 (5.4%)	177 (45%)	185 (47%)	5.37	0.72
B9	3 (0.8%)	7 (1.8%)	10 (2.6%)	62 (16%)	174 (45%)	135 (35%)	5.05	0.94
B10	5 (1.3%)	2 (0.5%)	7 (1.8%)	31 (7.9%)	168 (43%)	178 (46%)	5.27	0.89

Source: Author's compilation

As described in Table 5.2 above, the positive side of the responses on the 6-point Likert scale dominates the negative side, which ultimately means that more participants agreed than disagreed on risk management statements. According to Wan *et al*. (2014:2), the mean value is the average of all values added together. Table 5.2 above further indicates that item B6 (5.46) recorded the highest mean value of all other items. Standard deviation (SD) is the measure of variability in a data set from a mean (Altman & Bland, 2005:331). SD measures how far the values are from the mean. A lower SD value indicates that the data are clustered around the mean, while a higher SD value shows that the data spread out from the mean (Altman & Bland, 2005:331). The highest SD comes from item B2, with 1.64, with most SDs less than 1.00. This shows a greater variation in perception among participants on the risk management questions. This further implied that most participants had a positive perception of the overall risk management in the banking sector.

Section C of the questionnaire asked participants about their perception of culture risk in the banking sector. The aim is to establish the perception of culture risk in the banking sector. The descriptive analysis for Section C is shown in Table 5.3 below.

Table 5.3: Descriptive statistics of section C – Culture risk

Item	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	Mean	Standard deviation
C1	0 (0%)	3 (0.8%)	1 (0.3%)	19 (4.9%)	201 (51%)	167 (43%)	5.35	0.66
C2	1 (0.3%)	0 (0%)	2 (0.5%)	18 (4.6%)	185 (47%)	185 (47%)	5.41	0.65
C3	1 (0.3%)	3 (0.8%)	4 (1.0%)	24 (6.1%)	206 (53%)	153 (39%)	5.28	0.73
C4	1 (0.3%)	3 (0.8%)	5 (1.3%)	33 (8.4%)	204 (52%)	145 (37%)	5.23	0.75
C5	0 (0%)	0 (0%)	2 (0.5%)	14 (3.6%)	140 (36%)	235 (60%)	5.55	0.59
C6	1 (0.3%)	3 (0.8%)	5 (1.3%)	36 (9.2%)	194 (50%)	152 (39%)	5.24	0.77

Item	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	Mean	Standard deviation
C7	0 (0%)	0 (0%)	0 (0%)	7 (1.8%)	129 (33%)	255 (65%)	5.63	0.52
C8	1 (0.3%)	6 (1.5%)	4 (1.0%)	66 (17%)	174 (45%)	140 (36%)	5.11	0.86
C9	2 (0.5%)	7 (1.8%)	2 (0.5%)	38 (9.7%)	197 (50%)	145 (37%)	5.19	0.84
C10	2 (0.5%)	2 (0.5%)	3 (0.8%)	29 (7.4%)	181 (46%)	174 (45%)	5.32	0.76
C11	2 (0.5%)	6 (1.5%)	17 (4.3%)	60 (15%)	157 (40%)	149 (38%)	5.07	0.96
C12	2 (0.5%)	18 (4.6%)	26 (6.6%)	74 (19%)	162 (41%)	109 (28%)	4.80	1.09
C13	3 (0.8%)	14 (3.6%)	30 (7.7%)	59 (15%)	181 (46%)	104 (27%)	4.82	1.07
C14	1 (0.3%)	2 (0.5%)	9 (2.3%)	41 (10%)	205 (52%)	133 (34%)	5.16	0.77
C15	3 (0.8%)	6 (1.5%)	14 (3.6%)	62 (16%)	182 (47%)	124 (32%)	5.01	0.94

Source: Author's compilation

As seen in Table 5.3, the agreeing side has recorded higher values and percentages than the disagreeing side, leading to a mean value of 5 and above in almost all items except for item C12 (4.80) and item C13 (4.82). Regarding the SD, item C12 recorded a higher SD of 1.09, followed by item C13 with 1.07. The rest of the SD items are below 1.00. This suggests that participants had a positive perception of culture risk in the banking sector.

Section D of the questionnaire is concerned with people risk, which is a category of operational risk as defined by Basel (BCBS, 2011:3; Alobaidi & Raweh, 2018:12). This aimed at gathering information about the perception of people risk in the banking sector to establish how likely they agreed with each other from their responses. The descriptive statistics of Section D are shown in Table 5.4 below.

Table 5.4: Descriptive statistics of section D – People risk

Item	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	Mean	Standard deviation
D1	1 (0.3%)	0 (0%)	0 (0%)	13 (3.3%)	175 (45%)	202 (52%)	5.47	0.61
D2	5 (1.3%)	3 (0.8%)	6 (1.5%)	38 (9.7%)	182 (47%)	157 (40%)	5.20	0.89
D3	0 (0%)	4 (1.0%)	3 (0.8%)	27 (6.9%)	179 (46%)	178 (46%)	5.34	0.73
D4	1 (0.3%)	5 (1.3%)	6 (1.5%)	32 (8.2%)	187 (48%)	160 (41%)	5.25	0.81
D5	0 (0%)	0 (0%)	4 (1.0%)	19 (4.9%)	182 (47%)	186 (48%)	5.41	0.63
D6	1 (0.3%)	3 (0.8%)	8 (2.0%)	12 (3.1%)	189 (48%)	178 (46%)	5.35	0.75
D7	1 (0.3%)	0 (0%)	1 (0.3%)	12 (3.1%)	177 (45%)	200 (51%)	5.47	0.61
D8	1 (0.3%)	2 (0.5%)	3 (0.8%)	18 (4.6%)	193 (49%)	174 (45%)	5.36	0.69
D9	1 (0.3%)	0 (0%)	5 (1.3%)	26 (6.6%)	222 (57%)	137 (35%)	5.25	0.67
D10	0 (0%)	0 (0%)	2 (0.5%)	17 (4.3%)	194 (50%)	178 (46%)	5.40	0.60
D12	0 (0%)	1 (0.3%)	10 (2.6%)	31 (7.9%)	193 (49%)	156 (40%)	5.26	0.73

Item	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	Mean	Standard deviation
D12	1 (0.3%)	5 (1.3%)	18 (4.6%)	43 (11%)	212 (54%)	112 (29%)	5.04	0.86
D14	1 (0.3%)	6 (1.5%)	6 (1.5%)	38 (9.7%)	208 (53%)	132 (34%)	5.15	0.81
D15	1 (0.3%)	1 (0.3%)	5 (1.3%)	42 (11%)	210 (54%)	132 (34%)	5.19	0.73

Source: Author's compilation

As seen in Table 5.4 above, most responses from participants stemmed from the agree or positive side of the spectrum. This could mean that participants have a positive perception of the people risk in the banking sector. The mean values of all 15 items are higher than 5, with the highest mean value of 5.47 from both items D1 and D7 of the questionnaire. On the other hand, all SD values from the 15 items are less than 1, with the highest SD of 0.89 coming from item D2 in the table above. A lower value of SD entails that the data is reliable, and participants had a positive perception of people risk in the banking sector. The following section describes the FA of the research study using questionnaire responses from the participants.

5.4. FACTOR ANALYSIS

Factor analysis (FA) is defined as a statistical tool used to simplify and summarise a set of data into a smaller number of variables (Pallants, 2013:185; Kline, 2014:3). Brown and Moore (2012:2) further mentioned that factor analysis is used to describe complicated sets of data through the use of fewer variables. As cited in Chapter 4 (Section 4.7.5), FA consists of two-factor approaches, namely, EFA and CFA, which are both distinguished in the previous. EFA will be applied in this research study to analyse and explore the interrelationships between two or more variables from a set of data variables (Pallant, 2020:188; Malhotra *et al.*, 2012:774). The EFA was applied in Sections B, C, and D of the questionnaire. The following subsections were discussed for the EFA sections.

5.4.1. EFA for Section B – Risk Management

In Section B of the questionnaire, EFA was used to assess the level of participants' understanding of operational risk management in the banking sector. EFA was conducted to validate Section B questions in the questionnaire that were distributed and answered by participants in the banking sector.

Kaiser-Meyer-Olkin (KMO) was adopted to measure the adequacy of the sample, and Bartlett's test of sphericity to ensure that the matrix is different from the identity matrix, and it

is not random (Samuels, 2017:2). To get to the appropriate sampling adequacy for EFA, the KMO test should range between 0.5 and 1 (Field, 2009:660). According to Kaiser (1994:32), Malhotra *et al.* (2012:776), and Watkins (2018:226), KMO values vary from very poor (0 to 0.49), inadequate (0.5 to 0.59), mediocre (0.6 to 0.69), good (0.7 to 0.79), better (0.8 to 0.89), and best (higher than 0.9) for conducting FA. Pallant (2013:185) highlighted that the sample size should be more than 150, and for this research study, the sample size is 391 with three items per variable.

Concerning Table 5.5 below, Bartlett's test of sphericity is at $p<0.05$ (0.825), which represents the minimum requirements for adequate sampling that have been met for this section of the research study (Kaiser, 1994:31). The KMO index for this research study is sitting at 0.824, which implies that the sample is adequate for EFA. As shown in Table 5.5 below, Bartlett's test of sphericity has an approximate Chi-square value of 746.394 with a Degree of Freedom (DF) of 45 and is significant at $p<0.05$. This means that the data is adequate for exploratory factor analysis for Section B of the questionnaire, and there are sufficient relations or correlations in this section.

Table 5.5: KMO and Bartlett's test of sphericity for Section B

KMO and Bartlett's Test		**Section B: Risk Management**
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.824
Bartlett's Test of Sphericity	Approx. Chi-Square	746.394
	Df	45
	Sig.	<0.001

Source: Author's compilation

5.4.1.1. Naming and interpretation of the dimensions for Section B

Table 5.6 below presents two factors extracted for EFA from the pattern matrix in Section B: Risk management. These two factors accounted for 45.735 per cent of the variance for each factor demonstrated for EFA. Mooi *et al.* (2018:278) highlighted that the eigenvalue represents the importance of the direction of the variables. Positive eigenvalues represent a positive direction and relate to the greater importance of the direction of the variables. In contrast, negative eigenvalues represent a negative direction, which aligns with a less critical direction.

Factor 1*,* named **Operational risk management,** consists of five items relating to overall risk management in the banking sector. These items are grouped based on similarities. These items comprise 33.147 per cent of the variance with an eigenvalue of 3.315.

Factor 2, named **Risk management perception,** consists of five items relating to the overall understanding of risk management in the banking sector. These factors hold 45.735 per cent of the variance with 1.259 eigenvalues.

However, B9 in Factor 1 was in Factor 3 from the original table, and it was considered factor loading to 1, which is why it was moved to Factor 1 of the table below. Factor loading greater than 0.5 shows a fair correlation between the factor and the item. Table 5.6 below depicts the pattern matrix for factors in Section B: Risk Management.

Table 5.6: Pattern matrix for Section B: Risk Management

Item	Factors	
	Operational risk management (1)	**Risk management perception (2)**
B3	0.690	
B4	0.631	
B1	0.556	
B2	0.552	
B9	0.535	
B8		0.631
B5		0.630
B6		0.564
B7		0.352
B10		0.336
Eigenvalue	3.315	1.259
% of variance	33.147	12.588
Cumulative %	33.147	45.735

Source: Author's compilation

5.4.1.2. Internal reliability of scale: Section B

To validate internal consistency, which aligns with the reliability of scale measurement in Section B, the Cronbach alpha coefficient was calculated for the two factors: operational risk and risk management. This is to ensure consistency and stability of data measurement to ensure that it is reliable and accurate (Heale & Twycross, 2015:66). As mentioned in Chapter 4, Section 4.7.3, Cronbach's alpha values range between 0 and 1, with higher values leaning closer to 1 (0.8 to 0.9) that are represented by excellent reliability; 0.7 to 0.8 values represent very good reliability; 0.6 to 0.7 values represent good reliability; and values below 0.6 represent poor reliability (Welman *et al*., 2005:145; Maree & Pietersen, 2007:147). The

Cronbach alpha for the calculation of internal reliability for Section B: Operational risk management is demonstrated in Table 5.7 below.

Table 5.7: Reliability scale for Section B: Risk Management

Construct / Factor	Number of items	Cronbach's alpha
Operational Risk Management (1)	5	0.681
Risk management perception (2)	5	0.660

Source: Author's compilation

As seen in Table 5.7 above, **Operational risk management** has achieved 'good reliability' of Cronbach's alpha, which is indicated by 0.681, while **Risk management perception** has also achieved 'good reliability', shown by 0.660. This shows that the factors of Section B exceed the minimum requirement for measuring reliability (Malhotra *et al*., 2017:360). Therefore, it can be concluded that Section B: Risk Management's responses from the questionnaire entail a good internal consistency for reliability.

5.4.2. EFA for Section C – Culture risk

The EFA was conducted in Section C of the questionnaire to understand the general perception of culture risk in the banking sector. Table 5.8 below shows the KMO and Bartlett's test of sphericity for Section C: Culture risk, which has produced good results for this section. Bartlett's test of sphericity is sitting at 0.839, which is higher than the minimum required value of $p<0.05$ to achieve adequate sampling (Field, 2009:660; Watkins, 2018:226). The Bartlett test of sphericity obtained an approximate chi-square statistic of 1565.914 with a DF of 105 and indicates that the null hypothesis is significant at $p<0.05$ (Field, 2009:660). This proves that the variables in Section C of the research questionnaire are related and indicate the suitability of the data for EFA.

Table 5.8: KMO and Bartlett's test of sphericity for Section C: Culture risk

KMO and Bartlett's Test		Section C: Culture risk
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.839
Bartlett's Test of Sphericity	Approx. Chi-Square	1565.914
	df	105
	Sig.	<0.001

Source: Author's compilation

For Section C of the research questionnaire, the KMO index of 0.839 is indicated in Table 5.8 above and falls in the range of 0.8 to 0.89. Samuels (2017:2) indicated that the KMO index should be higher than 0.5 to be appropriate for FA. The KMO for Section C implies that the index is in the 'best' category (0.8 to 0.89), which means that the data are perfectly adequate for conducting FA (Kaiser, 1994:32; Malhotra *et al.*, 2012:776).

5.4.2.1 Naming and interpretation of dimensions in Section C: Culture risk

Table 5.9 below shows a pattern matrix of factors for Section C: Culture risk, indicating four factors with positive eigenvalues. As mentioned in Section B: Risk Management, items in this section produce greater importance direction of the variables of eigenvalues (Mooi *et al.*, 2018:278). All four factors accounted for a total variance of 56.544 per cent for the EFA of culture risk in the banking sector.

Factor 1, named **Causes of culture risk**, comprises six factors relating to the origin or causes of culture risk in the banking sector. These six factors accounted for 29.884 per cent of the total variance and 4.477 of the eigenvalues.

Factor 2 consists of three factors related to the perception of **Culture risk during the COVID-19 pandemic** in the banking sector. These three factors account for 11.911 per cent of the total variance and 1.787 of eigenvalues.

Factor 3 has only two factors related to the **Organisational culture** in the banking sector. These factors are grouped according to their similarities in the participants' responses. These factors have 7.718 per cent of total variance with 1.158 eigenvalues.

Factor 4, named **Culture risk awareness**, has three factors from culture risk in the banking sector based on understanding culture risk awareness. These factors account for 7.070 of the total variances and hold 1.061 of the eigenvalues.

Table 5.9 below indicates the pattern matrix for Section C of the research questionnaire, which concerns culture risk in the banking sector. The table also shows the percentages of variance and eigenvalues for each of these four factors. Factor 1 has more items than Factor 2, Factor 3, and Factor 4. Most items in Factor 4 are greater than 0.5, labelled satisfactory for measuring reliability (Pallant, 2020:201). Peterson (1991:381) highlighted that Nunnally (1967), in an edition of Psychometric Theory, recommended 0.5 as a minimum acceptable range for calculating reliability in the early stages of research. This was further recommended for an increase to 0.7 in 1978 without providing any reason or explanation for the changes (Peterson, 1991:381).

Factor 1 consists of three items (C15: 0.532, C10: 0.506, and C8: 0.504) that are greater than 0.5 and three items (C4: 0.475, C1: 442, and C9: 0.330) that are less than 0.5, as well as Factor 3 with one item (C3:.0707) that is greater than 0.5 and another item (C2: 462) that is less than 0.5. Moreover, Factor 4 consists of three items, of which two (C5:0.685 and C7:0.540) are greater than 0.5, and one (C6:0.346) is less than 0.5. However, factor 2 consists of all items with negative values that do not qualify to be used for reliability, as they are less than the minimum requirement of 0.5 for reliability. All the four factors have an eigenvalue that is greater than 1.0.

Table 5.9: Pattern matrix for Section C: Culture risk

Item	Factors			
	Causes of culture risk (1)	**Culture risk during COVID-19 pandemic (2)**	**Organisational culture (3)**	**Culture risk awareness (4)**
C15	0.533			
C10	0.506			
C8	0.501			
C4	0.477			
C1	0.445			
C9	0.329			
C13		-0.883		
C12		-0.875		
C11		-0.399		
C14		-0.299		
C3			0.720	
C2			0.453	
C5				0.685
C7				0.540
C6				0.346
Eigenvalues	4.477	1.787	1.158	1.061
% of variance	29.884	11.911	7.718	7.070
Cumulative %	29.884	41.755	49.473	56.544

Source: Author’s compilation

5.4.2.2 Internal reliability of Section C: Culture risk

In order to measure and validate the internal reliability of Section C of this research, the Cronbach alpha coefficient was performed for all four factors named: Causes of culture risk, Effects of culture risk, Organisational culture, and Culture risk awareness. This is to analyse the overall perception of culture risk in the banking sector. Table 5.10 shows Cronbach's alpha for Section C: Culture risk.

Table 5.10: Reliability for Section C: Culture risk

Construct / Factors	Number of items	Cronbach's alpha
Causes of culture risk (1)	6	0.717
Culture risk during the COVID-19 pandemic (2)	4	0.777
Organisational culture (3)	2	0.540
Culture risk awareness (4)	3	0.536

Source: Author's compilation

Table 5.10 above demonstrates Cronbach's alpha for factors in Section C, where **Causes of culture risk** sit at 0.717, which shows that it is a 'very good reliability' for this section. **Culture risk during the COVID-19 pandemic** risk obtained a Cronbach's alpha of 0.777. This means that both the **Causes of culture risk** and **Culture risk during the COVID-19 pandemic** show "very good reliability." Both **Organisational culture** and **Culture risk awareness** achieved Cronbach's alphas of 0.540 and 0.536, respectively, which are described as 'poor reliability'. This section further indicates that the responses from the participants are found to have good internal consistency and are deemed reliable.

5.4.3. EFA for Section D – People Risk

The last section of the questionnaire is Section D, which focuses on people risk. EFA was conducted based on Section D of the questionnaire that individual employees in the banking sector voluntarily answered. This section aimed to understand the overall perception of participants on people risk in the banking sector. Bartlett's test of sphericity was conducted for this section in Table 5.9 below, and the results were a good fit as the index was 0.837, which is greater than $p<0.05$. Malhotra *et al*. (2017:714) and Samuels (2017:2) mentioned that any index greater than 0.5 is considered satisfactory for sampling. The approximate chi-square statistic from Bartlett's test of sphericity produced 1525.586 for this section with a DF of 105, which is the same as the one in Section B above. This represents that the null hypothesis is significant at $p<0.05$, and Section D's variances are related to each other and are adequate for performing EFA. Table 5.9 below presents KMO and Bartlett's test for Section D.

Table 5.11: KMO and Bartlett's test of sphericity for Section D: People risk

KMO and Bartlett's Test		Section D: People risk
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.837
Bartlett's Test of Sphericity	Approx. Chi-Square	1525.586
	df	105
	Sig.	<0.001

Source: Author's compilation

The KMO index of 0.837 for Section D, as presented in the above-mentioned Table 5.11, is in the category of 0.8 to 0.89 range, which means it is the "best" category that represents the data as perfect enough for performing EFA (Kaiser, 1994:32).

5.4.3.1 Naming and interpretation of dimensions in Section D: People risk

Table 5.12 below presents the pattern for Section D: People risk, highlighting that all three factors are positive values and show a greater importance direction of eigenvalues. These three factors account for 49.747 per cent of the EFA in the people risk section. The following section consists of three factors from people risk:

Factor 1**,** labelled **Causes of people risk** entails six factors arising from contributing factors of people risk in the banking sector. These factors have a total variance of 29.983 per cent and eigenvalues of 4.497.

Factor 2**,** named **People risk during COVID-19 pandemic,** consists of six factors relating to the COVID-19 pandemic's influence on people risk in the banking sector. These are the results of how the COVID-19 pandemic has impacted the old ways of living, working, and doing business around the globe. These factors constitute 12.073 per cent of the total variance, with an eigenvalue of 1.811.

Factor 3**,** categorised as the **Perception of people risk,** contains three factors related to the perception of people's risk in the banking sector. These three factors consist of 7.960 of the total variances and 1.153 of the eigenvalues.

The pattern matrix for Section D: People risk is indicated in Table 5.12. This table consists of three factors, with two items out of six in Factor 1 being greater than 0.5, which meets the minimum requirement to suitably measure reliability. Both Factor 2 and Factor 3 items are less than 0.5 and are on the negative side, which shows that all these items do not meet the requirements to calculate reliability. All three factors in this section have a positive eigenvalue, contributing to a greater and more critical positive direction (Mooi *et al.*, 2018:278).

Table 5.12: Pattern matrix for Section D: People risk

Items	Factors		
	Causes of people risk (1)	People risk during COVID-19 pandemic (2)	Perception of people risk (3)
D7	0.741		
D6	0.604		
D5	0.393		
D10	0.359		
D2	0.322		
D8	0.314		
D13		-0.733	
D15		-0.622	
D14		-0.628	
D11		-0.623	
D12		-0.565	
D9		-0.293	
D3			-0.803
D4			-0.665
D1			-0.245
Eigenvalue	4.497	1.811	1.153
% of variance	29.983	12.073	7.960
Cumulative %	29.983	42.057	49.747

Source: Author's compilation

5.4.3.2 Internal reliability of Section D: People risk

Cronbach's alpha was conducted in this section for three factors, which are Causes of people risk, People risk during COVID-19 pandemic, and Perception of people risk. This was done to measure the internal consistency of the factors, which is reliability for Section D: People risk. Table 5.13 shows Cronbach's alpha for Section D: People risk.

Table 5.13: Reliability for Section D: People risk

Construct / Factors	Number of items	Cronbach's alpha
Causes of people risk (1)	6	0.715
People risk during COVID-19 pandemic (2)	6	0.779
Perception of people risk (3)	3	0.605

Source: Author's compilation

Table 5.13 above establishes Cronbach's alpha for three factors in Section D: People risk. **Causes of people risk,** and **People risk during COVID-19 pandemic** have both achieved Cronbach's alphas of 0.715 and 0.779, respectively. These two factors are represented by "very good reliability". On the other hand, the **Perception of people risk** attained Cronbach's alpha of 0.605, which is represented by 'good reliability'. In conclusion, this means that Section D: People Risk's responses from the questionnaire have achieved very good internal consistency for measuring reliability.

5.5. HYPOTHESIS TESTING

A hypothesis is a proposed explanation about a population tested using statistical analysis to predict the research outcome (Boyce, 2002:455). It is also known as an unconfirmed answer to the research question before testing or a prediction statement. The following hypotheses aim to accomplish the empirical objectives outlined in Chapter 1 of the research study. The construction of the null hypothesis (accept) and alternative hypothesis (reject) is outlined as follows:

Null Hypothesis (H_{01}): There is no significant relationship between the influence of people risk and risk management in the banking sector.

Alternative Hypothesis (H_{a1}): There is a significant relationship between the influence of people risk and risk management in the banking sector.

Null Hypothesis (H_{02}): There is no significant relationship between the influence of culture risk and risk management in the banking sector.

Alternative Hypothesis (H_{a2}): There is a significant relationship between the influence of culture risk and risk management in the banking sector.

Null hypothesis (Ho3): Participants' demographic factors do not influence risk management in the banking sector.

Alternative hypothesis (H_{a3}): Participants' demographic factors influence risk management in the banking sector.

The following section focuses on the analysis of variance (ANOVA).

5.6. ANALYSIS OF VARIANCE (ANOVA)

Analysis of Variance (ANOVA), as described in Chapter 4, Section 4.7.2, Table 4.10, was adopted for the first empirical objective of the research study. The objective was to see if there was a statistically significant difference in participants' operational risk management perception based on their demographic factors. Furthermore, the T-test was also implemented for this objective to analyse the participants' perceptions of operational risk management based on gender.

5.6.1. Determine the perception of operational risk management practices within the banking sector based on demographic factors

ANOVA is done by evaluating the significance of the tested variables and adopting F-statistics to determine if all variables have the same mean score (Marczyk *et al*., 2005:198; Nasir *et al*., 2011:1128). ANOVA tests can be performed using two different approaches: one-way ANOVA and n-way ANOVA. According to Malhotra (2010:531), one-way ANOVA consists of one independent variable, whereas n-way ANOVA uses two or more independent variables. However, this section of the research study adopted a one-way ANOVA for (age, ethnic group, employment position and position or role held) and a T-test for gender to determine the perception of operational risk management and risk management perception based on demographics. Cohen (1988:284) established the following guidelines for calculating and interpreting the effect sizes:

- 0.01 = Small effect,
- 0.06 = Medium effect, and
- 0.140 = Large effect.

5.6.1.1 Age comparison for operational risk management and risk management perception

This section discusses ANOVA on age groups. Table 5.14 shows a statistically significant difference in Operational Risk Management between the different age groups, which means that some age groups differed in their responses compared to the other age groups with f = 5.2958, p = 0.007, and eta size = 0.030. However, the actual difference in the mean scores was very small compared to the mean scores in Table 5.14 below, which shows the mean scores for age groups 18 to 24 years (5.2958), 25 to 34 years (4.8942), 35 to 49 years (5.0529), and 50 years and above (5.0429).

The eta squared of 0.030 proved that the effect size is very small. Moreover, a Post Hoc test was performed for multiple comparisons and showed a mean difference of 0.40165 between

age groups 18 to 24 years and 25 to 34 years, which means there was a difference in means between these age groups for Operational Risk Management.

Tables 5:14: Analysis of Variance for age

Variables	Age Group	N	Mean	Std. Deviation	Welch p-value	Eta squared
Operational Risk Management	18 to 24 years	48	5.2958*	0.64179	0.007	0.030
	25 to 34 years	189	4.8942*	0.79186		
	35 to 49 years	140	5.0529	0.72870		
	50 years and above	14	5.0429	0.70243		
	Total	391	5.0056	0.75818		
Risk Management perception	18 to 24 years	48	5.1792	0.74860	0.013	0.030
	25 to 34 years	189	5.2963	0.54288		
	35 to 49 years	140	5.4229	0.37939		
	50 years and above	14	5.5571	0.42375		
	Total	391	5.3366	0.52454		
Causes of Culture Risk	18 to 24 years	48	5.3854*	0.39822	0.001	0.039
	25 to 34 years	189	5.1076*	0.51273		
	35 to 49 years	140	5.2464	0.54291		
	50 years and above	14	5.3929	0.46043		
	Total	391	5.2016	0.51811		
Culture Risk during the COVID-19 Pandemic	18 to 24 years	48	5.1458*	0.67405	0.003	0.039
	25 to 34 years	189	4.8148*	0.80315		
	35 to 49 years	140	5.1089*	0.65715		
	50 years and above	14	4.9286	1.03044		
	Total	391	4.9648	0.75990		

Variables	Age Group	N	Mean	Std. Deviation	Welch p-value	Eta squared
Organisational Culture	18 to 24 years	48	5.4063	0.57108	0.227	0.009
	25 to 34 years	189	5.3095	0.53417		
	35 to 49 years	140	5.3393	0.61827		
	50 years and above	14	5.5714	0.47463		
	Total	391	5.3414	0.56878		
Culture Risk Awareness	18 to 24 years	48	5.5694	0.42919	0.048	0.021
	25 to 34 years	189	5.4109	0.47995		
	35 to 49 years	140	5.5190	0.43299		
	50 years and above	14	5.5952	0.35030		
	Total	391	5.4757	0.45657		
Causes of People Risk	18 to 24 years	48	5.4167	0.38130	0.0332	0.009
	25 to 34 years	189	5.3245	0.48278		
	35 to 49 years	140	5.4048	0.40488		
	50 years and above	14	5.2976	0.65430		
	Total	391	5.3636	0.45213		
People Risk during COVID-19 Pandemic	18 to 24 years	48	5.2153	0.60724	0.0392	0.007
	25 to 34 years	189	5.1129	0.56117		
	35 to 49 years	140	5.1750	0.45996		
	50 years and above	14	5.2857	0.42077		
	Total	391	5.1539	0.52878		
Perception of People Risk	18 to 24 years	48	5.4792	0.42890	0.241	0.008
	25 to 34 years	189	5.3351	0.53649		
	35 to 49 years	140	5.3333	0.57666		
	50 years and above	14	5.3810	0.45021		

Variables	Age Group	N	Mean	Std. Deviation	Welch p-value	Eta squared
	Total	391	5.3538	0.53709		
*Significant difference						

Source: Author's compilation

Regarding the Causes of Culture Risk, there is a statistically significant difference for the different age groups, where *f* = 5.3854, p = 0.001, and eta squared = 0.039. This further shows that the mean score difference was very small compared to the mean scores of different age groups, as shown in Table 5.13. Thus, this indicates that the eta squared shows a small effect size of 0.039. A Post Hoc test was adopted to conduct a multiple comparison, showing a mean difference of 0.27783 between age groups 18 to 24 years and 25 to 34 years. It can be concluded that there was a statistically significant difference between the age groups 18 to 24 years and 25 to 34 years for the Causes of Culture Risk variable.

Culture Risk during the COVID-19 pandemic entails a statistically significant difference in mean scores of different age groups. It has produced *f* = 5.1458, p = 0.03, and the eta size = 0.039, indicating a very small effect size. A Post Hoc test shows a mean difference of 0.33102 between the age categories of 18 to 24 years and 25 to 34 years. It can be concluded that there was a statistically significant difference between the age groups of 18 to 24 years and 25 to 34 years for Culture Risk during the COVID-19 pandemic. Furthermore, A Post Hoc further shows a 0.29411 mean difference between the age groups 35 to 49 years and 25 to 34 years, which proves that there was a statistically significant difference between age groups 35 to 49 years and 25 to 34 years for Culture Risk during the COVID-19 pandemic.

However, factors such as Risk Management Perception, Organisational Culture, Culture Risk Awareness, Causes of People Risk, People Risk during COVID-19 pandemic, and Perception of People Risk did not show statistically significant differences. The next subsection focuses on ethnic group comparison.

5.6.1.2. Ethnic group comparison for operational risk management and risk management perception

This section discusses ANOVA based on the ethnic group comparison. As described in Table 5.15 below, Operational Risk Management shows a statistically significant difference between different ethnic groups, which shows that some ethnic groups are reliably different from others. This includes *f* = 5.260, p = 0.000, and eta squared = 0.031. The difference is very small, with an eta squared of 0.031, indicating a small effect size. In addition, a Post Hoc test was conducted for multiple comparisons, and it showed a mean difference of 0.3312 between

Asians and Africans, a mean difference of 0.37934 between Indians and Africans and a mean difference of 0.37571 between Indians and Coloured. It can be concluded that there is a statistically significant difference between Asians and Africans, between Indians and African ethnic groups, and between Indians and Coloured ethnic groups for the Operational Risk Management variable.

Table 5.15: Analysis of Variance for ethnic group

Variables	Ethnic group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
Operational Risk Management	African	219	4.9288**	0.80801	0.000	0.031
	Asian	10	5.2600*	0.23190		
	Coloured	71	4.9324*	0.84714		
	Indian	37	5.3081**	0.46090		
	White	54	5.1593	0.55814		
	Total	391	5.0056	0.75818		
Risk Management	African	219	5.3105	0.57248	0.141	0.012
	Asian	10	5.3600	0.24585		
	Coloured	71	5.3099	0.49660		
	Indian	37	5.5027	0.38187		
	White	54	5.3593	0.46683		
	Total	391	5.3366	0.52454		
Causes of Culture Risk	African	219	5.1058***	0.59354	0.001	0.047
	Asian	10	5.2667	0.27442		
	Coloured	71	5.2864*	0.39760		
	Indian	37	5.3964*	0.38158		
	White	54	5.3333*	0.33646		
	Total	391	5.2016	0.51811		
Culture Risk during COVID-19 pandemic	African	219	4.8390**	0.81031	0.000	0.058
	Asian	10	5.0250	0.72121		
	Coloured	71	4.9331**	0.69302		
	Indian	37	5.3243**	0.54602		
	White	54	5.2593**	0.61422		
	Total	391	4.9648	0.75990		
Organisational Culture	African	219	5.3470	0.61936	0.357	0.008
	Asian	10	5.2500	0.58926		
	Coloured	71	5.2887	0.52551		

Variables	Ethnic group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
	Indian	37	5.4730	0.42403		
	White	54	5.3148	0.48851		
	Total	391	5.3414	0.56878		
Culture Risk Awareness	African	219	5.4429	0.49787	0.140	0.014
	Asian	10	5.4000	0.26294		
	Coloured	71	5.4695	0.42753		
	Indian	37	5.5405	0.38771		
	White	54	5.5864	0.37161		
	Total	391	5.4757	0.45657		
Causes of People Risk	African	219	5.3135	0.51592	0.171	0.016
	Asian	10	5.4333	0.29606		
	Coloured	71	5.4249	0.35500		
	Indian	37	5.4459	0.35585		
	White	54	5.4167	0.34378		
	Total	391	5.3636	0.45213		
People Risk during COVID-19 pandemic	African	219	5.1393*	0.57736	0.004	0.031
	Asian	10	5.0500	0.45846		
	Coloured	71	5.0305*	0.47418		
	Indian	37	5.3694**	0.40471		
	White	54	5.2469	0.42181		
	Total	391	5.1539	0.52878		
Perception of People Risk	African	219	5.3059	0.58198	0.115	0.016
	Asian	10	5.2667	0.21082		
	Coloured	71	5.4648	0.51170		
	Indian	37	5.4505	0.47930		
	White	54	5.3519	0.43155		
	Total	391	5.3538	0.53709		
*Significant difference						

Source: Author's compilation

Table 5.15 above in the Causes of Culture Risk variable shows that there are statistically significant differences between different ethnic groups, with f = 5.3099, p = 0.001, and eta squared = 0.047. The difference in means was found to have a very small effect. A Post Hoc test presented a three-mean difference between Africans and the following ethnic group:

Coloured with 0.18060, Indians with 0.29062, and White with 0.22755. This implies a statistically significant difference between Africans and Coloured, Indians, and White ethnic groups for the Causes of Culture Risk variable. These further suggest that these ethnic groups' responses are unlikely to be similar as Africans answered differently from Coloured, Indians and Whites. This may be as result that different ethnic groups had different perceptions about operational risk and risk management.

Concerning Culture Risk during the COVID-19 pandemic, Table 5.15 shows that there are statistically significant differences between different ethnic groups. Table 5.15 further indicates $f = 5.3243$, $p = 0.000$, and eta squared = 0.058, showing a relatively small effect size. A Post Hoc test presented a mean difference between the Indian and the following ethnic groups: African (0.48528) and Coloured (0.39123). Furthermore, there is a mean difference between White and African (0.42022) and White and Coloured (0.32616) individuals. These mean differences proved to show a statistically significant difference between the ethnic groups of Indian, African, Coloured and White for the culture risk during the COVID-19 pandemic variable.

Table 5.15 reveals a statistically significant difference between different ethnic groups and provides a $f = 5.3243$ with a $p = 0.000$ and an eta squared of 0.058 for People Risk during COVID-19 pandemic variable. The difference is very small as it has not exceeded the small effect size. A Post Hoc test revealed a mean difference between Indians and the following ethnic groups: Africans (0.23101) and Coloured (0.33885). As a result, there was a statistically significant difference between the Indian, African, and Coloured ethnic groups. This proves that these different ethnic groups responded differently to each other in the questionnaire provided for People Risk during COVID-19 pandemic variable. This is a result that different ethnic groups have different perceptions regarding People Risk during COVID-19 pandemic, and were also discussed in Chapter 3, Section 3.3.2.

Interestingly, individuals of different ages and genders do not view risk management differently. Each group had very high mean values in each case, indicating their strong perception of risk management. Further, Organisational Culture, Culture Risk Awareness, Causes of People Risk and Perception of People Risk showed no signs of statistically significant differences between the groups, yet all categories indicated high mean values. The next subsection focuses on types of employment.

5.6.1.3. Types of employment comparison for operational risk management and risk management perception

This section discusses ANOVA based on types of employment groups. Table 5.16 below indicates that Operational Risk Management had a statistically significant difference between different types of employment groups with an *f* = 5.2471, p = 0.015, and eta squared = 0.025, indicating a small effect size. A Post Hoc test indicates a mean difference of 0.68342 between contract and full-time freelancing employment. This declares that contract and full-time freelancing employment differed in operational risk management and risk management perception.

Table 5.16: Analysis of Variance for types of employment

Variables	Types of employment group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
Operational Risk Management	Contract employment	51	5.2471*	0.70039	0.015	0.025
	Full-time employment	300	4.9727	0.76402		
	Full-time freelancing	11	4.5636*	0.63130		
	Graduate / learnership employment	29	5.0897	0.74371		
	Total	391	5.0056	0.75818		
Risk Management Perception	Contract employment	51	5.4667**	0.61014	0.001	0.047
	Full-time employment	300	5.3567*	0.46853		
	Full-time freelancing	11	5.0727**	0.24121		
	Graduate / learnership employment	29	5.0000*	0.78921		
	Total	391	5.3366	0.52454		
Causes of Culture Risk	Contract employment	51	5.2353	0.65505	0.007	0.012
	Full-time employment	300	5.1900	0.50985		
	Full-time freelancing	11	4.9848*	0.22918		
	Graduate / learnership employment	29	5.3448*	0.36713		
	Total	391	5.2016	0.51811		
Culture Risk during the COVID-19 pandemic	Contract employment	51	5.2255*	0.56404	0.007	0.021
	Full-time employment	300	4.9242*	0.79864		
	Full-time freelancing	11	4.7273*	0.45352		

Variables	Types of employment group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
	Graduate / learnership employment	29	5.0172	0.65100		
	Total	391	4.9648	0.75990		
Organisational Culture	Contract employment	51	5.4510	0.57667	0.103	0.019
	Full-time employment	300	5.3483	0.55725		
	Full-time freelancing	11	5.0000	0.59161		
	Graduate / learnership employment	29	5.2069	0.61987		
	Total	391	5.3414	0.56878		
Culture Risk Awareness	Contract employment	51	5.5033	0.50935	0.793	0.002
	Full-time employment	300	5.4722	0.45818		
	Full-time freelancing	11	5.3939	0.29129		
	Graduate / learnership employment	29	5.4943	0.40454		
	Total	391	5.4757	0.45657		
Causes of People Risk	Contract 3mployment	51	5.4085	0.42598	0.425	0.005
	Full-time employment	300	5.3528	0.46912		
	Full-time freelancing	11	5.2576	0.41072		
	Graduate / learnership employment	29	5.4368	0.31312		
	Total	391	5.3636	0.45213		
People Risk during COVID-19 pandemic	Contract employment	51	5.1307	0.55809	0.632	0.005
	Full-time employment	300	5.1550	0.52630		
	Full-time freelancing	11	5.0000	0.55777		
	Graduate / learnership employment	29	5.2414	0.50116		
	Total	391	5.1539	0.52878		
Perception of People Risk	Contract employment	29	5.2941	0.59122	0.531	0.006
	Full-time employment	391	5.3500	0.53362		
	Full-time freelancing	51	5.4545	0.45394		
	Graduate / learnership employment	300	5.4598	0.50720		

Variables	Types of employment group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
	Total	29	5.3538	0.53709		
*Significant difference						

Source: Author's compilation

The Risk Management Perception variable suggests a statistically significant difference between different types of employment groups with *f* = 5.4667, p = 0.001 and eta squared of 0.047, which indicates a very small effect size. A Post Host test depicts a mean difference between contract employment and the following: full-time freelancing with 0.39394 and graduate/ learnership employment with 0.46667. Furthermore, there is a mean difference of 0.28394 between full-time and freelancing employment. It can be concluded that there is a statistically significant difference between contract employment, full-time freelancing employment, graduate/learnership employment, and full-time employment for the Risk Management Perception variable.

In addition, causes of culture risk show a statistically significant difference between different types of employment groups, with f = 5.3448, p = 0.007, and an eta squared of 0.012 that indicates a relatively small effect size. A Post Hoc test presented a mean difference of 0.35995 between graduate/learnership employment and full-time freelancing employment. It can be concluded that there is a statistically significant difference between how graduate or learnership employment and full-time freelancing employment view the Causes of Culture Risk.

Table 5.16 demonstrates statistically significant differences between the different types of employment groups regarding Culture Risk during the COVID-19 pandemic with f = 5.2255 and p = 0.007. Cohen (1988:284) noted that an eta squared of 0.021 indicates a relatively small effect size. For the Culture Risk during the COVID-19 pandemic variable, a Post Hoc test revealed a mean difference between contract and full-time freelancing employment of 0.49822, indicating a statistically significant difference between these two factors. It can be concluded that the participants in contract employment provided the highest mean value in their responses which were significantly different from those of the participants in full-time freelance employment regarding the perception of culture risk during COVID-19.

Consequently, the following variables: Organisational Culture, Culture Risk Awareness, Causes of People Risk, People Risk during COVID-19 pandemic and Perception of People Risk indicated no statistically significant difference. The following subsection contains levels of positions.

5.6.1.4. Current role or position comparison for operational risk management and risk management perception

This section discusses ANOVA for the current role or position group. According to Table 5.17 below, the Risk Management Perception variable presents a statistically significant difference between different positions or roles with f = 5.5500, p = 0.030 and eta squared of 0.026, indicating a relatively small effect size. A Post Hoc test was performed for multiple comparisons, indicating a mean difference of 0.29912 between senior management and junior management roles. However, this means that there is a statistically significant difference between senior management and junior management roles for the Risk Management Perception variable.

Table 5.17: Analysis of Variance for current role or position

Variables	Current role / position group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
Operational Risk Management	Junior	114	5.0912	0.73262	0.369	0.013
	Junior management	67	5.0627	0.66352		
	Middle management	88	5.0318	0.69208		
	Senior management	36	4.9778	0.86425		
	Supervisor / coordinator	80	4.8575	0.84924		
	Total	385	5.0135	0.75237		
Risk Management Perception	Junior	114	5.2509*	0.64069	0.030	0.026
	Junior management	67	5.3701*	0.52484		
	Middle management	88	5.3682	0.37739		
	Senior management	36	5.5500	0.45198		
	Supervisor / coordinator	80	5.2925	0.49600		
	Total	385	5.3351	0.52623		
Causes of Culture Risk	Junior	114	5.1681	0.54516	0.794	0.006
	Junior management	67	5.1667	0.51411		
	Middle management	88	5.2254	0.41217		
	Senior management	36	5.2963	0.72387		
	Supervisor / coordinator	80	5.2146	0.48260		
	Total	385	5.2026	0.51826		
Culture Risk during	Junior	114	4.9057	0.76669	0.458	0.011
	Junior management	67	4.8955	0.81085		

Variables	Current role / position group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
COVID-19 pandemic	Middle management	88	5.0227	0.62587		
	Senior management	36	5.1597	0.88671		
	Supervisor / coordinator	80	4.9938	0.73452		
	Total	385	4.9727	0.75080		
Organisational Culture	Junior	114	5.2982	0.62301	0.709	0.006
	Junior management	67	5.3433	0.49397		
	Middle management	88	5.3239	0.60667		
	Senior management	36	5.4583	0.59010		
	Supervisor / coordinator	80	5.3625	0.49667		
	Total	385	5.3403	0.56923		
Culture Risk Awareness	Junior	114	5.5146	0.46328	0.068	0.020
	Junior management	67	5.4627	0.49901		
	Middle management	88	5.3977	0.44595		
	Senior management	36	5.6204	0.39160		
	Supervisor / coordinator	80	5.4375	0.44562		
	Total	385	5.4727	0.45823		
Causes of People Risk	Junior	114	5.4620*	0.40464	0.029	0.029
	Junior management	67	5.3632	0.48193		
	Middle management	88	5.2557*	0.47743		
	Senior management	36	5.4028	0.47371		
	Supervisor / coordinator	80	5.3500	0.37559		
	Total	385	5.3688	0.44149		
People Risk during COVID-19 pandemic	Junior	114	5.2135	0.57329	0.251	0.014
	Junior management	67	5.0945	0.56125		
	Middle management	88	5.0795	0.46867		
	Senior management	36	5.2593	0.53814		
	Supervisor / coordinator	80	5.1458	0.49496		
	Total	385	5.1524	0.53048		
Perception of People Risk	Junior	114	5.3977	0.54290	0.070	0.022
	Junior management	67	5.2388	0.64303		

Variables	Current role / position group	N	Mean	Std. Deviation	Welch P-Values	Eta squared
	Middle management	88	5.2765	0.44699		
	Senior management	36	5.3981	0.62650		
	Supervisor / coordinator	80	5.4500	0.47468		
	Total	385	5.3532	0.53996		
*Significant difference						

Source: Author's compilation

Regarding Causes of People Risk, statistically significant differences exist between different positions or roles with a $f = 5.4620$, $p = 0.029$, and eta squared = 0.029. There is a relatively small difference, as the eta squared shows a small effect size of 0.029. A Post Hoc test shows a mean difference of 0.20631 between junior and middle management roles. However, this means that there is a statistically significant difference between junior and middle management roles for the Causes of People Risk variable.

It can be concluded that the following variables, Operational Risk Management, Causes of Culture Risk, Culture Risk during the COVID-19 pandemic, Organisational Culture, Culture Risk Awareness, People Risk during COVID-19 pandemic and Perception of People Risk showed no signs of statistically significant differences. The next subsection focuses on the T-test adopted to help achieve the first objective of this research study.

5.6.1.5. T-test for gender comparison of the perception of operational risk management and risk management

In order to determine the perception of operational risk management and risk management perception based on gender, an independent sample was adopted to assist with the T-test. T-test forms part of the inferential statistical approach adopted to analyse the gender variable from the demographic factor. T-test is a statistical method that can be used to compare two or more groups that produce different mean scores on a continuous variable (Welman *et al*., 2005:237). However, a higher mean value indicates a strong participant's perception of operational risk management and risk management perception. In contrast, a lower mean value represents a lower participant's perception of operational risk management and risk management perception (Gravetter & Wallnau, 2014:281).

According to Levene (1960:292), Levene's test checks the equality of variance of all samples. The test assumes that an independent sample of two mean values is similar. The null hypothesis (H_0) indicates that the mean values for both genders are similar. On the other

hand, the alternative hypothesis (Ha) states that the mean values for both genders will likely differ according to the participants' perceptions. Cohen (1988:284) effect sizes were adopted to assess the difference between the mean values. The following are the effect sizes used for guidelines and interpretation of the T-test:

- 0.20 = Small effect
- 0.50 = Medium effect
- 0.80 = Large effect

Table 5.18: T-test analysis for gender

Variables	Gender	N	Mean	SD	t	df	Sig.	Mean difference	Effect size
Operational risk Management	Male	224	4.93	0.783	-2.203	373.38	0.026	-0.170	0.225
	Female	167	5.10	0.715	-2.233				
Risk Management perception	Male	224	5.28	0.518	-2.311	354.98	0.022	-0.123	0.236
	Female	167	5.41	0.535	-2.306				
*Statistically significant at the 0.05 level (2-tailed)									

Source: Author’s compilation

As shown in Table 5.18 above, a statistically significant difference exists between gender and the operational risk management variable where $p = 0.025 < 0.05$ and between gender and the risk management perception variable where $p = 0.022 < 0.05$. It can be concluded that the null hypothesis (Ho1) can be rejected, and the alternative null hypothesis (Ha1) can be accepted at a statistically significant level of $p = 0.05$. Therefore, gender differences in operational risk management and risk management perception are statistically significant where $p < 0.05$. This was also mentioned in Section 3.3.1, which was about operational risk management and risk management perception, and it was noted that these two variables affect one another, and the data is more reliable (Vasvári, 2015).

Table 5.18 also shows the operational risk management mean value for males of 4.93 and the mean for females of 5.10. This indicates that females have higher propensities on operational risk management than males. As a guideline from Cohen (1988:284), the effect sizes depict 0.225, which signifies a small effect size between males and females. Moreover, for risk

management perception, the mean for males is 5.28, and the mean for females is 5.41. The mean value for females is higher than that for males, which is similar to the operational risk management variable above. This also means that females have higher propensities on risk management perception than males. The effect size is 0.236, implying a small effect size between males and females. The next section of this chapter focuses on the correlation, which analyses the relationships between the variables.

5.7. CORRELATION

The correlation analysis, as explained in Section 4.7.3 of Chapter 4, was adopted to address the empirical objectives set in Chapter 1 for this research study by measuring the relationship between variables. Since various correlation analyses (Pearson's and Spearman's correlations) can be used, Pearson's correlation analysis was applied for this research study to determine the relationship between people risk, culture risk and risk management during the COVID-19 pandemic.

As detailed in Chapter 4, Pearson's correlation determines the linear relationship between two or more variables from quantitative data (Zhang, 2008:1007). Pearson's correlation values range from -1 (linear negative relationship) to 1 (linear positive relationship) to determine the strength and direction of variables, with 0 indicating no correlation (Pallant, 2020:140). The following are the general statistical guidelines adopted to evaluate the correlation between variables.

- r = 0.10 to 0.29: Small/weak relationship,
- r = 0.30 to 0.49: Medium relationship and
- r = 0.50 to 1.00: Large/strong relationship.

This would assist in indicating the strength and direction between two or more variables when determining the relationship.

5.7.1. Determine the relationship between people risk, culture risk and risk management during COVID-19 pandemic

This second objective of the research study is based on conducting a correlation analysis to determine the relationship between two or more variables. Table 5.19 below demonstrates the correlation to determine the relationship between people risk, culture risk and risk management during the COVID-19 pandemic. This section uses the following general statistical guidelines for correlation:

- r = 0.10 to 0.29: Small/weak relationship,

- r = 0.30 to 0.49: Medium relationship and
- r = 0.50 to 1.00: Large/strong relationship.

Table 5.19: Correlation for the second objective

Items	Correlation Coefficient	Culture risk during the COVID-19 pandemic	People risk during COVID-19 pandemic	Operational Risk Management
Operational Risk Management	Pearson's correlation	0.434**	0.338**	1
	Sig. (2-tailed)	<0.000	<0.000	<0.000
	N	391	391	391
Risk Management Perception	Pearson's correlation	0.307**	0.271**	0.466**
	Sig. (2-tailed)	<0.000	<0.000	<0.000
	N	391	391	391
** Correlation is significant at a 0.01 level (2–tailed) * Correlation is significant at a 0.05 level (2–tailed) N = 391				

Source: Author's compilation

Operational Risk Management

Table 5.19 above shows the correlation coefficient between operational risk management and culture risk during the COVID-19 pandemic, which is indicated by r = 0.434, p<0.000. A medium positive linear relationship exists between operational risk management and culture risk during the COVID-19 pandemic since r = 0.434 is between r = 0.30 and 0.49 of the general guidelines. As the understanding of participants' perceptions of operational risk increases, the perception of culture risk during the COVID-19 pandemic also increases.

Operational risk management and people risk during COVID-19 pandemic have obtained r = 0.338, with a p<0.000. This correlation of r = 0.338 lies within r = 0.30 to 0.49 of the general guidelines for measuring a relationship between variables. Furthermore, this correlation indicates a medium positive linear relationship between operational risk management and people risk during COVID-19 pandemic. As the understanding of participants' perceptions of operational risk improves, so does their perception of people risk during COVID-19 pandemic.

Risk Management Perception

The relationship between the dependent variable risk management perception and culture risk during the COVID-19 pandemic is represented by r = 0.307 at p<0.000. This shows that the correlation between these two variables is between r = 0.30 to 0.49, indicating a medium positive linear relationship between risk management perception and culture risk during the

COVID-19 pandemic. As the understanding of participants' risk management perception increases, the perception of culture risk during the COVID-19 pandemic increases.

Risk management perception and people risk during COVID-19 pandemic correlation is reported at $r = 0.271$, where $p<0.000$. The correlation between these two variables is shown to be between $r = 0.10$ and 0.29 in the general guidelines, which is stated as a weak or small relationship. This implies a weak linear positive relationship between risk management perception and people risk during COVID-19 pandemic. When participants' risk management perception improves, so does their perception of people risk during COVID-19 pandemic.

The correlation between risk management perception and operational risk management is labelled $r = 0.466$, where $p<0.000$. This shows a medium positive linear relationship between these two variables, as the correlation is within $r = 0.30$ to 0.49, termed a medium relationship. This further means that when risk management perception is understood, it will spill over positively to operational risk management. For this objective, it can be comprehensively concluded that a medium positive linear relationship exists between the risk management perception and operational risk management variables. These results were also highlighted and are similar to the theoretical view by Mañez *et al*. (2021) in Chapter 3, Section 3.3.1.

5.7.2. Analysing the influence of people risk and culture risk on risk management in the banking sector

Table 5.20 below shows the correlation to analyse the influence of people risk and culture risk on operational risk management in the banking sector, which is the third objective of this research objective.

Table 5.20: Correlation for the third objective

Items	Correlation Coefficient	Causes of culture risk	Organisational culture	Culture risk awareness	Causes of people risk	Perception of people risk
Operational Risk Management	Pearson's correlation	0.468**	0.285**	0.210**	0.319**	0.203**
	Sig. (2-tailed)	<0.000	<0.000	<0.000	<0.000	<0.000
	N	391	391	391	391	391
Risk Management Perception	Pearson's correlation	0.377**	0.343**	0.293**	0.288**	0.244**
	Sig. (2-tailed)	<0.000	<0.000	<0.000	<0.000	<0.000
	N	391	391	391	391	391
** Correlation is significant at a 0.01 level (2–tailed) * Correlation is significant at a 0.05 level (2–tailed) N = 391						

Source: Author's compilation

Operational Risk Management

Table 5.20 shows the correlation coefficients to determine the relationship between people and culture risk on risk management in the banking sector. The relationship between operational risk management and causes of culture risk (r = 0.468 with a p<0.000) shows a medium positive linear relationship between operational risk management and the causes of culture risk. Concerning the relationship between operational risk management and organisational culture, Table 5.20 shows a correlation of r = 0.285 with a p<0.000. Therefore, a weak positive linear relationship exists between operational risk management and organisational culture. Operational risk management and culture risk awareness had a correlation of r = 0.210, where p<0.000, which represents a weak or small relationship.

Furthermore, the correlation shows that as the participants' perception of operational risk management increases, culture risk awareness increases. Concerning operational risk management and causes of people risk in the banking sector, the correlation between these two variables is shown as r = 0.319, where p<0.000 in Table 5.20, which is labelled a medium relationship. As the participants' perception of operational risk management improves, the causes of people risk will be identified. The correlation between operational risk management and the perception of people risk is described by r = 0.203, where p<0.000, which denotes a weak or small relationship. When the participants' perception of operational risk management increases, the perception of people risk also increases.

Risk Management Perception

The relationship between risk management perception and the causes of culture risk produced a correlation of r = 0.377, where p<0.000 indicates a medium relationship. The relationship between risk management perception and organisational culture is shown by r = 0.343, where p<0.000. This means the correlation is between r = 0.30 to 0.49, described as a medium relationship. When the participants' risk management perception increases, organisational culture will also mature. Regarding risk management perception and culture risk awareness, these two variables have formed a correlation of r = 0.293, where p<0.000. This correlation falls within r = 0.10 to 0.29 of the general correlation guidelines, which are called a weak or small relationship. This further means that as the participant's risk management perception gets stronger, culture risk awareness will, to a small degree, move in the same direction. Risk management and causes of people risk (r = 0.288, where p<0.000) obtained a weak or small relationship. Therefore, it can be established that there is a positive, weak linear relationship between risk management perception and causes of people risk. As the participant's perception of risk management escalates, causes of people risk will slightly move in the same direction. Table 5.20 shows a correlation of r = 0.288 with a p<0.000 between risk

management perception and the perception of people risk. This indicates a small linear relationship between risk management perception and perception of people risk. It can be concluded that there is a medium positive linear relationship exists.

For this section, it can be comprehensively concluded that operational risk management and risk management perception have a positive linear relationship, similar to Chapter 3, Section 3.3.1 highlighted (Vasvári, 2015). The next section of this chapter discusses the structural equation model to achieve the third and final empirical objective as comprehensively defined and discussed in Chapter 4, Section 4.7.7.

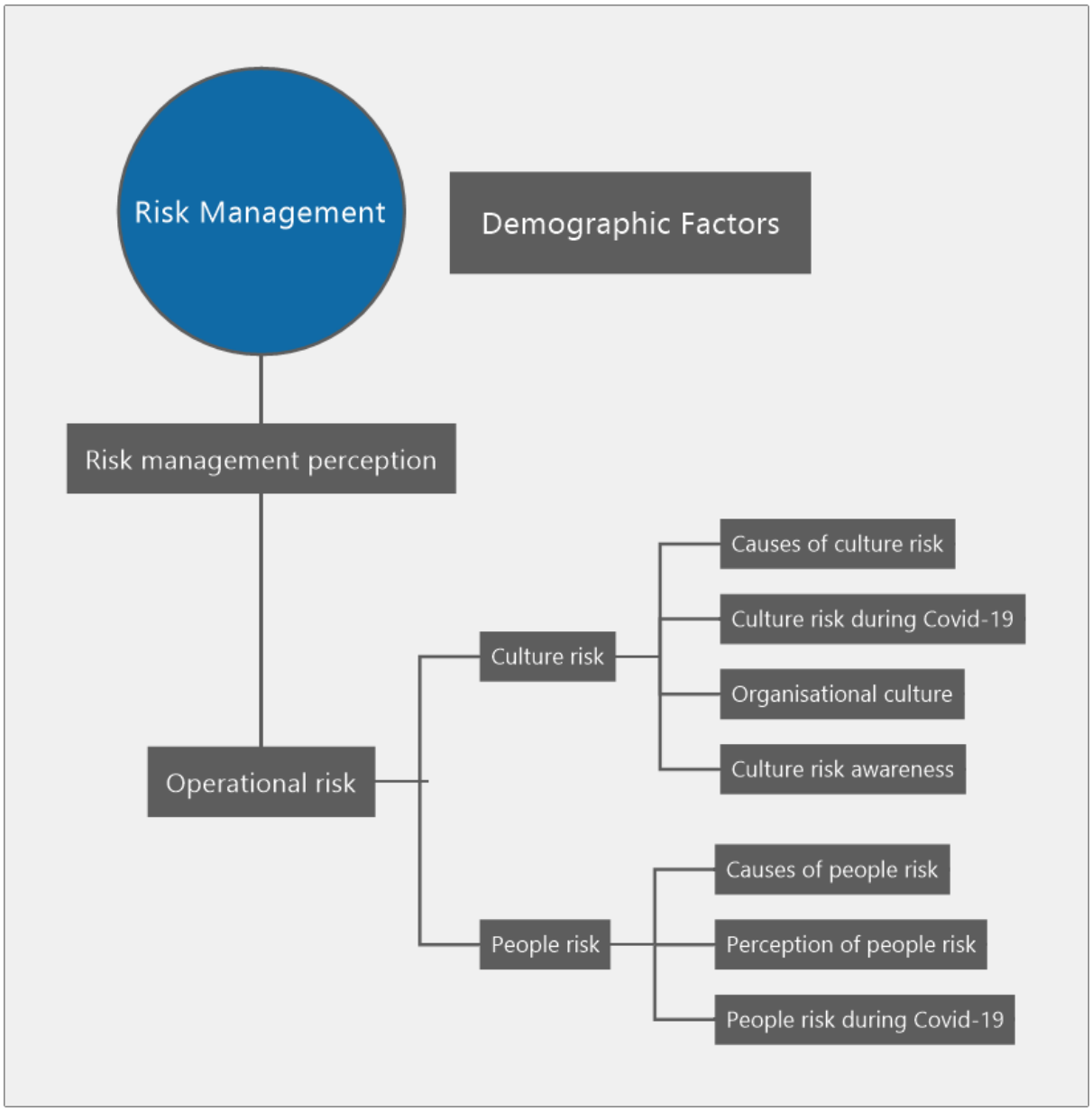
5.8. STRUCTURAL EQUATION MODELLING (SEM)

The Structural Equation Model (SEM) was adopted to achieve the final empirical objective of analysing the influence of the various demographics, people risk, and culture risk on operational risk management in the banking sector. In theory, SEM is adopted to construct a model to identify theoretical constructs and assess the relationship between two or more variables. As mentioned in Chapter 4, Section 4.7.7, when considering the sample, a sample size of 200 participants is satisfactory for performing a multivariate analysis of normal data. Regarding the estimation of maximum likelihood, which involves multivariate normal data, the sample size of 391 participants from the banking sector was considered adequate for conducting SEM. The following subsection of this section focuses on the implementation of SEM.

5.8.1. Indicate structural model

According to Hardy and Bryman (2004:452), the structural model of SEM can be demonstrated after the measurement model of validity has been assessed and considered adequate. Figure 5.11 below the structural model indicates the influence of people risk and culture risk (and all demographics) on risk management.

Figure 5.11: Structural model



Source: Author's compilation

5.8.2. Assess structural model validity

The second section of SEM focuses on assessing the validity of the structural model. This subsection aims to seek the validity of the assessment of the structural model and the theoretical relationships between numerous variables (Kline, 2011:94). Chapter 5, Section 5.4, contained information relating to the measurement of the validity and reliability of the scales, which are considered satisfactory. In order to evaluate the goodness-of-fit indices for the structural model, the following guides were used:

- Malhotra *et al.* (2017:807) highlighted Comparative Fit Index (CFI) values ranging from 0 to 1, with values closer to 1 considered a better fit and values closer to 0 indicating no data

fit for the model. Values leaning closer to 0.9 imply a marginal goodness-of-fit (Mueller, 1996:204). However, the CFI model has produced an index of 0.856 for this research study, which is a good model fit.

- Tucker-Lewis Index (TLI) also produced an index of 0.828, which is also deemed a good model fit, as it is closer to 0.9.
- For CMIN/DF (chi-square test statistics divided by the degrees of freedom), a value of 2.166 (277.252/128) shows a good fit. Plucker (2003:28) asserted that values between 2 and 5 present a standard for a good fit model.
- Schreiber *et al.* (2006:327) and Malhotra *et al*. (2017:807) mentioned that for the Root Mean Square Error of Approximation (RMSEA), values of less than 0.08 indicate a good model fit with 90 percent confidence intervals. However, for this research study, RMSEA obtained a value of 0.057, with a 90 percent confidence interval with a lower value of 0.047 and an upper value of 0.066. This indicates that a good model fit.

However, the CFI and TLI values are below the value of 0.9, which is a good model fit, whereas the CMIN/DF and RMSEA indicate a good model fit. It can be concluded that the specified structural model is satisfactory for data fits. Moreover, there is enough evidence of construct validity for the structural model to be considered valid. Table 5.21 demonstrates the latent variable model.

Table 5.21: Latent variables model of SEM

Construct	Coefficient	P-Value
Risk Management		
Operational Risk Management	0.747	<0.001
Risk Management perception	0.637	<0.001
Culture Risk		
Causes of culture risk	0.832	<0.001
Culture risk during the COVID-19 pandemic	0.622	<0.001
Organisational culture	0.423	<0.001
Culture risk awareness	0.529	<0.001
People Risk		
Causes of people risk	0.736	<0.001
People risk during COVID-19 pandemic	0.665	<0.001
Perception of people risk	0.650	<0.001
***Significant at the 0.001 level		

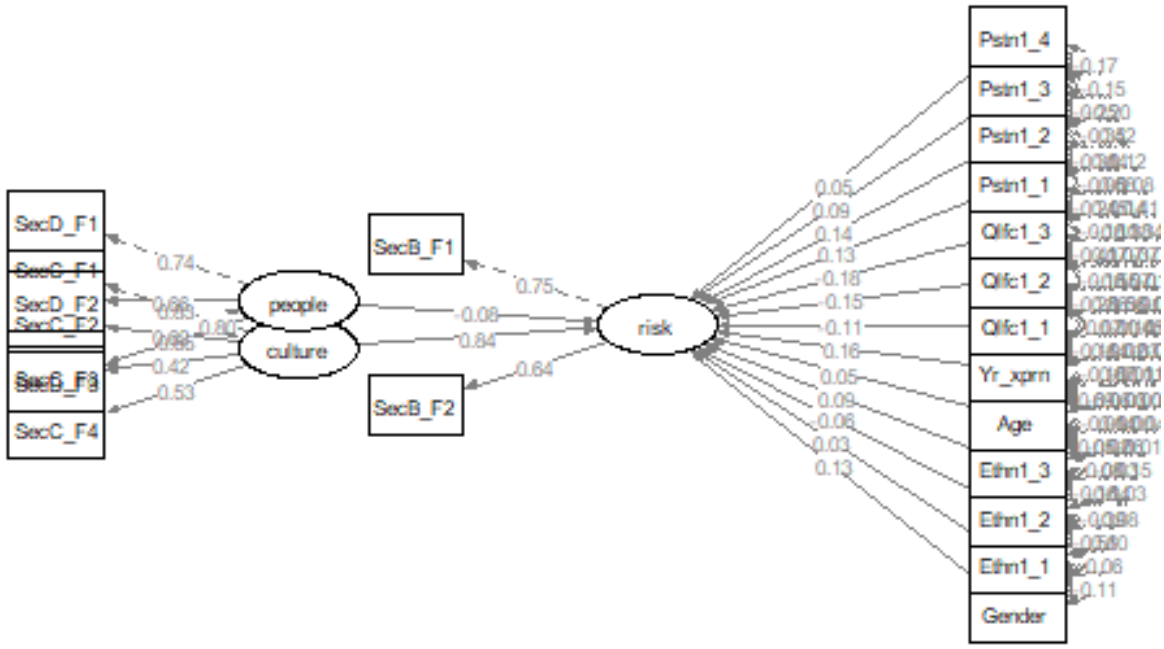
Source: Author's compilation

Table 5.21 shows the latent variables of SEM. The risk management factor has operational risk management and risk management perception as factors, which obtained coefficients of 0.742 and 0.628, respectively. The coefficients of both factors contributed significantly to influencing risk management perception at the $p < 0.001$ level.

With regards to the culture risk, the following factors, namely, the causes of culture risk with a coefficient of 0.832, culture risk during the COVID-19 pandemic with a coefficient of 0.622, organisational culture with a coefficient of 0.423, and culture risk awareness with a coefficient of 0.529, proved to be significant towards influencing risk management perception at the $p < 0.001$ level.

Moreover, for people risk, the following factors, namely, causes of people risk with a coefficient of 0.736, people risk during COVID-19 pandemic (0.665), and perception of people risk with a coefficient of 0.650, also contributed significantly towards influencing risk management perception at the $p < 0.001$. This means that factors measuring people risk were statistically significant at the $p < 0.001$. However, the relationship between people risk and risk management perception as a dependent variable was insignificant based on the regression path. Figure 5.12 below demonstrates the structural equation model of risk management.

Figure 5.12: Structural equation model of risk management



Source: Author's compilation

Table 5.22 below shows the standardised regression coefficient for SEM.

Table 5.22: Standardised regression coefficient for SEM

Constructs		Coefficient	P-value
Demographical factors			
‹‹‹	Age	0.054	0.486
	Gender (Male)		
‹‹‹	Female	0.127	0.016***

Constructs		Coefficient	P-value
	Ethnic group (white)		
‹‹‹	African	0.033	0.678
‹‹‹	Coloured	-0.061	0.404
‹‹‹	Indian	0.089	0.176
	Education level (undergraduate)		
‹‹‹	Diploma	-0.106	0.067
‹‹‹	Honours	-0.150	0.022
‹‹‹	Masters	-0.177	0.012
	Position/role (Supervisor)		
‹‹‹	Junior	0.131	0.074
‹‹‹	Junior Management	0.138	0.035
‹‹‹	Middle Management	0.089	0.227
‹‹‹	Senior Management	0.046	0.519
‹‹‹	Number of experiences	0.159	0.048
Culture Risk		0.838	<0.001
People Risk		-0.077	0.619
***Significant at the 0.001 level ** Significant at the 0.05 level * Significant at the 0.1 level			

Source: Author's compilation

Table 5.22 above shows a standardised regression coefficient for people risk, culture risk, and demographic factors. For gender**,** females with the standardised coefficient of 0.127 are higher than males, considered the base group. Furthermore, females obtained a p-value of 0.016, indicating that they contribute positively and significantly towards risk management, at a p = 0.05 and to a small degree.

For ethnicity groups, the white group has been considered as the base group. The African and Indian groups achieved standardised regression coefficients of 0.033 and 0.089, respectively, which are higher than the white group at the p = 0.05 level. The coloured group obtained a standardised regression coefficient of -0.061, lower than the white group at the p = 0.05 level. However, for the ethnicity group, both the African and Indian groups positively contributed significantly to risk management, at a p = 0.05, and to a small degree. In contrast, the coloured group did not contribute significantly to risk management.

Regarding the level of education, undergraduates have been considered the base group, with diplomas achieving standardised regression coefficients -0.106 lower than undergraduates. Moreover, honours and master's also achieved standardised regression coefficients of -0.150 and -0.177, respectively, lower than the base group at the p = 0.05 level. The level of education did not contribute significantly towards risk management at a p = 0.05 level. It can be established that gender, ethnicity group and level of education are similar to previous research findings conducted by (Lawrenson, 2020).

The supervisor role is the base group for the position or role held. Junior with a standardised regression coefficient of 0.131, junior management with a standardised regression coefficient of 0.138, middle management with a standardised regression coefficient of 0.089, and senior management with a standardised regression coefficient of 0.046 obtained scores higher than supervisor (base group) at a p = 0.05 level. It can be concluded that the position or role held positively contributed significantly to risk management at a p = 0.05 level and to a small degree.

Culture risk, with a standardised regression coefficient of 0.838, significantly contributed towards explaining risk management at a p = 0.05 level. However, with a standardised regression coefficient of -0.077, people risk did not contribute significantly to explaining risk management at a p = 0.05 level.

5.8.3. Forecasting model conclusion and recommendations

Malhotra *et al.* (2012:812) and Kline (2016:120) emphasised that the last step of SEM consists of presenting remarkable conclusions and valuable recommendations of the specified structured model to be used for future research studies. This is done after the validity of the structural model has been evaluated and deemed satisfactory. Table 5.23 below summarises the variables that may have contributed to the influence of people risk and culture risk on risk management.

Table 5.23: Summary of SEM variables

	Constructs	Summary
People risk and culture risk on risk management	Age	Did not contribute significantly towards risk management.
	Ethnic group	Did not contribute significantly towards risk management.
	Gender	Contribute significantly towards risk management to a small degree, with females having a higher response.
	Educational level	Honours and Masters contributed significantly towards risk management to a small degree.
	Position/role	Junior management contributed significantly towards risk management to a small degree.
	Years of Experience	Contributed significantly towards risk management to a small degree.
	People Risk	Did not contribute significantly to risk management and has a negative relationship with risk management.
	Culture Risk	Contributed significantly towards risk management to a large degree.
	** Significant at the 0.05 level	

Source: Author's compilation

Table 5.22 demonstrates the variables that contributed significantly to the development of the SEM model. Demographical factors, namely gender, educational level, position or role held, and years of experience, contribute significantly to explaining risk management to a small degree. However, demographic factors such as age and ethnicity did not contribute significantly to explaining risk management. Regarding the people risk, there was no significant contribution to explaining risk management, which negatively relates to risk management. Culture risk has contributed significantly to explaining risk management and has achieved a positive relationship with risk management to a large degree.

It can be concluded that SEM provided a significant contribution to the research study and the study field, and to date, no researcher has established a SEM model that intergrades demographical factors (gender, educational level, position or role held and years of experience) and culture risk to explain risk management. This could result from the smaller sample size used (391), and future researchers could increase the sample size. The following section provides a summary of the chapter.

5.9. SYNOPSIS

Chapter 5 comprehensively discussed the empirical results and findings of the research study. Analysis and interpretation of the empirical results and findings were presented in such a way as to ensure that all three empirical objectives, as well as the primary objectives of the research study, were achieved. Section 5.2 contained an analysis of the demographic information of the final sample of the research study. Section 5.3 of the research study presented a descriptive analysis and interpretation of demographic information.

Section 5.4 presents FA, which has two types: EFA and CFA. FA was applied to ensure the validity and reliability of the measurement of the scales. EFA was applied in Section B: Operational Risk Management, Section C: Culture Risk, and Section D: People Risk of the Questionnaire. Concerning Section B: Operational risk management comprises two factors, operational risk and risk management perception, which were determined by the level of participants' understanding of operational risk management in the banking sector. Therefore, section B achieved good internal consistency and was deemed reliable. EFA was also applied to Section C of the questionnaire, Culture Risk, with four factors extracted: causes of culture risk, culture risk during the COVID-19 pandemic, organisational culture, and culture risk awareness. These four factors were extracted to report on the overall perception of culture risk in the sample. The response was shown to have good internal consistency and is deemed reliable. Lastly, EFA was further applied in Section D of the questionnaire, People Risk, with three factors extracted: causes of people risk, people risk during COVID-19 pandemic, and

perception of people risk. These three factors were extracted to report on the overall perception of people risk in the sample, and the results achieved a very good internal consistency for measuring reliability.

Sections 5.5 to 5.8 contained inferential statistics such as hypothesis testing, analysis of variance (ANOVA), correlation analysis and T-test, and SEM that were adopted and reported to achieve the empirical objectives in Chapter 1. Section 5.5 demonstrated hypothesis tests for empirical objectives. It is evident that people risk, culture risk, and demographic factors influence risk management in the banking sector. Section 5.6 provided information on ANOVA for statistically significant differences between participants' perceptions, and the T-test focused on comparing the mean values of two or more different groups.

A correlation analysis was performed in Section 5.7 of the research study. This research showed two types of correlation, namely Pearson and Spearman correlations. Pearson's correlation analysis was adopted to assess the relationship between risk management perception and people risk, culture risk, and operational risk management in the banking sector. It was found that there was an overall medium positive correlation between different factors. SEM was performed in Section 5.8 to achieve the last empirical objective of the research study. SEM was performed to construct a model determining the significant contribution to explaining risk management. The validity and reliability of the SEM were evaluated, and the model's results were considered valid and highly reliable. Moreover, the goodness-of-fit model also showed good results. Section 5.9 provided a synopsis of this chapter.

In conclusion, by employing various statistical approaches for this research study, all three empirical and primary objectives were achieved in this chapter. Chapter 6 focuses on synthesising the empirical results and findings of Chapter 5. Chapter 6 will also provide the final conclusions and recommendations of the research study and a summary of the objectives achieved. Limitations, recommendations, and opportunities for further research will also be presented.

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1. INTRODUCTION

Chapter 6 aims to present the research study's conclusion, with Section 6.2 providing a summary of the study, focussing on the primary, theoretical, and empirical objectives. Section 6.3 illuminates the findings and empirical objectives drawn to conclude the research study. Moreover, Section 6.4 provides a snapshot of the main contribution made by the research study. Lastly, Section 6.5 provides the limitations and implications of the research journey and also presents recommendations and avenues for future research possibilities.

6.2. OVERVIEW OF THE RESEARCH STUDY

Chapter 1 presented an introduction and problem statement of the research study, which entails the need or motivation and the purpose of this research study. The primary, theoretical and empirical objectives were established and specified to achieve the objective of the research study. An overview of the research approach, the target population, contributions, ethical considerations, and the classification of chapters was also explained in this chapter. The following theoretical objectives were formulated to address the primary objectives mentioned in Chapter 1:

- Contextualise the South African banking sector;
- Discuss risks in the banking sector;
- Define culture risk and its relation to people risk;
- Discuss a theoretical framework for culture risk as a component of operational risk;
- Discuss the importance of good corporate culture in the banking sector; and
- Establish the opportunities and challenges banks face to mitigate people risk and culture risk.

The theoretical objectives mentioned above were established and addressed in Chapters 2 and 3 of the research study.

Chapter 2 focused on an analysis and overview of the banking sector, different types of banks, and different types of operational risks faced by banks. Various banking regulations, legislation, and guidelines governing the South African and financial sectors were also discussed. International frameworks and guidelines such as the Basel Accords, ISO 31000, and the King IV Code were highlighted as mitigating factors for people risk and culture risk.

This chapter also provided measures banks could follow to mitigate risks and improve risk awareness. However, the theoretical section on the influence of people and culture risk on risk management was addressed in Chapter 3 of the research study.

Chapter 3 discussed the theoretical overview of operational risk and its relation to people risk and culture risk. In this chapter, the theoretical factors influencing people risk and culture risk were identified and finalised, as well as the positive contributions toward people risk and culture risk. The relationship between people risk and culture risk was also discussed. Moreover, the perception of people risks and culture risk in the banking sector was discussed. The impact of the 2007/08 GFC and COVID-19 pandemic on people risk and culture risk as part of operational risk was widely discussed. The negative and positive impacts of the COVID-19 pandemic were noted and addressed with the "new norm," which is life after the COVID-19 pandemic. The importance of good corporate governance was discussed to assess its importance of risk and governance in the banking sector. Lastly, positive and negative challenges faced by banks were raised, as well as measures that could help banks improve their overall risk management.

Chapter 4 presents quantitative methods adopted to achieve the empirical objectives mentioned in Chapter 1. In this chapter, a comprehensive analysis and discussion of the research design, the research approach paradigm, sampling procedures, methods used to collect data and data collection procedures were adopted to analyse quantitative data. The exploratory research design was adopted, as it is the most efficient and inexpensive method of collecting data through questionnaires (online and hard copy) and is used to explore new territories. Moreover, positivist research paradigms and a quantitative research approach (numerical) were selected as the most appropriate research paradigms and approaches for this research study.

A self-administered questionnaire was used to gather quantitative data from employees in the banking sector. Non-probability-purposive and snowball sampling methods were adopted to collect information from participants. The 18-year-old and above criteria with more than 6 months of working experience in the banking sector and a minimum qualification of matriculation or grade 12 obtained from the sample was adopted. A sample size of 391 individual employees responded to the questionnaire and was considered adequate to perform a quantitative research study analysis.

Chapter 5 laid out a comprehensive discussion and outcome of the empirical results and findings of the research study. Analysis and interpretations of the empirical findings were

presented so that all the empirical and primary objectives of the research study were achieved. The core findings of the research study described in Chapter 5 are summarised in the next section.

6.3. MAIN FINDINGS OF THE RESEARCH STUDY

In order to achieve the primary objectives of analysing the influence of people risk and culture risk on risk management, the following empirical objectives were developed in Chapter 1 and achieved in Chapter 5. Achievement of the empirical objectives successfully contributed to achieving the main objectives and findings of the research study.

6.3.1. Empirical objective 1: Determine the perception of operational risk management practices based on demographical factors

The first empirical objective of the research study focuses on the perception of operational risk management practices based on the demographic factors of bank employees, which was achieved in **Section 5.6** of the research study by performing an ANOVA and a T-test. The aim was to assess whether there was a statistically significant difference between participants' perceptions of risk management practices based on age, gender, ethnicity, position or role, and types of employment.

It can be concluded that the following demographical factors, namely, age, ethnicity group, types of employment, and position or role held, were found to be positive and statistically significant in influencing the perception of operational risk management practices within the banking sector, with all factors having a small effect size. Regarding the T-test for gender, females were found to have a greater propensity to influence the perception of operational risk management practices than males. This was contrary to previous studies in a way that past researchers found that males had more desires to adhere to risk management practises than females and is based on the level of understanding of risk management practices in the banking sector (Sharma, 2006; Rahmawati *et al.,* 2015:373).

6.3.2. Empirical objective 2: Determine the relationship between people risk, culture risk, and risk management during COVID-19 pandemic

The second empirical objective of the research study focused on determining the relationship between people risk, culture risk, and risk management during the COVID-19 pandemic, which was achieved in **Section 5.7** through the conducting of a correlation coefficient, which aims at measuring the linear relationship between variables. The relationship between operational risk

management and culture risk during the COVID-19 pandemic was tested in Section 5.6.1, and it was found that there was a medium positive linear relationship that exists. Operational risk management was further tested for correlation with people risk during COVID-19 pandemic, and it was established that there was a medium positive linear relationship that exists. This further means that as operational risk management increases, culture risk during the COVID-19 pandemic and people risk during COVID-19 pandemic increase based on their positive associations. Operational risk management positively influences people risk and culture risk, and vice versa.

A mixture of medium-positive linear and positive-weak linear relationships existed for risk management as a dependent variable. The correlation between risk management perception and culture risk during the COVID-19 pandemic was also tested in Section 5.6.1. The outcome showed a medium positive linear relationship between risk management perception and culture risk during the COVID-19 pandemic. This means that as risk management perception improves, understanding of culture risk during the COVID-19 pandemic increases. In addition, risk management perception and people risk during COVID-19 pandemic were also tested to check whether there is an existing correlation. The results demonstrated a weak positive linear relationship between risk management perception and people risk during COVID-19 pandemic. This means that as risk management perception slightly improves, so does their people risk during COVID-19 pandemic.

It can be concluded that there is a medium positive linear relationship between operational risk management and risk management perception as dependent variables. This further suggests that operational risk management and risk management perception positively influenced people risk and culture risk during the COVID-19 pandemic. Previous researchers also found similarities that people risk and culture risk influence operational risk as they categorised its components and further utilised risk management processes, tools, and systems to manage and mitigate potential operational risks such as risks discussed in Section 2.6 and their relationship in Section 3.3.2.

6.3.3. Empirical objective 3: Analysing the influence of people risk and culture risk on risk management in the banking sector

The third and last empirical objective of the research study focused on analysing the influence of people risk and culture risk on risk management in the banking section, which was achieved in **Section 5.8** by performing SEM. Validation of the SEM model consists of statistical methods, including EFA and CFA, that were discussed in Section 4.7 and interpreted in Section 5.4 to ensure the validity and reliability of the model. The SEM model depicted in

Figure 5.12 showed sufficient evidence of validity and reliability and exhibited a good model fit. It can be concluded that the SEM model is valid and reliable and has been proven to be a good model fit for the data.

The achievement of the theoretical and empirical objectives contributed to achieving the primary objectives established in Chapter 1. The following section focuses on proving the general conclusion and contributions of the research study.

6.4. GENERAL CONCLUSION AND CONTRIBUTION OF THE RESEARCH STUDY

The successful achievement of the primary objectives, including the research study's theoretical and empirical objectives, contributes to the field of study and the local and international banking sectors. This research has made significant and comprehensive contributions by providing information on the theoretical framework for people risk and culture risk in risk management in the banking sector. The in-depth discussion of operational risk factors and factors influencing people risk and culture risk and the highlighting of the impact of people risk and culture risk during the COVID-19 pandemic make remarkable contributions to the research study. This research offers the banking sector a better understanding of factors that influence people risk and culture risk and provides strategies that could contribute to mitigating operational risks that were previously not given much attention.

The main contributions of the research study were made by establishing statistical tools to achieve empirical objectives. ANOVA, T-test, correlation coefficient, and SEM were adopted to meet the empirical objectives. ANOVA and T-tests were adopted to determine whether there was a statistically significant difference in participants' responses, including demographical factors. A correlation coefficient was used to determine the relationship between factors. Lastly, SEM was performed for the validation and reliability of the model, determining factors influencing people risk and culture risk in risk management. It was found that the SEM model is valid and reliable and produced a good model fit for the data. The SEM model made a notable contribution to the field of study and the banking sector.

The research study was newly developed and consists of a self-structured questionnaire established from the risk management background in the banking sector. From a South African perspective, the researcher has established how people risk and culture risk influence risk management in the banking sector.

6.5. MANAGERIAL IMPLICATIONS AND RECOMMENDATIONS

Banks are unlikely to be satisfied with the level and the number of risk exposures faced before and after COVID-19; therefore, it is essential to manage any types of risk that may be exposed, including those mentioned in Chapter 2, Section 2.6. Based on the primary objectives of this research study, managerial implications, and recommendations are presented to the banking sector. The research discovered that age, ethnicity group, types of employment, and position or role held were statistically significant, while females showed a greater propensity to influence operational risk management. This further showed a medium-positive linear relationship between operational risk management and risk management perception. This means that operational risk management and risk management perception positively influence people risk and culture risks. Hence, the following recommendation can be adopted by the banking sector.

- People risk and culture risk should be given more limelight and highlighted as the top risks that could impact the strategic and operational objectives of the banks.
- Continuously renew culture as it is not once off exercise, especially after the COVID-19 pandemic that affected employees (professionally and personally) to adapt to new working changes.
- Manage people risk and culture risk based on adopting recommendations highlighted in Chapter 3, Section 3.2.1. and 3.2.2.
- The creation of ongoing awareness to positively influence employees' perceptions of risk.
- Develop and incorporate robust ERM RMF, including strategies, processes, and tools to manage and improve people risk and culture risk.

Moreover, implementing the abovementioned recommendations would guarantee or ensure that the people risk and culture risk within banks are within acceptable risk appetite levels. Since people risk and culture risk are the core risks and are regarded as the components of operational risk, mitigating these risks will minimise risks relating to inadequate management or treatment of employees, as well as create a culture that is enabling and continuously improving. This will contribute further towards achieving the strategic and operational objectives of the banks.

6.6. LIMITATIONS AND FUTURE RESEARCH

Consequently, limitations are part of any research study, and this research is not different from others. Limitations create room to formulate a new opportunity for future research possibilities.

Future researchers can use this study as a basis to conduct a new study that would provide different conclusions. Concerning the literature review and the empirical part of the research study, the limitations of this study were highlighted to make future recommendations and avenues for future research.

The quantitative data of the research were obtained from South African participants employed in the banking sector, with a sample size of 391 individual employees. The sample was considered satisfactory for quantitative data analysis since it met all the statistical analysis requirements to achieve the empirical objectives of the research study and was compared with the sample sizes used in previous studies. However, a larger sample can be recommended to improve the accuracy of the current model.

Non-probability purposive and snowball sampling was adopted to collect responses from the questionnaire sent to participants in the banking sector who met the criteria of being 18 years of age or older and had been employed for more than six months in one of the top five South African banks with some form of educational qualification. However, it may be recommended to employ other sampling methods and to expand the participant criteria of the research study according to the researcher's preference. In addition, a quantitative research approach was adopted in this research study. Therefore, it may be advisable to use a mixed methods research approach incorporating quantitative and qualitative analysis to evaluate factors that can influence people risk and culture risk in risk management in the banking sector.

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ANNEXURE A: INFORMED CONSENT

PO Box 1174, Vanderbijlpark
South Africa 1900

Tel: 016 910-3111
Fax: 016 910-3116
Web: http://www.nwu.ac.za

Risk Management Department
Tel: +27 16 910 3365
Email: 23261048@nwu.ac.za

Participant information leaflet and consent form

Title of the research project: Analysing the influence of people and culture risk on risk management in the banking sector.

Principal Investigator: Makiri Lancelot Monama (076 942 4962)

Promoter(s): Dr. Suné Ferreira-Schenk and Ms Ruschelle Sgammini

Reference numbers: TBC

You are being invited to take part in a research project that forms part of a Master's study. Please take some time to read the information presented here, which will explain the details of this research project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say decline, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the particiaption of the research project at any point, even if you do agree to take part.

This study has been approved by the **Economic and Management Sciences Research Ethics Committee of the North-West University (TBC)** and will be conducted according to the established ethical guidelines and principles of business and management research. It might be necessary for the research ethics committee members or relevant authorities to inspect the research records to make sure that we (the researchers) are conducting research in an ethical manner.

What is this research study about?

The primary objective of this study is to analyse people and culture risk on risk management in the banking sector to ensure that ensure that banks manage or mitigate the impact of the risk of bad culture and poor management of employees. Although people (employees) and culture play a key influence in the banking sector, they have not been given sufficient attention as the bank's top risks priority. People and culture are underestimated, yet they are crucial resources for banks to their strategic objectives.

Why have you been invited to participate?

You have been invited to participate in the study because we believe that you are best placed to provide an informed explanation to analyse people and culture risk in risk management in the banking sector.

What will your responsibilities be?

Participate in the questionnaire that should take approximately 15 minutes. After the primary data has been analysed, you will be presented with feedback of the study through an article format.

Who will have access to the data?

Anonymity (that is, in no way will the results be linked to you or the company you are employed at) will be ensured. Confidentiality (that is, we assure you that we will protect the information we have about you or the company you are employed at) will be ensured by the way the data will be captured, and no mention of you or your employer will be included in the study or any research projects related to the study. Only the researchers will have access to the data. Data will be stored for 5 years before being confidentially and securely destroyed.

What will happen to the data?

The data from this study will be reported on in the following ways: in an academic study and research articles. In all of this reporting, you will not be personally identified. This means that the reporting will not include your details, the company name or any details that will help others identify that you or the company you are employed at participated (e.g. the company's name or physical description).

Will you be paid/compensated to take part in this study and are there any costs involved?

You will not be paid/compensated to take part in the study. No costs will be incurred when conducting this study other than incidental costs to be borne by the researcher for academic review and editing of the thesis.

How will you know about the findings?

The general findings of the research will be shared with you electronically in an article form, after completion of the study.

Is there anything else that you should know or do?

Should you have any queries please contact Makiri Lancelot Monama at 076 942 4962 or **lancelotkagiso@gmail.com.** Alternatively, you can contact Dr. Suné Ferreira-Schenk at (016) 910-3365 or **23261048@nwu.ac.za**; and/or Ms Ruschelle Sgammini at (016) 910-6111 or **22794107@nwu.ac.za.**

If you have any concerns or complaints that have not been adequately addressed by the researcher you can contact the chair of Economic and Management Sciences Research Ethics Committee (Prof. Mark Rothbone) at 018 299 1356 or **Mark.Rathbone@nwu.ac.za**. You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I voluntarily agree to take part in the research study.

I declare that:

- I have read and understood this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher (if this is a different person), and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I understand that what I contribute (what I report/say/write/draw/produce visually) could be reported publically and/or quoted, but without reference to my personal identity.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at *(place)*_____on *(date)*_____.

_____

Signature of participant

Declaration by researcher

I, Monama Makiri Lancelot declare that:

- I explained the information in this document to the participant.
- I encouraged the participant to ask questions and took adequate time to answer them.
- I am satisfied that the participant adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter.

Signed at *(place)* *Pretoria* on *(date)* *07/10/2021* .

Signature of researcher

ANNEXURE B: QUESTIONNAIRE

Analysing the influence of people risk and culture risk on risk management in the banking sector

My name is Makiri Lancelot Monama and I am currently a registered master's student in Risk Management at North-West University (Vaal Campus). You are invited to take part in a research project that forms part of my master's study. The aim of the study is to analyse people risk and culture risk in the banking sector to ensure that banks reduce or mitigate the risk of negative culture and inadequate or poor management of employees. The study comprises of various banks impacted by operational risk such as big five South African banks which are ABSA, Standard Bank, First National Bank, Capitec and Nedbank

Please complete the questionnaire if you meet the following criteria:

- **You are employed in one of the following South African banks: ABSA, Standard Bank, Nedbank, FNB and Capitec Bank;**
- **You have been employed for more than 6 months;**
- **You are older than 18 years old and above;**
- **Have some form of education; and**

To assure anonymity please do not include your name, surname, or any identifying marks on your questionnaire.

Furthermore, your participation is entirely voluntary, and you are free to decline participation. If you decide to decline, this will in no way affect you negatively whatsoever. The data will be **confidential,** and your results will be reported in aggregate (as part of the whole sample) and not individually. The questionnaire should take, on average, 15 minutes to complete.

Thank you for your important contribution to my study. Your time and inputs are highly appreciated.

Student:
Makiri Lancelot Monama

North-West University
076 942 4962
Email: lancelotkagiso@gmail.com

Promoters:
Prof. S Ferreira-Schenk
23261048@nwu.ac.za
Ms R Sgammini
22794107@nwu.ac.za

A. DEMOGRAPHIC INFORMATION

Demographics will only be used to describe the composition of the sample and not to compare groups or make inferences. This enable employees from South African banking sector to be more comfortable in sharing such personal information.

A1. What is your gender?

1	Male	
2	Female	
3	Other	

A2. In which ethnic group do you fall?

1	Black / African	
2	Coloured	
3	Indian	
4	White	
5	Asian	
6	Other	

**Designations are according to and in line with the terminology of the Employment Equity Act, 55 of 1998 and that no offense is intended.*

A3. What is your nationality?

1	South African	
2	Other, please specify: ……	

A4. What is your age?

1	25 to 30 years	
2	31 to 40 years	
3	41 to 50 years	
4	51 to 60 years	
5	61 years and above	

A4. What is your highest level of education?

1	Matric	
2	Higher certificate	
3	Diploma	
4	Undergraduate degree	
5	Honour's degree	
6	Master's degree	
7	Doctoral degree	
8	Other	

A5. How many years of banking experience do you have?

1	Up to 1 year	
2	2 up to 3 years	
3	More than 3 years up to 5 years	
4	More than 5 years up to 10 years	
5	More than 10 years	

A6. What is your current role / position in the banking sector?

1	Junior	
2	Supervisor / coordinator	
3	Junior management	
4	Middle management	
5	Senior management	
6	Executive	

A7. Which of the following best describe your current employment status?

1	Full time employment	
2	Contract employment	
3	Full time freelancing	
4	Graduate / learnership employment	
5	Other, please specify: ……	

A8. Which of the following risk management frameworks / guidelines are you familiar with?

1	COSO Framework	
2	King IV Code	
3	Basel Accords	
4	ISO 31000	

A9. Which of the following membership/s do you hold?

1	IRMSA	
2	IIA	
3	SAICA	
4	CISA	
5	Others, please specify:	

For the sections below, you requested to complete the questionnaire by using the shading/fill function  . After completion, save it and email it back to me. Please complete all the sections as half completed questionnaires cannot be used. Please see example below on how to complete the questionnaire.

Example

##	**How strongly do you agree or disagree with the following statements?**	**Strongly disagree**	**Disagree**	**Slightly Disagree**	**Slightly Agree**	**Agree**	**Strongly**
	Risk is not knowing what you are doing.						

B. RISK MANAGEMENT
To test the understanding of participants perception risk management

#	**How strongly do you agree or disagree with the following statements?**	**Strongly disagree**	**Disagree**	**Slightly Disagree**	**Slightly Agree**	**Agree**	**Strongly agree**
1	Operational risk is the prospect of loss resulting from inadequate or failed procedures, systems or policies.						

2	Operational risk is any risk except financial and market risk.						
3	All identified operational risks should be documented in the risk register.						
4	Risks are monitored by a risk manager*.						
5	I am a risk champion* at my own capacity.						
6	Inadequacies of operational risk assessment can make or break the bank's operations.						
7	I believe culture is one of the best solutions in managing risk.						
8	I consider all forms of risks when making business decisions.						
9	I believe operational risk occurs as a result of people's lack of good risk management.						
10	I believe that everyone should act as a risk manager.						

** Note: A risk champion is someone appointed to assist the risk owner with matters related to risk.*

**Note: A risk manager is someone appointed to identify, assess, analyse and monitor the risks that company is exposed to.*

**Note: A risk owner is a someone (head of department of function) who is ultimately accountable for ensuring the risk is managed appropriately.*

C. CULTURE RISK

To determine the perception of culture risk in banking sector.

#	**How strongly do you agree or disagree with the following statements?**	**Strongly disagree**	**Disagree**	**Slightly Disagree**	**Slightly Agree**	**Agree**	**Strongly agree**
1	Culture risk is a risk resulting from a bank's operational struggle because of differences in language, customs, values, behaviour norms, and customer preferences.						
2	Creating the right environment is essentially about creating the right culture.						

3	I believe that culture risk is a dynamic set of behaviours and attitudes toward risks.						
4	I believe culture risk is due to the misalignment between company values and the employees.						
5	Training and awareness of culture risk are important to the culture of the bank.						
6	Integrated culture guarantees that employees will operate within the boundaries of acceptable risk.						
7	Communication is key in improving risk culture.						
8	More operational risk failures are causing more culture risk since the Covid-19 pandemic						
9	I believe that culture develops the ability of the banks and employees to identify risks.						
10	Employees' unethical behaviour may cause culture risk.						
11	Culture risk has increased during Covid-19 pandemic.						
12	It is more difficult to maintain culture since the Covid-19 pandemic.						
13	I believe it is challenging to develop a mature and proactive culture risk during Covid-19 pandemic.						
14	I believe that good culture risk is needed to face Covid-19 pandemic.						

D. PEOPLE RISK

To determine the perception of people risk in banking sector

#	**How strongly do you agree or disagree with the following statements?**	**Strongly disagree**	**Disagree**	**Slightly Disagree**	**Slightly Agree**	**Agree**	**Strongly agree**
1	People risk refers to risk as a result of employee error, key employees leaving the bank, fraud,						

	mistreatment of employees, lack of expertise or competence, lack of compliance with existing procedures and policies.						
2	I believe people risk is having the wrong people in the right positions.						
3	Failing to understand company brand may cause people risk.						
4	People risk is having a weak tone at the top that sets little precedent.						
5	Bad employees can become the source of tremendous financial, operational and public relations stress.						
6	I believe that companies may avoid people risk by means of recruiting, retaining and developing current employees.						
7	Good people risk management is a win-win activity.						
8	Absenteeism, work ethics, key man dependency, other internal issues are regarded as people risk.						
9	I believe that people risk may cause culture risk.						
10	It is more difficult to maintain people risk since the Covid-19 pandemic.						
11	Planning ahead with financial provisions and succession plans is a way of mitigating people risk.						
12	People risk in the banking sector have increased since the covid-19 pandemic.						

ANNEXURE C: CODE BOOK

SECTION A Demographic Information			
Question	**Code**	**Construct measured**	**Value**
Question 1	1	Gender	(1) Male, (2) Female, (3) Other
Question 2	2	Ethnic group	(1) African, (2) Coloured, (3) Indian, (4) White, (5) Asian, (6) Other
Question 3	3	Nationality	(1) South African (2) Other
Question 4	4	Age	(1) 18 to 24 years, (2) 25 to 34 years, (3) 36 to 49 years, (4) 50 years and above
Question 5	5	Education	(1) Matric, (2) Higher certificate, (3) Diploma, (4) Undergraduate, (5) Honours degree, (6) Master's degree, (7) Doctoral's degree, (8) Other
Question 6	6	Banking experience	(1) Up to 1 year, (2) More than 1 year up to 3 years, (3) More than 3 years up to 5 years, (4) More than 5 years up to 10 years, (5) More than 10 years up to 20 years, (6) More than 20 years and above.
Question 7	7	Current role/position	(1) Junior, (2) Supervisor/coordinator, (3) Junior management, (4) Middle management, (5) Senior management, (6) Executive management
Question 8	8	Employment status	(1) Full time employment, (2) Contract employment, (3) Full time freelancing, (4) Graduate/ learnership employment, (5) Other
Question 9	9	Risk management guidelines/frameworks	(1) COSO framework, (2) King III & King IV on corporate governance, (3) Basel Accords, (4) ISO 31000, (5) Other
Question 10	10	Membership held	(1) IRMSA, (2) IIA, (3) SAICA, (4) CISA, (5) Other
SECTION B Risk management			
Item	**Code**	**Construct measured**	**Value**
Item 1	1		
Item 2	2		
Item 3	3		
Item 4	4		
Item 5	5		
Item 6	6		

Item 7	7	Risk management	(1) Strongly disagree, (2) Disagree, (3) Slightly disagree, (4) Slightly agree, (5) Agree, (6) Strongly agree
Item 8	8		
Item 9	9		
Item 10	10		
Item 11	11		
Item 12	12		
Item 13	13		
Item 14	14		
Item 15	15		
SECTION C Culture risk			
Item	**Code**	**Construct measured**	**Values**
Item 1	1	Culture risk	(1) Strongly disagree, (2) Disagree, (3) Slightly disagree, (4) Slightly agree, (5) Agree, (6) Strongly agree
Item 2	2		
Item 3	3		
Item 4	4		
Item 5	5		
Item 6	6		
Item 7	7		
Item 8	8		
Item 9	9		
Item 10	10		
Item 11	11		
Item 12	12		
Item 13	13		
Item 14	14		
Item 15	15		
SECTION D People risk			
Item	**Code**	**Construct measures**	**Values**
Item 1	1		
Item 2	2		
Item 3	3		
Item 4	4		
Item 5	5		
Item 6	6		

Item 7	7	People risk	(1) Strongly disagree, (2) Disagree, (3) Slightly disagree, (4) Slightly agree, (5) Agree, (6) Strongly agree
Item 8	8		
Item 9	9		
Item 10	10		
Item 11	11		
Item 12	12		
Item 13	13		
Item 14	14		
Item 15	15		

ANNEXURE D: ETHICAL CLEARANCE

NORTH-WEST UNIVERSITY
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Economic and Management Sciences Research
Ethics Committee (EMS-REC)

31 January 2022

Prof S Ferreira-Schenk
Per e-mail
Dear Prof Ferreira-Schenk,

EMS-REC FEEDBACK: 28012022
Student: Monama, ML (24011355)(NWU-01273-21-A4)
Study leader: Prof S Ferreira-Schenk – MCom in Risk Management

Your ethics application on, ***Analysing the influence of people and culture risk on risk management in the banking sector,*** which served on the EMSREC meeting of 28 January 2022, refers.

Outcome:

Approved as a minimal risk study. A number **NWU-01273-21-A4** is given for one year of ethics clearance.

Please note that the ethics approval of this application is subject to the Covid-19 protocols.

Kind regards,

Mark Rathbone

Digitally signed by Mark Rathbone
DN: cn=Mark Rathbone, o=North-West University, ou=Business management, email=mark.rathbone@nwu.ac.za, c=ZA
Date: 2022.02.01 16:45:39 +02'00'

Prof Mark Rathbone
Chairperson: Economic and Management Sciences Research Ethics Committee (EMS-REC)

ANNEXURE E: STATISTICAL CLEARANCE

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Statistical Consultation Services
Tel: 018 299-2552
Web: http://www.nwu.ac.za
Email: Marike.cockeran@nwu.ac.za

14 November 2023

Re: Dissertation, L Monama student number: 24011355

We hereby confirm that the Statistical Consultation Services of the North-West University analysed the data. However, any opinion, findings or recommendations contained in this document are those of the author, and the Statistical Consultation Services of the NWU (Potchefstroom Campus) do not accept responsibility for the statistical correctness of the data reported.

Yours sincerely,

Prof Marike Cockeran
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