

Exploring perceptions of open-source ERP applications as a compliance solution within NPO's in Gauteng Province

YF Myburgh

 orcid.org/0000-0001-5836-6791

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Supervisor: Dr N Ndlovu

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Student number: 32958935

DECLARATION

I, Yolande Floreen Myburgh, hereby declare that this mini-dissertation, submitted in partial fulfilment of the requirements for the degree Master of Business Administration at the faculty of Economics and Management Science at the Nort-West University, is my original work and has not been submitted to any institution of Higher Education. All the sources used in this study are cited and referenced in the reference list.

Name: Yolande F. Myburgh

Student number: 32958935

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ABSTRACT

At a most foundational level, this study is aimed at the pervasive lack of funding suffered by the majority of NPOs within South Africa. According to the literature on the matter, this issue stems from the inability to comply with financial regulations. Community-licensed open-source ERP systems have been identified as a potential solution to this problem. Exploring this potential solution and the perceptions surrounding it is, therefore, the overarching focus of this paper. In pursuing this aim, this study employs qualitative research methodologies entrenched within an interpretivist paradigm. Data was collected using semi-structured interviews and analysed using the principles of thematic analysis outlined in Braun and Clarke (2021). The study culminates in the following recommendations: the implementation of a multi-tenant cloud-based, open-source ERP solution hosted by the department of social development and the further education of executives within NPOs to build financial literacy and business principles required to perform their duties and allow them to better interpret information held in the aforementioned software package.

Keywords: NPO, Open-source, OSS, ERP, Financial Compliance, Recommendations, Financial Literacy, Cloud-based computing

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DEFINITION OF TERMINOLOGY

TERMINOLOGY	DEFINITION
Cloud computing	The delivery of computing services over the internet.
Community open-source software	Open-source software projects that semi-structured contributor groups have developed. These software projects are shared with anyone inside or outside the community (Proffitt, 2020).
Commercial open-source software	Software offered with its core product being open-source, with enhanced commercial versions providing alternate license options or add-on software functionality as a proprietary product (Open-source, 2020)
Customer Relationship Management (CRM)	Software used to manage an organisation's relationships and interactions with customers and potential customers.
Enterprise Resource Planning (ERP)	An amalgamated suite of business applications that share a standard process and data model, which deliver financial, distribution, manufacturing, service, and human resource functionality (Gartner, 2021).
Infrastructure as a Service (IaaS)	A service that enables the customer to deploy their own software (including operating system, applications layers, and development tools) on infrastructure owned and supported by a provider.
Manufacturing Resource Planning (MRP)	The core software used to generate production schedules and coordinate materials usage, as well as machine and labour availability.
Micro-organisation	An organisation whose annual income ranges from R50,000 to R500,000 (Business Tech, 2019)
Multi-tenancy	Multi-tenancy means that a single installation of the application software and the infrastructure on which it is installed serves as a platform for multiple customers. This is often used in SaaS solutions.

TERMINOLOGY	DEFINITION
Non-government organisation (NGO)	A non-profit organisation that operates independently from the government with the aim to address social or political issues.
Non-profit organisation (NPO)	A legal entity that is established to further a social ideal and provide public welfare, in contrast with an entity that operates as a business with the goal of generating profit (Western Cape Government, 2009).
Open-source software (OSS)	Computer software made available to the public by the license holder, allowing the user to use, study, change, and distribute the software and its source code; this is valid for anyone and any purpose (What is open-source, 2021)
Qualitative research	Research that attempts to provide in-depth insights into real-world problems and that does not introduce treatments, manipulate, or quantify predefined variables (Moser & Korstjens, 2017:271).
Platform as a Service (PaaS)	A cloud computing service that enables the consumer to deploy their own applications in a cloud infrastructure. The consumer does not maintain the underlying infrastructure, but has control of the application layer.
Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)	An evidence-based minimum set of items for reporting used in systematic reviews and meta-analyses.
Public benefit organisation (PBO)	A non-profit organisation that has tax-exemption status.
Software as a Service (SaaS)	A service that enables the consumer to run the provider's application in cloud infrastructure. The applications can typically be accessed from web browsers or program interfaces. The service is

TERMINOLOGY	DEFINITION
	managed by the provider, eliminating support and infrastructure overheads for the consumer.
Small to medium-sized enterprises	An organisation with one or more of the following characteristics: fewer than 200 employees, annual turnover below R64 million, capital assets below R10 million, and direct managerial involvement by the owners. (Business Tech, 2019)

CHAPTER 1:INTRODUCTION AND OVERVIEW OF THE STUDY

1.1 INTRODUCTION

The South African Bill of Rights contains a number of socio-economic commitments aimed at improving the quality of life of all South African citizens (Wyngaardt, 2013:5). To this end, the Department of Social Development and alternate channels like the National Lottery, MTN, and Vodacom have dedicated R7.6 billion to non-profit organisations (NPOs). However, to access this generous funding, NPOs must typically be registered and must maintain certain compliance standards.

The issue at hand, then, is that approximately 70% of NPOs fail to comply with the registration requirements of the *NPO Act* (Lawson, 2021). This puts such organisations at risk of deregistration, rendering them unable to access the funding that might otherwise enable them to remain afloat.

Given that most issues of non-compliance are related to NPOs failing to submit annual financial statements and narrative reports of their activities, many such NPOs might resolve their non-compliance by implementing an Enterprise Resource Planning (ERP) application. ERP applications are generally seen as integrated modular software solutions that provide organisations with a single platform combining financial, distribution, manufacturing, and human resources management functions (Tan *et al.*, 2020:1773). Lamentably, such solutions have historically been costly to implement, leaving them well beyond the reach of most South African NPOs.

Given cost as a prohibitory factor preventing the implementation of ERP systems, open-source software (OSS) solutions arise as a viable solution. OSS was initially brought to the fore by Richard Stallman in 1983 when he established the Free Software Foundation (Free Software Foundation, 2021). Since then, one area within OSS garnering much attention has been ERP applications (Gorishti & Sevrani, 2014:2).

This study hopes to explore opportunities to assist NPOs facing financial non-compliance by implementing community-licensed open-source Enterprise Resource Planning (ERP) applications.

This first chapter aims to provide insight into and familiarity with the background of the study and the underlying problem statement. In so doing, this chapter will describe the current *status quo* faced by many non-profit organizations (NPOs) in South Africa. The chapter will further provide a summarised approach to the study and methodology employed throughout this study.

1.2 BACKGROUND TO THE STUDY

Inyathelo (2021) determined that most newly established NPOs in South Africa are small micro-organisations with annual incomes ranging from R50,000 to R500,000. According to Reuben et al. (2019:17), implementing an ERP application can significantly affect the organisations' performance and ensure their financial visibility. However, the high cost associated with commercial ERP applications (Seres *et al.*, 2019:203) places the implementation of such a solution well outside the budget of small or micro NPOs.

While there can be little doubt that implementing an ERP system would enable NPOs to meet at least some of their annual compliance requirements, the NPOs cannot justify the cost of an ERP system to obtain annual financial statements. Therefore, as commercial ERP systems are out of reach for most NPOs, this study explores perceptions towards open-source ERP systems as a solution within NPOs; it also strives to provide a stepping stone toward further research and implementation. Even though there is a gap in the literature regarding the implementation of open-source ERP applications within South African NPOs, international case studies have indicated that open-source ERP applications can improve organisational performance (Miranda *et al.*, 2016:48).

Based on existing international precedent and literature, implementing open-source ERP applications in NPOs in South Africa could be a viable solution for improving organisational performance while simultaneously producing annual financial statements to ensure compliance with the *NPO Act*.

1.3 PROBLEM STATEMENT

The majority of NPOs fail because of a lack of financial visibility, which links to government compliance regulations regarding donations and funding (Department of Social Development, South Africa, 2020). According to Minister Lindiwe Zulu, there was an estimated 70% non-compliance in NPOs in September 2020 (Department of Social Development, South Africa, 2020).

Internationally, similar issues have been resolved—or at least mitigated—through the implementation of ERP systems. Such systems empower NPOs to better produce the necessary financial reports and support business functions, automating these processes where appropriate. The issue arises with the cost of such systems, which places them well beyond the reach of most South African NPOs. It is proposed that a Community Licensed open-source application could, then, fully support the needs of most South African NPOs. Implementing such an application would provide a low-cost alternative to the commercially available software that most NPOs would need to use otherwise.

Unfortunately, due to the lack of context-specific literature on the matter, the lack of awareness of such products is a pervasive issue within both literature and South African NPOs.

1.4 RESEARCH OBJECTIVES

The study explores and describes the experiences of targeted individuals within Gauteng NPOs, and their understanding of open-source ERP applications. This study might bring awareness of the availability of such products and could also be used as a foundation for the necessary training and steps towards improved transparency.

1.4.1 Primary objective

The primary objective of this study is to explore the perceptions of open-source ERP applications as a compliance solution within NPOs in Gauteng, South Africa

1.4.2 Secondary objectives

- Objective 1:
To explore the prevalence of ERP applications, or lack thereof, at NPOs within Gauteng.
- Objective 2:
To assess existing awareness of open-source software in NPOs within Gauteng.
- Objective 3:
To explore attitudes toward the implementation of open-source ERP applications in NPOs within Gauteng.
- Objective 4:
To identify factors prohibiting the implementation of open-source ERP applications within NPOs within Gauteng.

1.5 RESEARCH QUESTIONS

1.5.1 Primary question

What are the perceptions of open-source ERP applications as a compliance solution within NPOs in Gauteng, South Africa?

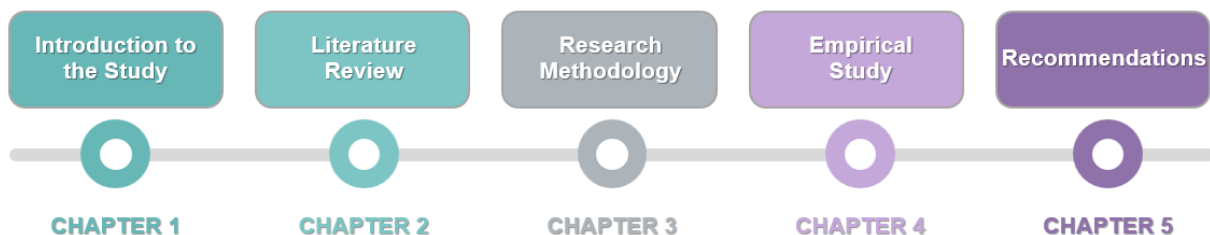
1.5.2 Sub questions

- Sub-question 1:
What is the prevalence of ERP applications within NPOs in Gauteng?
- Sub-question 2:
What is the nature of the existing awareness of open-source software in NPOs in Gauteng?
- Sub-question 3:
What are the attitudes toward the implementation of open-source ERP applications in NPOs?
- Sub-question 4:
What are the factors identified as prohibiting the implementation of open-source ERP applications within NPOs within Gauteng?

1.6 THE LAYOUT OF THE STUDY

This study is presented in the format of a mini-dissertation and is sectioned into five chapters as outlined in **Figure 1** below.

Figure 1: Chapter outline



Detail relating to the chapter outlines are provided below:

- Chapter 1:
The chapter provides an introduction and background to the study, highlighting the problem statement, research objectives, study limitations and introducing a summary view of the research methodology.

Background and introduction to the study, highlighting the problem statement providing a motivation for the methodology selected.

- Chapter 2:
The chapter, through a literature review, provides background and research regarding the key concepts contained in the study, namely NPOs, ERP systems and open-source software. Where possible, the literature presents a South African view.
- Chapter 3:
The chapter provides an analysis of the research methodology, trustworthiness and ethical considerations used during this study.
- Chapter 4:
The chapter presents the analysis and results of the semi-structured interviews, including a discussion on the six themes identified in the analysis.
- Chapter 5:
This study concludes with the identification of the limitations thereof, and recommendations are presented regarding further research in this area.

1.7 RESEARCH DESIGN AND METHODOLOGY

This study was conducted in two phases. First, to understand the evolution of this phenomenon across the organisational landscape, a literature review was conducted of the studies on open-source software adoption; thereafter, an empirical study was conducted to understand the potential awareness of, and need for, open-source enterprise applications in NPOs in Gauteng.

1.7.1 Literature review

In order to obtain the necessary insights to realise the primary and secondary research objectives of this study, an extensive literature review was conducted to explore the awareness of open-source software, specifically open-source ERP applications. To productively conduct the literature review, the following steps were taken:

- A request was sent the NWU library, asking for relevant sources. Once completed, the list was forwarded to the researcher;

- Where necessary, PRISMA was used as a quality appraisal tool to reduce the number of sources;
- Once the lead researcher thoroughly examined the sources, the key themes were identified within each text; and
- A final literature review was written based on the key themes identified.

The secondary data obtained from the academic sources provided a broad theoretical context, which enabled the outline of the research topic. Secondary data is defined as data that is no longer in a raw format, but has been obtained from sources that interpreted, aggregated, and provided descriptions of the raw data that was collected in the initial study (Cerar, Nell & Reiche, 2021:1370).

1.7.2 Empirical study

Primary data provides raw information and evidence concerning a study object (Cerar, Nell & Reiche, 2021:1369). The primary data required for this study were collected through an empirical investigation of the awareness of open-source ERP applications among NPOs in Gauteng, and the potential for implementing such software solutions within these organisations.

The formal methodology employed herein is further discussed in Chapter 3.

1.8 CONTRIBUTION OF THE STUDY

1.8.1 Theoretical contribution

There has been significant research conducted on OSS at the international level, specifically open-source ERP applications. Additionally, a vast body of knowledge exists around implementing ERP applications within organisations, whether large or small. Some attention has even been given to the benefits of implementing ERP solutions within international NPOs.

There is, however, a relatively small body of knowledge within the African and South African contexts. Upon examining existing literature, no research regarding the potential use of open-source ERP applications within South African NPOs could be identified.

1.8.2 Industry contribution

As previously mentioned, the *South African Bill of Rights* provides for certain socio-economic rights to ensure the quality of life of all South African citizens. This is achieved through a partnership between the South African Government and NPOs. However, many NPOs are at risk of becoming non-compliant due to an inability to provide annual financial statements. Unfortunately, many new NPOs cannot afford an ERP application that could assist them in producing financial statements due to the overall cost of ERP applications. It is at this point that open-source ERP applications come to the fore as a viable alternative solution. This study will contribute to the South African body of knowledge, but it is anticipated that it will also lead to compliance and sustainability within the sector.

1.9 CHAPTER SUMMARY

In summary, this chapter serves as a basic introduction to the concepts and methodological principles employed during this study. In so doing, this chapter provides a background on the *status quo* of NPOs in South Africa as well as an outline of the issues faced by these organisations. This chapter concludes with a brief discussion of the overall layout of the study as well as the theoretical contributions thereof.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

At a most foundational level, this study is aimed at addressing the pervasive lack of funding suffered by the majority of NPOs within South Africa. According to the literature on the matter, this issue stems from the inability to comply with regulations. Community Licensed open-source ERP systems have been identified as a potential solution to this problem.

Chapter 2 is aimed at providing insight and familiarity with the key concepts and methodology used during the course of this study. Therefore, this chapter will provide an understanding of non-profit organisations (NPOs) within South Africa and the challenges they face. Furthermore, potential solutions to these challenges are investigated through an analysis of open-source Enterprise Resource Planning (ERP) systems. Finally, a Singaporean case study provides further insights into the measures other countries have taken to empower their NPOs.

2.2 NON-PROFIT ORGANISATIONS IN SOUTH AFRICA

There are many terms used for non-profit organisations established to serve a specific purpose, typically within a community. Some of these terms include non-profit organisation (NPO), non-government organisation (NGO), and public benefit organisation (BPO). In this section, we will make use of a combined concept referred to as NPO.

2.2.1 Non-profit organisation definition and characteristics

Section 1 of the Nonprofit Organisations Act, 71 of 1997 defines an NPO as "a trust, company or other association of persons established for a public purpose and of which their income and property are not distributable to its members or office bearers except as reasonable compensation for services rendered" (South African Government, 1997).

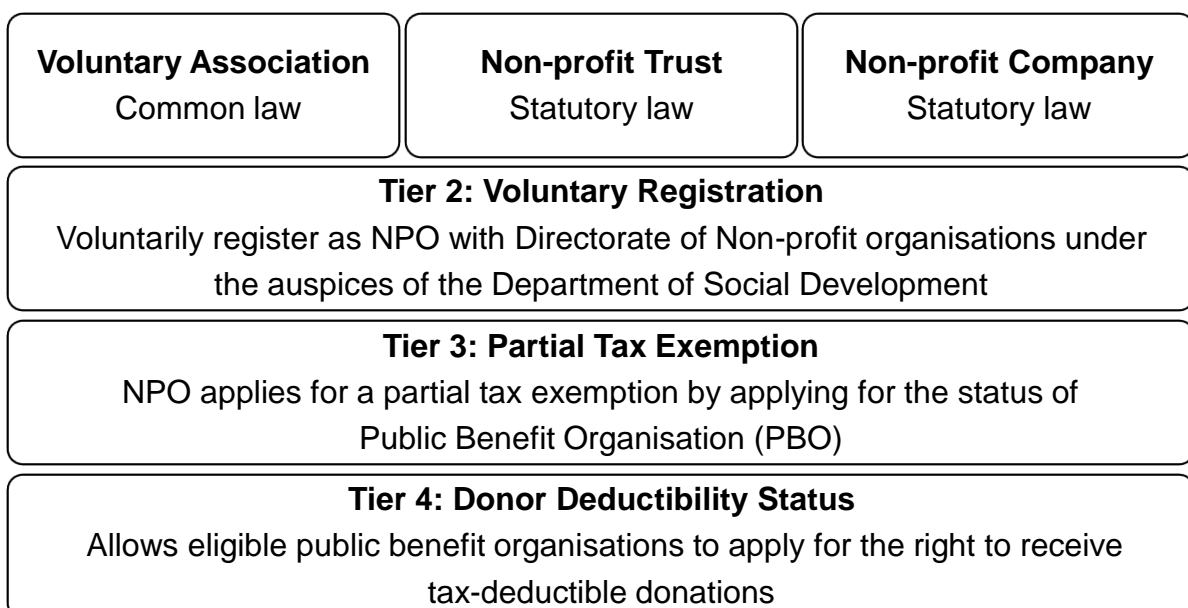
Singh and Mthuli (2021: 230-231) identify five main characteristics of an NPO, namely:

- Rather than distributing additional income to those in control of the organisation, these funds are channelled back into the NPO to contribute to the organisation's social mission;
- Similar to other organisations, NPOs are legal entities requiring various legal documents to be drawn up before their establishment;
- While NPOs are separate from government structures, they can still be financed or assisted by government;
- NPOs are self-governing and must therefore have their own decision-making structure, such as a board of directors; and
- NPOs are managed by volunteers and receive contributions on a non-compulsory basis.

2.2.2 Benefits of registering as a non-profit

The International Center for Not-for-profit Law (2022) states that the legal framework for establishing an NPO in South Africa consists of four primary tiers, as illustrated in **Figure 2** below.

Figure 2: Legal framework for the establishment of an NPO in South Africa



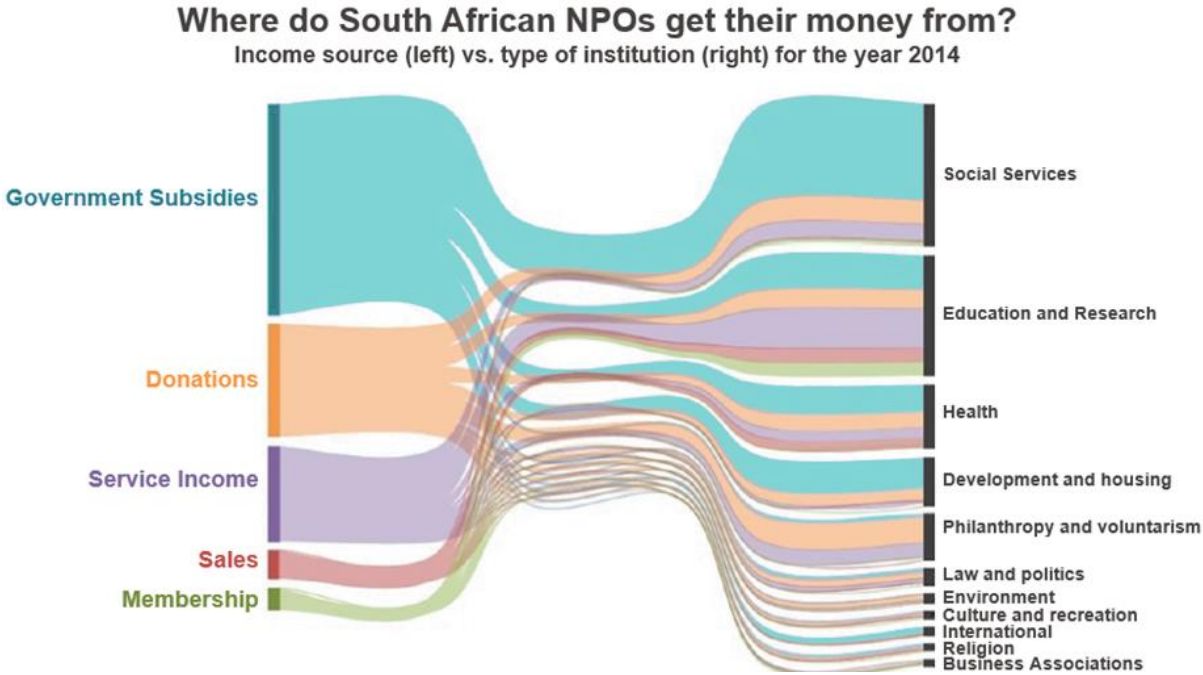
Source: International Center for Not-for-profit Law (2022)

The tiers can be seen as follows:

- Tier 1 involves the establishment of the NPO as a voluntary association, non-profit trust, or non-profit company;
- Tier 2 allows the established organisational form to register as an NPO voluntarily;
- Tier 3 enables the NPO to apply for partial tax exemption as a Public Benefit Organisation (PBO); and
- Tier 4 enables the PBO to apply for the right to receive tax-deductible donations.

As illustrated in **Figure 3** below, the largest income source for NPOs is government subsidies. Concerningly, the Gauteng Department of Social Development announced its decision to reduce its reliance on NPOs, indicating a loss of government subsidies to those affected NPOs (Gauteng Department of Social Development, 2022:45).

Figure 3: South African NPO income Sources



Source: Lehohla and Statistics South Africa (2017)

The change in the Gauteng Department of Social Development policy highlights the importance of donations as a significant source of income for NPOs. Therefore, the ability to receive tax-deductible donations is essential to the sustainability of NPOs.

2.2.3 Regulatory requirements

The *NPO Act* requires that registered NPOs submit a narrative report and an annual financial statement within nine months of their financial year-end (South African Government, 1997). Section 21 of the *NPO Act* states that any NPO failing to comply with this requirement will be served a 30 day notice, after which the NPOs registration status will be cancelled (South African Government, 1997).

At the end of October 2022, the Department of Social Development reported 267 498 registered NPOs (Department of Social Development, 2022). According to the Department, more than half of these registered entities were non-compliant (Mngxitama, 2022). In Gauteng, this represented 81 996 registered NPOs, of which 47 667 are non-compliant.

2.3 MOST CHALLENGING ISSUES FACED BY NPOS

In a study performed by Othman et al. (2012:11-16), a number of challenges are identified in the management of NPOs. Amongst these challenges, three areas of specific concern are funding, personnel issues; and accounting and financial reporting.

2.3.1 Funding

NPOs are increasingly forced to contend with competition for funds; this is exacerbated by donator's scepticism toward NPOs due to the perceived unethical behaviour of some NPOs (Abramson et al., 2018).

Although NPOs are predominantly dependent on government as their primary source of funding, other sources like grants, donations, and fundraising are also vital in the continued survival of these organisations (Molakeng, 2016:15). To receive government or private funding through donations, the NPO's must be registered (National Department of Social Development, 2011:1).

Additionally, Othman et al. (2012:15) highlight that there appears to be a relationship between an organisation's willingness to donate to NPOs and the NPOs' tax-deductible status. This view is supported by Molakeng (2016:63), who highlights that the corporate sector plays a substantial role in funding NPOs through their Corporate Social Initiatives (CSI). Making (2016:63) further remarks that these donations are typically motivated by taxation relief benefits.

Therefore, it can be concluded that funding of NPOs can be further complicated if the NPO is not registered or has a non-compliant registration status. SARS registration to receive tax-deductible donations will also greatly affect an NPO's ability to attract corporate sponsorship.

2.3.2 Personnel

Molakeng (2016:22) references Swilling and Russel's (2002:13) research evidence that identified the two sectors in which NPOs function, namely the formal and informal sectors. Molakeng (2016:22) further highlights that NPOs operating in the formal sector are generally better resourced and have a skilled labour force, while NPOs operating in informal sectors often make use of less skilled workers.

Othman et al. (2012:12) postulate that persons with the appropriate skills are seldom attracted to roles within NPOs due to generally lower levels of compensation and increased uncertainty regarding future security; Othman et al. (2012:12) believe this leads to the appointment of individuals who are not qualified to perform critical roles within the organisation. This phenomenon is highlighted by research conducted in the United States, where as many as a third of medium to large NPOs did not employ staff with accounting qualifications.

2.3.3 Accounting and financial reporting issues

Many NPOs fail to submit their annual financial statements, which could be attributed to a lack of internal skills, or to insufficient funding to outsource this function (Othman et al., 2012:14). In an attempt to identify methods to assist NPOs in achieving sound

accounting and financial reporting, Othman et al. (2012:14) posed the question whether NPOs would consider a computerised accounting system to assist in tracking and reporting their finances. The respondents believed that this would assist overall, but required that:

- The accounting system should be good, cheap, and suitable for use in NPOs;
- The software should include multiple modules, including accounting, inventory, payroll, accounts payable, etc.;
- The software should come with good support services;
- The software should be simple, allowing those other than qualified accounting staff to operate it; and
- Implementing an accounting system is expensive. The Government should assist in the implementation of the accounting system and continued training of the employees who will use it.

2.4 A CASE STUDY FROM SINGAPORE

Singapore is ranked fourth in the world in the IMD World Digital Competitive rankings 2022 (IMD World Digital Competitive Rankings, 2022). Thus, it does not come as a surprise that the country embraced technology and innovative thinking to resolve the non-compliance of approximately 2 000 NPOs. In 2007, Singapore established a charity portal for the electronic submission of returns from charities and institutions of a public character (IPC).

2.4.1 Grant offered to NPOs

In 2007 the Ministry of Community Development, Youth and Sports (MCYS) established the Charities Capability Fund (CCF) and appointed the National Council of Social Services (NCSS) to administer the fund. The aim of the fund was to improve productivity, operational efficiency, governance, and management capabilities within NPOs in Singapore; to this end it offers five grant types, namely:

- Training;
- Consultancy;
- Info-Communications Technology (ICT);

- Shared Services in Finance and Accounting; and
- Collaboration.

The fund has matured over the past 15 years and now offers grants in line with **Table 1** below:

Table 1: CCF Grants available to charities in Singapore

GRANT TYPE	GRANT VALUE
Training	<p>Singapore Nationals and permanent residents</p> <p>Can claim up to 80% of the course fee, up to a maximum of \$1,000 per course (8hrs) or \$500 for a half-day course (4hrs x 2), or \$250 per half day (4hrs), per participant, whichever is the lower value.</p> <p>Employment Pass or Work Permit Holder</p> <p>Can claim up to 60% of the course fee, up to a maximum of \$750 per course or \$375 per full day (4hrs x 2), or \$187.50 per half day (4hrs), per participant, whichever is the lower value.</p>
Consultancy	<p>For Small and Medium size Charities</p> <p>Can claim up to 80% of the consultancy fee, to a maximum of \$100,000 per charity over 5 years.</p> <p>For Large Charities</p> <p>Can claim up to 80% of the consultancy fee, to a maximum of \$50,000 per charity over 5 years.</p>
Info-Communications Technology (ICT)	<p>Basic infrastructure components</p> <p>For Small and Medium size Charities:</p> <p>80% of the support costs or actual expenditure, whichever is the lower value, to a maximum of:</p>

GRANT TYPE	GRANT VALUE
	<ul style="list-style-type: none"> ▪ 4 computers (desktop or laptop) at \$1,500 per device; ▪ 2 printers: \$300 per device; ▪ 1 broadband account: \$1,700 per account; ▪ Website development costs to facilitate the publishing of charity information for transparency: \$3,000 per charity; ▪ Subscription charges for video and audio-conferencing tools: \$250 per charity; and ▪ Firewall devices: \$3,000 per charity. <p>Digital solutions that can enhance the productivity and operational efficiency of charities</p> <p>For All Charities</p> <p>Can claim up to 80% of the supported cost or actual expenditure, whichever is lower, and capped at \$40,000 per charity.</p> <ul style="list-style-type: none"> ▪ Accounting Management; ▪ Bills and Payment; ▪ Customer Relationship Management; ▪ Document Management; ▪ Donor Management; ▪ Human Resource Management; ▪ Learning Management; ▪ Digital Marketing or Fund-raising; ▪ Visitor Management; ▪ Volunteer Management; ▪ Cyber Security; ▪ Live Streaming; and

GRANT TYPE	GRANT VALUE
	<ul style="list-style-type: none"> ▪ Remote Working. <p>Live Streaming Supportable scope:</p> <ul style="list-style-type: none"> ▪ 3-year funding (80% for 1st year, 50% for 2nd and 3rd year); and ▪ Professional Fees and Add-on (Up to \$6,000) <p>Non-supportable scope</p> <ul style="list-style-type: none"> ▪ Extended warranty; and ▪ Bank charges.
Shared Services in Finance and Accounting	<p>For All Charities</p> <p>Up to 50% of monthly charges for 1st year, and up to 25% for 2nd year, capped at \$30,000 per charity.</p>
Collaboration	<p>For All Charities</p> <p>Up to 80% of the project cost, capped at \$50,000 per project.</p>

Source: Charities Capability Fund (2022)

The fund provides the following criteria, identified in **Table 2** below, to determine the size of the NPO and its subsequent access to funding.

Table 2: Categorisation of NPO size in line with access to grant funding

CHARITY SIZE	CRITERIA
Small Charity	Charity should have a gross annual income, grants, donations, sponsorships and all other receipts in a financial year of up to \$1 million in the 2 financial years immediately preceding the current financial year
Medium-sized Charity	Charity should have a gross annual income, grants, donations, sponsorships and all other receipts in a

CHARITY SIZE	CRITERIA
	financial year between \$1 million and \$10 million in the 2 financial years immediately preceding the current financial year.
Large Charity	Charity should have an annual income, grants, donations, sponsorships and all other receipts in a financial year of not less than \$10 million in the 2 financial years immediately preceding the current financial year.

Source: Charities Capability Fund (2022)

Training Grant

Singapore Charities Capability Fund (2022) highlights the training grant offered to NPO board members and employees, to provide them with access to local and online courses in key governance and management areas. Subjects include but are not limited to:

- Board Governance;
- Conflict of Interest;
- Strategic Planning;
- Programme Management;
- Human Resource and Volunteer Management;
- Financial Management, Internal Controls, Risk Management;
- Fundraising Practices;
- Disclosure and Transparency;
- Public Image/Communications;
- Digitalisation/Data Protection/Cyber Security;
- Leadership and Organisational Development;
- Anti-Money Laundering/Counter Financing of Terrorism;
- Crisis Management, Business Continuity Planning; and
- Other training courses aimed at improving the governance and management aspects of charities.

In addition to the above training, the Singapore Government also promotes the Professional Development of Directors for NPOs. **Figure 4** below illustrates the training journey for NPO Directors.

Figure 4: SID Training and Development Journey for NPO directors



Source: Singapore Institute of Directors, 2022

Consulting Grant

According to the Singapore Charities Capability Fund (2022), consultancy grants are provided where through the use of external consultants, NPOs are provided a jumpstart, by assisting them with drafting policies and standard operating procedures in areas including, but not limited to, the following:

- Board Governance;
- Conflict of Interest;
- Strategic Planning;

- Programme Management;
- Human Resource and Volunteer Management;
- Financial Management, Internal Controls, Risk Management;
- Fundraising Practices;
- Disclosure and Transparency;
- Public Image/Communications;
- Digitalisation/Data Protection/Cyber Security;
- Leadership and Organisational Development;
- Anti-Money Laundering/Counter Financing of Terrorism; and
- Crisis Management, Business Continuity Planning.

Info-Communications Technology Grant

The ICT grant offered by Singapore Charities Capability Fund (2022) offers NPO the ability to obtain both hardware (infrastructure) and software to manage their business appropriately. A strong focus is placed on digital solutions that improve the overall functioning of the business (like ERP, CRM, etc.) and it is capped at \$40,000.

Shared Services Grant

Understanding that many NPOs do not have the resources to manage the day-to-day corporate functions of the business and prefer to focus on their core mission, the Shared Services Grant offered by Singapore Charities Capability Fund (2022) provides NPOs the option to outsource functions such as payroll, finance, accounting, human resource, and information technology to third-party service providers.

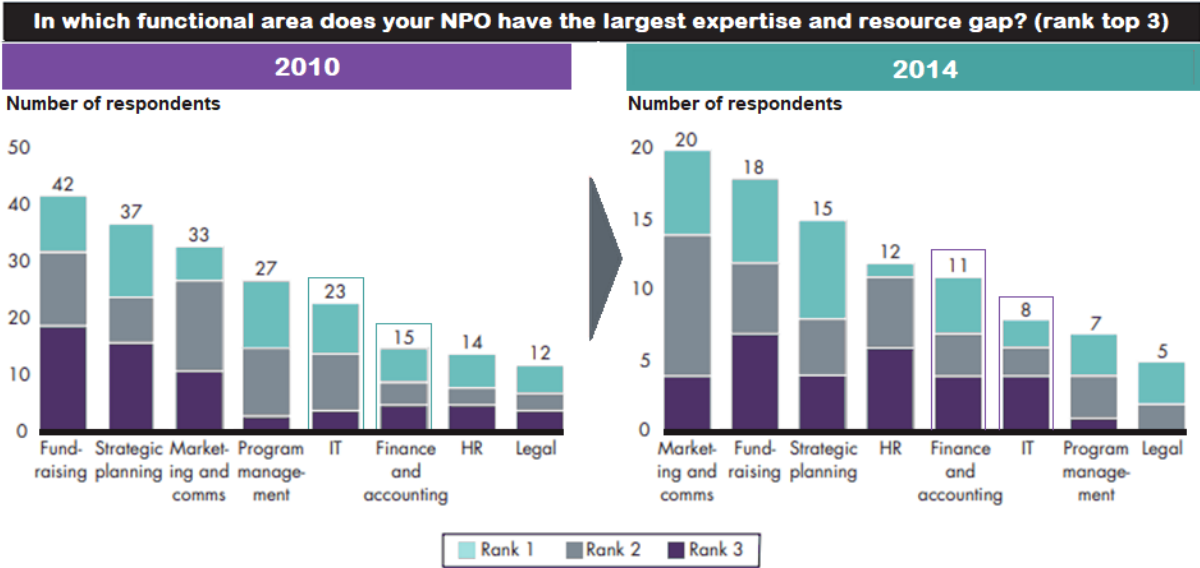
Collaboration Grant

To further promote innovation, a newly established collaboration grant was introduced by Singapore Charities Capability Fund (2022), for those wishing to build capacity or solutions that can be shared among charities. Examples of such projects include the design of systems that can be co-shared by NPOs to enhance their capacity.

2.4.2 Development of NPOs analysed over time

Perhaps most telling are the results from the *Singapore Nonprofit Capacity Survey*, first conducted in 2010 and then repeated in 2014. The primary question that was asked was: what functional areas within the NPO has the largest expertise and resource gap? **Figure 5** below illustrates the change in responses over the relevant period.

Figure 5: Perceived Functional Area Gap from 2010 to 2014



Source: Lamy & Akhtar, 2015

It is apparent that all areas showed tremendous improvement; however, for the purposes of this study, it is important to note that in the area of Technology the respondents flagging this area showed a 65% improvement, decreasing from 23 to 8; Finance and Accounting showed a 27% improvement, decreasing from 15 to 11. While there is no definitive research confirming that these improvements can be linked to the Charities Capability Fund (CCF), it seems that the Singapore investment in training, consulting, shared services, and technology had the desired effect.

Tang (2022) argues that Singapore achieved its current level through the involvement of the Singapore Government, which took on the role of gatekeeper, regulator, and enabler.

2.5 ENTERPRISE RESOURCE PLANNING (ERP)

As identified by Othman et al. (2012:14), systems with various financial and operational modules can assist NPOs in generating the appropriate financial reports. Such systems are often referred to as Enterprise Resource Planning (ERP) systems. To better understand the opportunities linked to ERP systems, the following is provided.

2.5.1 Definition of ERP

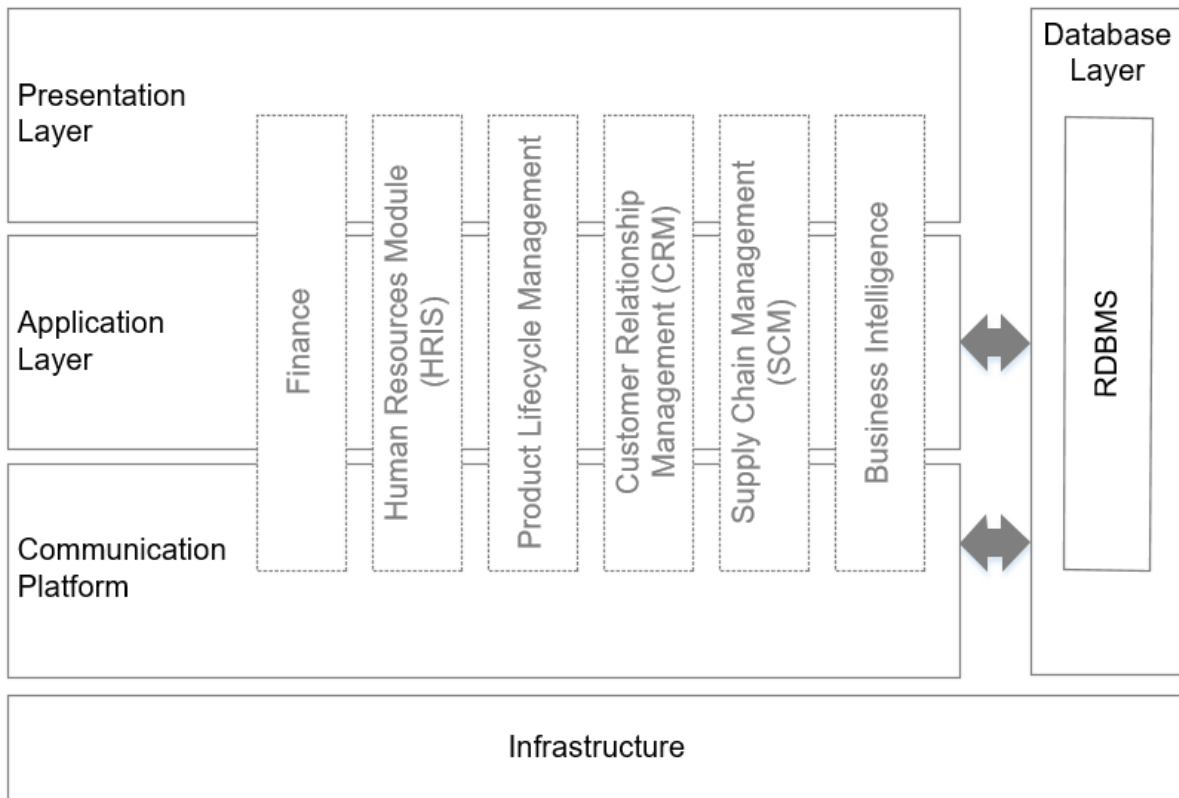
Jovanoska (2022:120-121) defines Enterprise Resource Planning (ERP) systems as business solution software that enables organisations to manage their business processes. ERPs are integrated modular solutions that monitor the organisation's operations in real-time and store all transactions in a database.

Some modules typically found in ERP systems are financial, manufacturing, production, transportation, sales and distribution, human resources, customer relationships, and e-business (Nguyen et al., 2022:2)

2.5.2 The evolution of ERP

Nazemi et al. (2012:1000) state that the term ERP was first coined in 1990 by Gartner Group, a technological research and consulting firm, to describe a new generation of Manufacturing Requirement Planning (MRP) systems. While SAP and PeopleSoft, two global ERP leaders, had developed systems before 1990, it was the rise of relational databases with client/server architecture that led to a boom in the ERP industry (Michel, 2019: 34-39). **Figure 6** below illustrates the typical architecture of an ERP system from the early 2000s onwards, where the ERP system was layered on a Relational Database (RDBMS) to ensure faster processing.

Figure 6: Typical Architecture of an ERP system in the early 2000s



Source: Adapted from Katuu (2020:41)

The advent of cloud computing further bolstered the adoption of ERP systems. Mell and Grance (2011:2) define cloud computing as a model that enables ubiquitous, convenient, rapid, on-demand network access to a shared pool of computing resources (shared servers, storage, etc.); they further identify the following service models:

- **Software as a Service (SaaS):**
A service that enables the consumer to run the provider's application in cloud infrastructure. The applications can typically be accessed from web browsers or program interfaces. The service is managed by the provider, eliminating support and infrastructure overheads for the consumer;
- **Platform as a Service (PaaS):**
A service that enables the consumer to deploy their own applications in a cloud infrastructure. The consumer does not maintain the underlying infrastructure but has control of the application layer; and

- Infrastructure as a Service (IaaS):
A service that enables the customer to deploy their own software (including operating system, applications layers, and development tools) on infrastructure owned and supported by a provider.

A summary of the three models and their relevant characteristics are provided in the **Figure 7** below.

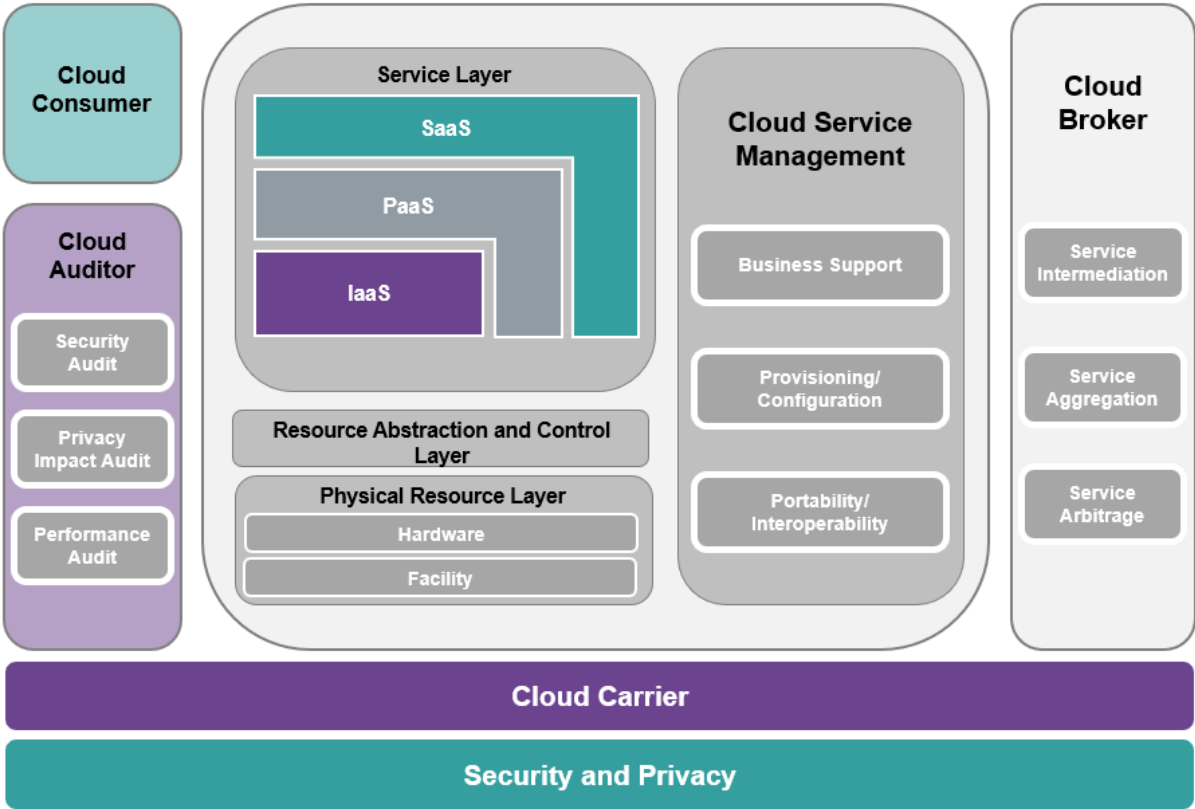
Figure 7: Characteristics of the three primary cloud models

Software as a Service (SaaS)	Platform as a Service (PaaS)	Infrastructure as a Service (IaaS)
A service model in cloud computing that hosts software and makes them available for clients over the internet	A cloud computing model that delivers tools necessary for application development over the internet	A service model in cloud computing that provides virtualised computing resources over the internet
Provides software as a service to the end-user	Provides runtime environments, development and deployment tools for applications	Provides access to resources such as virtual machines (servers), virtual storage etc.
Used by end users	Used by developers	Used by network architects
SaaS provides accessible and ready-to-use services for its clients. SaaS provides a solution to almost everything	PaaS is best for businesses that don't like to spend on different platforms. It helps users to focus on app development. It also helps in worrying less about infrastructure management	IaaS is the most flexible of the three services. It is best used for hosting fully built apps. It also provides a general data storage centre

Source: Adapted from OS System, 2020

Figure 8 below illustrates the Conceptual Reference model developed by Mell and Grance (2011:2) for the National Institute for Standards and Technology.

Figure 8: Adapted from NIST Cloud conceptual reference model



Source: Mell & Grance (2011:19)

According to Van Decker et al. (2019), the ERP is undergoing a shift driven by cloud computing and the perceived benefits of moving away from on-premise ERP systems.

2.5.3 Motivating factors for implementing ERP systems

According to Kanchana and Ranjini (2018:1150), the main drivers of implementing ERP systems are improved efficiency within the organisation, order fulfilment, and decreased operational expenditure; their research further supports the importance of ensuring a fit between the organisation and the ERP system (Kanchana & Ranjini, 2018:1150).

Estébanez (2021:68-70) identifies the following benefits as detailed by accountants:

- Reduced time required to close financial accounts and issue financial statements;
- Improved internal audit function;

- Increased integration with financial systems (banking systems, etc.), enabling automation and improved accuracy;
- Improved quality of reporting; and
- Better control of working capital.

2.5.4 Detractors from implementing ERP systems

As previously identified by Othman et al. (2012:14), two areas of concern in the implementation of ERP systems are cost and the complexity of the system. This view, regarding the cost of ERP systems, is supported by Rabaa'i and Gammack (2016:60) who list the cost as the top inhibiting factor in adopting ERP systems, as ERP software is expensive to buy and maintain.

Hewavitharana et al. (2019:5) notes that ERP implementations in the SME sector were significantly more successful with lower-complexity ERP systems, and that high-end ERP systems should be avoided (where possible). Their study further reveals that open-source ERP systems have the lowest complexity rating and are most appropriate for smaller organisations.

2.6 OPEN-SOURCE SOFTWARE

NPOs believe that the implementation of ERP software can assist in their accounting and financial reporting performance. According to Ihm and Kim, 2021:679 many studies have been conducted, their findings show that limited financial resources lead to an inability to adopt ICT. In research by Othman et al. (2012:14), participants suggested that the government should be responsible for covering the costs of an appropriate ERP solution. However, with the advent of open-source ERP software, an alternate option is now available to these NPOs.

In order to understand the concept of open-source ERP software better, an understanding of open-source software and its licensing options must first be achieved.

2.6.1 Definition of open-source software

There have been hundreds of studies over the past fifteen years regarding open-source software. Many of these have attempted to define the concept. Franco-Bedoya et al. (2017:162) state that open-source software (OSS) can be seen as a social movement offering a general philosophy regarding software development and availability, covering areas such as source code, licensing methods, development of best practices, innovations, and ethics. Due to the nature of the developments, contributors are typically volunteers that lead to the formation of a loosely coordinated and unsupervised community of developers (Franco-Bedoya et al., 2017:162). The development of OSS has led to the spread of freely available public software (Franco-Bedoya et al., 2017:162).

Due in large part to software licensing that enables users to install and use OSS with little to no restrictions, OSS has found its way into almost every field (Gorishti & Sevrani, 2012:2). Open-source software includes operating systems, web servers, database software, mobile development frameworks, big data analytical tools, office software suites, and ERP systems (AltexSoft, 2018).

One of the significant benefits identified when implementing OSS is cost savings, as community open-source software is often available at no cost (Economides & Katsamakos, 2006:1070).

2.6.2 History

While the concept of free and open-source software seems to have come about in the 1990s, sharing software was common practice prior to 1969 (Gonzalez-Barahona, 2021:75). It was at this time that IBM announced the unbundling of software delivery from hardware sales (Gonzalez-Barahona, 2021:75). The following table provides a high-level overview of the milestones achieved along the way to establishing OSS as a method of collaborating for the benefit of all.

Table 3: A historical view of the development of Open-source Software

PERIOD	DESCRIPTION
Before 1969	Software is considered an add-on to hardware and is shared freely.
1969	IBM announces the unbundling of software from hardware; software would be sold separately in the future, leading to propriety software becoming the norm.
1973	SPICE software is placed in the public domain by the author and is adopted by universities as their preferred tool for designing ICS; this is the first example of how FOSS software can become market dominant.
Late 1970s	Unix is distributed to universities with academic use licences in 1973. Over time, groups are formed consisting of academics and researchers improving the base product. The CSRG releases its own Unix distribution. This becomes a pivotal moment for FOSS.
1983	Richard Stallman announces the GNU Project.
1985	Richard Stallman establishes Free Software Foundation.
1994	Linus Torvalds released Linux 1.0, a combination of the CSRG Unix with an alternate kernel developed by him. Soon Linux based distributions are made available, including Redhat and Debian.
1998	Netscape announces their web browser is to be released as FOSS.
1998	The term open-source software is coined by Christine Peterson.
2000	The Linux Foundation is formed to organise contributions and support the Linux project. This becomes the first of many projects developed over time through collaboration between multiple legal entities and development teams. Linux goes on to become the basis for many software forks and is adopted across many industries worldwide.
2008	The Android mobile operating system is launched based on the Linux kernel.

PERIOD	DESCRIPTION
2022	There are 3 billion active Android devices worldwide, making open-source software the most common software worldwide.

Source: Gonzalez-Barahona, 2021:75-79

2.6.3 Licensing models

Riehle (2007:25) was the first to highlight the two types of open-source software licences, namely commercial and community licensing.

Commercial open-source software is developed by an organisation to generate revenue from the development (Riehle, 2007:26). In contrast, community open-source software is developed by a community of developers who determine what development code may be included to expand the overall application; therefore, they also make decisions relating to the software direction (Riehle, 2007:26).

While community open-source software can be used free of charge, there are often other costs involved in the implementation, such as the cost of training, installation, and implementation (Economides & Katsamakas, 2006:1070).

2.6.4 Categories of open-source

Forges are online platforms to support the development and distribution of open-source software (Tamburri et al., 2020:1931). Despite its waning popularity, Tamburri et al. (2020:1930) acknowledge that SourceForge is the largest Forge in the market.

Figure 9 below provides a list of open source categories available from SourceForge.

Figure 9: Categories of open-source software held in Sourceforge repository

Blockchain	Social Sciences	Other/Non-listed
Database	System	Religion and Philosophy
Education	Text Editors	Security
Games/Entertainment	Communication	Software Development
Mobile	Desktop Environments	Terminals
Office/Business	Formats and Protocols	
Printing	Internet	
Scientific/Engineering	Multimedia	

Source: Sourceforge.net (2022)

2.7 OPEN-SOURCE ERP SOFTWARE

Othman et al. (2012:14) identify the implementation of ERP systems as a possible solution to the financial reporting challenges faced by NPOs. While the proposed solution has merit, concerns were raised regarding the viability of this solution due to the costs of such ERP systems. With community-based open-source ERP systems becoming a reality, an alternate solution has become available to NPOs.

2.7.1 Definition of open-source ERP software

While a review of the literature could not reveal a commonly adopted definition for open-source ERP, it can be operationalised by analysing its components, namely open-source and ERP. Therefore, open-source ERP applications can be seen as ERP applications made available to the public; this would include the application source code, which enables adoption and adaptation. Open-source ERP systems are available under both community and commercial open-source licences.

2.7.2 Prevalence of community-based open-source ERP software

A four-week comparative analysis was performed on SourceForge.net to understand the level of interest in open-source ERP systems. The results of the comparative analysis are displayed in **Table 4** below.

Table 4: Downloads of open-source ERP applications

OPEN-SOURCE ERP	DOWNLOADS PER WEEK: OCT 2022	LAST VERSION UPDATE	START OF PROJECT
Dolibar	3681	Past month	2002
ERPNext	107	Past month	2010
IDempiere	822	Past month	2012
FrontAccounting	239	Past month	2005
WebERP	224	11 months	2003
Open-source ERP	35	5 months	2004

Source: Sourceforge.net (2022)

While these downloads would not necessarily lead to adoption, it is expected that the higher the downloads, the higher the corresponding software adoption would be.

2.7.3 The functionality of community-based open-source ERP software

Table 5 below illustrates the vast functionality available in each of the previously listed open-source ERP systems.

Table 5: Functionality available within identified open-source ERP software

OPEN-SOURCE ERP	MODULES AND FUNCTIONALITY OFFERED
Dolibar	CRM and Sales, Human Relationship Management, Website with content management and Point of Sale, Products and Stock, Finance and Billing, Marketing, Productivity and open integration standards.
ERPNext	Financial Accounting, Order Management, HR and Payroll, Manufacturing, CRM, Projects, Helpdesk, Asset Management, Website.
iDempiere	Full ERP, CRM and Supply Chain Management
FrontAccounting	Purchase Orders, Goods Receivable Notes, Supplier Invoices/Credit Notes, Payments, Allocations, Accounts Payable, Items and Inventory, Stock, Manufacturing, Fixed Asset, Sales

OPEN-SOURCE ERP MODULES AND FUNCTIONALITY OFFERED	
	Orders, Customer Invoices/Credit Notes, Deposits, Allocations, Accounts Receivable, Dimensions, General Ledger with Budget, Languages, Currencies, Several Companies
WebERP	Sales, Taxes, Accounts Receivable, Inventory, Purchasing, Accounts Payable, Bank, General Ledger, Manufacturing, Contract Costing, Fixed Assets.
Open-source ERP	Budgets, Payroll, Fixed Assets, Accounts Receivable, Check Reconciliation, Accounts Payable, Job Cost, Executive Desktop, General Ledger, Point of Sale, Sales Order, Inventory Control, Purchasing, E.D.I, Customer Service, Bar Coding, Sales Analysis, Warehouse Management, E-Commerce, Material Requirement Planning, Capacity Planning, Bill of Materials, Product Routing, Shop Floor Control, Master Production Scheduling, Workflow Management, Documentation, Communications, Knowledge Base, Reports

Source: Adapted from Dolibarr (2022); ERPNext (2022); Front Accounting (2022); Sourceforge.net (2022); Web ERP (2022) and iDempiere (2022)

2.7.4 Motivating factors to the implementation of open-source ERP systems

According to Mladenova (2020:1-6), there are many factors promoting the implementation of open-source ERP systems, including:

- An overall cost advantage;
- The freedom to modify the source-code according to the company's needs;
- The general trend toward adopting free and open-source operating systems and databases;
- Open-source ERPs are significantly more flexible than high-end commercial ERP systems; and
- A large community of specialists to support the system.

2.7.5 Barriers to implementation

In a qualitative survey performed, the following elements were highlighted as barriers to the implementation of open-source ERP systems (Chauhan, 2016:85-86):

- Technological competence:
- An absence of technological competence within an organisation, and
- Organisational change appetite:
- Organisations with a lower willingness to change or adapt were unlikely to consider the implementation of open-source software.

2.8 OPEN-SOURCE ERP SOFTWARE IN THE APPLIED CONTEXT

While a general view of NPOs and open-source software has now been introduced, it is vital to understand the relevance of these in the South African context.

2.8.1 Open-source software adoption in South Africa

In a study on the deployment of OSS within National Government Departments in South Africa, Ngoepe (2015:203) found that even though the Government passed a policy recommending the use of free and open-source software (FOSS), awareness of open-source software was limited and, therefore, not considered when new systems were identified.

In addition, Chidoori & Van Belle (2018) found that the support available from external companies greatly influenced the relevant SMEs' decision to implement OSS or not. Therefore, this study undertook to investigate the availability and support of the previously identified open-source ERP systems in South Africa.

2.8.2 Open-source ERP software availability in South Africa

Table 6 below highlights options regarding hosting and support services offered for each of the previously identified ERP systems.

Table 6: Hosting and Support of open-source ERP systems in South Africa

OPEN-SOURCE ERP	ON-PREMISE SOLUTION	CLOUD SOLUTION	SUPPORT IN SOUTH AFRICA
Dolibarr	Yes	SaaS	Yes
ERPNext	Yes	SaaS	No
iDempiere	Yes	PaaS	Yes
FrontAccounting	Yes	PaaS	No
WebERP	Yes	PaaS	No
Open-source ERP	Yes	PaaS	No

Source: Adapted from Dolibarr (2022); ERPNext (2022); Front Accounting (2022); Sourceforge.net (2022); Web ERP (2022) and iDempiere (2022)

As highlighted in the table above, each of the solutions provides an on-premise solution that can consequently be implemented in the NPO’s own infrastructure. In addition, each of the providers also offers a cloud-based solution, whether through SaaS or PaaS. Only two of the six systems considered offer support in South Africa.

2.8.3 ERP Systems within NPOs

NPOs benefit from the implementation of ERP systems, as this involves process and administrative innovations that contribute to the organisation's ability to reach its objectives (Miranda et al., 2016:48; Gundogar, 2010:95)

2.9 CHAPTER SUMMARY

A study by Kang'ethe on the survival of NPOs in an African context found that fundraising was a critical challenge; this challenge was further compounded due to corruption scandals involving NPOs, compromising the "trust and confidence of donors" (Kang'ethe & Tatenda, 2014:1495). By implementing the *NPO Act*, the government hoped to build a trust mechanism, enabling growth in donations to NPOs.

Unfortunately, NPOs struggle to meet annual financial management requirements, leading to non-compliance. While NPOs cannot justify the cost of commercial ERP systems to provide them with appropriate annual financial statements, this study hopes to explore opportunities to assist NPOs through implementing Community Licensed open-source Enterprise Resource Planning (ERP) systems.

While no study could be found that is related to the use of open-source ERP systems within NPOs in the South African context, international case studies proved the application of open-source ERP systems in NPOs could improve overall processes and provide a platform for innovation. The aim of the literature review is to identify a value proposition related to costs, compliance, business improvement, and the ability to generate donations.

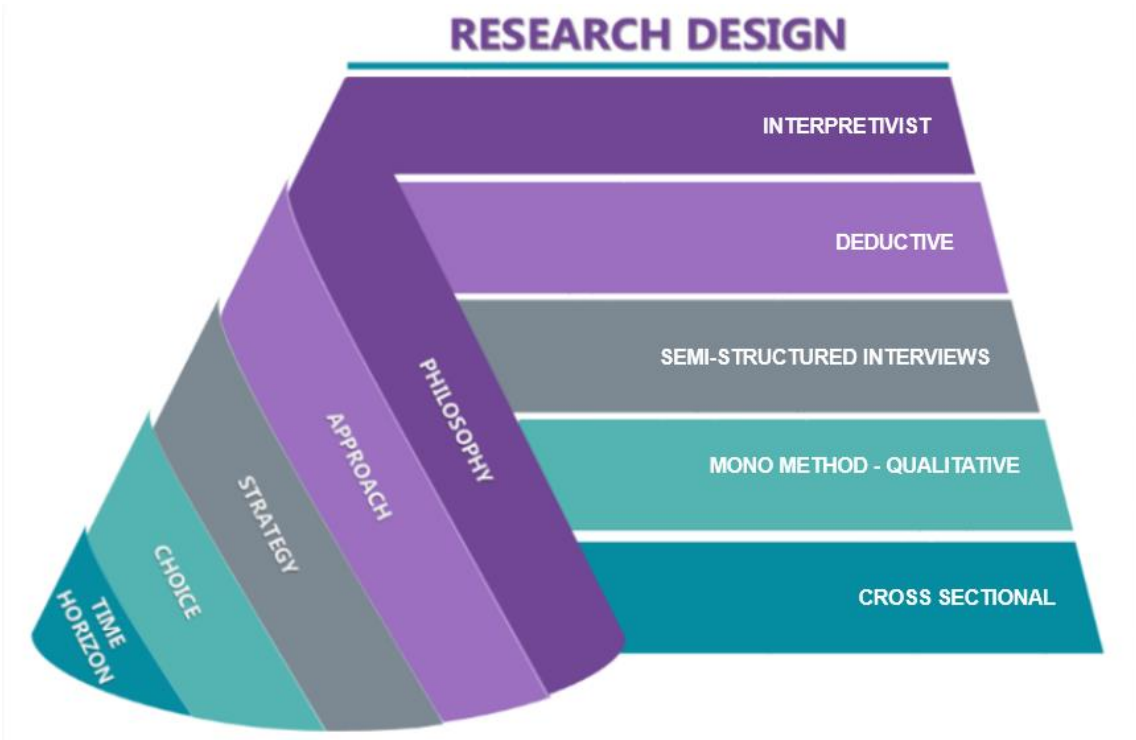
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In his seminal piece on the introduction and construction of basic research concepts, Grix (2002:175) states that any good scientific research design should be informed by the question asked. To this end, this study actively aligned its scientific methodology and design with the question asked.

With this in mind, this chapter describes the research design, paradigm, approach, methodological choice, research strategy, time horizon, sampling, measurement instruments, data collection, and statistical analysis. **Figure 10** below illustrates an adapted version of the Saunders et al. (2012) research onion, highlighting the overall research design.

Figure 10: Saunders-adapted research design



Source: Adapted from Saunders et al. (2012)

This chapter concludes with a discussion of the strategies employed to improve the trustworthiness of the study and those ethical considerations taken.

3.2 RESEARCH PARADIGM

A research paradigm involves the intersection of philosophies and methodological approaches (Kekeya, 2019:29). This incorporates data collection methods, as well as data analysis tools and techniques (Kekeya, 2019:29). Rather than being limited to the study's outcome, the research paradigm considers the fundamental research inquiry. There are three main paradigms: positivism, interpretivism, and critical theory. (Kekeya, 2019:30)

Given the nature of the questions and aims described in this study, it could be argued that this study would construct knowledge in a positivistic manner (Grix, 2002:175). However, in practice, the questions put forward during this study are best answered using qualitative methodologies that are commonly associated with an interpretivist paradigm (Grix, 2002:175).

The interpretivist paradigm puts forward the idea that reality, as it can be constructed through accounts and research, is complex and multi-faceted (Grix, 2002:178). Additionally, this paradigm suggests that any phenomenon, usually the focus of a study, is constructed by the accounts of those who perceive it (Grix, 2002:178). As such, constructions of the phenomenon can differ (Grix, 2002:178).

3.3 RESEARCH APPROACH

The methodological approach in research can be described as the process followed when conducting the research and the overarching logic used throughout the entire process (Collis & Hussey, 2014:95). When considering a research approach, a decision must be made on whether the research will be deductive or inductive (Saunders *et al.*, 2019:145). Deductive research, a positivist research paradigm, involves developing a hypothesis and then conducting the necessary research to prove or disprove the hypothesis (Greener & Martelli, 2018:27). Inductive research, an

interpretivist research paradigm, involves studying a situation before developing a hypothesis (Greener & Martelli, 2018: 27).

Based on the nature of the research questions, this study uses an inductive research approach.

3.4 METHODOLOGICAL CHOICE

To determine whether the research will be quantitative or qualitative in nature, it is essential to understand the difference between the two methods first. Quantitative research quantifies and analyses variables using numerical data and specific statistical techniques; this is associated with a positivistic research paradigm (Apuke, 2017:40). According to Moser and Korstjens (2017:271), qualitative research provides in-depth insights and understanding of real-world problems; this is associated with an interpretivist research paradigm. Therefore, a qualitative approach is adopted, as the researcher aims to gain a deeper understanding of the potential application requirements within NPOs and the potential to meet these requirements through open-source ERP applications. **Figure 11** below discusses three main approaches in a qualitative study design.

Figure 11: Three main approaches in qualitative study design

	Ethnography	Phenomenology	Grounded Theory
Definition	A branch of human enquiry, associated with anthropology that focuses on the culture of a group of people, with an effort to understand the world view of those under study.	A qualitative research tradition, with roots in philosophy and psychology, that focuses on the lived experience of the humans.	A qualitative research methodology with roots in sociology that aims to develop theories grounded in real-world observations
Discipline	Anthropology	Psychology, philosophy	Sociology
Domain	Culture	Lived experience	Social settings
Area of enquiry	Holistic view of culture	Experience of individuals within their experiential world	Social structural processes within a social setting
Focus	Understanding the meanings and behaviours associated with members of groups, teams, etc.	Exploring how individuals make sense of the world to provide insightful accounts of their subjective experiences	Building theories about social phenomena

Source: Moser & Korstjens, 2017

Broadly speaking, there are four predominant approaches that can be employed within qualitative research, namely ethnography, which emphasises anthropological and cultural factors; phenomenology, which focuses on the lived experiences of the sample population; grounded theory, which focuses on social theory development; and a general qualitative approach, which is a versatile approach designed to answer most qualitative questions (Moser & Korstjens, 2017:277).

This study uses a general qualitative approach based on these operationalisations and the nature of the research questions.

3.5 RESEARCH STRATEGY

The research strategy employed in the study uses combined elements of survey and narrative inquiry strategies. Therefore, the strategy uses the principles of narrative inquiry, while generating a narrative by using interview methods designed to emulate survey methods.

The study includes interviews with targeted members of selected NPOs. The process by which the potential participants were identified is detailed in the sampling section.

There are three predominant "types" of interviews: in-depth, semi-structured, and fully structured (Moser & Korstjens, 2017:271). In-depth interviews are often associated with phenomenological studies; it is also designed to extract data related to a participant's experience and the factors that inform that experience. Structured interviews require a rigid outline and as slight a deviation from it as possible; this interview strategy is beneficial when wholly standardised interview experiences are vital. Semi-structured interviews combine elements of the aforementioned styles, allowing for some freedom to pursue further discussion while still maintaining a more structured approach.

For this study, semi-structured interview strategies were used to gather data. These interviews were transcribed into written data and analysed using principles of thematic analysis.

3.6 TIME HORIZON

There are two options available when considering the time horizon of the study, namely longitudinal or cross-sectional studies. Longitudinal studies involve studying and measuring changes over an extended period in a "diary" style, while cross-sectional studies can be described as a "snapshot" in time (Saunders *et al.*, 2019:212).

This study takes the form of a cross-sectional study, as the investigation occurs over a single period in the short term.

3.7 STUDY POPULATION AND SAMPLING

Study population

The primary study population for the proposed research are NPOs in the Gauteng province. Given the scope and budget of the study, it was determined that expanding the study beyond the Gauteng province would be infeasible. Given, however, that this study does not serve to make generalised statements, this should not impede the credibility of the findings and, even if the goal were to generalise the findings, roughly 30% of South African NPOs are based out of Gauteng.

Determine the sampling frame

Having used the ForGood website <https://www.forgood.co.za/>, which is freely accessible, the researcher identified a list of NPOs that have indicated that they need expert assistance regarding the system or process improvements. In this case, the ForGood platform provided a publically accessible and consolidated list of NPOs, which not only reduced the risk of coercion, but also expedited the process of sourcing participants.

Select sampling technique

A non-probability purposive sampling strategy was followed. According to Saunders *et al.* (2019:800), non-probability purposive sampling allows the selection of the participants to be based on the researchers' assessment of which potential participants would be most instructive.

Determine the sample size

Given the ease of access to websites that NPOs can use to submit requests to the general community, gathering the sample body did not present challenges. Having made use of the guiding principle highlighted by Moser and Korstjens (2017:11), sampling continued until data saturation was achieved, i.e. until no new analytical information was revealed during interviews. Data saturation was achieved after approximately eight interviews but two further interviews were held to confirm that no further information was forthcoming. ($n=10$)

Execute sampling process

An independent third party contacted the potential participants through the communication platform made available by ForGood. These communications provided them with a basic outline of the study, including the objectives of the study and an informed consent form. The informed consent form clarified the purpose of the study and outlined the steps that were to be taken to protect the potential participants' confidentiality and their right to withdraw from the interview at any time. Finally, it informed the potential participants that a summary of the final report would be made available to participants on request.

Structured interviews were used for data collection. Following the existing literature on semi-structured interviews, seven to ten interview questions were generated before commencing the interview phase. These questions were developed to answer the

research questions and objectives, detailed earlier in this proposal. Participant responses were transcribed for data extraction and further analysis.

3.8 DESIGNING THE MEASURING INSTRUMENT

The data collection took the form of semi-structured interviews. According to Moser and Korstjens (2017:10), a well-designed semi-structured interview can have six to ten questions.

The questions that were used in these specific semi-structured interviews were formulated specifically for this study. These items were designed to extract accounts regarding the need for open-source application software, focusing on open-source ERP applications. Sub-items were developed to ensure that further rich data is extracted.

Independent consultants were consulted to ensure that the questions adequately extracted the required information. Two experts, one on open-source ERP solutions and the other on qualitative research, were consulted. The questions were revised based on their feedback.

Demographic information was captured using a five-item demographic survey designed to capture gender, age, ethnicity, managerial level, and education level. This information was used to describe the sample body of the study more richly. It was used to identify demographic-to-thematic associations.

The Interview guidelines are attached as an Appendix to this study.

3.9 COLLECTION OF DATA

Using the ForGood website, the researcher identified those NPOs that fit the sample criteria and that reported that they are seeking expert assistance regarding systems and ERP applications. The researcher then contacted these NPOs via the ForGood platform.

When contacting potential participants, the researcher provided details regarding the nature of this study and sought informed consent to commence the study. Potential participants were reminded of their right to withdraw from the study at any point before data extraction would begin and were ensured of the confidentiality of the study.

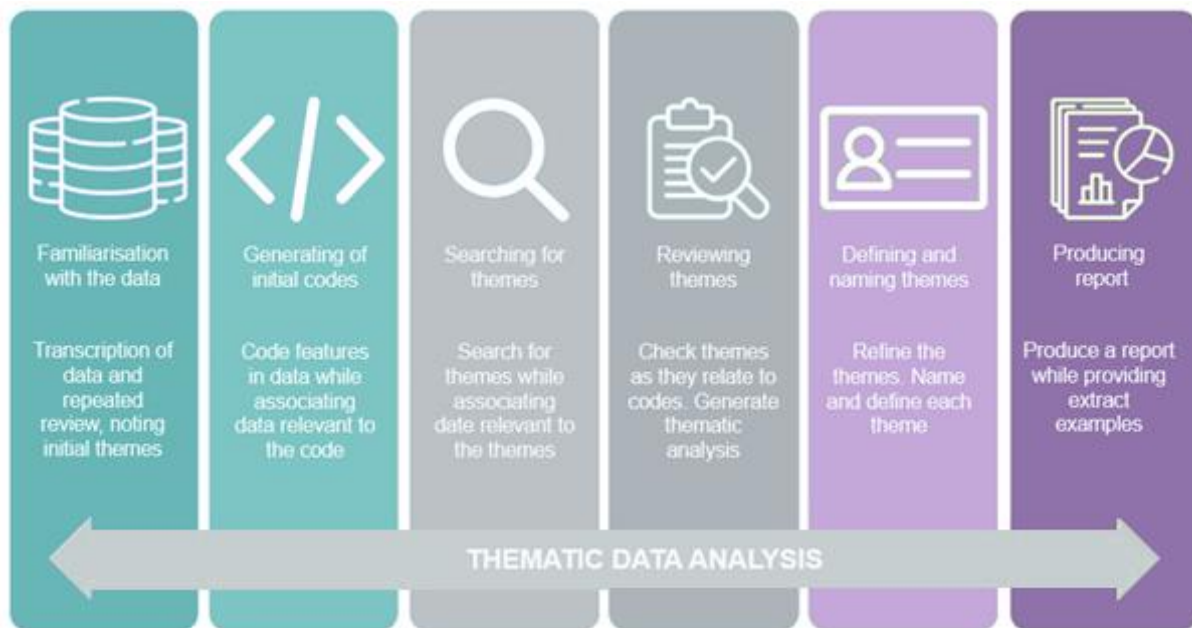
Once informed consent was obtained, the interview phase of this study commenced. These interviews involve seven to ten questions, which were used to gather pertinent information for this study. These questions were coupled with probing techniques to gather as much data as possible. The interviews were recorded and transcribed for further analysis.

Two forms of interviews were considered for this study: face-to-face interviews, the preference; and video conferencing software.

3.10 ANALYSIS

For this study, thematic analysis techniques were used. These techniques are aligned with Braun and Clarke (2021:78). **Figure 11** below details the steps involved in thematic analysis.

Figure 12: Thematic data analysis process



Source: Adapted from Saunders et al. (2019:651-653)

As illustrated above, these techniques include a series of steps, namely, familiarisation with data, code development, theme identification, review of identified themes, construction of themes, and reporting based on the themes. These steps are discussed in further detail below:

Step 1: Familiarisation with data

All interviews were recorded and as such constituted verbal data. Therefore, the data was transcribed using Otter.ai, as an industry-standard tool for rapid transcription. Once transcribed, the lead researcher initially read through the entire data set twice in order to

In order to immerse themselves with the data,. Notes were taken for coding purposes, identifying initial ideas from the data to be used during the later steps.

Step 2: Generating initial codes

After generating an initial list of ideas, initial codes were developed from the data. These codes differ from themes (repeated patterns) which are generally broader.

Through the use of Atlas.ti – an industry standard programme often used across various forms of literary analysis, the data was coded, with appropriate tags created for quotes that represented the code well.

Step 3: Searching for themes

After the coding was complete, an review of all the code was performed to highlight where multiple codes could be related to a single theme.

Step 4: Reviewing themes

Upon identification of the relevant themes, all the coded data extracts were reviewed to confirm that a pattern exists between the code and the theme identified. Once complete, the data set was reviewed for a third time to confirm that the themes adequately represented the full data sets. Overall six themes and nine sub-themes were identified and recorded in a table. Sub-themes can be seen as themes-within-themes and assists the researcher in providing structure to a larger data set Braun and Clarke (2021:80).

Step 5: Defining and naming themes

Once all the themes had been identified, the naming of each theme was assessed to confirm that the name attributed to the theme suitably relected the essence of the theme.

Step 6: Producing report

A report was produced, highlighting the themes and sub-themes analysed and providing an analysis of the data, including extracts from the data to highlight the

findings of the analysis. Frequency analytics were performed on the identified themes for reporting measures. The findings of the analysis were presented in tables.

Additional measures

In order to reduce bias, a supplementary coder (co-coder) was utilised.

3.11 TRUSTWORTHINESS

The following key concepts of trustworthiness have been identified as relevant for this study to ensure the trustworthiness of its data and findings (Moser & Korstjens, 2018:10):

- **Credibility**
Credibility establishes whether the findings denote reasonable information drawn from the participants' original data and whether it can be seen as an accurate analysis of the participants' original points of view.
- **Transferability:**
The extent to which the findings can be transferred to other sample populations. This can be facilitated by ensuring detailed descriptions within the data.
- **Dependability:**
The stability of the findings over a period of time.
- **Confirmability:**
The level to which the study can be replicated and confirmed by other researchers.
- **Reflexivity:**
The critical self-reflection by the researcher, as well as the relationship between the researcher and the participants and how this affects the participants' answers.

By ensuring these, trustworthiness can be insured. Methods to attain trustworthiness include:

- Ensuring that the researcher is appropriately knowledgeable in the subject matter and that they perform detailed and thorough interviews (Moser & Korstjens, 2018:10);
- Providing extracted data back to the NPOs to ensure that they can validate the data extracted (Moser & Korstjens, 2018:10);
- Creating an audit trail of the research process that ensures replicability (Moser & Korstjens, 2018:11); and
- Utilising a co-coder for thematic analysis.

3.12 ETHICAL CONSIDERATIONS

As far as possible, the study took every step to ensure ethical research practices. The overarching topic of the study is non-intrusive and low-risk, and potential participants were approached through an open-access third-party web platform. Potential participants were approached with an outline of the proposed study; if they were interested, an informed consent form was provided. As a part of informed consent, participants were informed of their right to withdraw from the study (without consequences) before data extraction would begin.

Participants were offered copies of the report upon completion of the study. They were provided with the contact details of relevant experts who are able to provide further details regarding the implementation of open-source ERP applications.

The researcher requested the participants' permission to record the interviews. A co-coder was used during the thematic analysis process to limit bias; the co-coder was selected after taking steps to ensure that they possess the necessary skills and qualifications. Additionally, the researcher and co-coder continually referred to the relevant documentation.

All recordings, transcriptions, and analyses were placed in a secured and password-protected folder. Organisations and identifiable characteristics were struck from the transcriptions to ensure confidentiality. In line with the *Protection of Personal Information Act (POPIA)*, no personal information was stored.

3.13 CHAPTER SUMMARY

This chapter was introduced with an emphasis on scientific design and rigour, and to this end, exhaustive steps were taken to ensure proper methodological alignment.

Therefore, this chapter reiterated the need for question-led research (Grix, 2002:175). Following this, the study was situated within an interpretivist paradigm and employed a general qualitative design.

Following this, those often neglected principles of ethical consideration and trustworthiness were outlined with emphasis on credibility, transferability, dependability, confirmability and reflexivity. Moreover, the specific strategies with which to improve these aspects of trustworthiness were also described.

While the overarching topic of the study is non-intrusive and low-risk, participants were identified through a third-party web platform. Once engaged, an informed consent was obtained prior to performing the interviews which were then transcribed and anonymised to ensure that confidentiality was upheld.

Lastly, an independent co-coder was used to reduce the risk of bias during the analysis.

CHAPTER 4: EMPIRICAL STUDY

4.1 INTRODUCTION

The literature review in Chapter 2 offers insights into NPOs and the challenges they face in financial non-compliance. A cursory investigation was performed that highlights ERP systems as a potential method to limit financial non-compliance, allowing NPOs to generate financial reports without necessarily having in-house accounting skills. The primary challenge with the adoption of ERP, i.e. the cost associated with such an implementation, was potentially limited by considering free open-source ERP systems as a viable product. In Chapter 3, the realisation of the empirical study, including data collection and analysis, is described. A general qualitative design was used, as it is an extremely flexible means of gathering qualitative data on the subject matter. Given the flexibility of the design, semi-structured interviews were used in conjunction with thematic analysis. This design allowed the researcher to explore and describe the topic empirically.

4.2 DATA COLLECTION

Once ethical clearance was obtained, the researcher used the ForGood website to identify NPOs that operate in the Gauteng region. The researcher communicated with these NPOs via the ForGood platform, explaining the study and inviting them to participate. Those NPOs that responded positively were engaged further and offered the option of a physical or virtual interview. All interviews were recorded and transcribed via Otter.ai. Transcribed interviews were imported into ATLAS.ti. Throughout the thematic analysis process, a co-coder was used.

4.3 DATA ANALYSIS

Once the data was collected and transcribed, the following steps were followed as part of the thematic analysis:

- The data was reviewed to develop an understanding of the initial themes;
- Initial codes were developed;

- A search of themes was performed and associated data was linked to each theme;
- The themes were reviewed;
- The themes were refined and named;
- Finally, a relevant report was produced with extract examples.

Data saturation was achieved after approximately eight interviews. In total, six themes and nine sub-themes were identified. Themes included misalignment between the roles fulfilled by employees and their qualifications; multiple approaches to Financial Management; software used to record accounting transactions; the general levels of knowledge regarding ERP and open-source software, revenue streams of the NPO's and potential obstacles in the implementation of open-source ERP software.

4.4 RESULTS AND DISCUSSION

Table 7 below represents the main and sub-themes identified throughout the thematic analysis and will form the basis of the discussion to follow:

Table 7: Thematic Analysis Themes Identified

THEME	THEME DESCRIPTIVE	SUB-THEME
Theme 1	Misalignment between the role vs the employee qualification	
Theme 2	Approach to Financial Management	Insourcing vs Outsourcing
Theme 3	Use of software for accounting purposes	
Theme 4	Knowledge of software and OSS	Lack of awareness regarding ERP systems
		Incomplete understanding of OSS
Theme 5	Revenue streams	The effect of other sources of income
Theme 6	Obstacles to the implementation of OSS ERP Software	Lack of required levels of knowledge
		Risk of downtime during the migration period

THEME	THEME DESCRIPTIVE	SUB-THEME
		Resistance to change
		Manual recordkeeping required by the Department of Social Development
		Is there a need for ERP Software

4.4.1 Theme 1: Misalignment between the role vs the employee qualification

NPOs perform a broad range of services in the community. It seems that those individuals attracted to roles within NPOs tend to be thrust into roles for which they are ill-equipped. An example of this can be seen in the list of participants, who, despite mostly fulfilling senior management roles within the organisation, often did not have the appropriate experience or skills needed. **Table 8** below represents a list of the roles held by each of the participants and their relevant skills and experience to serve in this capacity.

Table 8: Participants interviewed vs relevant qualification

ORGANISATIONAL TITLE	QUALIFIED FOR POSITION	PARTICIPANTS
Communications and Development Officer	0	1
Director	1	4
Operations Manager	1	1
Community Development Officer	0	1
Finance and Resource Development Officer	0	1
Coordinator: Fundraising	0	1
Financial Manager	1	1

In the responses from 70% of the participants, they admitted to being in roles for which they had not qualified. This corresponds with the challenges identified in the literature review that are experienced within NPOs. As previously noted by Othman et al. (2012:12), NPOs struggle to attract appropriately skilled employees due to lower compensation levels and insecurity in the NPO sector.

Unfortunately, this results in the appointment of employees who are unqualified to fulfil their roles. While employees and volunteers within NPOs are generally driven by a desire to help others, they often do not have the necessary skills to manage a business. Humorously, this was seen in the first interview, where the participant referred to themselves and their colleagues as “*bunny-huggers*” (P1).

This is seen elsewhere when discussing the organisational structure within the NPOs.

The board member on the HR subcommittee is a [sic] she has a [sic]. She's an engineer by early profession (P1)

So we don't have a lot of structure (P2)

This issue is aggravated within smaller NPOs that cannot sustain the appropriate management team to ensure that business functions are performed. When focusing on financial management and the general lack of financial literacy identified at a senior level, this can ultimately culminate in financial non-compliance by these NPOs.

According to Deng (2022:2), many companies have excellent business performance, but they struggle with cash-flow problems due to limited financial literacy and risk management within the organisation. While NPOs are often dependent on revenue generation from donations, potential benefactors need to understand how their donations are applied. As such, general financial literacy not only contributes to financial compliance but will also build trust with potential donors, which leads to further revenue generation.

4.4.2 Theme 2: Approach to financial management

In a response from 80% of the participants, they indicated that they outsource their financial accounting to an external company. While they have internal staff who perform administrative functions, like typically keeping a record of income and expenditure in an Excel spreadsheet, these records were forwarded to third-party

accountants to compile the necessary financial statements on a monthly basis. P1 describes this process well:

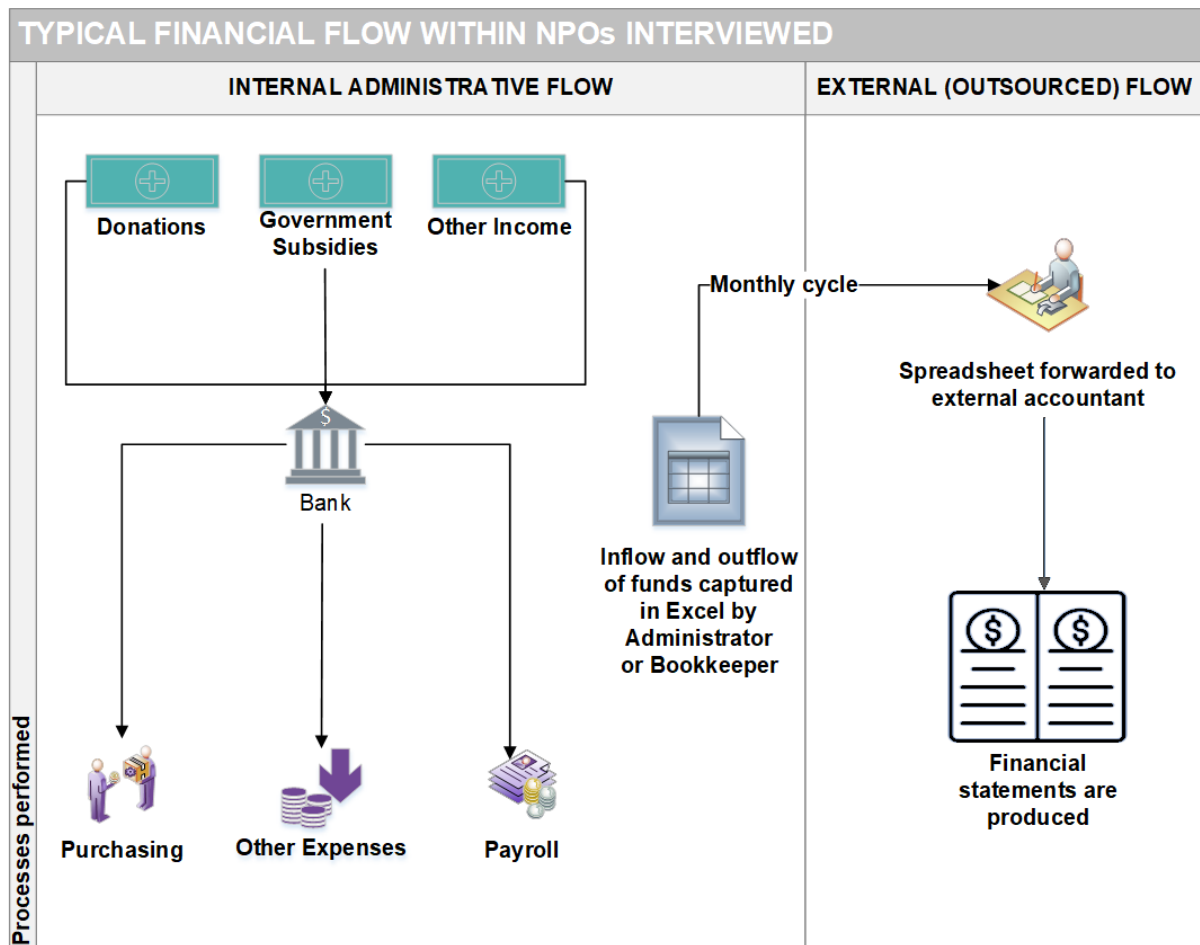
So the finance policy is our guide. And then we have a finance or like accounts clerk who manages the daily kind of the ins and outs and petty cash. We have two signatories who need to sign off on everything, and all that information gets fed through to the (external) accountant on a weekly and monthly basis. She actually sits down, and she produces the management pack that we receive mid-month of the next month. (P1)

Similar, if more redundant, processes were described by P3:

All of those receipts and invoices get compiled in the office, given to the bookkeeper, and she creates a physical file along with an Excel spreadsheet of all of the payments and income and allocations for those. Then that whole file and the spreadsheet go to our accountants, external accountants. (P3)

The flow diagram below in **Figure 13** best describes the method used by most of the participants.

Figure 13: Financial Accounting and Reporting flow diagram



The interview yielded a disquieting response from P6, who acknowledged that they had outsourced their financial reporting to a third party and that it cost them R40 000, but that they still owe the firm for the work done as they could not afford it.

We had to pay for the R40,000 for the financial statements. It was quite costly. But I think we have no option. I still owe the accountants money for it. But, you know, I had no option... I need it for the donations. (P6)

The cost of obtaining financial statements was again raised by another NPO:

Getting audited financial statements is not a cheap experience. (P5)

Conversely, participant 8 reported that they have a qualified financial manager who makes use of an accounting/ERP system for their financial record keeping and

reporting. In addition, they have an actuary on their board of directors who assists them with financial analysis when required.

He's an actuary, and he is a genius with the finances. He helps us to read and interpret the financials and so on. (P8)

These results are not congruent with previous studies performed internationally, where most respondents were reported to have their own internal accounting/ERP systems. It appears that most NPOs in Gauteng do not have the necessary skills and/or systems to generate financial reporting internally; thus, they choose to outsource this function. While this approach is entirely viable, it becomes a concern for smaller entities that cannot afford to do so.

4.4.3 Theme 3: Use of software for accounting purposes

A total of 60% of the respondents reported that they use Excel to record financial transactions internally, while 20% have a manual recordkeeping system. When asked what applications and software, if any, the particular NPO uses for finances and accounting, P2 responded that they make use of *"Just, uh, Excel and Sage."* As shown in **Table 9** below, this combination seemed to be the most commonly used by respondents.

Table 9: Systems used by participants for financial reporting

INTERNAL SYSTEM In-house accounting	EXTERNAL SYSTEM External Accountants	PARTICIPANTS
Excel Spreadsheets	Unknown external system	1
Excel Spreadsheets	Sage 50 Pastel Partner	3
Excel Spreadsheets	Quickbooks	1
Excel Spreadsheets	Sage 300 Accpac	1
Manual recordkeeping	Sage ERP (Pastel)	2
Sage 50 Pastel Partner for NPOs		2

The only respondent whose organisation does have an internal ERP system provided some feedback regarding the perceived advantages:

Yes, we make use of Pastel. It's an NPO package. For NPOs. So it's a specific package where you can do various things that are pertaining to the NPO. In other words, you can in the different accounts, link, say under the marketing account. Then you can link like I said, you can link t-shirts bought for victim empowerment to the victim empowerment account and t-shirts for the HIV program with the HIV account. Then you can draw an income statement for victim empowerment separately to say HIV if you want to do that. (P8)

In addition, the respondent admitted to considering a move to the cloud for the purpose of preventing redundancy.

Finally, due to the manual nature of financial record-keeping typically employed by most of the participants, there are areas of concern that should be highlighted:

- Risk management and control are challenging to maintain when managing recordkeeping in Excel, as records can easily be manipulated;
- NPOs lack real-time visibility relating to their overall financial position and are dependent on an external accountant to obtain financial reports at the end of each month;
- Invoices, especially tax invoices, should not be amended at a later stage, as per SARS requirements; and
- Recording records in Excel, and then later importing these records into an external accountant's ERP system, creates administrative and cost overheads.

4.4.4 Theme 4: Knowledge of software and OSS

When questioned regarding other software, in general, respondents provided details regarding alternative software packages that, while not specifically financial, could be seen as ERP-related software. A common software category named by 30% of participants was CRM software, which seems to be commonly used to keep track of donors and beneficiaries.

“We do have donor CRM, customer relationship, software.” (P1)

We use a program called Air table. I don't know if you're familiar with it [sic]. I think that they should pay me because I definitely advertise for them no one has ever heard about. I found them online. So we were looking at one point and setting up a beneficiary database. Okay, but I wanted something that I could control myself. Okay. So you know, with like, these big, what is that? What is the big one called? There are all these big, like, CRM management systems. (P3)

Another common software category was HRIS solutions, in this instance Sage VIP.

And then we've got a VIP system for payroll. The guys do the scheduled hours in Excel, and then it's imported into VIP to be paid for the month. So for VIP, for staff for everything and then and then that gets uploaded, and that's the payroll system. (P8)

Overall, the respondents admitted a general lack of knowledge regarding software as a whole.

Sub-theme: Lack of awareness regarding ERP systems

During many of the interviews, when asked about their knowledge of ERP systems, most participants admitted that they were unfamiliar with the term – in each such instance, the terminology had to be explained in order to continue with the interview, as the follow-up questions referred to ERP. This ignorance is due to a lack of exposure to such systems, which, given the state of the software described by most participants, seems plausible. Alternatively, it is also possible that, though they were unfamiliar with the term, they had encountered such software before but under a different name. In fact, while it only loosely fits the definition of an ERP system, many participants described the functions contained in Sage Pastel.

At the time of this study, a cursory examination of several business degree curricula, as well as those of the past ten years, reveals exposure to Information Systems in almost all instances. ERP, as a core subject matter of Information Systems, would

therefore definitely be covered during the course of the degree. This seems to indicate that, despite their positions held within the respective NPOs, the respondents either do not hold business degrees or obtained their respective degrees prior to the introduction of Information Systems in the curriculum.

Sub-theme: Incomplete understanding of OSS

Most of the participants who were interviewed displayed some knowledge of open-source software. In fact, one participant described it as “*Software that I don’t have to pay for*” (P1). All the other participants failed to define open source in this way. Instead, these participants described open-source software as malleable and customisable software, as seen in the excerpts below:

So open-source being the sort of back-end code type stuff, is open, and people can actually get in and tweak the software to do what they would like it to do. (P3)

"A customizable software, I guess." (P4)

One participant expressed interest in open-source software, as they felt it could be customised to their needs rather than them having to “*shoehorn*” (P1) their programs into the functionality provided by the software at hand.

Ironically, one participant was unable to provide a description of open-source software. However, during the course of the interview, it became clear that they had implemented open-source workflow software within their organisation and that this software had become essential to many of the functions.

So we use an electronic system called Cognito forms. I don't know if that's even the real name, but I think so. It's like a database. So when we counsel somebody, they fill in a form online [sic] that form then goes to an email address that the counsellors pick it up from there. They pick up the clients from there, and then I would contact that client, and they would then set up

the counselling sessions because we do virtual face-to-face and we do actual face-to-face. So the obvious ways that people contact us is if they pick up those forms and things on the website, lots of people go to our website. (P8)

When it was explained to the participants that open-source software is also free, most expressed interest.

“We're opposed to paying people obviously, being non-profit.” (P3)

4.4.5 Theme 5: Revenue streams

Of the participants, 90% were highly reliant on grants and donations for funding and had no means of self-generated income. This matches the findings recorded in the literature review. Only 10% of the participants indicated alternative forms of income.

Sub-theme: The effect of other sources of income

Significantly, P8 had a diverse range of revenue streams. Amongst these was income generated by their counselling staff through employee wellness programmes. Councillors who generally provide social services to those in need are seconded to these corporate initiatives, affording a reliable revenue stream not wholly dependent on donations.

And then, obviously, we do the counselling, the mental health counselling that I spoke about. We do it face to face, or we do it virtually these days. People really liked doing it virtually. And that is a purely mental health program that we have designed for ourselves [sic] and then we have a social enterprise arm as well, which is your employee wellness, employee wellness services. And that is sort of counselling for employees in trouble and group debriefing in case of traumas and so on, and sort of wellness days and wellness talks and that kind of thing. That's for companies, and

people pay us for that service [sic], and then we've got corporate training, where we train corporates on soft skills. (P8)

P8 is one of the participants with an in-house ERP system. Self-generated income could therefore be a further indicator of when ERP systems are needed internally, i.e. when the NPO tries to become self-sufficient by generating income independent of donations.

4.4.6 Theme 6: Obstacles to the implementation of OSS ERP Software

When asked whether the NPOs would consider the implementation of an open-source ERP system, 70% responded in the affirmative. Upon reflection, most of them immediately identified a range of obstacles. However, participant P2 stated that they would be keen to implement an open-source ERP system if it was "*user-friendly*". 20% of the respondents stated that they would not consider moving from their existing ERP system, Sage Pastel Partner for NPOs. 10% of respondents simply stated that they would not change their systems. When asked what would deter them from the implementation of an open-source ERP system, the participants had the following to say:

Sub-theme: Lack of required levels of knowledge

Almost all participants who were willing to consider the implementation of an open-source ERP system had reservations regarding an internal lack of system/technology knowledge. Some went so far as to highlight that they struggled with easy-to-use products such as Excel. This raised the question of how they could possibly move to something as advanced as an ERP system.

" I mean, true confessions, Excel. It's beyond us" (P1)

A number of the participants also expressed a view that their older employees would not be able to understand the ERP system. They believed that younger employees could potentially gain the necessary knowledge to use an ERP system.

We've recently, in May of 2021, hired a 30 or 29-year-old graduate, and I can see from his systems and things that he's much more tech-savvy than us dinosaurs. (P1)

Technology is in their DNA, these young people. Generally, there are some older people who are really, you know, they've had laptops for years, but they can't quite grasp it. (P8)

Sub-theme: Resistance to change

While not explicitly stated by any particular participant, most touched on or expressed a degree of reticence regarding potential changes to their current systems – even if those changes might improve the NPO's overall functionality. This theme, labelled resistance to change, is described below:

I don't think we would change anything on our finance side. (P1)

The same participant later expressed this sentiment again, going so far as to say that they would avoid progress or improving upon their current systems for the sake of remaining with that which is familiar:

I mean, there are newer versions of competing products that are quite persuasive, but we haven't opted to use them, I think because you're nervous about shifting and changing. (P1)

Sub-theme: Risk of downtime during the migration period

Another major concern that was expressed by several of the participants is the amount of time it would take to implement and familiarise themselves with the new system. The concern seemed to stem from an environment in which individuals could not afford to slow down. This can be seen in the excerpt below:

But yeah, there's a huge amount of fear in don't make me change my systems because that will slow me down, and I don't have time to be slow because I don't have the capacity to do more than what I'm doing. I mean, we, all of us, are working more than five days a week. (P1)

Put differently; it was suggested that NPOs might refrain from implementing any kind of new system because doing so would require an installation period and a learning curve they might not be able to afford.

Sub-theme: Manual recordkeeping required by the Department of Social Development

A number of participants pointed out that while the implementation of an open-source ERP solution was an excellent first step toward digitisation, especially considering their experiences during the COVID-19 lockdown, they felt that this strategy was contradictory with the Department of Social Development, which insists that physical copies of all files be held at these NPOs offices. The Department of Social Development often insists on hand-written reports as part of their process.

Department of Social Development, for which we do this very big program, want paper. (P8)

In addition to the labour-intensive nature of the Department of Social Development's strategy for both themselves and the NPOs, this strategy also creates a business continuity risk and, due to its manual nature, frustrates any hope of timeous reporting.

Sub-theme: Is there a need for ERP Software

When asked whether they saw a need for ERP software, all the participants reported that they did see a need for it. Be that as it may, the participants seemed to be divided on whether such a solution should be kept in-house or outsourced. The majority of the participants seemed to favour outsourcing the ERP system, potentially linking this sub-theme to reticence to change. Some did acknowledge the inherent advantages and

innovations available in the implementation of an ERP, as can be seen in the quote below.

There is a need to automate the process because, uh, you're dealing with a lot of paperwork, and it gets very messy. There's a definite need for more automated processes which allow you to keep track of revisions and, you know, to avoid also a lot of human error. (P2)

4.5 SUMMARY OF MAIN FINDINGS

Often, the findings, as they relate to the themes, were interlinked. As an example, the interviews revealed that many of the respondents do not possess the relevant education for the roles they are fulfilling in the NPOs. This problem seemed to be pervasive at all levels of the NPOs.

As Finance is a highly technical and skilled function, the lack of appropriate education leads to the outsourcing of financial accounting services within NPOs. The few who reported that they in-sourced the function seem to have specific daily invoicing and reporting requirements, which forces them to implement an internal system.

Most of the participants reported making use of Sage Accounting Products, whether in-house or outsourced. The most predominant tool used by all participants was Excel. It appears that the participants simulate accounting systems through template-based spreadsheets.

Most of the participants reported having heard of open-source software, but their understanding of the terminology was found to be skewed. Conversely, almost all participants expressed an interest in open-source software and its applications within the business.

However, when confronted with the idea of implementing an open-source ERP system, almost all participants mentioned barriers to such an implementation, showing an unwillingness to innovate and implement change.

4.6 ANSWERS TO THE RESEARCH QUESTIONS

The below information represents a concise answer to the research questions posed during the interviews:

4.6.1 Perceptions of open-source ERP applications as a compliance solution within NPOs in Gauteng, South Africa

Most participants felt that open-source ERP systems could assist with financial compliance, but they reported being hesitant due to the complex nature of ERP systems and the limited resources available within their organisation to manage the system.

4.6.2 The prevalence of ERP applications within NPOs in Gauteng

Very few NPOs (20%) have ERP systems in their environments. Most outsource the function to a third-party provider. This is in part due to the costs associated with ERP systems but, more importantly, due to a limited understanding of systems and financial accounting.

4.6.3 The nature of the existing awareness of open-source software in NPOs in Gauteng

The interviews revealed that most of the participants have a rudimentary idea of open-source software. The findings reveal that some respondents understood that open-source software offered an opportunity to adapt the software to their needs, while others understood that the software could be downloaded free of charge; all the participants reported being aware of either one or the other major benefit, but none reported being aware of both.

4.6.4 The attitudes toward the implementation of open-source ERP applications in NPOs

Most of the NPOs interviewed in this study expressed an interest in the implementation of open-source ERP software within the NPO.

4.6.5 The factors identified as prohibiting the implementation of open-source ERP applications within NPOs within Gauteng

Three factors were identified as risks to the implementation of open-source ERP software. These are:

- Limited knowledge of ERP and technology within the organisation;
- Unwillingness to have a disruption in the operation due to the implementation or migration (downtime); and
- A total unwillingness to change systems.

4.7 CHAPTER SUMMARY

This chapter describes the process through which the study collected and analysed data. Described briefly, this process involved performing interviews with various employees of various NPOs. These interviews were transcribed and analysed using the principles of Braun and Clarke (2006). From this analysis, six primary themes were identified, namely:

- Misalignment between the role vs the employee qualification;
- Approach to Financial Management;
- Use of software for accounting purposes;
- Knowledge of software and OSS;
- Revenue streams; and
- Obstacles to the implementation of OSS ERP Software.

When combined, these themes paint a dire picture of the current state of NPOs in South Africa. When designing the study, the hypothesis was formulated that many NPOs would not necessarily know what an ERP system is; thus, this hypothesis is

confirmed. This may be because the term ERP is more commonly found in corporates or amongst those individuals trained in Information Systems.

However, by performing these interviews, it was discovered that many of these NPOs have little to no understanding of business administration and financial systems. This would explain why these NPOs have chosen to outsource their financial accounting to third-party providers; however, this also implies that the NPOs do not have a clear understanding of the financial risks to which they are exposed. The significant lack of financial literacy at a senior or executive level can be seen as a direct risk to the survival of such NPOs.

CHAPTER 5: LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

The fifth and final chapter starts with a discussion of the key limitations of the study. This discussion is followed by an outline of proposed, actionable recommendations and projects.

5.2 LIMITATIONS OF THE STUDY

While this study will undoubtedly contribute to the larger body of literature regarding opportunities to implement and adopt open-source ERP applications in the NPO sector, the study does have limitations.

The chief limitation of this study is related to geographic factors, as the study is focused on Gauteng only. Further research should be promoted regarding the larger South African and African contexts.

The subjects addressed in this study can be considered expert topics. Given that the interviews reveal that the majority of the participants are not qualified for their roles within the NPOs, it is questionable whether they can be considered sufficiently knowledgeable regarding information systems and ERP. In fact, this is further confirmed by the number of participants interviewed who were unfamiliar with ERP systems. That is not to say that the participants are not experts within their respective NPOs, but rather that they are unfamiliar with the formal theory of more advanced solutions to the problems that they face. This ignorance, consequently, reinforces the need for this study and the pursuit of the solutions recommended.

5.3 RECOMMENDATIONS

While the literature review and the data analysis show an appetite in NPOs to find solutions through software, with a specific focus on open-source ERP solutions, there

were compelling concerns raised regarding NPOs’ ability to implement and manage these ERP solutions effectively. With this in mind, a relevant case study was identified and provided in the literature review, which concerns a government that assists its NPOs in the adoption of a digital strategy and governmental support.

Some might argue that, due to the limited size of its NPO sector, a case study concerning Singapore cannot be applied to the South African context; unlike South Africa, Singapore only has 2 000 NPOs registered for its approximately 5.96 million citizens. In addition, when compared to South Africa, Singapore is plausibly better placed to provide financial support through grants, which can be used to develop its NPO sector; its GDP per capita is \$57,782, but that of South Africa is only at \$5,599. **Table 10** below illustrates the limited variance in GDP despite Singapore's relatively smaller population.

Table 10: Singapore vs South Africa Comparison 2020

METRIC	SINGAPORE	SOUTH AFRICA
GDP	345.29 Bn	335.34 Bn
Population	5 975 689	59 893 885
GDP per Capita	\$57 782	\$5 599
Registered NPOs	2 320	267 498
NPOs as a percentage of the population	0.04%	0.45%

Source: Adapted from Statistica (2022)

While these arguments hold true, there are some lessons that can be learned from Singapore.

- Through the support of the local government, the overall longevity and success of NPOs can be improved;
- By providing the appropriate training, NPOs are able to generate their own financial reports and, similarly, identify financial risks. This will lead to higher levels of financial compliance; and
- By implementing suitable ICT solutions, NPOs are able to improve processes and become independent.

Therefore, the question remains: how can we bootstrap the resources available within the South African Government to offer increased support for South African NPOs? Some relevant initiatives are recommended below.

5.3.1 Information and communication technology (ICT)

Newly established NPOs, or those wishing to avoid costly fees relating to implementing in-house ERP systems or outsourcing their financial accounting function, will be offered the following:

- The deployment of a multi-tenant cloud-hosted open-source ERP solution, managed and supported by the Department of Social Development or a third party of their choice. Each NPO would become a tenant of the solution and have access to its own company within the environment. Through the recommended consolidation into a single environment, significant savings would be achieved. The use of an open-source ERP system would further ensure a free software solution with access to the source code, enabling required changes to ensure the solution is fit-for-purpose. The solution will have the following advantages:
 - Trusted, secure and convenient;
 - Always on and available due to cloud hosting; and
 - Redundant through cloud hosting.
- The development of a standard NPO template for all companies, including such elements as a standard chart of accounts. This generic view enables a faster implementation period of the ERP for NPOs.
- Standardised reporting across all companies, ensuring a similar design. This will facilitate the assessment of financial compliance reports, as these will have an identical structure.
- Electronic upload functions that will enable the NPO to upload their financial statements to the Department of Social Development.
- In addition to the developments above, it is recommended that the Department of Social Development develop an electronic portal for the uploading of all other forms of documentation and phase out manual documentation in favour of automated workflow, thereby alleviating the significant burden on the Department and enabling NPOs to move toward a digitisation strategy.

This initiative will come at a significant cost to the Department of Social Development but will facilitate the survival of NPOs. To lower the potential risk of failure of this project, it is advised that a pilot program (proof of concept) be introduced by identifying three different-sized NPOs willing to implement the open-source ERP solution hosted by the DSD within their organisations. This will allow the DSD to determine the program's potential success and highlight areas of improvement for future rollouts. This approach is further highlighted as an area for future participatory action research.

5.3.2 Training

It is suggested that offering training and grants through SETAs would enable directors of NPOs to obtain training in the:

- Programme Management;
- Human Resource and Volunteer Management;
- Financial Management, Internal Controls, Risk Management; and
- Digitalisation/Data Protection/Cyber Security.

5.3.3 Toolkits

There are a number of institutions in South Africa that have produced NPO start-up toolkits, advising NPOs on how to establish their NPO successfully. These are all available to the public at a cost commonly ranging from R1 000 to R4 000. It is therefore recommended that the Department of Social Development host regular training sessions in the use of these toolkits with start-up NPOs and those wishing to enter the market.

5.3.4 Future Research

Future research can be done on the following topics:

- NPO-based participatory action research to identify those issues that they, the NPOs, identify as issues within their organisations. This would be useful for all NPOs, but of particular relevance to those NPOs in their first year after

establishment, as such research would provide them with resources and solutions they might not otherwise have;

- Perform a case study involving three NPOs; one within its first year of operation; one that has survived beyond the first year; and one that is well established. The researcher will take on the role of ERP and OSS consultant, piloting the previously proposed recommendation.
- Understanding the relationship between revenue streams and a need for an ERP system within NPOs;

5.4 CONCLUSION

The purpose of this chapter is two-fold. First, this chapter tempers the results of the previous chapter with limitations informed by the scientific methods and practical elements of the empirical study that was conducted. These limitations quickly highlighted the limited knowledge of the topic expressed by the sample population – an ironic realisation, given that it only further emphasises the contributions of this study and the need for the solutions and research proposed in the recommendations which follow.

These recommendations are the second purpose of this chapter. They propose a multi-tenant cloud-based, open-source ERP solution hosted by the Department of Social Development, as well as the further education of executives within NPOs to ensure that they are familiar with the necessary finance and business principles required to perform their duties and, potentially, engage with the aforementioned software package. Additional research is also recommended.

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APPENDICES

Appendix	Document Name
Ethical Clearance	Myburgh, YF (32958935) (NWU-00630-22-A4)
Informed Consent	32958935_InformedConsent
Interview Guide	32958935_Interview Guide
Language Editor Certificate	32958935_LanguageCert
Similarity Index	32958935_SimilarityIndex

24 May 2022

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Economic and Management Sciences Research Ethics Committee (EMS-REC)** on 22/04/2022, Round Robin, the Economic and Management Sciences Research Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-RERC) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Exploring perceptions of open-source ERP applications as a compliance solution within NPO's in Gauteng Province
Study Leader/Supervisor (Principal Investigator)/Researcher: Dr K Ndlovu - MBA
Student: Myburgh, YF (32958935)

Ethics number:

N	W	U	-	0	0	6	3	0	-	2	2	-	A	4
Institution			Study Number					Year		Status				

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type:

Commencement date: 24/05/2022

Risk:

Low

Expiry date: 24/05/2023

Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

Special in process conditions of the research for approval (if applicable):

•

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- *The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the EMS-REC:

 - *annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and*
 - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.**
- *The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the EMS-REC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The date of approval indicates the first date that the study may be started. in the interest of ethical responsibility, the NWU-SCRE and EMS-REC reserves the right to:

 - *request access to any information or data at any time during the course or after completion of the study;**

- *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;*
- *withdraw or postpone approval if:*
 - *any unethical principles or practices of the study are revealed or suspected;*
 - *it becomes apparent that any relevant information was withheld from the EMS-REC or that information has been false or misrepresented;*
 - *submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or*
 - *new institutional rules, national legislation or international conventions deem it necessary.*
- *Please note that the ethics approval of this application is subject to the Covid-19 protocols.*

The EMS-REC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the EMS-REC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely,

Prof Mark Rathbone
Chairperson: NWU Economic and Management Sciences Research Ethics Committee

INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 11 October 2022

Participant code: P1

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

This Informed Consent Statement confirms the following information as it relates to the academic business science MBA and subsequent research on the opportunities to implement open-source ERP applications within nonprofit organisations in Gauteng.



This study forms part of a dissertation to be submitted in partial fulfilment of the Master of Business Administration requirements at the North-West University. It is an internationally accredited degree that requires adherence to strict ethical standards as a prerequisite to conducting this research.

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2. The estimated completion time for the interview will be approximately 45 minutes
3. If, at any point during the interview, the participant should feel uncomfortable, the participant will have the opportunity to make their discomfort known and immediately end their participation.
4. The interview will be voice-recorded for transcripts purposes and with the consent of the participant. The participant's name will not be recorded. At any time, the participant may request to see or hear the information collected. The

interviewer will take notes. This is done for data analysis purposes. The recording will be transcribed by the interviewer and kept confidential in a password-protected computer. The transcripts and recordings will be destroyed after three years.

5. All individual identification will be removed from the hard copy of the transcript. Participant identity and confidentiality will be concealed using coding procedures. Please note that excerpts from the interview may be included in the final dissertation report or other later publications. However, under no circumstances will your name or identifying characteristics appear in these writings.
6. It should also be emphasised that participation in this study is voluntarily and with the consent of the participant without any form of coercion.
7. The confidentiality, anonymity and privacy of participants are guaranteed.
8. A summarised copy of the final report will be made available to the respondent on request.

I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	<i>Name</i>	<i>Designation</i>	<i>Signature</i>	<i>Date</i>
<i>Researcher</i>	Yolande Myburgh			11/10/2022
<i>Respondant</i>	Susan Daly	EXCO – Kids Haven		11-10-2022



INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 2022.11.29

Participant code: P2

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

This Informed Consent Statement confirms the following information as it relates to the academic business science MBA and subsequent research on the opportunities to implement open-source ERP applications within nonprofit organisations in Gauteng.

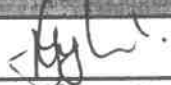

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I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	Name	Designation	Signature	Date
Researcher	Yolande Myburgh			2022/11/29
Respondant	THAM SANAK NGWENYA	Snr Finance Officer		2022/11/29

INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 24 November, 2022

Participant code: P3

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

This Informed Consent Statement confirms the following information as it relates to the academic business science MBA and subsequent research on the opportunities to implement open-source ERP applications within nonprofit organisations in Gauteng.

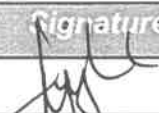

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1. The procedure to be followed is a qualitative research design, using semi-structured interview questions whereby the participant can communicate their views on the noted topic. Basic background information such as gender, age, ethnic group, seniority within the organisation and qualifications will be asked as part of the interview.
2. The estimated completion time for the interview will be approximately 45 minutes
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I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	Name	Designation	Signature	Date
Researcher	Yolande Myburgh			24/11/2022
Respondant	KATE JACOBS	ops manager		24/11/22

INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 29.11.2022

Participant code: P4

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

This Informed Consent Statement confirms the following information as it relates to the academic business science MBA and subsequent research on the opportunities to implement open-source ERP applications within nonprofit organisations in Gauteng.



This study forms part of a dissertation to be submitted in partial fulfilment of the Master of Business Administration requirements at the North-West University. It is an internationally accredited degree that requires adherence to strict ethical standards as a prerequisite to conducting this research.

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2. The estimated completion time for the interview will be approximately 45 minutes
3. If, at any point during the interview, the participant should feel uncomfortable, the participant will have the opportunity to make their discomfort known and immediately end their participation.
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8. A summarised copy of the final report will be made available to the respondent on request.

I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	Name	Designation	Signature	Date
Researcher	Yolande Myburgh			29.11.2022
Respondent	Nomuliso Beatty Muroa	Executive Manager		29.11.22

INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 29/11/2022

Participant code: PS

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

This Informed Consent Statement confirms the following information as it relates to the academic business science MBA and subsequent research on the opportunities to implement open-source ERP applications within nonprofit organisations in Gauteng.


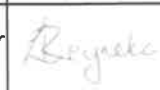
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7. The confidentiality, anonymity and privacy of participants are guaranteed.
8. A summarised copy of the final report will be made available to the respondent on request.

I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	<i>Name</i>	<i>Designation</i>	<i>Signature</i>	<i>Date</i>
Researcher	Yolande Myburgh			29/11/22
Respondant	Marina L Reyneke	Operations Manager		2022/11/29

INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 14/10/2022

Participant code: P06

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

This Informed Consent Statement confirms the following information as it relates to the academic business science MBA and subsequent research on the opportunities to implement open-source ERP applications within nonprofit organisations in Gauteng.

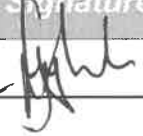

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I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	Name	Designation	Signature	Date
Researcher	Yolande Myburgh			14/10/2022
Respondant	Lorel Ayanly	Program Manager West. H. S.		14.10.2022

INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 2022.11.29

Participant code: P7

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

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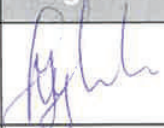

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I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	<i>Name</i>	<i>Designation</i>	<i>Signature</i>	<i>Date</i>
Researcher	Y. Myburgh			2022-11-29
Respondant	Gontse Moalafi	Communications & Development Officer		2022/11/29

INFORMED CONSENT

NORTH-WEST UNIVERSITY: MBA

Researcher: Yolande Myburgh

Mobile number: +27 76 053 3581

E-mail: yol.myburgh@gmail.com

Date: 23 November 2022 _____

Participant code: Pg _____

Dear participant,

INFORMED CONSENT TO PARTICIPATE IN AN INTERVIEW

This Informed Consent Statement confirms the following information as it relates to the academic business science MBA and subsequent research on the opportunities to implement open-source ERP applications within nonprofit organisations in Gauteng.



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I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Yolande Myburgh to use the information gathered in her MBA dissertation and subsequent research.

	<i>Name</i>	<i>Designation</i>	<i>Signature</i>	<i>Date</i>
Researcher	Yolande Myburgh			23/11/2022
Respondant	Isabella Holden	Director		23/11/22

QUALITATIVE RESEARCH

SEMI-STRUCTURED INTERVIEW GUIDE

Introduction

Greetings

- Introduce yourself to the participant (your name and your studies toward an MBA);
- Provide detail on your interests in Technology/Digital transformation and how this is incorporated in the study;
- Provide the participant detail regarding the study, highlighting the literature review that indicates many NPOs are struggling to keep complaint due to lack of access to financial statements and the cost burden to obtain these.
- Work through the informed consent document and obtain verbal consent prior to starting the interview. The following elements should be confirmed once again:
 - The estimated completion time for the interview will be approximately 45 minutes;
 - If the participant feels uncomfortable they will have the opportunity to make their discomfort known and immediately end their participation.
 - The interview will be voice-recorded for transcripts purposes and with the consent of the participant. The interviewer will take notes. The recording will be transcribed by the interviewer and kept confidential.
 - All individual identification will be removed from the hard copy of the transcript. Participant identity and confidentiality will be concealed using coding procedures.
 - It should also be emphasised that participation in this study is voluntarily and with the consent of the participant without any form of coercion.
 - The confidentiality, anonymity and privacy of participants are guaranteed.
 - A summarised copy of the final report will be made available to the respondent on request.

Data collection instrument - Semi-structured interview questions

1. Please tell me about your NPO and how it started?
 - a. Probe: How long has the NPO operational?
 - b. Probe: Can you please describe the main functions of your NPO?
 - c. Probe: What is your role within the NPO?
2. Would you please describe the workflow structures/processes within your organisation?
 - a. Probe: Do you produce your own financial statements or is this outsourced to an external accountant?
 - b. Probe: How do you keep records relating your activities (financial, operational)?
3. What application software (if any) do you use within your NPO?
 - a. Probe: Do you have accounting software?
 - b. Probe: Have you seen a need for software or automation of manual processes?
4. Have you any knowledge about Open Source Software?
 - a. Probe: If yes, where did you learn about Open Source Software?
5. Have you ever considered implementing Open Source Software within your NPO?
 - a. Probe: Would you consider implementing Open Source Software ERP as a compliance tool within your NPO?
6. What difficulties do you think your NPO would experience should you implement Open Source Software?
 - a. Probe: What is the level of technology skills available within the NPO
 - b. Probe: Do you have suitable hardware within the NPO to run Open source software?

Conclusion

I thank you for your time and willingness to assist in the research.

Would you like to receive a summarised copy

Certificate of Proofreading

391 Walter Sisulu Street
Miederpark
Potchefstroom
2531
26 November 2022

TO WHOM IT MAY CONCERN

I, Mirrycke Krüger, hereby confirm that Krüger Language Practitioners has proofread the mini-dissertation of YF Myburgh (student number 32958935), titled:

Exploring the perceptions of open-source ERP applications as a compliance solution within NPO's in Gauteng Province

Submitted in fulfilment of the requirements of the Degree Masters in Business Administration at the North-West University.

Yours sincerely



Mirrycke Krüger
SATI member number: 1000377
Qualified Language Practitioner: BPHIL Ethics, Philosophy, and Languages (with distinction/ GoldenKey)
kruger.langprac@gmail.com
063 521 4151

Primary proofreader: Mirrycke Krüger
Secondary proofreader: Henriëtte Krüger



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File size: 1.37M
Page count: 93
Word count: 19,580
Character count: 117,236
Submission date: 29-Nov-2022 10:00PM (UTC-0800)
Submission ID: 1967019195



Exploring perceptions of open-source ERP applications as a compliance solution within NPO's in Gauteng Province

YF Myburgh



² [Orcid.org 0000-0001-5836-6791](https://orcid.org/0000-0001-5836-6791)

Mini-dissertation submitted in partial fulfilment of the requirements for the degree *Master in Business Administration* at the North-West University

