THE ASSESSMENT OF FINANCIAL RISKS OF OPEN DISTANCE e-LEARNING (ODeL) UNIVERSITIES: EMPIRICAL EVIDENCE FROM THE UNIVERSITY OF SOUTH AFRICA

by

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DECLARATION

I, Joyce Nkosi (student number: 32973462), declare that this dissertation entitled “THE ASSESSMENT OF FINANCIAL RISKS OF OPEN DISTANCE E-LEARNING (ODeL) UNIVERSITIES: EMPIRICAL EVIDENCE FROM THE FROM THE UNIVERSITY OF SOUTH AFRICA (UNISA)”, which I hereby submit for the degree of Master of Commerce in Financial Management at the University of South Africa, is my own work and has not previously been submitted by me for a degree at this or any other institution.

I declare that the dissertation does not contain any written work presented by other persons whether written, pictures, graphs or data or any other information without acknowledging the source. I declare that where words from a written source have been used the words have been paraphrased and referenced and where exact words from a source have been used the words have been placed inside quotation marks and referenced.

I further declare that the content of my dissertation has been submitted to an electronic plagiarism detection software and that it falls within the accepted requirements for originality.

Signed:

Date: 29 February 2025

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ABSTRACT

Background

In South Africa, universities encounter a diverse range of financial risks that can affect their stability and long-term sustainability. These risks stem from internal factors, such as operational inefficiencies, and external factors, including economic fluctuations and policy developments. Effective identification and management of these risks is vital for ensuring the continued success of higher education institutions.

Problem statement

Despite the growing importance of financial risk management in higher education, there is limited understanding of how open-distance e-learning (ODeL) institutions, such as the University of South Africa (Unisa), experience and address these risks. In particular, there is a lack of clarity regarding the types of financial risks these institutions face and the extent to which their staff are equipped to manage them.

Objectives

The current study aimed to identify the types of financial risks faced by an open-distance e-learning university. It also aimed to assess the risk mitigation techniques currently employed. Finally, the study aimed to determine the training needs of staff responsible for managing financial risk.

Methodology

Using the University of South Africa (Unisa) as a case study, a quantitative research design using exploratory factor analysis Cross-sectional data were collected using a self-administered questionnaire distributed to 140 respondents within Unisa. The cross-sectional data provided insights into risk exposure and management practices.

Results

The results show that the Unisa is mostly exposed to credit and operational risks. Exposure to liquidity and market risks was observed to be low. Furthermore, the results show that there is a notable gap in staff training in risk management interventions in areas such as credit and operational risk management. Staff also demonstrated limited understanding of liquidity and market risk, indicating a broader issue in risk awareness and preparedness.

Conclusion

The study concludes that the concept of financial risk management in ODeL institutions is still in its infancy. Notably, liquidity and market risk are still unclear to staff in the department responsible for financial risk management, posing a threat to effective financial governance.

Policy implications

The study recommends the implementation of robust internal control systems, regular auditing and investing in reliable technological infrastructure to manage financial risks more effectively. Additionally, it suggests appointing a dedicated risk officer and developing a comprehensive financial risk management guide to inform institutional decision-making and improve risk response strategies.

Keywords: financial risk, financial asset, market risk, credit risk, liquidity risk, operational risk, risk mitigation

SISWATI

SIFINYETO

Lingemuva

ENingizimu Afrika, emanyuvesi ahlangabetana nebungoti betetimali lobehlukahlukene lobungatsintsa kusimama kwawo kanye nekugcinwa kwawo kwesikhatsi lesidze. Lobungoti buvela etintfweni tangekhatsi, letifana nekungasebenti kahle kwekusebenta, kanye netintfo tangephandle, letifaka ekhatsi kugucugucuka kwemnotfo kanye nekutfutfukiswa kwenchubomgomo. Kukhonjwa nekulawulwa kwalobungoti ngemphumelelo kubaluleke kakhulu ekucinisekiseni kutsi tikhungo temfundvo lephakeme tiyachubeka nekuphumelela.

Sitatimende senkinga

Nanobe kubaluleka lokukhulako kwekulawula bungoti betetimali emfundvweni lephakeme, kunekuvisisa lokunemkhawulo kwekutsi tikhungo tekufundzela usekudzeni kanye nekufundzela nge-inthanethi (i-ODeL) letivulekile, njenge Nyuvesi yaseNingizimu Afrika (i-Unisa), tihlangabetana njani nalobungoti futsi tilungisa njani. Ikakhulukati, kunekungacaci mayelana netinhlobo tebungoti betetimali letikhungo letibukene nato kanye nekutsi tisebenti tato tihlomele kangakanani kutilawula.

Tinhloso

Lolucwaningo lwanyalo luhlose kutfola tinhlobo tebungoti betetimali letibukene nenyuvesi ye-ODeL. Kwaphindze futsi kwahloswa kuhlola tindlela tekunciphisa bungoti letisetjentiswako nyalo. Ekugcineni, lolucwaningo beluhlose kutfola tidzingo tekuceceshwa kwetisebenti letinesibopho sekulawula bungoti betimali.

Indlela yekusebenta

Kusetjentiswa i-Unisa njengesifundvo sendzaba, kwamukelwa umklamo welucwaningo lwesilinganiso losebentisa kuhlatiya emaphuzu ekuhlola. Idatha yetigaba letihlangene yabutfwa kusetjentiswa liphepha lemibuto leliphatfwako

lelasakatwa kulabaphendvulile labangu-140 ngaphakatsi e-Unisa. Idatha yetigaba letihlangene inikete lwati ngekuchayeka ebungotini kanye netindlela tekulawula.

Imiphumela

Imiphumela ikhombisa kutsi i-Unisa ichayeke kakhulu ebungotini besikweleti kanye nekusebenta. Kuchayeka ebungoti bemali kanye nemakethe kwabonakala kuphansi. Ngetulu kwaloko, imiphumela ikhombisa kutsi kunesikhala lesibonakalako ekuceceshweni kwetisebenti ekungeneleleni kwekulawula bungoti etindzaweni letifana nekulawula bungoti besikweleti kanye nekusebenta. Tisebenti tiphindze futsi takhombisa kuvisisa lokunemkhawulo kwekukhishwa kwemali kanye nebungoti bemakethe, lokukhombisa ludzaba lolubanti ekucapheleni bungoti kanye nekulungela.

Siphetfo

Lolucwaningo luphetsa ngekutsi umcondvo wekulawula bungoti betetimali etikhungweni te-ODeL solo awukatfutfukiswa. Kuyaphawuleka kutsi, kukhishwa kwemali kanye nebungoti bemakethe solo akukacaci kubasebenti belitiko lelibukene nekulawula bungoti betetimali, lokubeka lusongo ekuphatfweni kwetimali lokuphumelelako.

Imiphumela yenchubomgomo

Lolucwaningo luncoma kucala kusebenta kwetinhlelo tekulawula tangekhatsi leticinile, kucwaninga njalo kanye nekutjala imali kusakhiwonchanti setebucwepheshe lesetsembekile kute kulawulwe bungoti betetimali ngemphumelelo. Ngetulu kwaloko, kuphakamisa kukhetsa sikhulu lesitinikele sebungoti kanye nekutfutfukiswa kwemhlahlandlela lophelele wekulawula bungoti betetimali kute kwatiswe kwenta tincumo tesikhungo kanye nekutfutfukisa emasu ekubukana nebungoti.

Emagama labalulekile; bungoti betetimali, imphahla yetimali, bungoti betimakethe, bungoti besikweleti, bungoti bekukhipha imali, bungoti betekusebenta, kunciphisa bungoti

XITSONGA

NKOMISO

Matsalwa yale ndzaku/Matimu

Etikweni ra Afrika Dzonga tiyunivhesiti ti hlangana na makhombo yo hambana hambana eka swa timali leswi swinga ha vaka na nxungweto ekamatirhelo na vumundzuku bya tona.. Makhombo lawa yangaha suka eka mintlimbo yale ndzeni, leyi fana ka na mafambiselo, na mintlimbo yale handle,ku katsa na ku tsekatseka ka ikhonomi hambi kuri ku tumbuluxiwa ka milawu ya mafambiselo.Ku longoloxiwa hivurhonwana ka makhombo lawa naku ya lawula swinga pfuna ku endla leswaku swiyenge swa tidzondzo tale hehla swi humelala eka migingiriko ya swona.

Nhlamuselo ya xiphiqo

Hambi leswi ku nga na ku ndlandlamuka ka xilaveko xaku lawuka makhombo ya swatimali eka xiyenge xa tidzondzo tale henhla, kahari na ku kayivela ka ntwisiso wa ndlela leyi ti Yunivhesisi leti nyikaka vukorhokeri bya dyondzo yale kule na thekinoloji tani hi Yunivhesiti ya Afrika Dzonga ti hlanganaka na makhombo no thlela ti ringeta kuya lulamisa.

Hiku kongoma , ka hari na ku kayivela mayela na tinxakanxaka ta makhombo ya swatimali lawa swiyenge leswi swi langutaneke na wona na ndlela leyi vatirhi eka swiyenge leswi va faneleke ku leteriwa hi tindlela taku lwisana na makhombo lawa.

Swikongomelo

Vulavisisi lebya haku endliwaka abyi ngongoma eka ku ku fikelela ku kumisisa tinxaka ta makhombo lawa ya langutana na tiyunivhesiti leti nyikaka vukorhokeri bya dyondzo yale kule na thekinoloji. Byi thlela byi xopaxopa tindlela leti tirhisiwaka eka nkarhi wa sweswi ku papalata makhombo lawa.Xo hetelela vulavisisi abyi lava ku kumisisa leswaku hi byihi vuleteri leswi vatirhi lava tirhanaka na ku lawula makhombo ya swa timali vabyi lavaka .

Maendlelo ya vulavisisi

Ku tirhisiwe ndzavisiso wa Yunivhesiti ya Afrika Dzonga bya maendlelo ya ku tirhisa ndzavisiso wa tinhlayonhlayo . Vuxokoxoko byi kumiwe hiku tirhisa mpfampfarhuto wa swivutiso lowu tumbuluxiweke hi mulavisisi ,lowu nga nyikiwa eka vanhu va dzana na makume mune ku suka e UNISA Vuxokoxoko lebyi kumiweke ku suka eka swivutiso abyi paluxa hi makhombo na malawulelo ya wona ku suka eka lava tekeke xiave eka vulavisisi.

Mbuyelo

Mbuyelo wu komba leswaku UNISA yi langutane na makhombo ya mali leyi nga kona na swona makhombo ya xibundzu la langutela yari enhansi swinene.Hi hala thlelo kuna vangwa kumbe ku kayivela ekaku leteriwa ka vatirhi eka xiyenge xa malawuleyo ya swikweleti na makhombo ya mafambiselo.s. Vatirhi va kombise kuva na nkayivelo lowu kulu wa vutivi eka xiyenge xa makhombo eka swa timali, nankayivelo wa vutivi eka swa makhomboya mabindzu, leswi swinga na nxungweto lowu kulu eka vutivi bya makhombo hiku angarhela hambi kuri ku lulamela ka vona kuya emahweni.

Mahetelelo

Vulavisisi lebyi byi komba leswaku kahari na nkayivelo eka xiyenge xa mafambiselo ya makhombo ya swa timali eka xiyenge xa swa tidzondzo leti nyikaka dyondzo yale kule na thekinoloji. Swahari tano,mhaka ya mafambiselo ya swikweleti na bindzu kahariki nthlonthlo eka vatirhi eka dzawulo leyi lawula mafambiselo ya makhombo ya swa timali , leswi tisaka nxungweto eka mafambiselo lama nene ya swa timali.

Switandzaku swa milawu ya mafamiselo

Vulavisisi byi bumabumela kuva ku tirhisiwa ndlela leyi tiyeke ya malawaulelo eka ndzwawulo,swikambelo swa nkarhi na nkarhi ,na kuva ku vuvekisiwa eka switirhisiwa swa nkoka swa xitekinoji, kuri ndlela yo ringela ku lawula makhombo ya swa timal.

Nthlandla kambirhi,vulavisisi byi thlela byi bumabumela ku thoriwa ka mutirhi loyi angata langutana na makhombo ya swa timali no thlela a mpfampfarhuta no

tumbuluxa tsalwa leri ngata tsundzuxa ndzawulo hi swiboho leswi ngaha tekiwaka ku antswisa mandlelo yo lwisana na makhombo lawa yanga vaka kona.

Marito ya nkoka:

khombo ra swa timali,rifuwo ra swa rimali, khombo ra xibindzu khombo ra xikweleti , khombo ra mali leyinga kona ,khombo ra matirhelo, na ku hunguta

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CHAPTER 1. INTRODUCTION

1.1. INTRODUCTION

The rapid advancement of technology has revolutionised the landscape of higher education, mainly through the proliferation of Open Distance e-Learning (ODeL) institutions (Paul and Tait, 2019). Kumar, Sani, Kumar, and Kumar (2020) assert that advances in internet and computer technology have resulted in changes in the state of higher education, with online learning changing the traditional pedagogies of learning and skills training. According to Danchikov, Prodanova, and Kovalenko (2021), the impact of COVID-19 affected all levels of education, from primary to tertiary, leading to significant transformations during the isolation period. Practical experiences have demonstrated that educational institutions can effectively convert formal education into online formats by utilizing virtual classes and other essential online tools. Currently, online training remains relevant for various educational organizations and is used alongside traditional forms of instruction. An estimated 8 million students are enrolled in the 60-80 open universities worldwide (Paul and Tait, 2019). These institutions provide flexible, accessible, and often more affordable education to a diverse and geographically dispersed student population. Among them, the University of South Africa (Unisa) is a leading example of an ODeL university, playing a pivotal role in expanding educational opportunities across the African continent and beyond. However, as these institutions grow and adapt to the changing educational environment, they are increasingly exposed to various financial risks. Understanding and managing these risks is crucial for ensuring the long-term sustainability of ODeL universities.

Like corporate entities, higher education institutions across the globe face both inside and outside risks that may affect the accomplishment of their mission and objectives (Toma, Alexa and Sarpe, 2014). Some or more familiar and distinct financial risks include credit risk, liquidity risk, and market and operational risk (Ismail and Ahmed, 2023).

Financial risk is a type of threat that can result in a loss of capital for interested parties. This means that when the university fails to manage its student debt that arises from the default of tuition fees and an operational system that is not in place to achieve the

goal and objectives set, this might result in financial loss for the university (Putri, Nugroho and Lutfiah, 2024). Financial risk in higher education is regarded as a problem, and open distance e-learning (ODEL) is not exempt from this risk (Syed, Ahmad, Alaraifi, and Rafi, 2021). Empirical literature on financial risks in the context of higher education institutions has lagged behind theoretical research. Chen, Kumara, and Sivakumar (2021) argue that financial risk is a threat that can result in capital loss to interested parties. Studies have shown that universities fail to manage their student debt that arises from the default of tuition fees and an operational system that is not in place to achieve the goal and objectives set, this might result in a financial loss (Newfield, 2018; Shermer, 2021; Guthrie, Linnenluecke, Martin-Sardesai, Shen and Smith, 2022; Looney and Yannelis, 2024). Therefore, the financial risks associated with open-distance e-learning (ODEL) universities must be assessed, which this study aims to do using empirical evidence from Unisa. Moez and Abdelheq (2020) indicate that financial risk management analysis is crucial for supervisors and financial analysts.

1.2. BACKGROUND

Financial risk is a significant issue in many academies in South Africa and abroad, as there is uncertainty about fee payments, primarily due to the use of credit cards and National Student Financial Aid Scheme (NSFAS) cards (Sabi, Siwela, Kolanisi, and Naidoo, 2018).

Recently, Universities have shifted to debt collectors to lessen the burden of financial risk, thereby placing the responsibility for collection on debt collection companies. In risk terms, this is called risk avoidance, which means outsourcing the risk to another party (in this case, external debt collectors). Outsourcing debt collection to a third-party collection agency is a strategic option for institutions such as universities, as third-party collection agents are professional agencies that use proven tactics to yield effective results with past-due debtors (Wambugu, 2012).

Many businesses use this kind of outsourcing as a risk management strategy to transfer risk to more competent entities, allowing them to focus on their core competencies (Benaroch, 2020). Debt collection strategies require considerable time and resources to implement effectively, and debt collectors have an arsenal of tools, software, and files at their disposal that make them far more efficient and effective at

finding inaccessible delinquent customers (Wambugu, 2012). An organisation's management must decide whether to employ a specialised collector, which will incur additional costs, or to create an in-house collections unit at a lower cost but with few relevant tools and little experience. However, the organisation must carefully explore its options, noting each path's available resources, costs, and benefits and how the tactic fits its structure. A well-designed collections plan considers the strengths and weaknesses of the institution, addressing general inquiries such as whether collections should be handled internally or externally through an intermediary (Mapa, 2017).

Financial risk arises from uncertainties that make it difficult to execute financial plans effectively. Existing plans or processes are ineffective if the risks are not appropriately managed. According to Hillson and Murray-Webster (2007), risk management methods and techniques must be effective in implementing contingency plans, as many existing risk processes are likely inefficient when unexpected threats or changes emerge. Currently, Unisa is finding it challenging to identify financial risks, such as credit card fraud, online risks, and credit risks. Due to unpredictable economic factors such as high unemployment and Covid-19, many students opt to use an acknowledgement of debt (AOD) for their studies, which may make debt collection from current students difficult and increase the number of unfulfilled AODs. There are also no effective repercussions for the students concerned in these cases (Matsebula and Yu, 2020).

Another contributor to defaulting on payments is when students or stakeholders lack knowledge of using the University payment system. Economic issues such as unemployment, inflation, and interest rate hikes are associated with financial exclusion of students and contribute to payment default (Ozili, 2021).

Some universities do not have a system to check student creditworthiness, as expected by the Public Credit Act 34 of 2005, or proper in-house debt collection tools. Ittelson (2001) and Zheng, Zu and Lin (2019) emphasise the effectiveness of new digital systems that are available and which can verify students' creditworthiness as well as the accuracy of the credit bureau record as evidence of a student's or parent's ability to pay, to be granted the credit. Litheko (2021) stresses the importance of the Domestic Credit Act, which aims to protect consumers against dishonest moneylenders and to regulate the credit market.

This dissertation thus considers the financial risks an ODeL university such as Unisa is exposed to, as well as the financial risk mitigation techniques and possible training interventions for staff members that may enable more effective risk management.

Unisa is the leading ODeL foundation of higher learning, with multiple campuses in South Africa, Ethiopia and, more recently, Eritrea. Unisa has also introduced online studies, which, combined with its multiple campuses across South Africa, firmly positions the university as a feature of the Fourth Industrial Revolution or 4IR. Thirty-eight tertiary institutions in South Africa serve approximately 2.6 million students. The annual budget for higher learning in South Africa has increased by approximately 7.2% from R116.8 billion in 2021/22 to R143.7 billion in 2024/25 (Estimate Government Expenditure, 2023). Unisa was constituted 150 years ago, celebrating its 150th anniversary in 2023. Its annual enrolment is approximately 350,000 students (Unisa, 2021). Although other universities have also begun incorporating remote learning, mainly due to the COVID-19 pandemic, Unisa is still the largest ODeL institute in South Africa and Africa.

Since financial risk is present in all sectors of the economy, it is necessary to examine how financial risk could influence the financial status of universities and to determine effective risk management strategies for the ODeL universities.

1.3. RESEARCH PROBLEM

The University of South Africa (Unisa), as an Open Distance e-Learning (ODeL) institution, is currently facing severe financial strain due to declining student enrolments, reduced government subsidies, increasing student bad debt, and a shrinking third-stream income. According to Unisa (2020), a drop in revenue coupled with rising student debt delinquency poses a direct threat to the financial sustainability of the institution. Furthermore, Unisa reportedly lost R830 million due to financial mismanagement and loopholes (Unisa, 2022), further exacerbating its financial vulnerabilities. In response, the National Student Representative Council (NSRC) has appealed for assistance in covering student debt, highlighting the urgency of addressing the university's worsening financial condition.

Despite these critical challenges, there is evidence that Unisa lacks an effective and integrated financial risk management strategy. This contradicts widely accepted

financial principles, which state that an institution must adopt an efficient revenue approach that maximises resources and minimises costs (Amason & Ward, 2020; Leach & Melicher, 2020). While prior research, such as Van Schalkwyk and Bevan-Dye (2018), has established that financial risk is not unique to Unisa or South African universities, there remains uncertainty in how ODeL institutions, specifically, manage these risks. Additionally, as Heller (2022) suggests, universities must evolve and adopt modern business practices to survive financially in a changing environment.

Unisa's financial sustainability is increasingly compromised by insufficient financial risk management practices, particularly within the context of a resource-constrained and enrolment-sensitive ODeL environment. The lack of a comprehensive financial risk framework raises serious concerns about the institution's ability to anticipate, mitigate, and respond to systemic financial risks. This study aims to investigate financial risk with the goal of improving financial risk management strategies. It addresses the gap in existing research that focuses primarily on the financial risk landscape of Open Distance e-Learning (ODeL) while neglecting other aspects of risk. The research encourages further exploration of financial risk management in universities, specifically considering issues such as student dropout rates, declining third-stream income, the increase in bad debt due to acknowledgments of debt (AOD) granted without a credit check, stakeholders' awareness of various types of risks, and the broader societal implications. By using UNISA as a case study, this research seeks to enhance financial risk management strategies within the context of ODeL institutions.

1.4. RESEARCH GAP

While the concept of financial risk is well-researched in the corporate sector and public finance at national and provincial government levels, there is a notable paucity of empirical research on financial risk management within universities. Aina et al. (2022) observe that studies in this area are fragmented and often narrowly focused on select types of financial risk, failing to provide a holistic understanding. Much of the available literature is limited to areas such as banking, accounting, or engineering finance, with minimal focus on the higher education sector (Komarek, De Pinto & Smith, 2020).

Even within the limited body of research addressing higher education, most studies ignore the unique financial risk landscape of Open Distance e-Learning (ODeL) universities. Alsharari and Abousamra (2019) identify challenges such as rising bad debt and credit risk in higher education but do not address the distinct dynamics of financial risk in distance education models. Sum and Saad (2017) further argue that universities often underestimate their exposure to financial risk, mistakenly perceiving themselves as insulated from market and credit vulnerabilities due to their academic mission.

There is limited empirical evidence on the comprehensive financial risk management practices of universities, particularly within the context of ODeL institutions like Unisa. Existing studies either overlook the sector entirely or fail to explore the full spectrum of financial risks faced by such institutions, including credit, liquidity, operational, and market risks. This study seeks to fill this gap by offering an in-depth, case-based examination of financial risk exposure and mitigation practices at Unisa.

Table 1.1: Research Gap

Author & year of publication	Risks covered	Gap (risks not covered)
1. Shah, Khalid, Khan, Arif1 and Khan, 2020	1. Financial risk-tolerance 2. Different dimensions of financial risk	1. Credit risk 2. Market risk 3. liquidity risk
2. Ramudzuli and Muzindutsi, 2018	1. Financial ability 2. Psychological willingness to tolerance risk level 3. non-financial risk tolerance	1. Credit risk 2. Market risk 3. liquidity risk
3. Tas, Saydaliev and Kadyrov, 2022	1. Financial risk-taking 2. financial risk propensity	1. Credit risk 2. Market risk 3. liquidity risk
4. Harrison, 2019	1. Rethinking risk for disadvantaged young people	1. Credit risk 2. Market risk 3. liquidity risk
5. Zang, Luo, 2022	1. Financial risk creating an early warning system.	1. Credit risk 2. Market risk

	2. Prevention Strategy	3. liquidity risk
6. Gori, 2010	1. Credit risk Management and non-performing loan	1. Market risk 2. liquidity risk
7. Carnegie, Guthrie and Martin-Sardesai, 2022	1. Risk disclosures	1. Credit risk 2. Market risk 3. liquidity risk
8.(Komarek, De Pinto, Smith, 2020).	Engineering and agricultural finance	1. Market risk 2. liquidity risk
9.Rabbania, Heob and Lee, 2022	1. financial knowledge. 2. financial education, 3. financial well-being, 4. financial risk tolerance	1. Credit risk 2. Market risk 3. liquidity risk

Source: Author construction

1.5. RESEARCH QUESTIONS

1.5.1. Primary research question

What are the critical financial risks that characterise open distance and e-learning Universities, and how can such risks be mitigated for financial sustainability?

1.5.2. Secondary research questions

1. What are the main sources of financial risk for the University of South Africa as an ODeL institution?
2. What financial management techniques does Unisa currently use to mitigate financial risk?
3. What non-financial management techniques does Unisa currently use to mitigate financial risk?

1.6. RESEARCH AIM

The primary aim of this research was to assess the financial risk of Unisa, an ODeL institution in South Africa, and contribute to the literature on financial risk management in ODEL institutions.

1.6.1. Primary objective

Flowing from the primary research question presented in Sub-section 1.5.1, the primary objective of this study is to identify and assess the key financial risks faced by open-distance e-learning universities, paying attention to understanding their impact on the financial sustainability of the ODeL universities.

1.6.2. Secondary objectives

Based on the primary objective, the following secondary objectives were formulated as follows:

1. To determine the main sources and nature of financial risks faced by Unisa as an ODeL university.
2. To determine the financial risk management techniques Unisa management uses to mitigate financial risk.
3. To identify the non-financial management techniques used by Unisa to mitigate financial risk.

1.7. SIGNIFICANCE OF THE STUDY

The primary aim of this study was to assess the financial risk of ODeL institutions using Unisa as a case study. Sum and Saad (2017) opine that universities are vulnerable to many types of financial risk. Similarly, Willetts (2017) observed that a lack of risk management may threaten the success of any business. Concomitant with these views, in South Africa, the ODeL model plays a crucial role in expanding access to higher education, particularly for students in rural and underserved areas. Institutions like Unisa represent a substantial part of the national higher education landscape, serving a large population of non-traditional students. However, ODeL universities encounter unique financial risks associated with high dependency on technology, fluctuating enrolment numbers, and escalating operational costs. These institutions must also address financial pressures stemming from reliance on government funding and the challenge of maintaining quality and infrastructure amid limited physical resources.

By examining financial risk management in South African ODeL institutions, this study seeks to identify financial risks and methods of mitigating those risks for their financial

sustainability. Such an assessment is crucial, as effective risk management directly impacts the institution's capacity to provide affordable, accessible, and quality education to diverse student populations. The study provides insights into financial strategies that can help ODeL universities navigate economic uncertainties, adapt to shifts in the higher education landscape, and fulfil their mission to democratize learning in a resource-constrained environment.

This study aims to enhance risk awareness among society and stakeholders by improving their knowledge of risk types and policies. This can be achieved by implementing structured frameworks, processes, and tools. Key actions include providing targeted training, engaging expert support, translating risk into practical terms, and centralizing and simplifying processes. The findings of this study could also inform policy and decision-makers, helping to safeguard the financial stability and educational accessibility of Open Distance e-Learning (ODeL) institutions in South Africa and . Additionally, this research seeks to add value to the body of knowledge in the field of financial risk management.

RESEARCH METHODOLOGY

This section presents the methodology in the order of the research philosophy and paradigm, research design and methods, the study’s reliability and validity and finally, the ethical considerations and delimitations.

1.7.1. Research philosophy and paradigm

In this section, this research presents the information based on the research philosophy and paradigm approach contributing to the business inquiry on the way the world is perceived and organisational realities (Saunders, Lewis and Thornhill, 2023)

The philosophical foundation is based on the researcher's reflection on understanding the world, though this awareness is not voiced or made clear to the readers (Saunders et al., 2023)

Paradigms can be categorised into positivism when conducting quantitative methods and interpretivism when interpreting the results in-depth (Alharahsheh and Pius, 2020).

1.7.2. Research design

This study applied a quantitative study approach and descriptive design. Mohajan (2020) defines quantitative research as the method used to summarise and arrange data in an effective and meaningful way. The quantitative approach was deemed relevant since quantitative review information was utilised to answer the exploration questions and the examination targets in the wake of social events and the expected information.

A descriptive design is utilised to depict the dissemination of at least one factor, regardless of any causal or different speculations (Aggarwal and Ranganathan, 2019). A distinct plan was utilised to evaluate the financial risk of Unisa. A typical illustration of this kind of plan is a registration study, in which a populace is overviewed at one moment to portray qualities of that population, including age, sex, and geographic area, among different attributes. The information assortment, information examination, degree, and boundary are talked about momentarily in sub-segment 3.3. Subtleties of the exploration procedure are introduced in Chapter 3.

1.7.3. Data collection

Empirical research aims to collect new data and determine whether the data will assist in establishing the evidence that is collected (Birks & Mills, 2022). This review gathered information utilizing a study survey with an example of the population. Jones, Baxter and Khanduja (2013) indicate that a survey questionnaire is an efficient technique for gathering data from a sample or the whole population of the objective respondents to develop quantitative descriptors of the traits of a bigger or smaller population of which the respondents are individuals. Each respondent completed a standardised electronic questionnaire. Respondents positioned their reactions to each question on a five-point Likert scale. Cross-sectional information was gathered from 140 respondents.

1.7.4. Data analysis

The Statistical Package for the Social Sciences (SPSS) was used to analyse the data collected. The data was analysed using descriptive statistics such as the standard deviation, mean and bivariate Pearson correlation coefficient, which were utilised to determine the relationship between factors in the review. Moreover, the information

was examined utilizing Exploratory Element Investigation (EFA) and Concurrent Legitimacy (CV) to test the reasonableness and legitimacy of the examination.

1.8. SCOPE AND DEMARCATION OF THE STUDY

The study focused on an ODeL institution in South Africa, specifically on the staff of the Finance Revenue and Treasury Management Department in the Finance Directorate housed at Unisa's three main campuses, namely Muckleneuk Campus (main campus) (Pretoria), Sunnyside Campus (Pretoria) and Science Campus (Florida, Johannesburg). The study concentrated on student fees, debt collection, and other financial risks that can influence the university`s sustainability. The rest of the Finance Directorate deals with other aspects of the university's finances. To this end, the quantity of members in the review is genuinely low.

1.9. ETHICAL CONSIDERATIONS

The researcher had acquired moral leeway before leading the exploration from Unisa and enrolled with the School of Finance, Risk and Banking in the College of Economic and Management Sciences (CEMS). The researcher was granted and endorsed moral approval by the ethics board**.** The respondents were provided with an assent form, and their data were kept confidential.

DEFINITION OF KEY TERMS

1.9.1. Financial risk

Financial risk is the likelihood of any investment or business losing money **(**Chen, Kumara and Sivakumar, 2021)**.**

1.9.2. Acknowledgement of debt

Student acknowledgement of debt (AOD) is granted to assist them in registering for a semester and paying for it later. It is like a loan to students. According to Bolton et al. (2020), an AOD is a debt relief measure granting the provisional suspension of debt payments.

1.9.3. Open distance e-learning

Open distance e-learning (ODeL) means studying remotely. In South Africa, the term has changed from open distance learning (ODL) to ODeL (Ngubane-Mokiwa and Letseka, 2015).

1.9.4. Debt collectors

A debt collector can be a person or company assigned to collect irrecoverable debt from debtors (Bellotti, Brigo, Gambetti and Vrins, 2021).

1.9.5. National Credit Act 34 of 2005

The Public Credit Act 34 of 2005 states that a credit supplier should not go into untrustworthy arrangements for a client or understudy without knowing the client's capacity to pay (Boraine, 2010).

1.9.6. Financial performance

Financial performance is an emotional mark of how well an endeavour involves resources in its centre business and produces income (Kotter, 2022).

1.10. CHAPTER OUTLINE

Chapter 1 outlines the introduction and background of the study. The study's problem statement, research questions and objectives are elucidated in this chapter.

Chapter 2 presents a detailed theoretical and empirical analysis of the study. It discusses the systems used to assess financial risk and the strategies for mitigating that risk. Additionally, it outlines the supporting conceptual framework. The chapter reviews and integrates specific evidence that forms the study's foundation, highlighting gaps that exist in the literature.

Chapter 3 frames the examination strategy of the review. The instruments and approaches used to meet the exploration objectives are portrayed and assessed.

In Chapter 4, the results of the study are presented and discussed. This chapter summarises the study's main results and makes recommendations for future research. Practical recommendations for ODeL institutions are also made, and the study's limitations are briefly discussed.

Chapter 5: The fifth and final chapter concludes the study, presents a summary, and concludes the study.

1.11. CHAPTER SUMMARY

This chapter provides a concise acquaintance and foundation with the review by examining the reasons for directing exploration on the financial risk of an ODeL organization in South Africa. The exploration issue, research hole, question points, and goals were illustrated and examined. The exploration plan and technique utilised in this study were momentarily discussed. The following area examines the writing survey with the appraisal of financial risk at an ODeL establishment.

CHAPTER 2. LITERATURE REVIEW

2.1. INTRODUCTION

Following the introduction and background of the study in Chapter 1, this chapter presents the applicable theoretical and empirical literature on financial risk. Four types of risk: credit risk, market risk, liquidity risk and operational risk support this study.

Chapter 2 proceeds as follows. Section 2.2 gives the theoretical background of the study. More precisely, the theory of financial risk is presented and discussed in detail. Figure 2.1 summarises the elements of financial risk.

Higher education institutions are engaged in developing human capital for both public and private entities. In the process, they need finance to support their operations. Globally, these institutions deal with a variety of risks that have a direct impact on their performance. These risks pose a significant drawback in achieving growth and sustainability in terms of size, assets and performance of the institution, which is measured in terms of throughput rates. Accordingly, such a crippling situation in the institution justifies the need for a better framework to manage such risks.

The key financial risks affecting ODeL higher learning institutions are market risks, credit risks, operational risks and liquidity risks. All these risks can be categorised under a single umbrella term, ‘financial risk’.

2.2. FINANCIAL RISK

Financial risk is an umbrella term used to denote several categories of risk associated with financial transactions (Wani, Ahmad, 2015). The risk can be described as the likelihood of investors losing money in an asset whose cash flows are insufficient to meet matured liabilities. Similarly, Ha, Tran, Sakka, and Ahmed (2024) define financial risk as a potential loss of money and the degree of uncertainty a customer is willing to accept when making a financial transaction. This view aligns with Ayele (2024), who posits that financial risk refers to the likelihood that the cash flows of an enterprise will be inadequate to meet creditors' falling due and to fulfil other financial obligations. Accordingly, the level of financial risk relates less to the business’s operations themselves and more to the amount of debt a business incurs to finance those operations. The higher the credit the business assumes, the higher the probability of

default on its financial obligations. Taking on higher debt or financial liability increases a business' financial risk.

2.3. TYPES OF FINANCIAL RISK

Financial risk is a concept that has its roots in company monetary management. A company's financial conditions may be unclear as a result of the uncertainty of its repayment of a loan that is due with monetary capital in daily operations (Jain 2024). Figure 2.1 illustrates these types of financial risk. Four types of financial risk are discussed in Sections 2.3.1 to 2.3.4 below.

Figure 1: Types of financial risk

Source: Author construction

2.3.1. Market risk

Market risk refers to the fluctuations in a company's income sources due to changes in market factors, such as interest rates, which can impact an organization's revenue or the value of its financial assets (Leo, Sharma, and Maddulety, 2019). According to Muriithi, Muturi and Waweru (2016), market risk involves potential threats to an institution due to shifts in market prices, particularly changes in interest rates, foreign

exchange rates, and equities and commodities prices. In the context of higher education institutions, market risk can manifest in many ways. One significant area is tuition revenue fluctuations that are influenced by economic downturns or changes in government funding for education, which can lead to a decrease in the number of students who are able or willing to pay tuition, specifically affecting private institutions (Mintz, 2021). A recession may result in financial strain due to reduced enrolment and funding (Unisa, 2022).

Many universities rely on endowment funds invested in financial markets to support their designated purposes and daily operations (Nguyen and Mogaji, 2022). This is known as endowment performance. If stock markets or other financial assets perform poorly, the value of a university's endowment may decline. This decrease can impact the institution's ability to fund scholarships, research, or capital projects.

2.3.2. Credit risk

Credit risk refers to the possibility of default and reflects the degree of variation in the valuation of debt instruments and derivatives, which depends on the creditworthiness of borrowers (Lopez and Saidenberg, 2000). According to Young (2014:7), credit risk is the likelihood that an institution may incur a loss due to providing loans or unpaid credit cards, resulting in insufficient funds or fraud. Similarly, Baradaran and Keshavarz (2017) assert that credit risk arises when borrowers cannot repay their liabilities. Drawing from the three definitions, it is evident that credit risk results from borrowers not fulfilling their obligations in a credit transaction. Such obligations include the repayment of the capital sum plus interest. Accordingly, it is crucial to identify, measure, monitor, and manage credit risk effectively to ensure that the risks associated with loans are accurately assessed, facilitating the achievement of targeted returns.

According to Chen and Hsiao (2021), default risk arises from poor lending decisions based on incorrect appraisals. Kithinji (2010) emphasizes the importance of thoroughly investigating credit documentation before approving a loan to avoid potential financial losses. Credit risk is a critical factor in the financial stability of institutions, and if not managed properly, it can lead to organizational failure (Makri and Papadatos, 2014). To reduce default risk, universities should begin implementing credit checks. Kim,

Kraft and Ryan (2013) and Chen and Hsiao (2021) found that the most effective method for assessing default risk is comparing net profit to the desired profit.

Credit risk is a significant financial consideration that must be carefully monitored and managed to reduce the non-payment rate (Noomen and Abbes, 2018). The overall absence of a monitoring strategy for loan accounts, such as not tracking loans granted to students, along with the risks associated with management, contributes to increased credit risk. It is essential for any financial department within a university to continuously evaluate the borrowers' capacity to repay their debts (Addae-Korankye, 2014). When debts are repaid, the level of non-payment declines, leading to improved profitability.

Since credit risk plays a crucial role in the financial performance of economic sectors, failure to manage, monitor, and address it appropriately may lead to significant issues (Makri and Papadatos, 2014). An aggressive approach to granting credit has been identified as a primary cause of loan defaults (Sibiya, 2023). South Africa has experienced low economic growth, which exacerbates credit risks and negatively impacts the financial stability of colleges. The unstable global, political, and economic landscape demands greater managerial expertise in handling credit to enhance the financial performance of higher education institutions (Jansen, 2023).

Haneef et al. (2012) state that a poorly performing economy leads to higher levels of debt and defaults, which can result in organizational failures. Therefore, effective management of non-performing loans is crucial for maintaining universities' performance and financial efficiency. The rise in non-payments jeopardises the profitability of universities (Oguk and Imboga, 2021). Willetts (2017) implies that a lack of effective risk management can compromise the success of any organization. The provision of credit advances by universities creates uncertainty because the risks associated with future repayments are unpredictable (Naili and Lahrichi, 2022). Furedi (2009) notes that the future of loan provisions remains unclear and uncertain, as it is impossible to know whether borrowers will repay their debts. The default in payment will trigger market risk and influence financial sustainability, damaging the university's reputation (Khoshtaria, Datuashvili and Matin, 2020).

The next subsection will discuss liquidity risk, which comprises cash flow shortages, expected stock returns, and other sources of revenue.

2.3.3. Liquidity risk

Liquidity risk is when financial assets, securities, or commodities cannot be quickly traded in the market without affecting their price (Pontiff and Singla, 2019). It often arises from expected stock returns, with liquidity mismatches a main factor in systemic risk (Marozva, 2019; Marozva and Makina, 2020). Gasimov (2024) describes liquidity risk as the possibility that an institution may be unable to meet its short-term financial obligations due to an imbalance between its liquid assets (like cash or easily convertible assets) and its liabilities. This situation can occur even if the institution possesses valuable long-term assets.

In the context of higher education institutions, liquidity risk may manifest in several ways. For instance, cash flow shortages can arise when universities rely on various revenue sources, such as tuition fees, government funding, donations, and investment income (McPherson, M Schapiro, 2021). A sudden decline in any of these streams, such as a decrease in student enrolment or cuts in government funding, could hinder the university's ability to cover immediate operational costs, including payroll and utility bills. Additionally, many universities depend on endowment funds to support scholarships, research, and salaries; if these funds are not managed wisely or market conditions are poor, they may not be accessible quickly enough to address immediate financial needs (Nguyen, Mogaji, 2022).

Universities often face liquidity risks related to debt payments because they frequently take on loans to finance infrastructure projects. Unexpected declines in revenue or funding can make it challenging to meet these loan repayment obligations (Cohen, Liang, Lourie and Nekrasov, 2024). On a different note, Luo, Liu, Zhang, Xu, and Guo (2021) stated that government subsidies can harm an institution's short-term financial health, leading to a reduced cash flow. Delays in government payments or grant funding may further complicate cash flow, impacting the university's ability to manage short-term expenses.

Moreover, firms that rely on delinquent payments to meet cash flow forecasts are less likely to establish new supplier relationships and more likely to end existing ones. Unforeseen costs, such as emergency repairs or legal fees, can strain cash reserves if liquid assets are insufficiently available (Shem and Mupa, 2024). Additionally, changes in international student enrolment, influenced by global economic conditions

or visa policies, can significantly affect tuition revenues, especially for institutions that depend heavily on international students. These shifts are often driven by both domestic and international political policy changes (Scott, 2021).

Liquidity risk in higher education institutions refers to the potential difficulties a university may encounter in quickly converting assets into cash or fulfilling short-term financial obligations, which can result in financial strain or instability. Stability is defined as an institution's ability to match its funding sources with its funding uses while maintaining a state of financial liquidity (Presley, 2022). Institutions can mitigate this risk by maintaining cash reserves, securing access to short-term credit lines, and diversifying their revenue sources.

2.3.4. Operational risk

The Basel Committee on Banking Supervision (2004) defines operational risk as “the risk of loss resulting from inadequate or failed internal processes, people and systems or external events. Similarly, Skogdalen and Vinnem (2011) and Merker and Peck (2019) posit that operational risk is a risk of loss or failure due to inadequate internal processes resulting in a breakdown in procedures and systems and from poor management or human error. Operational risk includes legal risk but excludes strategic and reputational risk. Following this succinct definition, Hubbard (2020) opined that effective risk management plays an essential role in the effective loss of finance caused by a failure of risk management.

In the context of universities, operational risk refers to the risk that a university’s internal processes, systems, or people may fail to function effectively, leading to financial loss. This can include risks related to management decisions, fraud, system breakdowns, or legal liabilities. Universities may also face increased operational risks when scaling operations, such as expanding campuses or offering new programs.

Alenezi's (2021) emphasis is on institution transformation, which impacts the transformation of operations digitally to sustain education delivery**.** This indicates how universities' internal operations (e.g., financial management, governance, and strategic planning) can contribute to operational risk. Poor financial oversight or mismanagement of funds can lead to cost overruns, financial crises, or even legal issues, thereby increasing the financial risk for universities. Given the close linkage of operational risk management and other types of risk, it is imperative that, like banks,

higher education institutions first understand the concept of operational risk before designing the operational risk measurement and management framework (see Chisasa and Young, 2013).

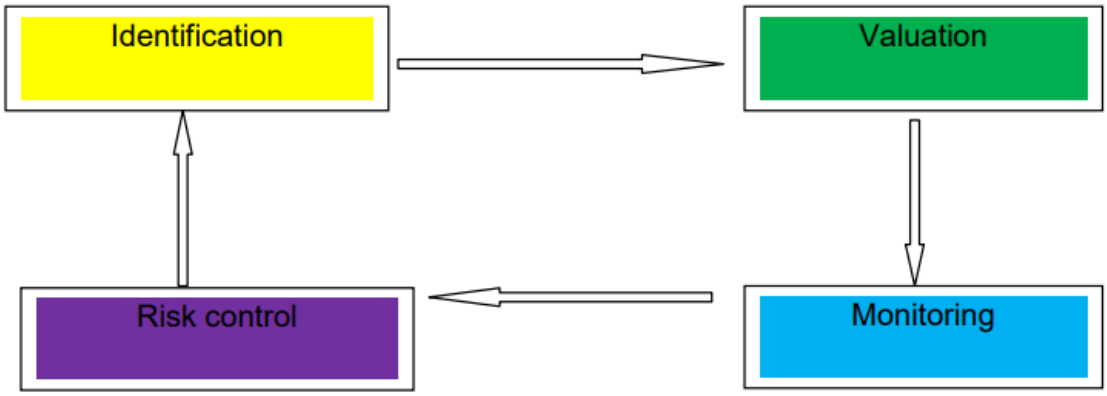


Figure 2.2: The operational risk management process

Source: Chisasa and Young (2013).

The operational risk management framework is a brief four-step risk management process (Primorac and Kozina, 2021**).** In the first step, the risk to which an entity is exposed must be identified. In this stage, it is necessary to set sufficient operational risk identification indicators. Operational risk should be identified in a timely manner to allow for adequate intervention strategies to mitigate the adverse effects and consequences on the operations of the affected entity. The identified risk will form the basis for determining viable systems for monitoring and controlling operational risk. The estimation and valuation of losses emanating from risks that have been identified is the next step. This step involves calculating and analysing ratios regarding operational risk losses using recorded loss data from established databases. The valuation of operational risk focuses on the correlations of this risk with other risks affecting the entity since this risk may determine the development of other risks, especially credit risk, market risk, and reputational risk (Wang, Zhao and Huchzermeier, 2021). After identifying and valuing the risks that affect the business activities, the risk owners should take appropriate measures to prevent the manifestation of the risk. This is the monitoring stage. Risk control is the fourth and final stage in the risk management process. It involves management's decision on how to deal with the identified risks. This may be done through, for instance, staff training,

risk transfer to third parties such as insurance companies, and the elimination of risk by ceasing operations.

To mitigate the operational risk inherent in their businesses, risk owners transfer some of the operational risks they face (Girling 2022). They do this by establishing insurance policies for the types of events that generate operational risk.

During all the phases, it is necessary to maintain control and perform the audit of operational risk assessment following the risk framework, complying with the regulations and internal audit reports.

Thus far, the financial risks that higher education institutions may be exposed to have been identified and discussed. The next section presents the risk mitigation strategies available to ameliorate the adverse impact of the identified risks on the performance of higher education institutions.

2.4. FINANCIAL RISK MITIGATION STRATEGIES

Successful financial risk mitigation involves implementing policies, procedures, and practices that lower the probability or impact of risks. Some of the most commonly used strategies include portfolio diversification, maintaining high levels of liquidity, e.g., maintaining sufficient cash reserves and using risk management tools such as hedging and insurance. Businesses that proactively identify and address potential financial risks will be able to protect their after-tax income, improve financial stability, and make well-informed decisions (Adeyemi and Yahaya, 2024).

2.4.1. Credit risk mitigation

Credit risk assessment is the first step in credit risk mitigation. This can be done through credit scoring and historical data analysis (Scott, Amajuoyi and Adeusi, 2024). However, these methods are no longer sufficient and should be augmented by new and advanced solutions that offer more robust and dynamic tools for identifying, assessing and mitigating credit risk. These methods include the integration of big data and machine learning algorithms. By analysing big data from different sources, lenders may obtain a detailed understanding of the behaviour of borrowers, market trends and economic indicators. Default probabilities may be estimated using machine learning, which tends to offer high levels of accuracy and allows for proactive risk mitigation

strategies. Real-time risk monitoring systems, stress testing and scenario analysis are some of the risk mitigation techniques used to manage credit risk. Additionally, blockchain technology has emerged as a tool that can enhance transparency and reduce fraud in credit transactions (Scott, Amajuoyi and Adeusi, 2024).

Credit risk is an eminent kind of financial risk that should be carefully observed and managed to decrease the non-instalment rate as it adversely influences the element's liquidity (Noomen and Abbes, 2018). A general absence of observing methods on layaway records, for example, not following up with debt holders, is a significant proponent of expanded credit risk and liquidity risk. It is fundamental for any monetary division to screen the borrower's capacity to reimburse their obligation consistently (Addae-Korankye, 2014). At the point when obligations are paid, the degree of non-instalment progresses lessens, and productivity diminishes (Raj, Jauhar and Ramkumar, 2022)

2.4.2. Liquidity risk mitigation

There is a paucity of literature on liquidity risk mitigation among higher education institutions. However, drawing from the extensive literature on studies across banks, it is observed that the Asset Liability Management Committees (ALCO) of banks monitor and manage liquidity risk and interest rate risk by constantly modulating and updating the asset-liability mix in the banks' balance sheets (Brahmaiah, 2022). ALCOs, inter alia, review interest rate scenarios, patterns of growth, competitive advantages, liquidity management, adherence to the regulatory prescriptions and pricing of liabilities and assets from time to time. Almeida (2021) suggests that when a firm is hit with a negative shock to cash flow, as was the case among many corporates during the Covid-19 pandemic, cash flows are raised through debt. Thus, it is essential that the firm raises cash, which is equivalent to negative short-term debt. The firm can use the cash holdings to help finance the required investment if the short-term cash flow tends to be low.

2.4.2.1. Liquidity risk

An empirical literature review on liquidity risk in the context of universities, focusing on aspects like declining student enrolment, cuts in government funding, and the dependency on endowment funds, can be organised around several key themes and findings from previous studies (Mintz, 2021). The review is structured by focusing on

the challenges universities face in managing liquidity risk and the role of financial strategies like endowment funds.

Liquidity risk is the threat that an institution may lack sufficient liquid assets to fulfil its short-term financial obligations, such as payroll, utility bills, and other operational expenses. For universities, this risk is heightened by external factors like student enrolment fluctuations and government funding cuts (Nkisi, 2021). This liquid asset comes from tuition fees, research projects and others.

Van Schalkwyk (2021) highlights that student enrolment is a major source of revenue for universities, particularly public institutions. As student numbers decline, universities experience reduced tuition fees and other associated revenues. This leads to increased liquidity pressure as the cash flow from student payments becomes more uncertain (McPherson and Schapiro, 2021).

A study by Britton, Rall and Commodore (2023) found that a reduction in student enrolment, especially in private institutions, correlates with a heightened risk of liquidity crises. Universities face challenges in maintaining cash reserves, leading to potential operational disruptions. For public universities, this risk can also be compounded by a lack of flexibility in adjusting tuition rates due to government regulation.

Government funding is another critical revenue stream for many universities, particularly those in public systems (Nkisi, 2021). In times of austerity or policy shifts, cuts in funding exacerbate liquidity risk, leaving universities with less financial buffer to absorb fluctuations in operating costs.

Research by Nundkumar and Subban (2018) found that universities that rely heavily on government funding are particularly vulnerable to liquidity risks in the face of funding cuts. This revenue loss necessitates quick adjustments, such as downsizing staff or cutting other operational costs, which may lead to decreased institutional capacity in the long run.

Endowment funds allow universities to smooth out cash flow problems during times of revenue shortfalls (Nguyen and Mogaji, 2022). The income generated from the fund's investments can be used for scholarships, research, and operational costs. However, endowment performance is subject to market conditions, and a significant decline in market value (such as during financial crises) can diminish the available funds.

A study by Usman et al. (2023) demonstrated that universities with larger endowments are better equipped to absorb shocks caused by enrolment declines or cuts in government funding. However, this is conditional on the investment performance of the endowment. If the market underperforms, the funds cannot sufficiently mitigate liquidity risks, requiring universities to tap into other financial strategies.

Despite their potential, endowment funds are not a panacea for liquidity risk. Endowments are typically restricted by donor-imposed guidelines, limiting their use for immediate operational needs, and that may cause financial risk (Cometto, 2022). Additionally, universities may face political pressure to use these funds for specific purposes (e.g., scholarships) rather than for covering day-to-day expenses.

According to Cometto (2022), endowment funds often have specific restrictions placed by donors, which means they cannot always be used to cover immediate operational costs like payroll and utilities. This increases the risk of a liquidity shortfall, especially in times of economic downturns when revenue from tuition and government funding is reduced.

2.4.3. Market Risk Mitigation

Market risk mitigation tools are strategies and instruments used to manage the potential negative impact of market fluctuations on an organisation or investment. Cai and Hong (2024) present examples of the most widely used market risk mitigation strategies below (Raj, Mukherjee, de Sousa Jabbour and Srivastava, 2022).

Scenario analysis and stress testing are defined by the Basel Agreement 1996 as tests conducted by financial institutions to manage interest rate movements. These tests help determine the potential impact of interest rate changes on possible loss calculations. They serve as a control mechanism in risk management processes and provide valuable information, especially during crises. This approach helps to understand the risks taken, identify the main factors contributing to stress situations, and detect underlying sources of risk.

By promptly making this information available to management, institutions can reduce their overall risk exposure through hedging transactions or by decreasing their self-trading positions (Aquilina, Frost and Schrimpf, 2024). According to Ionescu and Yermo (2014), stress testing is a useful and increasingly popular method of analysing the resilience of financial systems to adverse events. Stress tests are used widely in

the banking, insurance, and industry sectors by financial institutions and the supervisory authorities overseeing them. For example, stress tests are central to the Basel II and Solvency II supervisory frameworks for international banks and EU insurance companies. They are also used in the International Monetary Fund (IMF) Financial Sector Assessment Programmes (FSAPs) and more frequently in financial stability reports worldwide. Academic institutions manage large endowment funds, which consist of money accumulated over time. These savings and investments are subject to market risks, such as fluctuations in interest rates. Additional strategies for mitigating market risk will be discussed in Section 2.6.2 on Market Risk Management Strategies.

- Derivatives
- Diversification
- Insurance
- Asset-Liability Management (ALM)
- Risk Transfer
- Fixed-rate instruments
- Reserve funds and capital buffers
- Dynamic risk management

2.4.4. Operational risk mitigation

Various tools and techniques are used to mitigate operational risk. For instance, practical methods for identifying, analysing, and evaluating the causes and consequences of risks, as well as the controls in place to mitigate operational risks, include process mapping, control self-assessments (RCSAs), and root cause analysis tools like the bowtie method (Cornwell, 2023). According to Chen et al. (2021), preventive controls involve implementing predictive methods to recognize latent conditions and help prevent accidents. Additional procedures or systems, such as routine maintenance, employee training, and process redesign, can help reduce the likelihood of risks occurring.

Continuous employee education on risk management practices and awareness of internal controls helps reduce human errors and improve adherence to risk mitigation

strategies (Chapelle, 2019; Mendes de Oliveira et al., 2022; Modarres and Groth, 2023; Valis, Vintr and Koucky, 2009). According to McIlwraith (2021), training and awareness programs involve continuous employee education on risk management practices and an awareness of internal controls to reduce human errors and improve adherence to risk mitigation strategies.

Operational risk insurance products can be a mitigation tool by transferring certain operational risks, such as property damage, business interruption, or liability risks, to an external insurer (Girling, 2022).

Premuzic, Dakic and Petrunic (2024) emphasize that business continuity planning (BCP) and disaster recovery (DR) plans are crucial for organizational resilience. These plans develop procedures and strategies to ensure critical operations continue during and after disruptions (e.g., pandemics or natural disasters). Disaster recovery plans are focused on restoring IT systems and data following major disruptions, enabling the rapid resumption of business operations.

Internal and external audits are instrumental in identifying operational weaknesses, assessing adherence to policies and regulations, and ensuring that risk mitigation strategies function as intended. Michel-Villarreal et al. (2023) argue that universities lacking the necessary technological tools to comply with protection regulations must address this issue. Compliance and regulatory tools, including regulatory technology (RegTech), assist organizations in meeting laws, regulations, and industry standards to mitigate compliance-related risks. Examples of these tools include automated reporting, risk monitoring, and regulatory reporting solutions.

2.5. EMPIRICAL LITERATURE REVIEW

In higher education, universities encounter a variety of financial risks that can affect their stability and long-term sustainability. It is essential to conduct a risk assessment to enhance risk management and mitigation efforts (Izumi, Sukhwani, Asurjan and Shaw, 2021). These financial risks can arise from internal factors, such as operational management, and external factors, including economic fluctuations and policy changes. Understanding these risks is vital for developing effective strategies to mitigate them and ensure the ongoing success of educational institutions.

The main types of financial risks in higher education, with empirical insights from the literature, are discussed in the following subsections.

2.5.1. Types of financial risk in higher education institutions

2.5.1.1. Credit risk

Public institutions or universities often face increased credit risk because they rely heavily on state appropriations and government funding, which can vary based on political and economic conditions. According to Gurgand, Lorenceau and Mélonio (2022), enrolment in higher education is limited by restricted and generally direct access to credit. Their study employs a regression discontinuity design, examining how student loans are awarded at a South African credit institution called NSFAS, which provides short-term loans based on market conditions. The findings indicate that credit constraints are significant, reducing enrolment by more than 40 percentage points among a population that is predominantly middle-class applicants. Public universities are also more likely to be rated based on the creditworthiness of the state government (Nundkumar and Subban, 2018).

While less dependent on government funding, private institutions or universities may still face credit risk due to tuition dependence and other revenue streams. They also face different risks, such as fluctuations in donor contributions or dependence on a narrow market of students. On a different note, Kotze (2021) states that even though private institutions' tuition is three times higher than in public institutions, the private institution still depends on one stream of revenue brought about by student enrolment to sustain the institution.

During economic downturns, universities may struggle to maintain revenue, increasing credit risk. Research has shown that aggressive credit granting is a major factor contributing to loan defaults (Rahman and Hai, 2017). Credit risk refers to the risk that a university might default on its financial obligations, such as bonds, loans, or other credit instruments. This risk is especially relevant for universities that borrow funds to finance large projects such as infrastructure development. Poor financial decision-making, poor financial management, and a lack of assessment of the creditworthiness of students and parents when applying for credit will lead to poor financial health. This results from inadequate revenue streams or economic downturns that can affect a

university's creditworthiness and lead to higher borrowing costs (Looney and Yannelis, 2024).

Kithinji (2010) noted that credit documentation should be thoroughly reviewed before loan approval to avoid financial losses. Given that credit risk plays a significant role in the financial stability of the banking sector, inadequate management of this risk may lead to organizational failure (Makri and Papadatos, 2014). Although credit risk is often associated with banks, accounting, and industry risk, it can also significantly affect most universities and colleges (Van Schalkwyk and Bevan-Dye, 2018). In universities, credit risk occurs when borrowers are unable to repay their debts, including educational expenses or failure to meet their repayment commitments (Baradaran and Keshavarz, 2017). In universities, credit risk applies to students who do not comply with their payment agreements within the designated timeframe. This situation typically arises when a university provides loans to students who fail to meet their payment commitments and default on the loan.

Several factors affect credit risk among universities. Those with strong financial health and sound financial management practices are less likely to default on debt obligations. Key indicators include liquidity, debt-to-equity ratios, operating margins, and revenue stability, for example, from tuition fees and state funding. Universities perceived as having strong financial management skills are more likely to improve their financial situation (Zhang & Fan, 2022). Shermer (2022) emphasizes that unpaid student loans may exacerbate unstable financial sustainability in universities and colleges. This finding highlights the issue of skyrocketing college debt stemming from federal student loan programs that unintentionally replaced affordable tuition fees with burdensome financial obligations.

2.5.1.2. Market Risk

Universities, particularly public ones, can also face risks related to broader economic conditions, including inflation, interest rates, and changes in government funding. For instance, systemic factors such as a recession can negatively impact tuition revenue, performance, and government appropriations (Ozili, 2021).

Market risk, often referred to as investment risk, arises from the volatility of financial markets. According to Nguyen and Mogaji (2022), many universities depend on investment returns from their endowment funds to support scholarships, research, and

other academic initiatives. A downturn in the financial markets can significantly reduce the value of these endowment funds, leading to diminished university resources. Usman and Rahman (2023) noted that endowment funds serve as a crucial alternative funding source for academic activities, such as scholarships and research, in many universities in developed countries, highlighting the need for effective management of these funds. Don and Hussin (2024) pointed out that the waqf funds for Al-Azhar University can be traced back to Cambridge University, which provides endowment funds to ensure the availability of scholarships, research funding, and academic initiatives.

Research conducted by Aragon, Jiang and Joenväärä (2022) focuses on responsible investing and the impact of market fluctuations on university endowments. The study suggests that universities adopting more conservative investment strategies tend to experience less market risk but also forgo the potential for higher returns. Furthermore, it indicates that adoption rates of responsible investment strategies are higher among universities facing stakeholder pressure and those dependent on donations.

Universities that rely on various income sources such as tuition fees, research grants, donations, endowments, and auxiliary services (e.g., housing, sports) are generally considered lower risk. In contrast, those overly dependent on a single source, such as state funding, may face greater credit risk if that revenue source decreases (Cooley, Prelec and Heathershaw, 2022).

Interest rate risk refers to the potential changes in interest rates that can affect a university's financial situation, particularly in debt financing. For instance, if a university has variable-rate loans or bonds, an increase in interest rates can lead to higher borrowing costs. Conversely, universities with fixed-rate debt may be more insulated from this risk.

Mintz (2021) analyses the impact of interest rate fluctuations in the economy that causes universities to fail to manage their debt, resulting in a financial burden to the university, and explains the processes that lead to changes in commitment to colleges and universities and the cost increases that result from these changes. Granja, Jiang, Matvos, Piskorski and Seru (2024) state that institutions engaging in proactive interest rate hedging, such as through derivative instruments, can better manage the risks associated with interest rate changes.

2.5.1.3. Operational risk

Operational risk in higher education institutions may stem from staff negligence in granting student loans (AOD) without properly verifying whether the accounts are blocked due to non-payment. Unlike many other types of consumer debt, student loans are unsecured and often granted without thorough underwriting (Bruckner and Ryan, 2023). Additionally, there have been cases where university staff approved AOD without assessing the financial capability of students and their families.

This section will focus on three key elements that can contribute to operational risk:

- Regulatory Compliance It is crucial for universities to stay updated with relevant legal and regulatory requirements in higher education, including data protection laws, accreditation standards, student loan regulations, and labour laws. Staying compliant helps avoid legal penalties and reputational harm. It is essential for universities to incorporate budgeting practices for various purposes, including control, strategic planning, communication, and ongoing compliance (Kenno, Lau, Sainty, and Boles, 2021).
- Internal Audits: Conducting regular internal audits is necessary to ensure adherence to financial, academic, and operational policies. These audits can help identify areas of risk, inefficiency, or non-compliance that need to be addressed. Understanding and adhering to institutional policies, as well as federal and state laws governing educational institutions, are imperative steps for maintaining compliance within higher education (Monges-Hernandez, 2023).
- Legal Risk Mitigation: Partnering with legal advisors to draft contracts and policies can help mitigate risks associated with student, staff, and third-party relationships and build relationships. For instance, clear student contracts regarding tuition fees, accommodation, and penalties for non-payment can prevent potential disputes (Clevenger, Kretovics, and Watts, 2024).

Operational risk is a risk of loss or failure due to inadequate internal processes resulting in a breakdown in procedures and systems and from poor management or

human error (Skogdalen and Vinnem, 2011; Merker and Peck, 2019). According to Abu Hawwach (2021), humans are presented with various burdens and conditions that could bring about errors and mishaps. This assertion illustrates that when executives neglect to respond to the innovation enhancements, it could make the college lose understudies and result in a reduction in income, while the contenders acquire understudies and increment their income by having an exceptional framework or redesigned framework. Even though people may be versatile and flexible, they ought to be taught to adjust, be allowed to practice their capacities and be outfitted with the ideal information brilliantly to adjust to advancement disillusionments (Salonen, 2019). This operational risk management answers one of the questions regarding information systems at Unisa. Human error might cause universities to use Artificial Intelligence (AI) to mitigate financial risk caused by operational risk. The digital revolution envisioned through the Fourth Industrial Revolution and the state of readiness of ICT innovation in supporting education provisioning in the university sector to improve the chances of opportunity in the competitive environment (Nundkumar and Subban, 2018).

2.5.1.4. Liquidity risk

An empirical literature review on liquidity risk in the context of universities, focusing on aspects like declining student enrolment, cuts in government funding, and the dependency on endowment funds, can be organised around several key themes and findings from previous studies (Mintz, 2021). The review below focuses on the challenges universities face in managing liquidity risk and the role of financial strategies like endowment funds.

Liquidity risk is the threat that an institution may lack sufficient liquid assets to fulfil its short-term financial obligations, such as payroll, utility bills, and other operational expenses. For universities, this risk is heightened by external factors like student enrolment fluctuations and government funding cuts (Nkisi, 2021). This Liquid asset comes from tuition fees, research projects and others. Van Schalkwyk (2021) highlights that student enrolment is a major source of revenue for universities, particularly public institutions. As student numbers decline, universities experience reduced tuition fees and other associated revenues. This leads to increased liquidity pressure as the cash flow from student payments becomes more uncertain (McPherson and Schapiro, 2021).

A study by Britton, Rall and Commodore (2023) found that a reduction in student enrolment, especially in private institutions, correlates with a heightened risk of liquidity crises. Universities face challenges in maintaining cash reserves, leading to potential operational disruptions. This risk can also be compounded by the lack of flexibility in adjusting tuition rates due to government regulations for public universities. Government funding is another critical revenue stream for many universities, particularly those in public systems (Nkisi, 2021). In times of austerity or policy shifts, cuts in funding exacerbate liquidity risk, leaving universities with less financial buffer

Many universities are subject to regulatory and accreditation requirements that necessitate maintaining a certain level of financial stability. These regulations are enforced by regulatory institutions within the country (Mokwele, 2023). For example, universities that fail to comply with tax regulations may risk losing their accreditation with bodies like the South African Qualifications Authority (SAQA) and may lose their recognition as professional institutions and also lose students because of uncertainties. Inadequate liquidity management can jeopardize a university's ability to meet these standards, putting its accreditation status or eligibility for government funding at risk (Ogunode & Adah, 2022).

With sufficient liquidity, universities can strategically invest in new programs, technologies, or research initiatives. This financial flexibility allows them to respond effectively to unforeseen opportunities or challenges, such as expanding academic offerings or increasing student housing and online course availability (Adeniran & Abhulimen, 2024).

Unexpected events, such as economic recessions, natural disasters, or pandemics like COVID-19, can significantly disrupt cash flow (Ramli, Yekini,2022). Universities with strong liquidity are better positioned to withstand these challenges. Effective management practices enable them to handle crises without compromising their core functions or financial stability. Efficient liquidity management allows universities to continue fulfilling their educational mission and achieving their long-term strategic goals.

2.6. RISK MITIGATION STRATEGIES AMONG HIGHER EDUCATION INSTITUTIONS

2.6.1. Credit risk management strategies

Enrolment Trends: According to Britton, Rall and Commodore (2023), a decrease in enrolment may lead to an increase in tuition fees. Conversely, McPherson and Schapiro (2021) state that addressing student needs and rewarding talent can help institutions attract higher enrolment rates from students from lower-income families. Featherman (2023) adds that effective strategic outcomes can improve university results and reduce tuition fees, leading to stable or increasing student enrolment. This stability ensures steady revenue from tuition and fees, thereby reducing credit risk. However, declining enrolment due to demographic changes, shifts in student preferences, or economic factors can increase the risk of default. Looney and Yannelis (2024) suggest that the rise in aggregate student debt and the difficulties faced by today's student loan borrowers can be linked to changes in federal policies to broaden access to federal aid and educational opportunities. These changes have contributed to increased enrolment and borrowing in higher education.

Revenue Diversification: Universities that diversify their income sources, including tuition fees, research grants, donations, endowments, and auxiliary services such as housing and sports, are generally considered to be at lower financial risk. According to a study by Pillah and Gokum (2024), a private institution in Nigeria primarily relies on tuition fees to fund its major activities. This institution also uses its endowment funds to generate additional income that supports various initiatives. In contrast, universities that depend heavily on a single source of revenue, such as state funding, may face greater credit risk if that source of funding declines (Cooley, Prelec and Heathershaw, 2022).

2.6.2. Market Risk Management Strategies

The following strategies are commonly employed in financial management to address the market risks associated with fluctuations in market conditions, such as interest rates, inflation, or changes in investment markets, which can impact an institution's financial stability. An overview of how these strategies can be applied in higher education is outlined below.

2.6.2.1. Derivatives

Higher education institutions, particularly those with large endowments or significant investments, may utilise financial derivatives (such as options, futures, or swaps) to hedge against market risks like interest rate changes or currency fluctuations. For example, a university may use interest rate swaps to mitigate the risk of rising interest rates on its variable-rate debt or employ currency derivatives to protect against the risks associated with currency fluctuations in international partnerships or investments (Alexander, 2020).

2.6.2.2. Insurance

Insurance is a common tool for mitigating market-related risks that could affect an institution's financial stability (Gatzert, Reichel and Zitzmann, 2020). This may include insuring against investment losses, property damage, or liability claims with substantial financial implications. For instance, a university might opt for financial loss insurance to safeguard against significant disruptions in its investment portfolio due to market volatility or secure insurance coverage for events impacting its cash flow, such as natural disasters affecting campus operations.

2.6.2.3. Risk Transfer

Transferring Market Risk: Risk transfer involves shifting some or all of the financial risk associated with market fluctuations to another party, such as through insurance, derivatives, or outsourcing (Abor et al., 2025). This approach is beneficial for mitigating exposure to unpredictable events like economic downturns or policy changes. For example, a university could establish a partnership where the financial risk of certain market conditions is shared or transferred to an external partner through contractual agreements, thereby transferring the risk of specific liabilities or operating costs.

2.6.2.4. Capital Buffers

Building Capital Buffers for Financial Stability: Capital buffers are reserves that institutions set aside to absorb shocks from market volatility (Andrae 2024). Higher education institutions can maintain a capital buffer in their endowment or reserve funds to cushion the impact of adverse market movements. For instance, universities can utilise their endowment funds as a capital buffer to cover operating expenses or support academic programs during market downturns, ensuring financial stability amid periods of uncertainty.

2.6.2.5. Asset Liability Management (ALM)

Guzel (2021) emphasised the importance of managing the relationship between assets and liabilities, known as Asset Liability Management (ALM). This process involves balancing a university's investments (assets) with its financial obligations (liabilities) to minimize exposure to market risks. Universities can achieve this balance by aligning the durations of their assets and liabilities or by employing hedging strategies to protect against interest rate risks and other market fluctuations. For instance, a university might use ALM strategies to synchronize the maturity dates of its long-term assets, such as endowment investments, with the maturity dates of its liabilities, like debt repayments. This approach helps reduce the risk of liquidating investments at unfavourable times due to liquidity constraints.

2.6.2.6. Stress Testing in Market risk

Simulating Adverse Market Scenarios: Stress testing using simulations of adverse market scenarios is crucial for understanding how a university's financial situation would react to extreme but plausible market conditions, for example, economic recessions, interest rate hikes, or market crashes (Van Loo, 2022). These tests help institutions identify their vulnerabilities and develop contingency plans. For instance, a university might conduct stress tests to evaluate how its investment portfolio would perform during a significant market downturn or how changes in government funding could impact its revenue. The insights gained from stress tests enable administrators to prepare more effectively for financial crises or unexpected market fluctuations.

2.6.2.7. Diversification

Diversifying Investments to Reduce Risk: Diversification is one of the most fundamental strategies for managing market risk. Higher education institutions can mitigate their exposure to the volatility of any single asset or market by spreading investments across various asset classes (such as stocks, bonds and real estate) and sectors (e.g., domestic vs. international investments). For example, universities often diversify their endowment portfolios to include a mix of equities, fixed income, real estate, and alternative investments (like private equity or hedge funds). This strategy reduces the risk that any one market or asset class will adversely affect the overall financial health of the institution.

2.6.3. Liquidity risk management strategies

Liquidity risk management or mitigation in higher education involves ensuring that institutions can meet their short-term financial obligations without facing financial distress. Since universities often have long-term investments and large, fixed costs (such as staff salaries, infrastructure, and operational expenses), managing liquidity risk effectively is essential for their financial health. Below are key strategies for managing liquidity risk in higher education:

2.6.3.1. Cash Flow Management and Monitoring Strategy

Universities should maintain detailed cash flow projections to track incoming and outgoing funds. By adopting a strategy from a study by Hamilton, Characklis and Reed (2022) similar to that of banks using bank statements to project future revenues, universities can aim to maintain sufficient cash flow and keep costs low for customers. This practice enables institutions to predict potential shortfalls and address them proactively before they escalate into a crisis. Additionally, maintaining cash reserves is essential for universities to establish an adequate fund to handle periods of low cash inflows or unexpected expenses. A liquid cash reserve acts as a cushion to cover short-term funding needs.

2.6.3.2. Diverse Revenue Streams

Diversifying payment options for students can help improve cash inflow and enhance tuition fee management. Offering flexible payment plans, instalment options, or discounts for early payments can reduce liquidity risk associated with tuition revenue (Safari and Mwanyefa, 2024).

Brint (2022) emphasised that universities should explore alternative sources of revenue beyond tuition fees. These sources include research grants, endowment income, donations, partnerships, auxiliary services (housing and food services), and online programs. Strong engagement with alums and targeted fundraising campaigns can also generate additional funds by producing one-time or recurring donations.

2.6.3.3. Debt Management and Financing

Universities should maintain a healthy debt-to-equity ratio to prevent excessive debt obligations that could strain liquidity (Kinyua, 2023). Effectively managing debt repayments, such as refinancing or spreading payments over time, preserves cash

flow. Establishing revolving credit facilities with banks or other financial institutions can assist universities in meeting short-term cash needs (Madalane, 2021). Having a pre-arranged credit line allows for quicker access to funds when necessary.

2.6.3.4. Collection action is a preventative strategy

Collection action is a preventative strategy to avoid situations that may require liquidation. It addresses cash flow issues by recovering outstanding debts instead of selling off assets to raise funds (Youssef, 2024). Timely cash flow management and collecting student fees and other outstanding debts are essential for ensuring that the university has the necessary funds for day-to-day operations. This approach also helps minimize short-term borrowing; if a university struggles to collect payments promptly, it may have to resort to short-term loans or credit lines to cover financial gaps, which can be expensive and unsustainable.

An effective collection actions strategy is crucial in avoiding revenue shortfalls, especially for universities with limited or seasonal cash inflows. Examples of collection actions include sending payment reminders, SMS notifications, and statements to students about their tuition payment deadlines. Additionally, universities may set up payment plans that allow students to pay in instalments rather than in one lump sum, making it easier for them to pay and reducing the risk of default (Fredy, 2022).

Some universities offer an "Acknowledgement of Debt (AOD)" program to help students register without making immediate payments. This allows them to enrol on credit (Bolton et al., 2020). Many institutions impose late payment fees on overdue balances to encourage prompt payments. If students overlook payments after receiving multiple reminders, universities may turn to debt collectors or refer the case to a third-party collection agency to recover the outstanding amounts. In their study, Demeter et al. (2022) utilised machine learning algorithms to identify currently enrolled students who require financial support. They achieved an overall accuracy of 79% in predicting students' graduation outcomes.

2.6.3.5. Manage student receivables strategy

Timely Tuition Collection: Universities must implement effective systems for collecting tuition fees to maintain liquidity. Universities should offer various payment options, such as credit/debit cards and direct bank transfers, to make it easy for students to pay their fees timeously. Payment plans for students provide flexible payment options

that can ease cash flow pressures while ensuring that they meet their tuition obligations. The late fee Implementation introduces reasonable late fees that may encourage students to pay on time, ensuring that the university receives the necessary funds for its day-to-day operations.

2.6.3.6. Liquidity Stress Testing and Scenario Planning

Liquidity Stress Tests: Universities should regularly conduct stress tests to evaluate their ability to manage liquidity in adverse scenarios, such as a sudden enrolment drop, cuts in government funding, or unexpected capital expenditures. These tests help institutions prepare for worst-case scenarios (Roncalli, Cherief and Karray-Meziou, 2021).

Contingency Planning: Developing contingency plans for financial strain enables universities to respond swiftly to mitigate liquidity risks. This may involve reducing discretionary spending, deferring capital projects, or utilizing emergency funding sources (Boateng, Pepra-Mensah, Gyabea and Boateng, 2024).

2.6.3.7. Risk Transfer Strategies

Insurance Coverage: Universities should maintain appropriate insurance coverage, including property, liability, and business interruption insurance. In the event of unexpected disruptions, such as a natural disaster, insurance payouts can help manage liquidity risks by covering immediate costs (Kousky, 2022).

2.6.3.8. Partnerships and Strategic Alliances

O'Dwyer, Filieri, and O'Malley (2023) discuss collaborations with industry partners, highlighting that universities can form partnerships with businesses and research organizations to generate additional revenue streams and reduce reliance on tuition fees. These strategic alliances can enhance research funding, attract corporate sponsorships, and secure private donations, improving financial stability.

According to Khallaf, Kang, Hastak and Othman (2022), public-private partnerships (PPP) are beneficial as they involve collaborations in infrastructure projects or research initiatives, providing universities access to additional resources. This approach can help mitigate liquidity risk by introducing external funding sources.

2.6.3.9. Government Funding and Financial Aid

Government Subsidies and Grants: Public universities should closely monitor government policies and funding allocations to ensure they receive government funding promptly, which can be a key revenue source. Universities that regularly reallocate resources are more likely to achieve larger budget surpluses. Funding delays can create liquidity risks, especially if the institution relies heavily on these funds (Heaton and Teece, 2023).

Student Financial Aid Programs: According to Bomer, Liu, Irungu and Wanjiru (2021), efficient management of financial aid programs, such as loans and grants, is crucial to avoid delays in tuition payments. Timely disbursement of aid funds is essential for maintaining stable cash flow.

2.6.4. Operational risk management strategies

Operational risk management in higher education involves identifying, assessing, and managing risks that arise from daily operations (Girling, 2022). These risks can impact the institution's ability to deliver core functions, such as teaching, research, administration, and student services. Effective operational risk management ensures continuity of services, enhances institutional performance, and protects reputation and financial stability. Key operational risk management and mitigation strategies in higher education are explored below.

2.6.4.1. Human Resource Management and Staff Training

Employee Engagement and Retention: High staff turnover can disrupt operations, making it essential to invest in employee satisfaction, professional development, and retention strategies (Susanto, Rony, 2023). Ensuring the right people are in key roles reduces operational risk.

According to Camilleri (2021), regular training and development, along with a routine review of the current state of the higher education system, is essential. Staff should receive ongoing training on policies, procedures, safety standards, and risk management strategies. This training must encompass academic policies, customer service, crisis management, and technology tools to prepare staff members to tackle operational challenges adequately.

Additionally, it is important to implement succession planning. Developing succession plans for key roles within the institution will help ensure continuity in leadership and operations in the event of unexpected departures (Morrow, 2023).

2.6.4.2. Compliance and Legal Risk Management

Regulatory Compliance: Stay updated on all relevant legal and regulatory requirements in higher education, including data protection laws (such as GDPR), accreditation standards, student loan regulations, and labour laws. Compliance helps prevent legal penalties and reputational damage (Komljenovic, 2022)

Internal Audits: Conduct regular internal audits to ensure compliance with financial, academic, and operational policies. These audits help identify areas of risk, inefficiency, or non-compliance that need attention (Abdulai, Salakpi and Nassè, 2021).

2.6.4.3. (AI) Artificial Intelligence

Fraud Detection and Cybersecurity: Ayodeji (2024) highlights that banks initially focus on identifying internal issues before detecting credit card fraud. Universities can implement similar strategies to minimize fraud risks. Fraud Prevention: Artificial Intelligence (AI) can also assist by identifying irregularities in financial transactions, such as fraudulent tuition payments and financial aid disbursements. Machine learning algorithms analyse historical transaction data to detect potential fraud patterns, enabling institutions to intervene before significant losses occur (Xu, Yang, Zhuang, Li and Lu, 2024).

Cybersecurity: Artificial intelligence (AI) is being increasingly utilised to strengthen cybersecurity measures in higher education institutions. AI-powered security systems can detect and respond to cyber threats, such as data breaches and phishing attacks, by monitoring network activity and identifying suspicious behaviour. By preventing cybersecurity breaches, AI plays a crucial role in protecting the institution's data and reputation (Akhtar and Rawol, 2024).

2.6.4.4. Supply Chain and Procurement Risk Management

AI in Procurement: AI can assist universities in managing procurement processes by predicting supply chain disruptions (e.g., delays in deliveries or price fluctuations) and suggesting alternatives. For instance, AI can monitor global supply chains and alert

universities to any risks that may affect the timely delivery of materials or services (Baryannis et al., 2019).

AI can optimize inventory management to prevent both shortages and overstocking of essential supplies. The delivery of books and equipment may be automated through this process. By predicting usage patterns, AI helps ensure universities maintain adequate supplies without overcommitting resources (George & Wooden, 2023).

2.6.4.5. Enhanced Decision-Making and Scenario Planning

Scenario Analysis: AI systems can assist universities in simulating various risk scenarios, such as economic downturns, pandemics, or changes in government policy. This helps decision-makers understand the potential impacts on the institution's operations (Katsamakas, Pavlov and Saklad, 2024). By conducting this analysis, universities can plan and prepare for potential challenges before they occur.

According to Funda (2023), data-driven approaches in South African higher education support decision-making within the ICT department. This approach provides valuable information that assists users. AI can help administrators make data-driven decisions by offering actionable insights from various data sources. AI models can identify potential risks related to financial management, enrolment trends, staffing needs, and academic performance, enabling more informed decision-making.

2.6.4.6. Human Resource Risk Management

Talent Management: AI can aid universities in managing staffing risks by identifying skill gaps, predicting turnover rates, and optimizing recruitment efforts. It can also help institutions anticipate workforce changes (e.g., retirements, promotions), ensuring they have the right personnel to meet future operational needs (Ghedabna et al., 2024).

Workforce Optimization: AI can analyse employee productivity and recommend improvements to reduce inefficiencies. By automating repetitive tasks, AI allows human resources teams to concentrate on high-value activities such as strategic planning, employee development, and retention (Nurlia, Daud and Rosadi, 2023).

2.6.4.7. Technology and Data Management

Cybersecurity Measures: It is crucial to implement robust cybersecurity protocols to safeguard the sensitive data of students and staff (Folorunso, 2024). This includes

conducting regular system updates, utilizing secure online platforms, and training employees on identifying phishing attempts and other cyber threats.

Disaster Recovery Plans (DRP): It is important to establish and maintain a comprehensive IT disaster recovery plan. Regular backups of critical systems, including student databases, administrative records, and research data, should be conducted to minimize disruptions in a system failure (Fitrani, 2022).

Business Continuity (BCP) Planning Ensure that all critical functions, such as remote learning and admissions processing, can continue with minimal disruption during technological or operational failures (Houston and Foster, 2021)

2.6.4.8. Effective Governance and Leadership

Clear Roles and Responsibilities: Establishing clear roles, responsibilities, and accountability structures within the institution is essential. This approach ensures everyone understands their duties in managing risks and responding to emergencies. While risk management processes may vary among organizations, they all emphasize the importance of accountability in resource utilization and the design of their structures (Addo, Asamoah and Adusei, 2021). According to Freeman, Teo, Leihy, and Kim (2021), the governance processes include structures, training, accountability, governance, and leadership.

According to Bataille and Cordova (2023), crisis management has become a crucial component of leadership in higher education institutions. Crisis Management Teams are established to handle unexpected operational disruptions, including natural disasters, IT breaches, and health-related crises, like pandemics. It is important to provide ongoing training in risk management practices for leadership to enhance their decision-making and risk response capabilities.

2.6.4.9. Crisis Management and Contingency Planning

Bataille and Cordova (2023) emphasised the importance of having a comprehensive crisis response plan for universities that addresses various crisis scenarios. This plan should be developed and tested to cover a range of potential emergencies, including public health crises (such as pandemics), natural disasters, political unrest, and active shooter incidents. It should clearly outline specific roles, emergency contacts, and protocols to minimize disruption to both academic and administrative functions.

Corrales-Estrada et al. (2021) noted that business continuity plans are essential for preventing loss and addressing systemic issues. These plans ensure critical operations can continue during a crisis by offering remote learning options, providing access to digital records, and maintaining online student services. This proactive approach helps minimize operational downtime and protect the institution's reputation. Moja (2021) highlighted that the pandemic impacted many countries, forcing their higher education systems to reimagine daily activities such as teaching, learning, and research. Institutional leadership faced the challenge of salvaging an academic year already halfway through.

Emergency Drills: Conduct regular drills, such as fire drills, lockdown drills, and emergency evacuations, to ensure that students, staff, and faculty are well-prepared for emergencies. Lee (2021) notes that emergency drills in schools were often seen as exercises that contributed to students' anxiety and detracted from class time. On a different note, Nattah (2022) discusses school preparedness and the lockdown drill procedures implemented to train staff as a preventative measure against emergencies.

2.6.4.10. Risk Transfer and Insurance

Rijanto, Putri, Calvin, Edbert and Suhartono (2023) noted that the growing scope of auto insurance now includes coverage for crime and fraud, which is essential for enabling risk transfer and providing financial protection through insurance claims. Consequently, insurance institutions should obtain adequate coverage to address various operational risks, including property damage, liability claims, business interruption, and cybersecurity breaches.

Boggavarapu (2021) emphasizes the importance of carefully evaluating third-party vendors, such as service providers and contractors, to ensure robust risk management practices. It is advisable to use contracts to transfer certain risks to these third parties when appropriate, especially for outsourcing non-core services like debt collection.

Below is Table 2.1 with references adding to the empirical literature review literature of financial risk mitigation.

Table 2.1: Summary of Financial Risk Mitigation Strategies

Risk type	Risk mitigation strategy	References
Credit risk	Credit risk assessment	Yang, Wang, and Ren (2019)
Liquidity risk	Implement effective credit management strategies to manage outstanding student fees.	Maseko (2018)
Market risk	Improve the collection rate by engaging debt collectors and increase the pool of investible funds.	Maseko (2018)
	Sustainable technological innovations for student retention	Hazarika (2021)
Operational risk	Implement a cashless payment system	(Unisa, 2019)

Source: Author construction

2.7 Conceptual framework

The core construct, financial risk, refers to the potential loss or instability in financial performance due to various internal and external uncertainties. In the context of ODeL institutions like Unisa, financial risk is driven by four interrelated dimensions, viz., liquidity risk, credit risk, market risk and operational risk. The unique attributes of ODeL institutions introduce specific vulnerabilities such as:

- Heavy reliance on tuition income.
- Limited physical infrastructure (impacting asset portfolios).
- High dependence on ICT systems and digital delivery.
- Lower retention rates compared to contact institutions.

This framework aims to assess how UNISA as an ODeL institution, identifies, mitigates, and manages these risks. In particular, it examines:

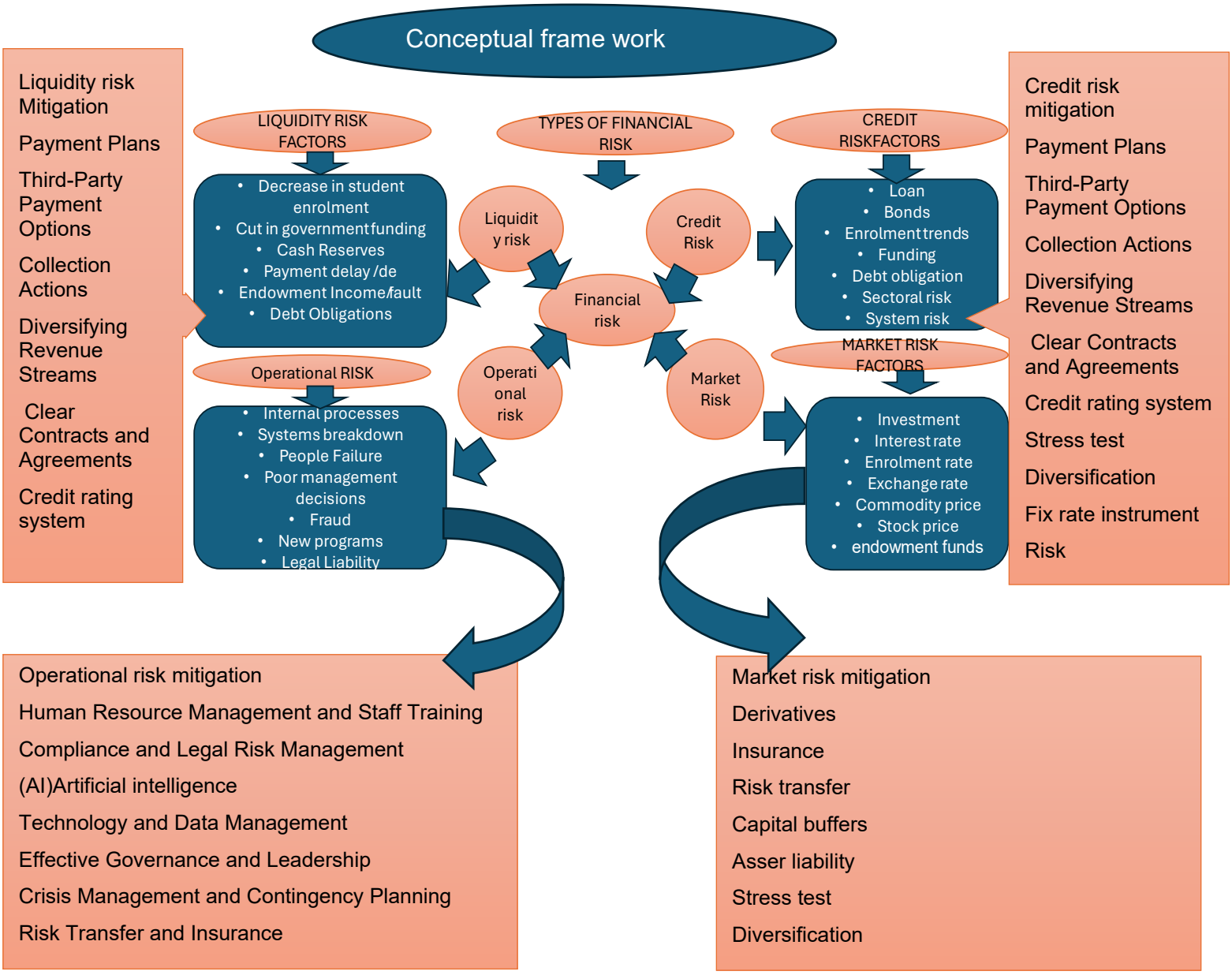
Risk identification mechanisms.

Risk mitigation strategies (e.g., reserves, diversification).

Strategic planning and forecasting, and

Governance and compliance frameworks.

2.7. CONCEPTUAL FRAMEWORK



Source: Author construction

2.8. CHAPTER SUMMARY

This section offered a comprehensive overview of the study's theoretical and empirical aspects. Specifically, Figure 2.1 illustrates and elaborates on the concept of financial risk, outlining its key components. Additionally, Table 2.1 presents empirical strategies for mitigating financial risk. The following chapter will cover the research design and methodology employed to meet the objectives.

CHAPTER 3. METHODOLOGY

3.1. INTRODUCTION

In the previous chapter, a literature review underpinning this study was presented. This chapter presents the research design and methodology applied to achieve the research objectives.

3.2. RESEARCH DESIGN

The examination configuration refers to the strategies used to gather information, which requires inspecting and selecting proper instruments for the exploration study (Ngugi, 2020). Research configuration is the general arrangement of how to approach responding to investigative questions, thinking about the fundamental philosophical suspicions, determination of members, information assortment and information examination strategies that will be utilised (Maree et al., 2014). This study followed a quantitative examination plan, wherein the research issues were distinguished and focused on in the predetermined setting, and strategies were explored and implemented to figure out the issue (Creswell, 2014). It utilises informative and expressive quantitative exploration techniques, with a poll for the observational part of the review (Ramudzuli and Muzindutsi, 2018). The other motivation for using quantitative exploration in this study is that this approach allows the researcher to notice circumstances or occasions that influence individuals, the probability of monetary occurrences and how an individual may recognise the kinds of dangers (Arpah and Nabella, 2023). As per Mugenda and Mugenda (2003), the quantitative examination technique is utilised to sum up and organise information in a viable and significant manner. It is generally connected with the rational methodology of inspecting the connection between factors. Quantitative exploration depends on the definition of financial risk that incorporates any occasion that may unfavourably influence an association's funds (McNeil, Frey, and Embrechts, 2015).

While recognizing the significance of subjective and blended techniques in research plans, the quantitative plan was considered generally suitable for this review. A subjective examination fundamentally differs from quantitative research because it does not provide the researcher with strict guidelines. Instead, it allows for a more

flexible approach, allowing the researcher to conduct their study as they see it (Bloomberg and Volpe, 2016:41). The subjective method is generally inductive, focusing on the participants' interpretations and meanings (Saunders and Thornhill, 2012). According to Creswell (2014:223), a mixed-methods approach combines qualitative and quantitative designs to understand the studied issue comprehensively. Taguchi (2018) defines mixed methods as a strategy for collecting and analysing data using qualitative and quantitative research techniques. Bloomberg and Volpe (2016:42) note that mixed-methods research employs qualitative and quantitative analyses simultaneously and thoroughly to gain insights into the phenomenon in question. Consequently, the mixed-methods approach addresses the shortcomings of both qualitative and quantitative approaches, providing a more comprehensive analysis of the topic.

3.3. RESEARCH PARADIGM

The study implemented a positivist paradigm, which underlines that genuine occasions can be noticed experimentally and explained with a reasonable assessment (Kaboub, 2008:343). The positivist strategy depends significantly on experimentation. The main focus is exploring the causal relations between occurrences or facts (De Houwer, 2018). Empirical evidence is gathered; the experimental evidence is then analysed and expressed as a hypothesis that clarifies the result of the free factor on the reliant variables discussed in the sections above.

3.4. RESEARCH APPROACH

There are three techniques to plan research questions: insightful, inductive and adaptative (Okoli, 2023).

3.4.1. The inductive approach

Jimenez (2021) emphasizes the use of inductive methodology and asserts that some conventional approaches to qualitative data analysis are limited. The inductive methodology conducts research to draw summarised conclusions about identified issues related to the subject. This suggests that the scientist coordinates an extensive review of the ongoing writing on the picked subject and endeavours to make hypotheses given an itemised comprehension of the point (Bindabel, 2020). Okoli

(2023) expresses: “In inductive hypothesizing, the scientist begins from experimental information and pursues fostering a hypothesis in view of that information.” A few specialists, like Charmaz (2014), utilised inductive and abductive subjective systems in their review to respond to each exploration question. Pitts, Fanari, Cooper, Jiao, and Kim (2023) involved partners in a mix of inductive, rational, and abductive reasoning to dissect the information, utilising a subjective strategy, while Azungah (2018) investigated subjective information utilizing both inductive and rational methodology.

3.4.2. The adductive approach

According to Okoli (2023), abduction can be defined as the “process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea”. Creamer (2021) uses the three-approach inductive, deductive, and abductive logic during analysis conducted using mix methods. Palermo et al. (2017) used a qualitative approach consistent with an adductive thematic analysis approach through the focus groups to compare and interpret the data.

3.4.3. The deductive approach

The deductive approach is utilised for quantitative assessment in which estimated relations are framed and checked (Saunders, Lewis and Thornhill, 2023). For this study, the deductive approach was used to examine exploratory information at a point either affirmed or dismissed, relying upon the consequences of measurable examination. The purpose is to quantify, control, anticipate, develop laws, and credit causality (Miguel, 2021). Casula, Rangarajan and Shields (2021) asserted that research is well suited for deductive approaches when a study examines the landscape using the deductive approach for exploratory research, using positivism presented in the research methods. Amjad (2022) indicated that the rational methodology employed in their quantitative analysis emphasizes the key aspects and practices related to the independent variable. Accordingly, this study utilised the rational methodology since it is proper for quantitative techniques, and it is additionally reasonable for utilising a positivist worldview (as outlined in Section 3.3 on research worldview).

3.5. POPULATION

According to Saunders et al. (2023), a population is a group of elements from which samples are picked, and these samples are elements selected to derive generalisations that can apply to the entire population. Similarly, Knott, Rao, Summers and Teeger (2021) define a population as the total group of elements from which a scholar makes analyses. It consists of a population block that integrates every individual, object or place from which the researcher will draw samples. The population for this study consisted of 140 staff members from Unisa's Finance, Revenue and Treasury Department: Revenue Section. The respondents were drawn from three campuses, namely Muckleneuk Campus (main campus, Pretoria), Sunnyside Campus (Pretoria) and Science Campus (Florida, Johannesburg). Agasisti and Bertoletti (2022) underline that the more remarkable the populace, the number of that population ought to make up the sample, as well as the other way around.

3.6. SAMPLING DESIGN

A sampling design is a strategic framework or plan that outlines how a sample will be selected from a target population for a research study It specifies the method, procedure, and rules for selecting individuals, groups, or units to represent the population being studied (Lohr, 2021). There are two types of sampling strategies: probability and non-probability. In probability sampling, every member of the population has a known and non-zero chance of being selected (Sekaran and Bougie, 2016; Taherdoost, 2021). Contrary to probability sampling, non-probability sampling, the probability of any member being selected is unknown. Selection is often based on researcher judgment or convenience.

Sample frame

3.6.1.

The sample frame is the rundown of the number of inhabitants in interest from which an example is attracted to be utilised in the exploration (Amorim, et al., 2021; Törnqvist, 2021). As per Saunders et al. (2021), the testing outline aids the definition of an inspecting unit. The example outlines for this study contained 140 workers and

supervisors in Unisa's Finance Directorate, Finance and Treasury Management Department.

3.6.2. Sampling methods

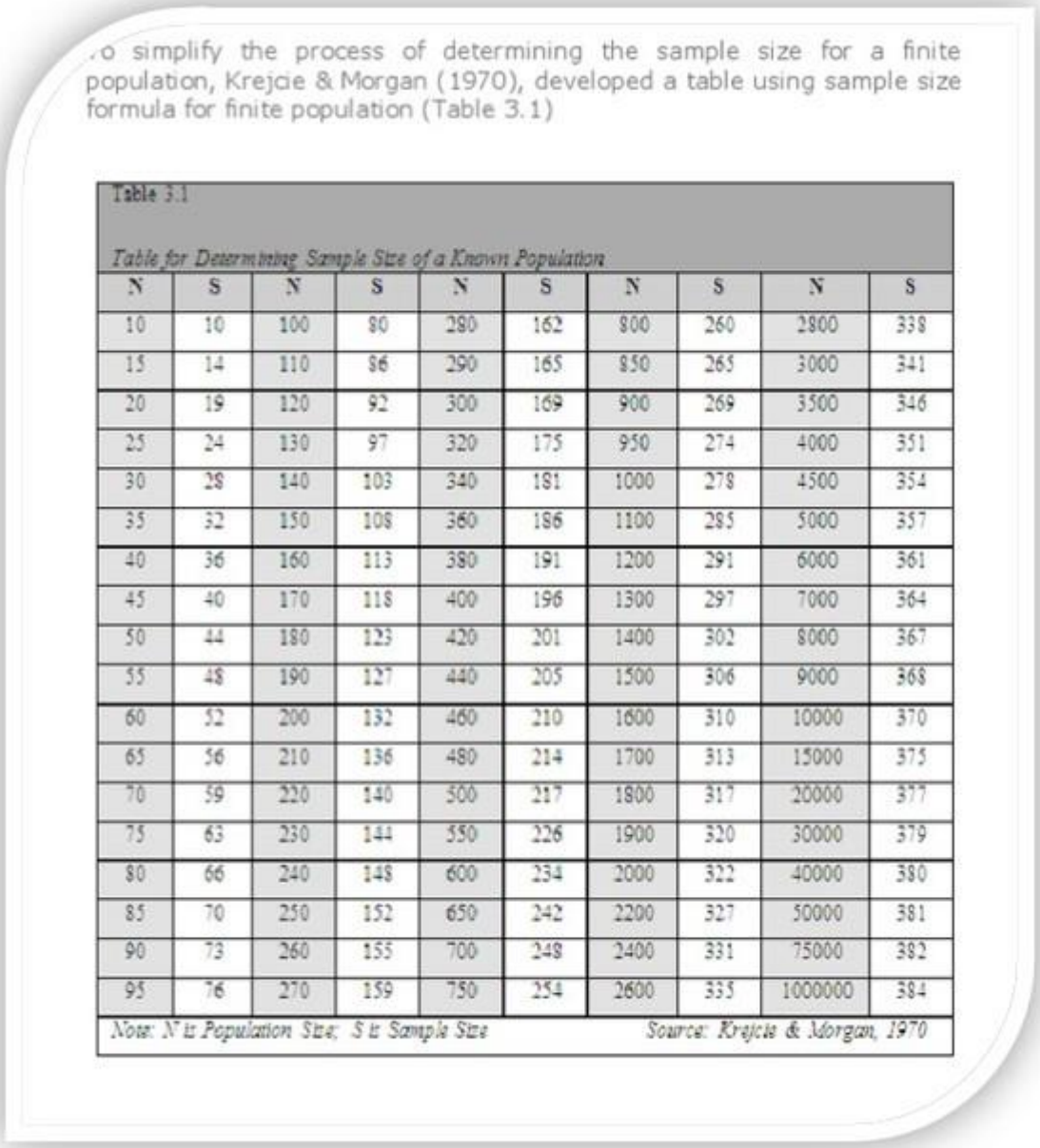
Sampling is the strategy for choosing a piece of the populace to draw conclusions and understandings representative of the whole (Polit and Beck, 2009). Sekaran and Bougie (2016) characterise testing strategies as the method of choosing things utilised in the review.

The review utilised a defined irregular testing strategy, a cycle where respondents are picked so that every individual from the populace is given an equivalent chance to be chosen (Mugenda and Mugenda, 2012). As per Creswell (2013), delineated testing is likewise used when the populace has different qualities; in this way, it guarantees that everybody is allowed an equivalent opportunity to be picked and the overall population is sub-partitioned into levels before utilizing basic irregular examining to get an example from every layer. In the first place, Unisa's Money Directorate was chosen as the unit of examination. In the subsequent layer, the Income and Depository Office was distinguished. In the last layer, administrative and non-administrative workers were considered for the review. This approach is reliable, as applied by Chisasa (2014).

3.7. SAMPLE SIZE AND ADEQUACY

The sample size refers to a smaller portion of the target population selected to represent the entire population (Liu and Pásztor, 2022). Several factors influence a researcher's decision regarding the sample size, including research objectives, confidence intervals, the risk associated with determining accuracy levels, variability within the population, as well as cost and time considerations (Sekaran and Bougie, 2016). Saunders et al. (2021) express that a specialist must gauge the base example size required. The computation should be based on certainty and allowance for mistakes. Applying Krejcie and Morgan (1970) sampling model, the sample size obtained for this study was 102 (see Table 3.1 below). Since the population of the study was 140, the researcher applied the census method to collect data, as all target participants were easily reachable via internal email communication.

Table 3.1: Sample size determination



To simplify the process of determining the sample size for a finite population, Krejcie & Morgan (1970), developed a table using sample size formula for finite population (Table 3.1)

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

Source: Krejcie and Morgan (1970)

3.8. QUESTIONNAIRE DEVELOPMENT AND DATA COLLECTION METHODS

Primary data were used to address the study's research questions, as articulated in Chapter 1. Primary data refers to data that was collected directly from the source for a particular research project through methods such as surveys, interviews, observation and experiments and has, therefore, never been published or used elsewhere (Taherdoost, 2021).

Primary data can be gathered through interviews, centre gatherings, overviews, messages, social communication or surveys (Siddiq, Ahmad, Jan, Khan and Khattak, 2023). The essential information assortment instrument utilised in this study was a self-controlled poll. Jacob and Sunday (2020) define a survey as “a record containing questions and different sorts of things intended to request data fitting for investigation”. Mburu (2020) argues that polls are suitable because they are free from predisposition. The survey for this study was created using Microsoft Structures and sent to 140 staff individuals from Unisa's financial office through email. The members likewise answered through email.

The questionnaire involved close-ended questions. As indicated by Siddiq, Ahmad, Jan, Khan and Khattak (2023), close-ended questions are suitable for use with a Likert scale, making it simple for the researcher to code and order reactions. Likewise, the review utilised a five-point Likert scale as it permits respondents to show how much they concur or contradict an assertion but does not allow for further developments in their viewpoints or offer explanations behind their responses. Respondents were approached to show their reaction on the accompanying scale: 5 (strongly agree); 4 (Agree); 3 (Neither agree nor disagree); 2 (Disagree); and 1 (Strongly disagree). The five-point Likert scale helps the analyst in deciding the unwavering quality of the scale utilising Cronbach's alpha and diminishes the risk of not accomplishing dependability (Malik, Sheikh and Mahmood, 2023; Malik et al., 2021).

The questionnaire was divided into the following sections in line with the research problem, objectives of the study and the thematic areas discussed in the literature review chapter (Chapter 2) from which the study’s objectives were drawn. Listed below are the sections of the questionnaire directing the data collection process.

- Section 1: Demographic characteristics
- Section 2: Types of financial risk that ODeL institutions are exposed to
- Section 3: Risk techniques used by ODeL institutions to mitigate financial risk
- Section 4: Non-financial techniques used by ODeL institutions to mitigate financial risk

The questionnaire was developed with the aid of Microsoft Forms. A total of 140 questionnaires were issued to staff in the Unisa Finance, Revenue and Treasury

Department: Revenue Section using the official Unisa email, which is deemed safe and secure enough to protect the responses received from the participants. 102 questionnaires were completed and returned, representing a 73% response rate.

3.9. RELIABILITY AND VALIDITY

Consistent with Aithal and Aithal (2020), the questionnaire was pilot-tested on twenty staff members to ensure validity. The pilot study was conducted on employees in the Finance, Revenue and Treasury Department: Revenue Section of Unisa. The results obtained from the pilot study were used to improve the questionnaire.

3.9.1. Reliability

Reliability refers to the internal consistency of a scale or survey. It assesses the extent to which the items within a scale or survey consistently measure the same underlying construct or attribute (Aithal and Aithal, 2020). A pilot study was conducted using 20 surveys to evaluate the reliability and validity of the research instrument. According to Siddiq et al. (2023), a pilot study is a small-scale investigation to identify any flaws in the survey. In this study, Cronbach's alpha was used to measure internal consistency. Cronbach's alpha indicates how consistently the questions assess the same general concept (Tavakol and Dennick, 2011). The interior unwavering quality of the estimation scales (surveys) was assessed utilizing Cronbach's alpha. Cronbach's alpha computes the typical connection between everything and every other thing in the scale. It goes from 0 to 1, where a higher worth shows more noteworthy interior consistency or unwavering quality. A Cronbach's alpha worth of 1 shows excellent internal consistency, while a worth of 0 recommends no connection among the items (Malik et al., 2023).

3.9.2. Validity

A pre-test was carried out to ensure the research instrument was appropriate. Experts in the field reviewed the questionnaire, specifically statisticians assisted in establishing if the questions could be analysed statistically (Aithal and Aithal, 2020).

The questionnaire was tested during the trial phase to see if it covered all of the basic aspects of the research before use. A questionnaire might pose potential problems in design and instruction; identifying these problems during the trial phase enables the

researcher to solve them early (Denscombe, 2017). A pilot study is a fundamental period of the exploration cycle (Aithal and Aithal, 2020)). It empowers the specialist to inspect the reasonability of a methodology the researcher proposes to use for a bigger scope. A pilot study was conducted with 20 finance staff of Unisa to determine the ease of answering the questions and the validity of the results. The analyst effectively conveyed the poll to the objective members.

During the trial phase, the researcher noticed that the respondents had difficulties answering section 3 of the questionnaire because the questions were not in a simple format to be understood by the participants, and the risk terms were not defined clearly enough for the participants to understand. The researcher, therefore, had to explain the terms and modify the questions to conform to the standard five-point Likert scale. Four out of 20 respondents did not respond or responded incorrectly; therefore, the four questionnaires were spoilt and not used.

3.9.3. Discriminant validity

Discriminant validity is a concept in factor analysis that assesses whether the constructs or factors being measured are distinct and not highly correlated with each other (Rönkkö and Cho, 2022). It aims to determine whether the factors measure unique aspects of the phenomenon under study or if they measure the same underlying construct. One way to assess discriminant validity is by examining the factor correlation matrix. The factor correlation matrix shows the correlations between the different factors extracted from the analysis (Schreiber, 2021). It is desirable to observe low inter-factor correlations to establish discriminant validity, indicating that the factors are distinct and not highly related to each other. The correlations between factors should generally be low or moderate, ideally below a certain threshold (e.g., 0.7). Low inter-factor correlations suggest that the factors measure different aspects of the phenomenon.

Within each factor, the correlations between the individual items or variables should be higher than between items from different factors. This implies that the items within each factor are more strongly related to each other, supporting the internal consistency of the factor. If the factor correlation matrix shows a high correlation between factors or patterns that suggest overlap or redundancy, it may signal a lack of discriminant validity (Schreiber, 2021).

3.10. DATA ANALYSIS

The preliminary data analysis was conducted using frequency tables to understand the characteristics of the respondents. The collected data was then exported to SPSS Version 28 for further analysis, which has an impressive command language that allows you to save and automate many repetitive tasks (Sadriddinovich, 2023).

3.10.1. Descriptive statistics

Descriptive statistics such as frequency tables and graphs were used to describe the data obtained from the survey (Aggarwal and Ranganathan, 2019).

3.10.2. Missing data

From the remaining 101 surveys that had apparent scales, any missing information was replaced with the midpoint of the nearest point. The missing data was filled in with the median for those with continuous scales, as the study uses clear measurements (Ghasemy, Teeroovengadum, Becker, and Ringle, 2020). Three factors contributed to the missed reactions, which accounted for less than 3% of the missing information. Consequently, no respondents were removed due to missing data. Each of the three areas of missing information was based on a scale measure, so they were replaced with the mean of the neighboring points.

3.10.3. Correlation analysis

The bivariate Pearson correlation coefficient was used to determine the association between risk, control, system and training because it is used as a parameter in the bivariate normal distribution to derive the correlation coefficient to be able to determine the strength, the weakness and direction of the correlations to provide initial insights into the relationships between variables (Baak, Koopman, Snoek and Klous, 2020). The factors are independent of each other and are examined, observed and described as they naturally occur. These factors do not influence each other but relate positively to each other.

3.10.4. Exploratory factor analysis

Exploratory factor examination was utilised to make connections and examples in the information clear and justifiable. Exploratory component examination is a measurable

procedure utilised in information examination to uncover many factors' hidden construction or aspects (Schreiber, 2021). The objective of exploratory element investigation is to distinguish the inert elements that make sense of the examples of connections among noticed factors. The most common way of directing an exploratory element examination includes a few stages. Firstly, the researcher chooses many factors to be considered in the investigation, given their significance to the exploration question or speculation. The factors were evaluated using a Likert or ordinal scale. The researcher then analyzed the intercorrelations among these selected factors. This analysis was completed by examining relationship grids and an overall change explainer. The strength and direction of these connections provide initial insights into the relationships between the factors (Baak et al., 2020).

Once the intercorrelations are established, the researcher applies a factor extraction method to identify the underlying factors. Commonly used extraction methods include principal component analysis and maximum likelihood estimation, which indicate that this factor is suitable for further analyses (Haron, Abdul Subar and Ibrahim, 2020). These methods aim to identify factors that explain the most significant variance in the observed variables. In this study, the researcher applied the maximum likelihood estimation approach since it is less forgiving and can be used in AMOS for further analysis.

After the factors were extracted, the researcher performed a factor rotation to improve the interpretability of the factors. Rotation methods such as Varimax or Promax simplify the factor structure by maximising the variance of factor loadings and promoting clear patterns of relationships between variables and factors (Khlaif, Khalili, Affouneh, and Tlili, 2023). In this study, the researcher applied Promax rotation. Unlike

Varimax or Promax rotation does not aim to produce orthogonal factors. Instead, it allows the factors to be correlated if there is evidence of shared variance between them. Promax rotation typically produces more realistic and interpretable results when factors are expected to be correlated in the underlying structure. By allowing for correlated factors, Promax rotation may yield simpler factor structures and more meaningful interpretations, especially when factors are theoretically related or have a high degree of overlap.

The researcher then examined the factor loadings, which represent the strength of the relationship between each variable and the identified factors. Variables with higher loadings on a specific factor were considered to be more strongly associated with that factor. This helped when interpreting and labelling the factors based on the pattern of loadings.

3.10.5. Normality test

Skewness and kurtosis were analysed to understand if the data is normally distributed. Skewness measures the asymmetry of a distribution. It indicates whether the data is skewed to the left (negative skewness), skewed to the right (positive skewness) or has a symmetric distribution (zero skewness). Skewness can be calculated using different formulae, but one commonly used measure is Pearson's coefficient of skewness. A positive skew designates a longer or fatter tail on the right side of the distribution, while a negative skew implies a longer or fatter tail on the left side (Khlaif, Khalili, Affouneh and Tlili, 2023). Kurtosis is a measure of the tailedness of a distribution. Tailedness is how often outliers occur. Excess kurtosis is the tailedness of a distribution relative to a normal distribution. Distributions with medium kurtosis (medium tails) are mesokurtic coefficients of kurtosis. Positive kurtosis (leptokurtic distribution) signifies a higher peak and heavier tails, while negative kurtosis (platykurtic distribution) shows a flatter peak and lighter tails compared to a normal distribution.

A skewness value less than –2 or greater than 2 means a moderately skewed distribution. A kurtosis value of ±3 implies a mesokurtic distribution, which is like a normal distribution. All of the data values were within the recommended range, apart from one training item, credit card risk. This discrepancy occurred because this item was on a measuring scale of 1–2; thus, it was not expected to be normally distributed.

3.11. ETHICAL CONSIDERATIONS

This study adhered to all the standards of Unisa's arrangement on research morals and vital ethical considerations as directed by Brittain et al. (2020). The analyst obtained ethical permission from Unisa before conducting the study. At the start of filling in the polls, respondents were provided with a consent form requesting informed consent prior to completing the survey. (Jacob and Sunday, 2020). The researcher guaranteed that the review did not negatively impact the respondents (Flick, 2020).

Respondents were not forced to participate in the survey and could renege their previously given consent at any time. In line with Cooper and Schindler (2014), all respondent data was kept hidden and classified.

3.12. CHAPTER SUMMARY

Exploratory element investigation and focused legitimacy were utilized to test the appropriateness and legitimacy of the examination. Moral considerations of the study were also briefly discussed. Chapter 4 will present the results and findings of the research.

CHAPTER 4. RESULTS AND DISCUSSION OF RESULTS

4.1. INTRODUCTION

In this chapter, the empirical results of the study are presented. Section 4.2 presents the response rate and the data screening process.

4.2. RESPONSE RATE AND DATA SCREENING

A total of 140 questionnaires were distributed among the sampled respondents. Thirty-eight (38) staff members did not answer the survey. All the questionnaires were at least 90% complete (under 10% missing information). The review did not record the time it took respondents to complete the questionnaire; instead, a standard deviation among the respondents' reactions was utilised to catch unengaged respondents. Only a single respondent was viewed as unengaged.

4.3. MISSING DATA

The data set is mostly complete and reliable, with only a few missing values. The **yellow** numbers show the items with missing data that were replaced by the median of the nearby point (see Table 4.1). Training and system-related variables were fully answered, highlighting strong engagement with these topics.

Table 4.1: Missing data

		ID	Age	Status	Education	Household	Gender	Work
N	Valid	101	101	101	101	101	101	101
	Missing	0	0	0	0	0	0	0
		Campus	Risk_1	Risk_2	Risk_3	Risk_4	Risk_5	Risk_6
N	Valid	101	101	101	101	100	100	101
	Missing	0	0	0	0	1	1	0
		Risk_7	Control_1	Control_2	Control_3	Control_4	Control_5	Control_6
N	Valid	101	101	101	101	101	101	101
	Missing	0	0	0	0	0	0	0
		System_1	System_2	System_3	System_4	Policy_1	Policy_2	Policy_3
N	Valid	101	101	101	101	101	100	101
	Missing	0	0	0	0	0	1	0
		Policy_4	Policy_5	Policy_6	Policy_7	Training_1	Training_2	Training_3
N	Valid	101	101	101	101	101	101	101
	Missing	0	0	0	0	0	0	0
		Training_4	Training_5	Training_6	Training_7	Training_8	Training_9	
N	Valid	101	101	101	101	101	101	
	Missing	0	0	0	0	0	0	

4.4. NORMALITY TEST

The data was subjected to normality tests using skewness and kurtosis. Table 4.2 summarizes the skewness and kurtosis values. The data exhibited non-normality since many variables deviate from the normal range in skewness and kurtosis. The non-normally distributed data was used for descriptive statistics. Descriptive statistics (such as mean, median, standard deviation, and percentiles) summarise the data regardless of distribution.

Table 4.2: Skewness and kurtosis of the data

	Age	Gender	Status	Education	Household	Work
Skewness	.994	-.210	1.914	-.776	.412	-.874
Std. Error of Skewness	.240	.240	.240	.240	.240	.240
Kurtosis	1.543	-1.002	4.037	-.310	.101	.489
Std. Error of Kurtosis	.476	.476	.476	.476	.476	.476
	Campus	Training_1_1	Risk_1	Risk_2	Risk_3	Risk_4
Skewness	-1.090	-3.163	-.433	-.443	-.150	-.437
Std. Error of Skewness	.240	.240	.240	.240	.240	.240
Kurtosis	-.653	8.169	.062	-.617	-.766	-.600
Std. Error of Kurtosis	.476	.476	.476	.476	.476	.476
	Risk_5	Risk_6	Risk_7	Control_1	Control_2	Control_3
Skewness	-.122	-.361	-.357	-.575	-.198	.077
Std. Error of Skewness	.240	.240	.240	.240	.240	.240
Kurtosis	-.363	-.647	-.842	.090	-.697	-1.017
Std. Error of Kurtosis	.476	.476	.476	.476	.476	.476

		Control_4	Control_5	Control_6	System_1	System_2	System_3
Skewness		-.247	.237	.020	-.177	-.392	-.343
Std. Error of Skewness		.240	.240	.240	.240	.240	.240
Kurtosis		-.039	-.781	-.564	-.725	-.265	-.317
Std. Error of Kurtosis		.476	.476	.476	.476	.476	.476
		System_4	Policy_1	Policy_2	Policy_3	Policy_4	Policy_5
Skewness		-.026	-.402	-.274	-.429	-.182	-.246
Std. Error of Skewness		.240	.240	.240	.240	.240	.240
Kurtosis		-.562	-.493	.190	.673	-.210	-.745
Std. Error of Kurtosis		.476	.476	.476	.476	.476	.476
		Policy_6	Policy_7	Training_1	Training_2	Training_3	Training_4
Skewness		.203	-.233	-1.227	-.640	-.597	-.894
Std. Error of Skewness		.240	.240	.240	.240	.240	.240
Kurtosis		-.884	-.741	.984	-.739	-.788	.418
Std. Error of Kurtosis		.476	.476	.476	.476	.476	.476
		Training_5	Training_6	Training_7	Training_8	Training_9	
Skewness		-1.060	-1.310	-1.022	-1.019	-.896	
Std. Error of Skewness		.240	.240	.240	.240	.240	
Kurtosis		.305	1.504	.500	.126	-.123	
Std. Error of Kurtosis		.476	.476	.476	.476	.476	

Source: Author construction

4.5. DEMOGRAPHIC DISTRIBUTION

The purpose of this section is to describe the characteristics of the respondents. Detailed measurements were used to establish the demographic attributes of the participants concerning age, gender, level of education, family background, occupation, residency, and training.

4.5.1. Age

Table 4.4 summarizes the age distribution of the respondents. Most respondents (54.5%; n = 101) were between 40 and 45 years old, while 35.6% were aged 25 to 39. Additionally, 5.9% were between 55 and 65 years old, and 4% were 65 or older.

Table 4.3: Age distribution of respondents

Age range	Frequency	Percentage (%)
25–39	36	35.6
40–55	55	54.5
55–65	6	5.9
65+	4	4.0
Total	101	100

Source: Research data

4.5.2. Gender

The gender of the respondents consisted of male, female and other. Male participants made up 36.7% of the total participants, while female participants made up 61% of the total, and 2 % for other, which demonstrates that the finance department staff are predominantly female. The gender distribution of the respondents is depicted in Figure 4.1.

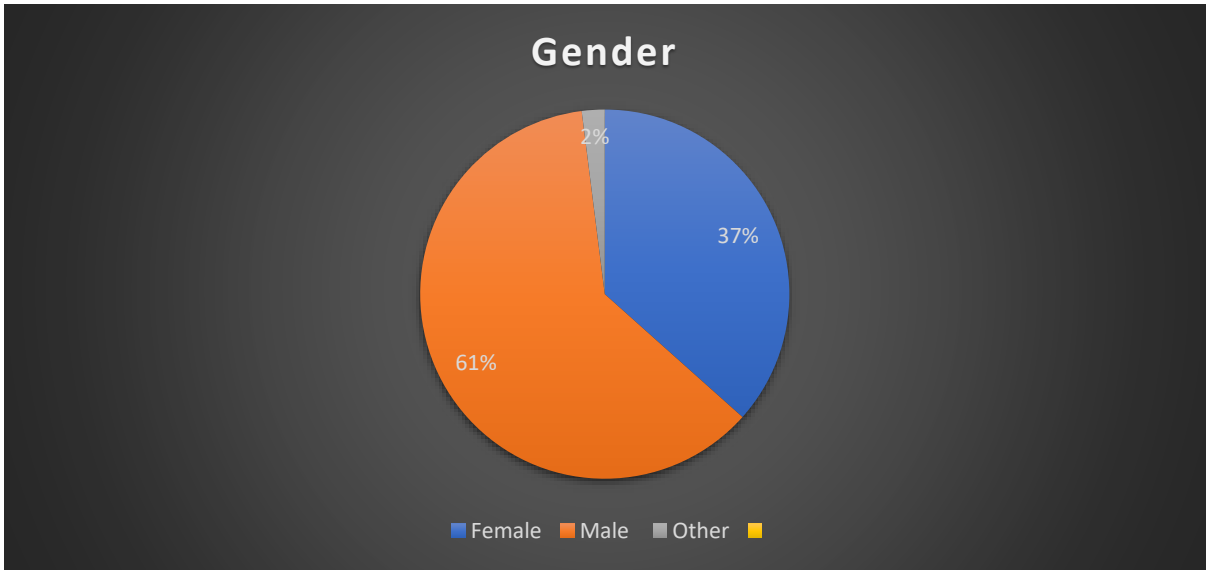


Figure 4.1: Gender distribution of respondents

Source: Author construction

4.5.3. Level of education

Figure 4.2 shows that most participants held bachelor's degrees (47.5%; n = 17). Having more staff with degrees and experience helps to understand the finance department's core challenges since they are involved in the day-to-day operations of the university's financial activities. Additionally, 19.8% of participants held either a master's or doctoral degree, 7.9% held a diploma, and 16.8% had a secondary school certificate.

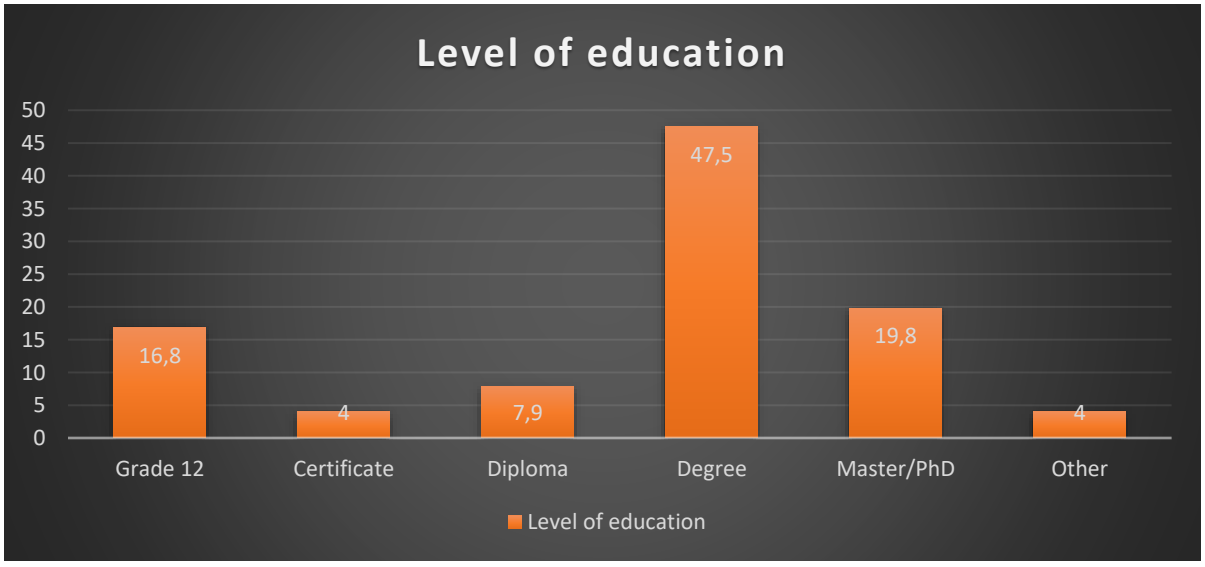


Figure 4.2: Level of education

Source: Author construction

4.5.4. Marital status

Table 4.4 presents the marital status of the participants. 51.5% of respondents were single, and 37.6% were married. Only 5% of the respondents were separated, and 4% were widowed. About 2% of the respondents fell under the category 'Other'.

Table 4.4: Marital status of respondents

Marital status	Frequency	Percentage (%)
Single	52	51,5
Separated	5	5,0
Married	38	37,6
Widowed	4	4,0
Other	2	2,0
Total	101	100

Source: Author construction

4.5.5. Workplace position

Figure 4.3 indicates that most respondents were support staff (71.3%; n = 73), followed by supervisors (13.9%, n = 14). Slightly fewer respondents (6.9%; n = 7) were managers, while approximately 5% of the respondents were directors (n = 3). Finally, about 5% of the respondents were categorised as other (n = 5).

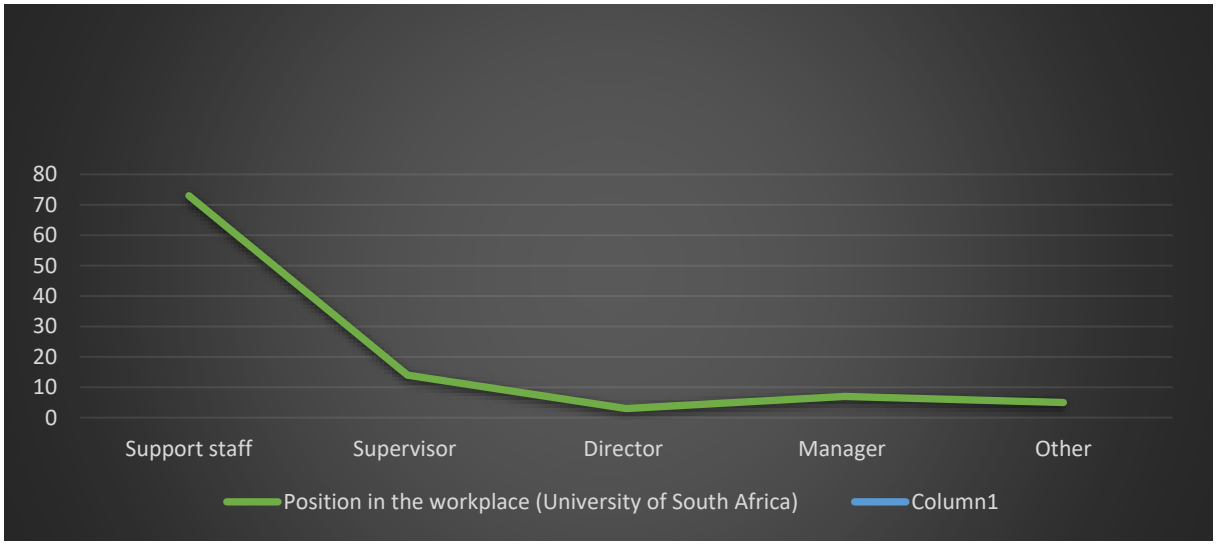


Figure 4.3: Workplace position

Source: Author Construction

4.5.6. Campus

The results demonstrate that the highest number of respondents were from the Florida campus (69%), followed by the Muckleneuk campus (22%) and the Sunnyside campus (9%), as indicated in Figure 4.4.

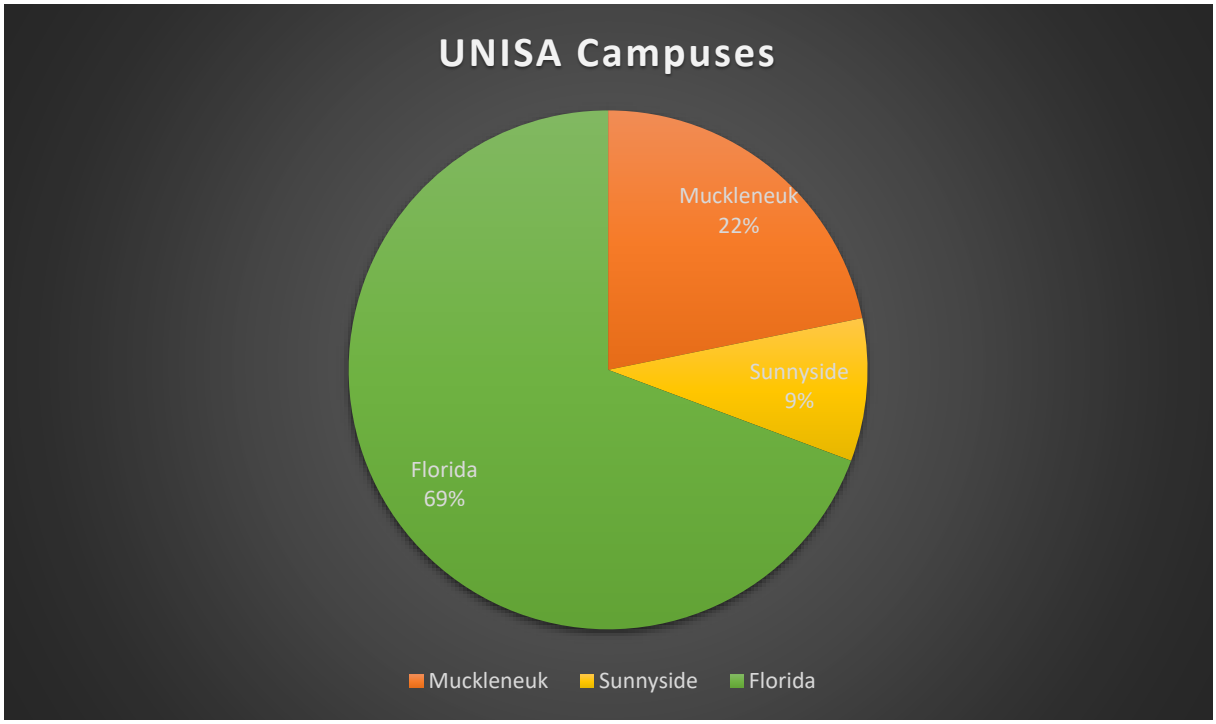


Figure 4.4: Number of respondents by Unisa campus

Source: Author Construction

4.5.7. Training needs

Training is essential for staff, yet a significant number of respondents (92.1%; n = 92) reported that they had not received any training on financial risk management in the past 12 months. This indicates that 92% of the staff require additional training, as reflected by their “No” response to whether they had received such training. Only 7.9% (n = 8) stated that they do not need further training, responding with “Yes”. This suggests that most of the finance staff should undergo retraining to improve their knowledge and skills in key areas of their responsibilities. The results are depicted in Figure 4.5.

Figure 4.5: Training needs of participants

Source: Author Construction

After determining the characteristics of the data in the preliminary analysis presented above, the statistical analysis techniques and the results therefrom are presented in the ensuing sub-sections.

4.6. RESULTS FOR OBJECTIVE 1: TYPES OF FINANCIAL RISK FACING ODEL UNIVERSITIES

The first objective of the study was to determine the types of financial risks ODeL universities are exposed to. Accordingly, respondents were asked to rate their knowledge of the financial risks Unisa faces. Unisa was used as the case study. Using a 5-point Likert scale, the descriptive statistics presented in Table 4.5 below show that Unisa was exposed to all the four key elements of financial risk, namely, liquidity, credit, market and operational risks.

4.6.1. Liquidity risk

With a mean score of 3.15, respondents demonstrated that they rated liquidity risk as of moderate concern. The standard deviation of 0.979 shows that the ratings were fairly consistent; however, there were still variations in how respondents perceived this

risk. The skewness of -0.431 indicates that the distribution was slightly negatively skewed, suggesting that more respondents rated this risk lower. The data distribution, measured by the Kurtosis of 0.088, is close to normal with a slight peak.

4.6.2. Credit risk

The data distribution, measured by the Kurtosis of -0.604, is flat. This is an indication of a lower concentration of ratings around the mean. When asked to express their credit risk rating, the respondents expressed moderate concern about credit risk, with a mean score of 3.37, slightly above the neutral point of 3. It can be observed from the fairly widespread ratings (δ = 1.185) that respondents had varied perceptions of credit risk. Similarly, the skewness of -0.436 shows that the risk is negatively skewed, meaning that more respondents rated this risk lower. Finally, with a kurtosis of -0.604, the data distribution is slightly flat, indicating a lower concentration around the mean.

4.6.3. Market risk

As with both liquidity and credit risks, the market risk average score of 3.27 highlights a moderate concern about market risk. This position aligns with the standard deviation of 1.038, which shows that the ratings have moderate variability, slightly similar to the study of Issackow (2022)that uses . The data distribution is almost symmetric (skewness = -0.122), with a minimal negative skew toward lower ratings. The Kurtosis of -0.363 shows that the distribution is slightly flat, implying a fairly normal distribution.

4.6.4. Operational risk

Results obtained from the 102 respondents with a mean score of 3.51 indicate moderate concern about operational risk. It can also be seen from the standard deviation of 1.069 that the spread of ratings is moderate. Unlike the other three risk types, the distribution is slightly negatively skewed (skewness = -0.348), with a tendency for lower ratings. With a kurtosis of -0.641, this distribution is slightly flat, which means the ratings are dispersed but still relatively close to the mean.

Table 4.5: Descriptive statistics – Types of financial risks in ODeL universities

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Nature /type of work	102	1	5	3,54	1,256	-,809	,239	,475	,474
Liquidity risk (is the cash crushed for a temporary period and adversely affects any institution and profit-making organisation).	102	1	5	3,15	,979	-,431	,239	,088	,474
Credit Risk (risk of default on a debt that may arise from a borrower failing to make required payment).	102	1	5	3,37	1,185	-,436	,239	-,604	,474
Market risk (the risk of loss in appositions arising from movement in the market variables like price and volatility).	101	1	5	3,27	1,038	-,122	,240	-,363	,476
Operational risk (the risk of losses caused by flawed or failed processes, policies, systems, or events that disrupt business operations)	102	1	5	3,51	1,069	-,348	,239	-,641	,474

Source: Author Construction

4.6.5. Summary of key insights for Objective 1

The mean rates are moderate across all financial risks (liquidity, credit, market and operational), generally between 3.15 and 3.54. This result suggests that respondents view these risks as neither insignificant nor extreme but as present and notable concerns. Most of the risks have negative skewness, indicating that respondents were more likely to rate these risks lower (1-3 on the scale), albeit this score not being severe. The kurtosis values are close to normal for many risks, indicating that the data is somewhat evenly spread out, but there are some risks with a slightly flatter distribution.

4.7. RESULTS FOR OBJECTIVE 2: RISK MITIGATION TECHNIQUES

The study's second objective was to determine the risk mitigation techniques used by ODeL universities. Respondents were asked to identify the financial risk mitigation techniques used at Unisa Using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). To this end, a set of 16 questions was posed, covering an array of risk mitigation techniques for liquidity, market, credit and operational risks. The following observations emerged from the descriptive statistical analysis of the data collected under the construct "Risk mitigation techniques among ODeL institutions." The results of the descriptive analysis are presented in Table 4.6.

An analysis of the central tendency and dispersion shows that most responses are concentrated between 2.5 and 3.7 when using the mean. This result suggests moderate agreement among the respondents with the statements making up the construct. The standard deviation, with values ranging from 0.768 to 1.287, indicates varying levels of dispersion in responses. Finally, the fact that the entire 5-point Likert scale was used means that the respondents had different views.

The results also show that most variables have negative skewness, suggesting that responses are slightly skewed towards high-value responses of agree or strongly agree. Notably, "Acknowledgement of debt (AOD) by students" has a skewness of -0.588, indicating a tendency toward agreement with the practice of issuing and signing the Agreement of Debt by students in support of their debt. The lowest skewness was

observed on the variable “The university does a credit check of the parents before the student signs an AOD” (0.072), suggesting that the responses are relatively balanced.

An analysis of the Kurtosis revealed that a majority of the variables have negative kurtosis. This result indicates more dispersed responses rather than clustering around the mean. The highest kurtosis (0.710) is for the variable “The finance policy of Unisa changes in less than five years”, meaning that responses are more peaked, with most responses clustering around specific points.

Based on the descriptive analysis presented in Table 4.6 below, this study makes some key observations on the financial risk mitigation strategies among ODeL universities.

- Debt management: The variable “Acknowledgement of debt (AOD) by students” has a high mean (3.63), suggesting that this technique is a widely accepted financial risk mitigation technique.
- Credit checks: The mean score (2.78) for the variable “The University does a credit check of the parents before the student signs an AOD” suggests this is not a popular practice.
- Financial awareness: There is a general awareness among respondents of the financial policy at Unisa. This observation is supported by a relatively high mean score of 3.55.
- System security: The variables “The university’s system is protected against hackers” (mean = 3.30) and “It is safe for stakeholders to use the University’s payment system” (mean = 3.65) suggest moderate confidence in the University’s security measures.
- Government influence: The mean score of 3.68 for the variable “The government influences financial policies in the institution” points to a view of substantial external control over financial regulations of the University. This is unsurprising as Unisa is a state-owned university.

While the results presented thus far show commendable efforts by Unisa to mitigate financial risk, there still is room for improvement in the following areas:

- Risk reporting mechanisms: The mean scores for the variables “A specific person is assigned to your department to report on risk” (2.86) and “The

department has a risk occurrence list" (2.99) indicate a lack of robust risk reporting structures. Additionally, both scores lean towards the response item 3 on the Likert scale, which suggests the respondents' neutrality toward the matter and, by extension, that the respondents neither agreed nor disagreed with the statements posed.

- Feedback on financial risks: With a mean score of 2.99, the result for the variable "I get feedback after reporting financial risk" highlights possible inefficiencies in risk communication.
- Policy stability: Respondents were asked if "The finance policy of Unisa changes in less than five years or in less than five years." It was found that the finance policy's change frequency (mean: 2.94 for <5 years, 2.74 for >5 years shows uncertainty about policy stability.

Table 4.6: Descriptive statistics for Objective 2: Risk mitigation techniques

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Acknowledgement of debt (AOD) by students	102	1	5	3,63	1,014	-,588	,239	,121	,474
Assessment of creditworthiness of students	102	1	5	3,35	1,166	-,190	,239	-,681	,474
The university does a credit check of the parents before the student signs an AOD	102	1	5	2,78	1,287	,072	,239	-,998	,474
The department makes use of the internal risk champions for advice	102	1	5	3,03	,990	-,247	,239	-,010	,474
A specific person is assigned to your department to report on risk	102	1	5	2,86	1,194	,235	,239	-,760	,474
The department has a risk occurrence list	102	1	5	2,99	1,147	,019	,239	-,540	,474
I get feedback after reporting financial risk.	102	1	5	2,99	1,094	-,027	,239	-,537	,474
Changes to ICT adversely affect the smooth functioning of the finance department	102	1	5	3,42	1,066	-,166	,239	-,712	,474

The University's system is protected against hackers	102	1	5	3,30	1,060	-,385	,239	-,246	,474
It is safe for stakeholders to use the university payment system.	102	1	5	3,65	,981	-,326	,239	-,321	,474
Are you aware of the financial policy at Unisa	102	1	5	3,55	1,087	-,388	,239	-,489	,474
Are there procedures in place to support employees following finance policies?	101	1	5	3,24	,940	-,274	,240	,190	,476
The finance policy of Unisa changes in less than five years	102	1	5	2,94	,768	-,433	,239	,710	,474
The finance policy of Unisa changes in more than five years	102	1	5	2,74	,933	-,191	,239	-,184	,474
The government influences financial policies in the institution	102	2	5	3,68	,924	-,227	,239	-,751	,474
Do you know the number of students that are under government subsidy	102	1	5	2,83	1,091	,199	,239	-,865	,474
Valid N (listwise)	101								

Source: Author Construction

4.7.1. Summary of key insights for Objective 2

Based on the results presented for Objective 2, it can be argued that ODeL universities, particularly Unisa, depend mainly on student acknowledgement of debt (AODs) and government subsidies as key financial risk mitigation techniques. Conversely, credit checks and internal risk reporting mechanisms appear weak, suggesting potential areas for strengthening financial oversight. Finally, financial security and policy awareness are moderate but could be improved with better stakeholder engagement.

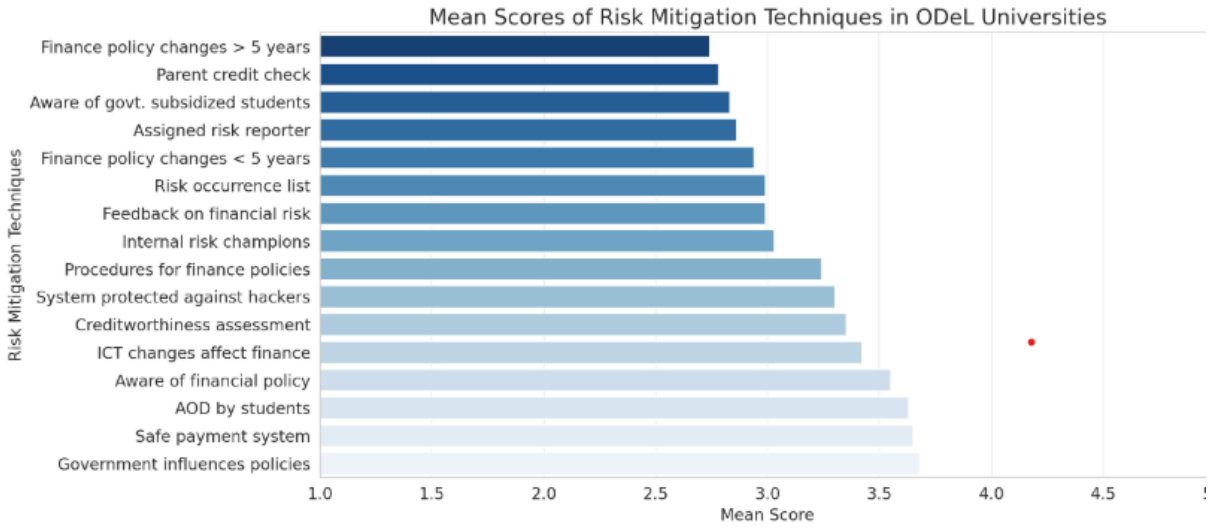


Figure 4.6: Source: Author Construction

Below are some histograms for selected key variables, showing the distribution of responses. The “AOD by students” and “Government influences policies” have peaks around 4, indicating higher agreement. “Parent credit check” is more spread out, suggesting mixed opinions. Finally, “Aware of financial policy” leans toward agreement but has some variation.

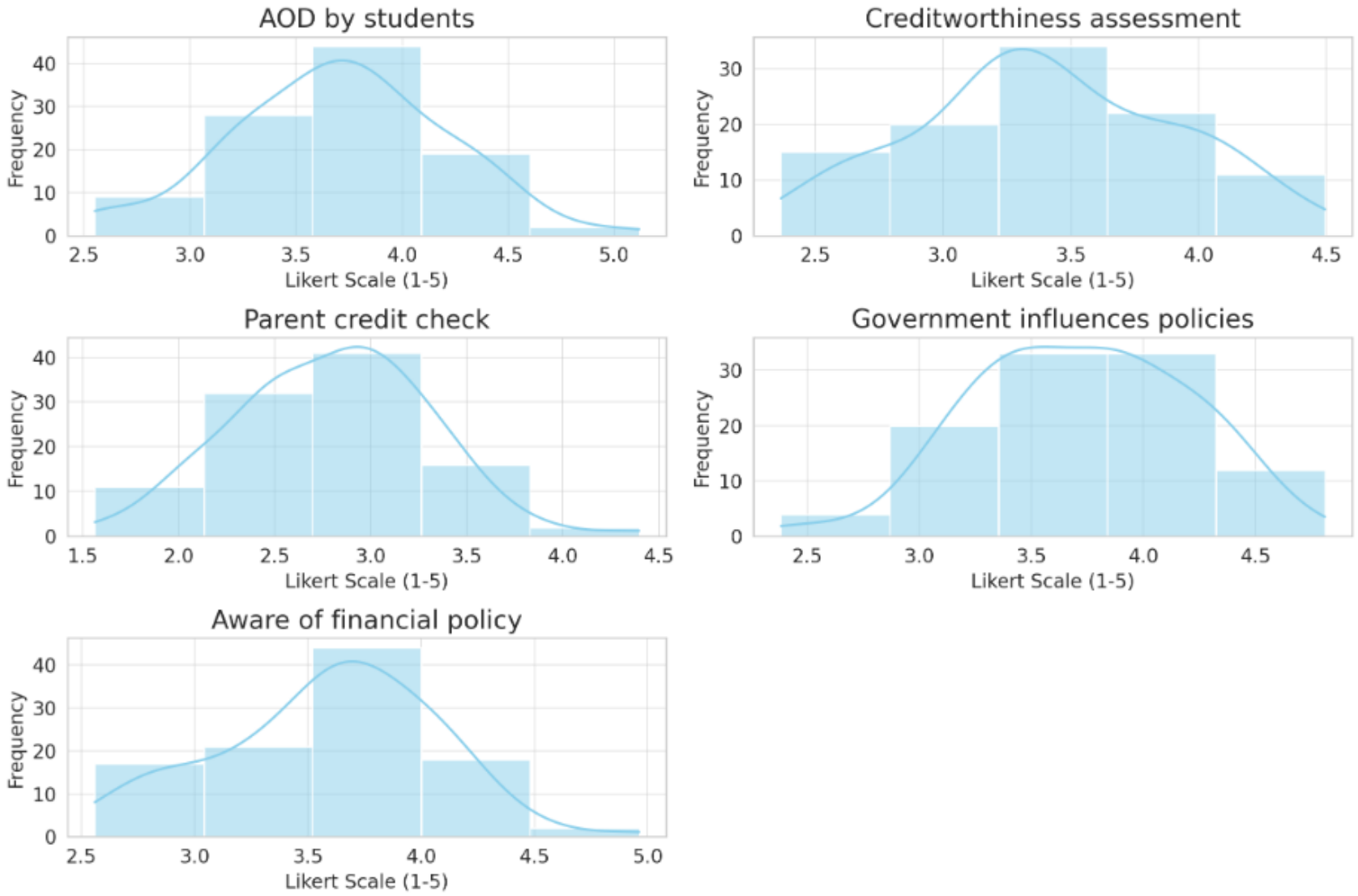


Figure 4.7: Source: Author Construction

4.8. RESULTS FOR OBJECTIVE 3: NON-FINANCIAL MANAGEMENT RISK MITIGATION TECHNIQUES

The third and final objective of the study was to identify the non-financial management techniques used by ODeL universities to mitigate financial risk. To this end, ten people management-oriented questions were asked. These questions aimed to determine the aspects of financial risk management in which the respondents needed upskilling. This assessment is premised on the fact that people or staff are an element of operational risk in the risk management framework (Chisasa and Young, 2013:605). In the first part of Objective 3, the respondents were asked if they had received training in financial risk management. The results showed a mean score of 1.92 (on a scale of 1-2), suggesting that most respondents answered "2", indicating that they had not received training in financial risk management in the last twelve months. With a standard deviation of 0.270, responses were found to be concentrated around the mean, meaning there was little variation. Overall, the overwhelming majority of respondents had not received financial risk management training, suggesting a potential gap in capacity building for risk mitigation. Table 4.7 summarises the results of the descriptive statistics in relation to the first part of the analysis of Objective 3.

Table 4.7: Descriptive statistics – non-financial risk mitigation techniques

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Have you received training in financial risk management in the last 12 months?	102	1	2	1,92	,270	-3,183	,239	8,294	,474
Valid N (listwise)	102								

Source: Author Construction

In the second phase of Objective 3, respondents had to answer nine questions regarding training interventions they required to aid financial risk management. The results of the descriptive analysis are presented in Table 4.8 below. All training needs identified in the research instrument have mean values greater than 3.4, showing a strong demand for training in all areas of financial risk management. The highest demand is for credit card risk and institutional policy training, with mean scores of 4.12 and 4.06, respectively. The lowest demand was observed for bad debt collection training (3.48), but even this suggests a moderate need.

All variables were negatively skewed, which means that more responses are concentrated towards higher values (in agreement with the need for training). The strongest negative skewness is for credit card risk (-1.192) and institutional policy (-1,276), reinforcing the demand for these training programs. The kurtosis results show that institutional policy training (1.408) has the highest kurtosis, indicating that responses are tightly concentrated around the mean. Conversely, bad debt collection (-0,780) and tuition fee risk (-0.735) have negative kurtosis, suggesting more dispersed responses.

Table 4.8: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
I need additional training in credit card risk	102	1	5	4,12	1,046	-1,192	,239	,891	,474
I need additional training in tuition fee risk (AOD)	102	1	5	3,57	1,339	-,629	,239	-,735	,474
I need additional training in bad debt collection and recoveries	102	1	5	3,48	1,348	-,589	,239	-,780	,474
I need additional training in online fraud	102	1	5	4,02	,985	-,864	,239	,351	,474
I need training in risk championship	102	1	5	3,97	1,130	-1,034	,239	,256	,474
Training on institutional policy	102	1	5	4,06	1,032	-1,276	,239	1,408	,474
I need additional training in liquidity risk	102	1	5	3,86	1,099	-,999	,239	,462	,474
I need training in how to report financial risk incidence	102	1	5	3,80	1,235	-1,000	,239	,105	,474
Training on government subsidy	102	1	5	3,76	1,228	-,878	,239	-,139	,474
Valid N (listwise)	102								

Source: Author Construction

4.8.1. Summary of Key Insights for Objective 3

Following the results of the descriptive analysis presented above, a summary of the top training priorities is presented below.

Credit card risk (4.12) and institutional policy (4.06) should be the focus of immediate training interventions. Online fraud (4.02) and risk championship (3.97) are also critical. Two areas were observed to be moderate but still important: liquidity risk (3.86) and financial risk incident reporting (3.80), which are also needed but are slightly lower in priority. Some topics, such as bad debt collection (3.48) and tuition fee risk (3.57), have more varied responses, indicating different levels of perceived need among staff.

4.9. RELIABILITY ANALYSIS

The questionnaire used for this study was subjected to reliability tests using Cronbach's alpha test to confirm that it measures what it was meant for. Cronbach's Alpha statistic (ɑ) is designed to measure the internal consistency or reliability of the items in the research instrument. Its values span from (0) to (1). As alpha tends to 1, the internal consistency of the items in the research instrument is greater. Table 4.9 sums up the Cronbach's alpha of each construct. All three constructs were found to be reliable with Cronbach's Alpha values above 0.7, which is greater than 0.6, the minimum threshold required for satisfying reliability. Thus, the research instrument is reliable since it lies within the acceptable range (Taber,2018)

Table 4.9: Reliability test

	Cronbach's Alpha	No of Items
Risk types	0.894	6
Financial risk mitigation techniques	0.798	4
Non-financial risk mitigation techniques	0.739	10

Source: **Author Structure**

4.9.1. Validity Test

Kaiser-Meyer-Olkin Measure (KMO) was used to study sample adequacy. The KMO measure ranges from 0 to 1, with values closer to 1 indicating better sampling adequacy (Shrestha, 2021). The results (KMO = 0.779) show that the sample had good adequacy. Additionally, Bartlett's Test of sphericity (950.455) was observed to be significant (p = 0000), suggesting that correlations exist.

Table 4.10: KMO results for sample adequacy.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.779
Bartlett's Test of Sphericity	Approx. Chi-Square	950.455
	df	190
	Sig.	.000

Source: Author Structure

4.10 CORRELATION ANALYSIS

The presence of correlations among the variables was confirmed through the Pearson bivariate correlation analysis. The results of the correlation analysis are presented in Table 4.11 below. Statistically significant correlations were observed between some variables while others exhibited no correlation at all.

Table 4.11 CORRELATION ANALYSIS

Correlations																		
	a	b	c	d	e	f	g	h	i	j	l	k	l	m	n	o	p	q
a		0.592**	0.488**	0.576**	0.568**	0.523**	0.467**	.127	.116	.088	.057	.021	.009	.147	.081	.069	-0.218*	.183
b			0.556**	0.659**	0.646**	0.543**	0.359**	-.071	-.030	-.090	-.052	-.076	-.046	-.001	.096	-.043	-.115	.125
c				0.604**	0.557**	0.495**	0.646**	-.020	.071	-.043	-.032	-.150	.057	.019	.041	-.093	-.068	.061
d					0.703**	0.679**	0.559**	-.010	.058	.025	.096	-.056	.014	.025	-.019	-.066	-.172	.055
e						0.629**	0.616**	.115	.154	.014	.129	.005	.020	.144	.109	.087	-.168	.094
f							0.576**	.056	.070	.143	.108	-.016	.103	.099	.043	-.047	-.185	.122
g								0.225*	.168	.111	.191	.014	.136	.154	.047	-.055	-.079	.126
h									0.530**	0.393**	0.482**	0.467**	0.372**	0.553**	0.567**	0.481**	.048	.172
i										0.659**	0.584**	0.521**	0.295**	0.652**	0.504**	0.702**	-.120	.169
j											0.627**	0.535**	0.283**	0.458**	0.294**	0.445**	-.116	0.273**
l												0.683**	0.49**	0.612**	0.341**	0.467**	.001	.184
k													0.515**	0.664**	0.475**	0.535**	-.005	.179
l														0.465**	0.386**	0.382**	.060	.175
m															0.590**	0.619**	-.052	.100
n																0.627**	-.071	.109
o																	-.138	.156

p																		-.155
q																		
**. Correlation is significant at the 0.01 level (2-tailed).																		
*. Correlation is significant at the 0.05 level (2-tailed).																		
c. Listwise N=101																		

Source: Author construction

4.11 EXPLORATORY FACTOR ANALYSIS (EFA)

This section presents the results of the factor analysis that was conducted using the constructs with principal factor analysis involving Varimax rotation to examine distinctions among the constructs.

4.11.2 Communalities

The communalities show the extent to which an individual item correlates with the rest of the items in the construct. In line with Hosany, Ekinci and Uysal (2006), all factors loading below 0.3 were excluded from further analysis. Almost all the variables were found to be acceptable at 0.500. Only a few were below 0.500. Details of the individual factor communalities obtained using the Maximum Likelihood extraction method are presented in Table 4.12 below.

Table 4.12: Communalities

	Initial	Extraction
Risk_1: Liquidity risk	.510	.491
Risk_2 : Credit risk	.616	.610
Risk_3 : Credit card fraud risk	.539	.534
Risk_4 : Interest rate risk	.686	.754
Risk_5 : Market risk	.640	.687
Risk_6 : Operational risk	.554	.594
Control_4Parent Cr	.436	.437
Control_5 Risk Camp	.664	.853
Control_6 Risk Occ ls	.636	.662
System_2ICT change	.458	.583
System_3 Protect-hoc	.351	.261

System_5_1Unisa paymnt system	.349	.230
Training_1Additionl Training	.524	.496
Training_2Tuition fee	.665	.608
Training_5 Risk champ	.587	.595
Training 6 Institutional_policy	.455	.302
Training_7Liquidity risk	.678	.725
Training_8 Financial risk	.584	.525
Training_9 Gov subsidy	.674	.614
Extraction Method: Maximum Likelihood.		

4.11.3 Total variance explained

Table 4.13 below shows that a 62.93% cumulative variance is attributable to four factors, namely Factors 1-4. Factors with Eigenvalues greater than 1 were considered for further analysis. Accordingly, only Factors 1–4 were included in the analysis. The cumulative percentage of 62.931% was observed to be good, and a four-factor solution was obtained. The loading factors of an item indicate the extent to which an individual item ‘loads’ onto a factor (which represents three loading factors, as depicted in Table 4.13).

Table 4.13: Total variance explained.

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.569	22.843	22.843	3.910	19.550	19.550	3.898
2	3.937	19.687	42.529	3.644	18.221	37.770	3.683
3	2.702	13.512	56.041	2.348	11.741	49.511	2.282
4	1.378	6.890	62.931	.952	4.761	54.272	1.965
5	.979	4.894	67.824				
6	.888	4.442	72.266				
7	.763	3.815	76.081				
8	.642	3.210	79.291				
9	.562	2.811	82.103				
10	.539	2.697	84.799				
11	.461	2.304	87.103				
12	.434	2.170	89.273				
13	.389	1.946	91.219				
14	.322	1.611	92.830				
15	.293	1.465	94.295				
16	.284	1.420	95.715				
17	.261	1.306	97.021				
18	.236	1.180	98.200				
19	.217	1.086	99.286				
20	.143	.714	100.000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

A further analysis was carried out using a scree plot presented below as Figure 4.8. Considering the different criteria, the decision was made to extract four factors.

4.11.4 Interpretation of factor loadings

As in the scree plot (Figure 4.8) below, the loading of a factor shows the extent to which an item contributes to the factor. Values close to 1 indicate an item that loads highly on a specific factor. A loading of 0.400 may be deemed acceptable (Lee, Lee and Wicks, 2004).

4.12 EFA PATTERN MATRIX

An EFA was conducted using the principal component analysis (PCA) and varimax rotation. The minimum factor loading criteria was set at 0.50. The commonality of the scale, which indicates the amount of variance in each dimension, was also assessed to ensure acceptable levels of explanation. The results showed that all communalities were greater than 0.50.

An important step involved weighing the overall significance of the correlation matrix through Bartlett's Test of Sphericity, which measures the statistical probability that the correlation matrix has significant correlations among some of its components. The results were significant $x^2(n=140) = 950.455$; ($p<0.001$), which indicates its suitability for factor analysis. The Kaiser- Meyer-Olkin measure of sampling adequacy (MSA), which indicates the appropriateness of the data for factor analysis, was 0.779 (approximately 0.800). In this regard, data with MSA values above 0.800 are considered appropriate for factor analysis.

The initial EFA pattern matrix is shown in Table 4.14. In this initial EFA, three items, i.e., "Policy 5", "Policy 6", and "Policy 7", had loading less than the acceptable 0.35 and thus failed to load to any factor significantly. Some factors had some cross-loadings among factors. Some items were deleted following the recommendations based on reliability analysis to improve the pattern matrix. Thus, the items that failed to load to the dimensions under study were removed from further analysis.

Table 4.14: Initial pattern matrix

	Factor						
	1	2	3	4	5	6	7
Risk_1: Liquidity risk		.738					
Risk_2: Credit risk		.790					
Risk_3: Cr Cd risk		.671					
Risk_4: Int rate risk		.846					
Risk_5: Market risk		.816					
Risk_6: Oper risk		.753					
Control_1: AOD						.650	
Control_3: Student Cr							.641
Control_4: Parent Cr			.483				.488
Control_5: Risk Champ			.976				
Control_6: Risk Occ Ls			.782				
System_2: ICT change					.873		
System_3:Protect-hac				.922			
Syst4: Unisa pay sys			.442		.372		
Training_1Additional Traning	.649						
Training_2 Tuition fee	.766						
Training_5 Risk Champ	.788						
Training_6 Institution pol	.481					.374	
Training_7 Liquidity risk	.881						
Training_8 Financial risk	.664						
Training_9 Gov subsidy	.769						

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

4.13 FINAL PATTERN MATRIX

The EFA was repeated without including the factors that failed to load in the initial analysis. After several iterations and trials, 20 items were retained. These items are loaded on four major factors, i.e., risk types, risk controls, hedging techniques and staff training. There was no cross-loading among factors. In addition, all items had loadings greater than 0.35; thus, there was no discriminant or convergent validity. Table 4.15 shows the final pattern matrix that was generated.

The four dimensions explained a total of 62.9 per cent of the variance among the items in the study. Bartlett's Test of sphericity was significant, and all communalities exceeded 0.500. The four factors identified as part of this EFA aligned with the theoretical framework in this study. Factor 1, which includes items “Training 1” to “Training 6”, refers to the Training Types. Factor 2 includes “Risk 1” to “Risk 6”. Thus, Factor 2 summarises the different types of financial risk Unisa is exposed to. Factor 3 gathers items “Control 4” to “Control 6”, which represents Risk Mitigation. Finally, Factor 4 includes items “System 2”, “System 3”, and “System 5”, referring to risk mitigation. The respective factor loadings are presented in Table 4.15 below.

Table 4.15: EFA Final Pattern Matrix Results

Items	Non-financial risk mitigation techniques	Risk types	Risk mitigation
Training:			
Risk championship	.814		
Institutional policy	.573		
Government subsidies	.763		
Types of risk			
Liquidity risk		.693	
Credit risk		.777	
Market risk		.817	
Operational risk		.769	
Risk mitigation			
System is protected			.741
Acknowledgement of debt (AOD) by students			.479
System 5			.421

Extraction Method: Maximum Likelihood.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

4.14 FACTOR CORRELATION MATRIX

The dataset was checked for the presence of a patterned relationship amongst the variables under study to determine if the dataset was suitable for EFA. The correlation matrix was used for this purpose (Yong and Pearce, 2013). The correlations between factors should generally be low or moderate, ideally below a certain threshold (e.g., 0.7). Low inter-factor correlations suggest that the factors measure different aspects of the phenomenon. Variables with low correlation coefficients (r < +/- .30) were removed as they confirmed a lack of patterned relationships. Similarly, correlation coefficients that were above 0.90 (r = +/- 0.90) suggest that there may be a case of multicollinearity. The rule of thumb of .00001 indicates that there is no multicollinearity.

Higher correlations within factors: Within each factor, the correlations between the individual items or variables should be higher than the correlations between items from

different factors. This indicates that the items within each factor are more strongly related to each other, supporting the internal consistency of the factor. If the factor correlation matrix shows high correlations between factors or patterns that suggest overlap or redundancy, it may indicate a lack of discriminant validity.

Table 4.16 shows that all the factor correlation matrices between factors were below 0.7. The highest was between Factor 1 and 3, with a correlation of 0.348. Thus, the results pass the discriminant validity.

Table 4.16: Factor correlation matrix

Factor	Risk types	Risk mitigation	Non-financial risk mitigation
Risk types	1.000	.034	.348
Risk mitigation	.034	1.000	.083
Non-financial risk mitigation	.348	.083	1.000

Extraction Method: Maximum Likelihood

4.15 MODEL FIT

The model was subjected to a fitness test using the Chi-square test of association. The results in Table 4.17 below confirm that the model was fit for purpose with a probability value greater than 5% ($p>0.05$).

Table 4.17: Goodness-of-fit Test

Chi-Square	df	Sig.
125.765	116	.252

4.16 DISCUSSION OF RESULTS

4.16.2 Results for Objective 1: To determine the types of financial risks faced by Unisa as an ODeL university.

Risks in Higher Education Institutions (HEIs) belong to five common types: strategic, financial, operational, compliance and reputational (Nayaran and Kommunuri, 2022). The first objective of the study was to determine to which financial risks Unisa is exposed. Accordingly, respondents were asked to rate, on a scale of 1 (not

knowledgeable at all) to 5 (very knowledgeable), their knowledge of these financial risks. The following types of financial risk were identified using descriptive statistics and exploratory factor analysis as the risks that the institution is exposed to:

- credit risk
- liquidity risk
- market risk
- operational risk

These results are in sync with the output of descriptive statistics employed to analyse the data and establish the respondents' awareness of the prevalence of liquidity, credit and market risks within Unisa. Table 4.5 reveals that most participants have some or no knowledge about the meaning of liquidity risk.

4.16.3 Results for Objective 2: To determine the financial risk mitigation techniques used by Unisa management to mitigate financial risk.

Respondents were asked to indicate the measures used to mitigate financial risk in Unisa. Based on the empirical results of this study, this section presents the various measures used to mitigate financial risk at Unisa. Thus, the identified risk management techniques are risk assessment and quantification, hedging, contingency planning, compliance and risk governance and continuous monitoring and review. Details of each of these techniques are espoused in the ensuing sub-sections.

Operational risk mitigation techniques

- Internal controls

In-house controls were found to be useful for financial risk mitigation. Internal controls are accounting and auditing processes used in a company's finance department that guarantee the integrity of financial reporting and regulatory compliance. These results are consistent with those of Otieno, Alala and Rading (2021), who found that, in Kenyan universities, controls are in place to evaluate the efficiency of the financial risk management program. For instance, the universities periodically review the financial risk management policies.

- Feedback on risk reporting

When asked if they get feedback after reporting financial risk, approximately 47% of the respondents indicated that management still has to work on providing feedback to staff. If any staff members do not provide feedback, it means that staff do not stay up to date with the university's risk mitigation strategies. The results appear in Table 4.6 above.

- Assessment of parents' creditworthiness

The university does a credit check of students' parents before the student signs an AOD. This control was removed from the pattern matrix. It was loading separately from other controls.

- Internal risk champions

"The department uses the internal risk champions for advice." Approximately 56% of the respondents knew that there were risk champions in the department, while the remainder did not.

- Assigned person reporting on risk

"A specific person is assigned to your department to report on risk." This question was a follow-up question to control 4. This control was placed very high (95%) by the respondents, showing that they do not have an identified person assigned to their department or are not aware of the person. This shows the lack of coherence between the top management and the staff. Staff need to be informed of what is happening in the department and who is responsible for what. Table 4.8 reflects the response percentage.

- Risk occurrence list.

The department has a risk occurrence list. This was the second highest-ranked question, with an 80% response from participants. This is a red flag, meaning that a high preventative measure must be taken with immediate effect to mitigate this kind of peril. It is crucial that all staff know about the risk occurrence list or risk register and how to report any risk that occurs in the department for financial sustainability purposes. It may happen that the staff were not informed that there is such a control in the finance department that can assist the department in limiting financial and other risks. Table 4.9 projects the results.

- Information technology system risk

Based on the research fallouts, the question was based on the system protection information, specifically whether it was protected against hackers. The replies to this question were 47%, as shown in Table 4.11, which denotes that many believe the system of the university is protected. The mitigation is in place, but training is still necessary to manage it as effectively as possible. Should the university lose students due to an unprotected system, it may result in a loss of revenue and university status. The question asking about the safety of the university payment system received a response of 47.9 %. This indicates that it is safe for stakeholders to use the university system and that the relevant precautions and monitoring were adhered to since Unisa is a large ODeL institution. The university system has been gradually upgraded to meet 4IR standards.

Credit risk mitigation techniques

- Hedging with an acknowledgement of debt signed by the student.

The last question on the system was on the possibility of granting an AOD to students without doing a creditworthiness review. Unisa tries to help students register and pay their fees later; this acts as a loan to students, although this action might pose a financial threat of default to the university. However, it is still a recommendable act by Unisa to assist the community. Results show that Unisa uses the acknowledgement of debt to mitigate default risk by students in arrears with their tuition fees.

- Assessment of students' creditworthiness

This control was eliminated from the pattern matrix as it was loading four times. It is important that caution is taken on this control as it involves a high risk of default and doubt; Jain (2024) implies that university authorities should try every rational and effective means, e.g., honesty education for students, to collect unpaid tuition fees (credit risk management) while providing more scholarships for the students (liquidity risk management).

There was no evidence of how liquidity and market risk are managed.

4.16.4 Results for Objective 3: Non-financial techniques used by ODeL institutions to mitigate financial risk

In the third and final objective, the study sought to identify the non-financial techniques used by ODeL universities to mitigate financial risk.

In line with this objective, the respondents were asked to indicate the areas where they needed training. Table 4.12 shows that training was required for the role of risk champion and liquidity risk management. These elements exhibited a 90% percentage score by participants, as indicated in Figure 4.5: Training needs of participants. Other areas requiring training include the treatment of AOD.

4.17 EMPIRICAL FINANCIAL RISK MANAGEMENT MODEL FOR ODeL INSTITUTIONS

After excluding variables that failed to load to the three factors in the exploratory factor model, the study proposes the financial risk management model depicted in Figure 4.9 below. Thus, the study argues that operational and credit risk are the two key financial risks that ODeL institutions need to place a lot of risk management effort in. Internal controls, the use of risk champions, a safety payment system, ICT system protection from hacking and feedback on risk reporting are some of the techniques that are recommended for managing operational risk in ODeL institutions. The acknowledgement of debt by students and the credit assessment of parents are the two methods used to mitigate credit risk.

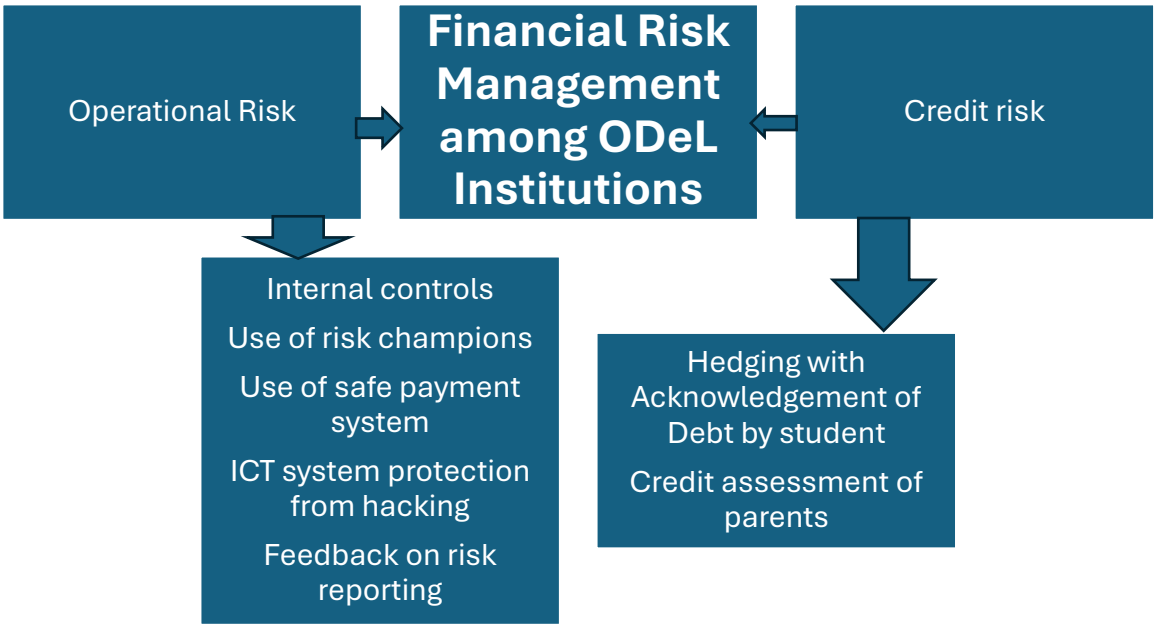


Figure 4.9: Financial risk management model for ODeL

Source: Author construction

4.18 CHAPTER SUMMARY

The results of the financial risk assessment of Unisa's finance department demonstrate that mitigation and training on risk, such as the existence and use of a risk register and risk championship, are deficient. The results also reveal that the

university is mostly subjected to market risk. Exposure to credit, operational and liquidity risks was observed to be low. Furthermore, the results show that risk management instruction would be beneficial to staff in areas such as liquidity risk management, risk champions and bad debt recovery. All the results of this study can be replicated.

The results also indicate that the university needs to monitor all the financial risks detected in the study. More effective use can also be made of all the presented and accessible resources, such as risk registers, risk champions and risk conferences and meetings, so that staff may extend their experience in risk management. The results are alarming and raise concerns about the financial risk to which Unisa is exposed.

5 SUMMARY, CONCLUSIONS & RECOMMENDATIONS

5.1 INTRODUCTION

The primary objective of this study was to identify the key financial risks faced by open-distance e-learning universities. Thus, the study employed a quantitative research design applying a survey methodology to achieve the specific objectives. Unisa was used as a case study since it is the largest and oldest ODeL university in South Africa. Specifically, 140 respondents were drawn from the Finance, Revenue and Treasury Department to participate in the survey. A structured questionnaire was administered to the selected sample group, and 102 responses were received. Data collected was cleaned and analysed using frequencies, descriptive statistics, bivariate correlation analysis and exploratory factor analysis.

This chapter presents the summary of the results, conclusion and recommendations for the study based on the evidence from the data analysis.

5.1.1 Objective 1: Types of financial risks

In the first objective, the study sought to determine the types of financial risk that ODeL universities face. Based on the Unisa case study, results show that ODeL universities are exposed to credit, market, liquidity and operational risks, albeit at varying degrees of severity. These results align with the theoretical underpinning of this study outlined in Chapter 2.

5.1.2 Objective 2: Risk mitigation techniques

In general, staff exhibited moderate knowledge of financial risk management. Respondents were generally in agreement that Unisa mitigates its credit risk exposure by getting students to sign and acknowledgement of debt in support of their debt. Unisa also raises financial awareness among staff of its financial policy. Finally, financial risk mitigation is achieved through Government's substantial external control over financial regulations of the University.

5.1.3 Objective 3 Non-financial management risk mitigation techniques

The study showed that there is a high need for teaching in the Finance, Revenue and Treasury Department. This is particularly so in areas where the financial risk is indicated at a high level of uncertainty. In any organisation, training is very crucial to keep the staff up to date and to develop their skills not only in the areas that they lack but overall. As this training need is rated very high, it will need more attention from all the finance staff including management to mitigate it. The question of training meets the research objectives regarding the financial risk management competencies of staff in the finance department of Unisa by identifying the training interventions obligatory by staff in the Department for the effective management of financial risk. The purpose of any education is to deliver results to guarantee those undergoing the training are more effective thereafter than they had been previously (Blanchard, Thacker, 2023).

5.2 RECOMMENDATIONS

5.2.1 Risk types

The overall risk, according to Cronbach's alpha of 89.4%, as noted in Table 4.11, is a good example that risk must be mitigated. Therefore, the study recommends that Unisa's Finance Revenue and Treasury Department use existing resources to address the higher rating of the risk that employees are lacking and provide training about the types of risk the university is exposed to. A practical strategy might include discussing risk topics in monthly meetings to check staff understanding.

It is vital that all staff know the market they work in, namely the university. A lack of knowledge concerning market risk might jeopardise the university's image, finances, reputation and integrity. So, precautions must be taken to allay such adverse circumstances. There are resources currently available to assist with risk identification, monitoring and mitigation that form part of the Unisa market. The study suggests that staff and management first use those resources before using other external resources to avoid unnecessary costs. Risk compliance and enterprise risk management are available wherewithal, including risk champions. Under enterprise risk management, there is also a risk register that the risk champion must recommend and have in their

department to record new risks and monitor old risks, which will then be discussed in risk committee assemblies.

5.2.2 Recommendations

5.2.2.1 Unisa Controls administer

Overall control results of 79.8% are denoted on Cronbach's alpha in Table 4.11. The study recommends that management examine the existing university controls and ensure they align with the policies, practices, and government supervision. Management must always share appropriate and focal information about proceedings within the university with their operational staff. Using accessible sources such as internal risk championship, individuals allocated to finance forward current issues to Enterprise Risk Management at Unisa, which is meant to help report risks by maintaining a risk register. Receiving feedback directly from management is crucial so that staff will not have false information. These controls are available at the university, but the staff are generally not knowledgeable about them. This means that there is a communication breakdown between the staff and management. The study suggests that Unisa's old information technology system should be changed, and a new system should be implemented. All employees must adapt to the new system and not be reluctant to change, as changes benefit both staff and the overall university system. The university must be able to compete with other ODeL institutions while also adapting to 4IR.

Regarding tuition fee risk, the study recommends that management investigate how to improve the financial suspended of modules that confuse the students when the student account reflects a low amount that the student does not owe. Secondly, a better system would be one that can calculate the number of cancelled modules that need to be credited into students' accounts without putting pressure on the staff and students. This will lessen students' confusion and decrease pressure on staff to calculate the amounts credited to students' accounts. On the new system that Unisa is planning to use in the future, the study suggests that the calculation and suspension of funds that need to be credited to the student's account should be automatically calculated by the system, with a staff member guiding the system calculations and processes. So, the study recommends that the university investigate how it might obtain a new system. As top management must recommend and authorise any new

system to be aligned with 4IR and then thoroughly tested, this process should be started timeously to allow for complexities along the way. The new system should be flexible and able to retrieve info, add comments to entries and store old information without the staff manually tracing previous details. Most importantly, the system must link Unisa's system with the debt collectors' systems and with banks.

5.2.3 Recommendation : Systems

The outcome for the overall system rating was 55.9%. There are many ways to increase information technology security, such as two-step verification, identity verification and safety questions. Further research is needed to determine which areas of Unisa's online system require security improvements, although the details of such improvements are outside the scope of this dissertation. The parts of a system must be related to each other and designed to work as a coherent entity. Otherwise, they would be two or more distinct systems. This relates to the university policies and procedures that must be aligned with the university's vision and mission. Management is responsible for ensuring that staff members properly utilise all systems and that Unisa policy and procedures are followed. The University took some initiatives to upgrade the system to reach the standard of 4IR; this will serve as a precaution and a step to improve all the systems.

Regarding AOD, the study suggests that credit or affordability checks must be done on both students and parents. A pre-agreement assessment is a tool to filter out those instances where students or their parents are not creditworthy or will not be able to pay student fees. Credit should not be granted in these cases; this characteristic is common to the lending regimes. The university can borrow the bank checking or scoring system or acquire a similar system, perhaps incorporating it into the existing system, to use for assessing the creditworthiness of parents and students before granting AODs. The university must establish a reliable risk assessment model to check the affordability of both students and parents before granting the loan (AOD).

5.2.4 Recommendation : Training

The study recommends that staff be trained on institutional policy every three months. During this training, the staff and management must discuss university policy and its implications to measure their understanding and how to implement the policy in their work. This is another way of training staff as they discuss policy and how to apply it in

their day-to-day operations. This will increase staff knowledge, understanding and implementation of university policy in their work. Financial risk knowledge and practices can be improved through formal and informal training of all the finance department employees.

5.2.5 Recommendations for future research

Further studies investigating university financial risk are crucial and need to be steered in other ODeL and traditional universities. Knowledge is absent about types of risk in academes and its influences on finance departments, and it is important to change the misperception that financial risk is only the problem of banks and can only be assessed and addressed by banks because it has to do with credit cards, borrowing and finance matters. Financial risk is not only a risk that affects the banks but also impacts all institutions. Therefore, it is necessary to explore and determine the influence of the different types of danger, their categories, the impact of risk on universities and employees, the impact of peril on strategic planning and how menace can be managed and mitigated. What is the relevant equipment that can be used to monitor financial threat? What systems can effectively prevent unforeseen situations that expose universities to danger? What plans can management apply to mitigate risk and sustain the institution's finances?

5.2.6 Limitations of the study

The study is limited by the fact that it was conducted within one relatively small finance revenue and treasury department at Unisa with a relatively small number of contributors. In addition, not all employees responded to the questionnaire, so the entire target population could not be included. The study also used quantitative data in the form of surveys, thereby omitting qualitative data from the study. Additionally, due to financial constraints, the first statistician needed for the research could not be employed, so Unisa had to hire a second statistician to assist the researcher.

5.3 CONCLUSION

The study aimed to examine the financial risk at Unisa. The study is a case study using 140 staff members from the university's Finance, Revenue, and Treasury Department. The technique selected was a quantitative research approach. The reason is that it

uses both explanatory and descriptive quantitative research methods, with a questionnaire used for the empirical segment of the study (Ramudzuli and Muzindutsi, 2018). The data collection was self-administered, with a questionnaire created using Microsoft Forms and then emailed to all the participants. The research was inspired by the gap in the university, which made the researcher enthusiastic to conduct the processes of this study. The outcome demonstrates a need for guidance in all the areas where staff members seem to have a low level of understanding regarding types of risk. Those financial risks are the four risks: market risk, operational risk, liquidity risk and credit risk, all alarming and relevant to the university's situation. Staff knowledge regarding credit, operational and liquidity risk was low. Additionally, the results show that risk management training intermediations are required by staff in areas such as liquidity risk management, risk champions and bad debt recovery. The study recommends that all the risks that directly impact the Finance revenue department must be treated cautiously, as they might affect the reputation of the university and its financial sustainability.

Furthermore, all the risks that positively or negatively affect the university must be transparently declared on its website to raise awareness among all stakeholders and improve their knowledge for easy management and mitigation. Lastly, it is essential that operational staff and management attend a refresher education to familiarise themselves with how to identify, monitor and mitigate financial risk and to whom to report those types of risks. The findings indicate the necessity for management and financial staff training and development. All controls must be monitored to ensure that all staff adhere to the regulations and that they are effectively implemented.

The gap reveals that limited studies are focusing on the financial risk in higher education. According to Aina et al. (2022), confirmation regarding financial risk in universities is that most studies focus only on a handful of financial risks affecting universities but not the other aspects of risk, such as the types of risks, the system, control and training Sum and Saad (2017) state that the risk management of many universities is still missing and require some additional consideration. In addition, few studies on financial risk have been conducted in South African higher education institutions regarding credit risk because more studies on credit risk are conducted in the banks, government sectors, auditing firms and the public sectors but not in the institutes of higher learning. The study recommends that the researchers start

considering extending their knowledge by writing more articles to readers on credit risk, account receivables, fair value of assets and default risk.

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