FACTORS INFLUENCING THE PERFORMANCE OF POWER AFRICA DONOR-DRIVEN MONITORING AND EVALUATION SYSTEM IN SOUTH AFRICA

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DECLARATION

I, Blessing Muvhuti, declare that this thesis report is my original and unaided work. The report contains sources that have been accurately acknowledged and not submitted to attain an academic qualification or examination at any other university. It is presented in partial fulfillment of the requirements for the degree of Master of Management in Governance (Public and Development Sector Monitoring and Evaluation) at the University of the Witwatersrand, Johannesburg. I have not submitted this report before for any other degree or examination to any other institution.

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ABSTRACT

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Title: Factors influencing the performance of power Africa donor-driven monitoring and evaluation system in south Africa

Effective monitoring and evaluation (M&E) are essential to the success of any project. Although there is no evidence suggesting donor-supported projects did not exist before 1994, there was a significant increase in donor projects after that year. This led to the creation of the South African Monitoring and Evaluation Association (SAMEA), which aims to bridge the competence gap by providing a platform where M&E is considered a profession (SAMEA, 2022). Despite implementing M&E systems, little is written about the factors that affect their performance. A 2012 McKinsey survey found that donor-funded projects had a low M&E performance success rate of 36%. Therefore, it is necessary to assess the factors that influence the performance of the Driven (Power Africa) M&E system in South Africa. This study examines the impact of technology, human capital, data quality, and stakeholder participation on the system's performance.

A quantitative research strategy was used, and a self-administered questionnaire was developed, tested, validated, and shared online through Google Forms to 203 selected participants who received direct emails with guidance on how to complete the questionnaire and how we obtained the sample size.

The findings revealed that the majority (90%) of participants agreed that the evolution of technology, data quality, human capacity, and stakeholders all have a positive relationship with the performance of donor-driven monitoring and evaluation systems.

Theoretical arguments from this study suggest that technology, human capital, stakeholders, involvement, and data quality positively impact the performance of an M&E system within the NGO sector.

Keywords: Power Africa, Monitoring &Evaluation, Donor-driven M&E system performance, the evolution of technology, Humana capital, stakeholder's participation, data quality.

Pretoria, September 2023

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LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
COP	Conference of the Parties
CLEAR-AA	Center for Learning on Evaluation and Results for Anglophone Africa
Covid-19	Corona Virus
DPME	Department of Planning, Monitoring and Evaluation
EU	European Union
GWM&E	Government-Wide Monitoring & Evaluation
HIV	Human Immunodeficiency Virus
IP	Implementing Partner
IPG	International Partners Group
ICT	Information and Communication Technologies
M&E	Monitoring and Evaluation
MW	Mega Watts
NGOs	Non-Governmental Organisations
NDS	National Development Strategy
NGOs	Non-Governmental Organisations
PA	Power Africa
PGD	Post Graduate Diploma
RDP	Reconstruction and Development Programme
SAMEA	South African Monitoring and Evaluation Association
SA	South Africa
STATA	Statistical software package
SPSS	statistical software suite
US	United States
USAID	United States Agency for International Development

DEDICATION

I am deeply grateful to my dear Cherie, who has consistently provided encouragement and unwavering faith in me and my sons, and compassionate family and work colleagues, who always cheered me on.

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I appreciate all those who supported and encouraged me along the way to accomplish my study. To my supervisor, Professor Kambidima Wotela, I would like to say at first, I did not understand all those steps, but it made sense, and I owe it to you. If I were to choose another supervisor, I would prefer you. Professor Kambidima Wotela's supervision, comments, and encouragement helped to see this fulfilled.

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As always, I will praise God for everything and keep praising him for more to come. Glory and Praise to him constantly. Amen.

1 INTRODUCTION TO THE RESEARCH

1.1 Background

In a broader context, this research assesses the factors influencing the performance of Power Africa donor-driven monitoring and evaluation systems in South Africa. However, before delving into the research problem statement (Section 1.2.1) and, consequently, the purpose of this research (Section 0), along with the research questions (Section 0), this chapter offers a concise introduction to the terms and concepts employed in shaping this research. In addition, Section **Error! Reference source not found.** and Section 1.1.3 introduce the research context generally and broadly, while Section 0 provides a more specific and detailed examination of this context. Section **Error! Reference source not found.** briefly acquaints the reader with the program under study and accompanying key terms and concepts. Likewise, Section 2.2 provides a more detailed discussion of this intervention. Section 1.3 discusses the delimitations of the research. Furthermore, section 1.4 justifies the study, while Section 1.5 provides a preface to the research report.

1.1.1 South Africa in Context.

Apartheid left a painful legacy of injustice and segregation, particularly evident in the unequal distribution of public services. Following the democratic election of 1994, the newly formed government faced immense pressure to rectify these historical wrongs by improving access to and the quality of services, particularly in underserved communities and among vulnerable groups, including children and individuals with disabilities. The 1996 Bill of Rights enshrines the rights of citizens to essential services such as healthcare, housing, education, water, and more (Ajam & Engela, 2010). Moreover, the 1996 constitution established distinct spheres of government to ensure that various entities took responsibility for different government functions. These spheres encompassed the national government for policymaking at the national level, provincial and local governments for managing education and healthcare services, and municipal governments responsible for local governance and service delivery. This multifaceted approach addressed the complex challenges stemming from Apartheid's historical injustices.

South Africa has nine provinces, each with its own Legislature, Premier, and Executive Council (Government of South Africa, 2021). South Africa has a population estimated

to be 60,14 million at mid-year 2021, as reported by (Stats SA, 2021). The government requires adequate and functional tools to ensure service delivery to its people. According to a survey by Afrobarometer published in 2017, half or more of South Africans said municipalities performed "fairly badly" or "very badly" in maintaining roads (56%), maintaining marketplaces (55%), managing land use (54%), and maintaining health standards (50%). Local governments scored slightly better on keeping communities clean (52% said this was handled "fairly well" or "very well") (Nkomo, 2017).

Some projects necessitate donor assistance to facilitate the government in fulfilling its duty to serve its citizens. South Africa boasts an estimated 200,000 Non-Governmental Organizations (NGOs), a number that continues to surge, with contributing factors being high unemployment rates, economic downturns, and challenges in delivering essential services (Radebe & Nkonyeni, 2020).

Furthermore, recent developments on the international stage have shown promising support for South Africa's initiatives. During the COP26 conference, South Africa garnered a substantial $8.5 billion commitment from the International Partners Group (IPG) dedicated to aiding the nation's energy transition. Additionally, South Africa secured further funding of approximately R800 million from the United States through the Power Africa initiative, which actively enhances energy accessibility within South Africa (Omarjee, 2022). These commitments represent a significant step towards addressing critical issues facing the country.

1.1.2 Monitoring and evaluation systems in South Africa

South Africa is one African nation that has actively embraced comprehensive monitoring and evaluation systems development. This commitment to monitoring and evaluation was set in motion when the recommendation from the President's office for an implementation plan to establish such a system was endorsed by the South African Cabinet in 2005, as documented by (Ajam & Engela, 2010). The proposal laid out a clear framework, encompassing functions like monitoring, verification, evaluation, data collection, analysis, early warning indicators, and reporting procedures. It underscored the imperative for integrating monitoring and evaluation into all implementation plans. Transparency in government has historically been a challenging endeavor, often met with resistance, and this initiative faced a lull in momentum for about a year following the initial recommendations from the President's office. However, it gained renewed commitment after the elections in 2009, ultimately leading to the establishment of the

Department of Planning, Monitoring, and Evaluation (DPME) in 2010, as detailed by (B. Smith, 2019). The DPME's central mandate revolves around the continuous enhancement of service delivery, marking a pivotal step towards greater accountability and effectiveness in governance.

In 2011, the South African government took a significant step forward by promulgating the National Evaluation Policy Framework. This framework laid the groundwork for a comprehensive plan of evaluations aimed at facilitating learning and enhancing the overall impact and effectiveness of government initiatives. Subsequently, this evaluation system was systematically integrated into national and sub-national planning processes, reflecting a commitment to data-driven decision-making. However, despite these efforts, the Department of Planning, Monitoring, and Evaluation (DPME) encountered several challenges since its inception. One of the primary hurdles was the quality of data collected from various government departments, which often fell short of the required standards, rendering many initial evaluations less effective. In addition to data quality issues, challenges included a lack of a compliance culture, redundant reporting practices across departments, and a deficiency in robust Theories of Change to underpin the Monitoring and Evaluation processes. These experiences have taught the DPME a valuable lesson: the vital importance of securing political support and commitment for the successful functioning of a national Monitoring and Evaluation system, as emphasized by (Ajam & Engela, 2010).

1.1.3 Donor-driven Monitoring and Evaluation Systems in South Africa

There is a lack of evidence suggesting that donor-supported projects did not exist before 1994. but donor projects increased significantly after 1994. Studies show that the first evidence of evaluation activities in South Africa is found in NGOs. NGOs have become active reformers of government institutions, promoting accountability and assisting with establishing political organizations aligned with indigenous values (Fowler, 1993).

The more South Africa opened itself to the outside world, the more the government had to be accountable. Accountability can be external, usually from donors, or internal, when the organization takes responsibility for its actions. South Africa's intentions of accountability grew in the 1990s primarily due to the external forces of NGOs. Most NGOs work with donor countries/agencies that provide financial assistance. Countries/agencies like the USA (USAID), Germany, Denmark, European

Union (EU), Norway, Japan, and Sweden after 1994 provided financial assistance to South Africa(B. Smith, 2019). Most funding was to support the Reconstruction and Development Programme (RDP), established to address socio-economic problems before 1994 during Apartheid. Other areas that received funding were Education, HIV/AIDS capacity building, and research. The World Bank provided a loan of US$80 million for poverty alleviation and public sector capacity building (Bratton & Landsberg, 1999).

Private foreign donor funders such as Kellogg's, Bill and Melinda Gates Foundation, and the Ford Foundation, etc., also partnered with the government, providing funding that amounts to R615 million. In 2004, about 60 faith-based foundations, 70 foreign-based private foundations, and NGOs were active in South Africa (Ewing, 2020). Their efforts mainly supported democracy, transformation, and economic rebuilding initiatives.

The local private sector is another donor contributing to and funding projects in South Africa. In 2002, South Africa was the country that received the most significant single amount from the private and corporate sectors, R2.2 billion, with the most considerable portion going to the education sector (Mouton & Mouton, 2010).

Accountability provided a foundation for creativity and flexibility before 1994 (Bratton & Landsberg, 1999). There were few requirements; mainly, only an audit and an annual report were adequate. Because of corruption and poor service delivery, donors' funding comes with "strings attached." Stipulated guidelines and procedures are required to be eligible for more funding. Amidst the prevailing power challenges in South Africa, President Cyril Ramaphosa was officially handed R1.5 trillion through the IPG at COP27 (Omarjee, 2022). The management of these funds will be managed through channels chosen by the donor, which include the Power Africa Program.

According to the Power Africa Toolbox, the Power Africa donor-driven system comprises two crucial components: the Power Africa Information System (PAIS) and the Power Africa Tracking Tool (PATT) (USAID.GOV, 2021b). The PAIS system is a comprehensive reporting platform housing the Monitoring and Evaluation (M&E) indicators and results of Power Africa initiatives. It functions as a centralized web-based system utilized by all implementing mechanisms involved in program execution. Implementing partners rely on PAIS to report their indicators and submit their M&E plans.

On the other hand, the PATT is a specialized tool employed by Power Africa to track all projects across sub-Saharan Africa meticulously. This tool is actively used by project managers stationed on the ground, enabling them to record project details and updates directly into the system. PATT effectively monitors various aspects such as power generation and transmission projects, partnership information, and overall project engagements. It stands as an indispensable resource for Power Africa operations.

Together, these two systems constitute what is known as the Power Africa Donor-funded Monitoring and Evaluation System (USAID.GOV, 2021b). They play a pivotal role in facilitating efficient project management, monitoring progress, and ensuring accountability within the Power Africa initiative of achieving 60 million connects and 30 000 MW by 2030.

1.1.4 Power Africa Program in South Africa

Power Africa is a program initiated in 2014 by the US government to improve energy access in Africa, including South Africa. The Power Africa headquarters is situated in Pretoria, South Africa. Power Africa aims to bring about 60 million new connections and about 30,000 MW of new and cleaner energy in Sub-Saharan Africa by 2030. Power Africa seeks to achieve this by working with experts, the private sector, and governments, including South Africa, to increase the number of people with access to power (USAID.GOV, 2021b). Power Africa is working with the Southern Africa Energy Program to help South Africa increase and stabilize power generation and access (USAID.GOV, 2021a). According to World Bank data, South Africa's access to electricity increased from about 57% in 1994 to about 87% in 2019 (World Bank, 2022). As discussed During COP27, South Africa is now working on stabilising access and moving to clean energy (Omarjee, 2022).

To date, Power Africa supports over 60 projects in different technologies, including Solar, Wind, Hydro, Natural gas, Biomass, and Energy Efficiency in South Africa. Twenty-five projects are operational and contribute to the grid (USAID.GOV, 2021b).

According to Power Africa (USAID.GOV, 2021b), Power Africa employs a transaction-centered model to address obstacles in energy project development and investment in sub-Saharan Africa. This approach focuses on expediting energy project transactions while driving policy reform, aiming to avoid lengthy processes typically

associated with creating an investment-friendly environment. Power Africa provides resources such as interagency teams and field-based Transaction Advisors to facilitate project transactions and support governments in efficiently prioritising and implementing power projects.

The Power Africa guideline lits the major milestone and one key milestone in Power Africa's approach is reaching financial close, which signifies the commitment of financing for a project. This milestone is crucial for measuring short-term impact and overcoming barriers to investment. Power Africa intervenes to accelerate financial close by enhancing project bankability, providing technical and transaction support, and ensuring adherence to best practices and developmental considerations. Achieving financial close requires demonstrating project feasibility, commercial viability, and mitigation of significant project risks.

Additionally, Power Africa collaborates with governments to create a conducive regulatory environment for investments and ensure projects have sustainable development impacts beyond financial closure. In South Africa the Southern Africa Energy Program (SAEP) was launched by Power Africa to specifically look at efforts in Southern Africa, including South Africa, with a mandate of helping Southern Africa increase power generation and access while promoting investment in the energy sector (USAID.GOV, 2021a).

1.2 Research conceptualisation: Towards assessing the factors influencing the performance of Power Africa donor-driven monitoring and evaluation systems in South Africa.

1.2.1 The research problem statement

Traditionally, Monitoring and Evaluation systems have been paper-based systems. According to recent studies, paper-based systems are susceptible to numerous errors due to their reliance on manual processes. From the information from Donors, collecting data, gathering it, analysing it, and sending it back to the donors is inefficient and prone to many errors (E. Smith, 2019).

Other studies have shown how Monitoring and Evaluation systems are undergoing a revolution in data collection and analysis (The Rockefeller Foundation,

2014). According to the Rockefeller Foundation, the Covid-19 response has underscored the critical role of technology and innovation, which will remain pivotal in averting future pandemics. The Rockefeller Foundation, as a scientific philanthropy, actively backs initiatives aimed at harnessing technology to prevent and mitigate the impact of infectious diseases. One key focus is supporting organizations in developing data science platforms and tools, both locally and globally. These platforms leverage various technological advancements, such as statistical modeling, algorithms, artificial intelligence, and publicly available data. By analyzing these data streams, they can effectively identify early signals of emerging outbreaks and understand disease transmission patterns. This proactive approach enables health authorities to swiftly respond to epidemics and implement targeted interventions, ultimately curbing the spread of infectious diseases.

Through its support, The Rockefeller Foundation aims to empower organizations to build robust systems capable of real-time monitoring and analysing epidemiological data. These efforts contribute significantly to global health security and resilience against future pandemics by strengthening the capacity for early detection and response.

There have been so many M&E systems developments to try and address some of the challenges. Emergent ICT tools and applications may help address some overarching M&E challenges in the broader development space while simultaneously contributing to overcoming real-world and methodological difficulties (Raftree & Bamberger, n.d.).

Technology is used more in M&E work (E. Smith, 2019). We have seen this Since COVID began, where technology is used more especially for data collection and analysis. An increasing number of applications are being developed to aid traditional data collection and analysis methods as mentioned above according to the Rockefeller Foundation.

There is also a concern about ownership of the system and data. A system owned by users generates reliable and valid information (Gebremedhin et al., 2010). A system must establish clear responsibilities, roles, and political lines of authority. (Kusek & Rist, 2004).

There has been a challenge in ensuring that the NGO has the necessary competence to use and analyse the information from its Monitoring and Evaluation systems (Britton, 2009). NGOs face challenges as some cannot employ skilled professionals (Radebe & Nkonyeni, 2020).

The traditional M&E activities focus more on accountability and donors and their achievements with the funds provided. There is a suggestion that the digital world has changed this to more than just adherence. Organizations are now empowered and have moved beyond data collection to data analysis and have more insights that help decision-making about the programs (Hoang, 2022).

The data collected should be limited to only what is intended for use. However, a challenge arises when project managers end up with data that serves no purpose. (Kusek & Rist, 2004).

Another problem experienced is that in some instances, the NGOs will have adequate and functional M&E tools but lack participation from stakeholders who will see it as a watchdog or a device that exposes the lack of service delivery (Radebe & Nkonyeni, 2020).

Therefore, based on the studies presented in the literature, there is a need to examine the factors influencing the performance of a donor-driven Monitoring and evaluation system. Perhaps as articulated by the DPME, It is essential to change the predominant culture in the public service of a fear of doing things differently (B. Smith, 2019). There might be a need to do things differently.

1.2.2 The research purpose (aim and objectives) statement

The study aimed to examine the factors influencing the performance of Power Africa's Donor-driven monitoring and evaluation system in South Africa.

The objectives were as follows:

- To establish how the evolution of technology influences the performance of an M&E system.
- To determine how data quality affects the performance of an M&E system.
- To determine how human capital influences the performance of an M&E system.
- To determine how stakeholder participation influences the performance of an M&E system.

1.2.3 The research questions, as well as accompanying hypotheses or propositions

1.2.3.1 How does the evolution of technology influence the performance of the M&E system?

Null hypothesis: There is no relationship between the evolution of technology and M&E system performance.

Alternative hypothesis: There is a relationship between the evolution of technology and M&E system performance.

Proposition: There is a relationship between the evolution of technology and M&E system performance.

1.2.3.2 How has human capital influenced the performance of the system over time?

Null hypothesis: There is no association between human capital and M&E system performance.

Alternative hypothesis: There is an association between human capital and M&E system performance.

Proposition: There is an association between human capital and M&E system performance.

1.2.3.3 How does data quality influence the performance of an M&E system?

Null hypothesis: There is no relationship between data quality and M&E system performance.

Alternative hypothesis: There is a relationship between data quality and system performance.

Proposition: There is a relationship between data quality and M&E system performance

1.2.3.4 How does stakeholder participation influence the performance of an M&E system?

Null hypothesis: There is no relationship between stakeholder participation and M&E system performance.

Alternative hypothesis: There is a relationship between stakeholder participation and M&E system performance.

Proposition: **There is a relationship between stakeholder participation and M&E system performance**

1.3 Delimitations of the research

In the context of South Africa's extensive landscape of over 200,000 Non-Governmental Organizations (NGOs), this study was specifically focused on investigating the factors that influence the performance of the donor-driven monitoring and evaluation system implemented by Power Africa within the country. The overarching goal of the Power Africa program is to revolutionize energy access in Africa by adding 30,000 Megawatts of new and cleaner energy capacity and connecting

60 million people to electricity by the year 2030. Currently, the program supports 63 power projects distributed across all provinces in South Africa. Such a monumental endeavor demands a consistent and rigorous assessment and tracking of programs to ensure their feasibility and effectiveness. The success of any program, especially one of this scale, relies heavily on a robust and functional system for project tracking, as Nyonje et al. (2012) underscored. It's important to note that this study was explicitly confined to examining the performance of the USAID-funded Power Africa Programme.

1.4 Justification of the research

The justification for this research is further reinforced by the widespread recognition that donor-driven Monitoring and Evaluation (M&E) systems present a formidable global, regional, and local challenge, as highlighted by (Fowler, 1993). The complexity and inherent difficulties associated with these systems necessitate a thorough investigation into the factors that contribute to their effectiveness and efficiency. An alarming statistic from a 2012 survey conducted by McKinsey serves as a stark reminder of this inquiry's critical nature: only 36% of funded projects, such as the Power Africa Program, achieve success. This report underscores the high level of risk associated with such projects and the many factors that influence their outcomes, extending far beyond the control of the implementers, as noted by (Hekala, 2012). Given the substantial investments and significant developmental goals tied to donor-driven initiatives like Power Africa, gaining deeper insights into the elements that can enhance their success and impact is imperative, making this research all the more relevant and necessary.

This research gains further importance in the context of South Africa's historical challenges with poor service delivery. In a nation striving for development, the success of programs like the Power Africa Program becomes imperative, given their potential to address pressing socio-economic issues. These initiatives typically involve many stakeholders and often operate under close government scrutiny due to their significance. Therefore, understanding and enhancing such programs' performance is paramount, underscoring the relevance of this study.

The outcomes and recommendations derived from this research endeavor are poised to offer valuable insights to various stakeholders, including donors, program managers, and educators. By shedding light on the key factors that impact the effectiveness of Monitoring and Evaluation systems, this study can guide decision-makers in designing

and implementing more efficient and impactful initiatives. Additionally, this research aims to contribute to the broader body of knowledge concerning the factors that influence the performance of donor-driven Monitoring and Evaluation systems. In doing so, it serves as a foundational resource for future research in this domain, providing a platform for scholars and practitioners who intend to delve deeper into this critical area of study. While Monitoring and Evaluation practices are not new in South Africa, ensuring that these systems are not just in place but also functional, beneficial, and capable of yielding desired outcomes is an ongoing imperative for the nation's development efforts.

1.5 Preface to the research report

To this end, the report has six chapters. Following this introductory chapter 1, Chapter 2 explores the literature that underpins the research title, covering the problem, the past studies, the explanatory framework, and the conceptual framework. Chapter 3 discusses the research strategy, design, procedures, reliability and validity measures, and limitations. Chapter 4 and Chapter 5 present and discuss the findings, respectively, to interrogate our research questions, while Chapter 6 summarises and concludes the research.

2 REVIEWING LITERATURE TO DERIVE THE CONCEPTUAL FRAMEWORK

This chapter encompasses four overarching aims: firstly, to gain insight into the research problem (covered in Sections 2.1 and 2.2); secondly, to pinpoint the existing knowledge gap (discussed in Section 2.3); thirdly, to construct a theoretical framework for interpreting the research findings (comprising Sections 2.4, 2.5, and 2.6); and lastly, to formulate the research approach (elaborated in Section 2.7). To be more specific, Section 2.1 provides a concise overview of the research context in preparation for the subsequent Section 2.2, which delves into a detailed exploration of the research problem.

2.1 The history and description of South Africa

South Africa has nine provinces, each with its own Legislature, Premier, and Executive Council (Government of South Africa, 2021). South Africa has a population estimated to be 60,14 million at mid-year 2021, as reported by (Stats SA, 2021). South Africa has an estimated 200,000 Non-Governmental Organisations (NGOs), which continues to increase. One reason for growth is unemployment, economic recession, and poor service delivery (Radebe & Nkonyeni, 2020).

NGOs have played a significant role in South Africa's history, especially during the apartheid era and after. Organizations such as the South African Council of Churches and the African National Congress played an essential role in the struggle against Apartheid and were at the forefront of this resistance (Mackie, 1980). Post-Apartheid NGOs also played a significant role in the country's reconstruction and development efforts, with many NGOs mainly focussing on issues to do with poverty alleviation, education, social justice, and healthcare (Bhattacharya, 2011).

NGOs also played a significant role in assisting with the HIV crisis that the new democratic South Africa faced. According to the Centre for Disease Control and Prevention, HIV and Aids are one of the challenges faced by South Africa. South Africa has one of the highest numbers of infected adults and children globally, with 5.7 million citizens infected with HIV(CDC Global Health, 2019). NGOs such as the Treatment Action Campaign (TAC) played a significant role in advocating for access to treatment and raising awareness about the disease. TAC was founded in 1998 to campaign for access to AIDS treatment and is widely acknowledged as one of the most

important civil society organisations active on AIDS in the developing world (TAC, 2021).

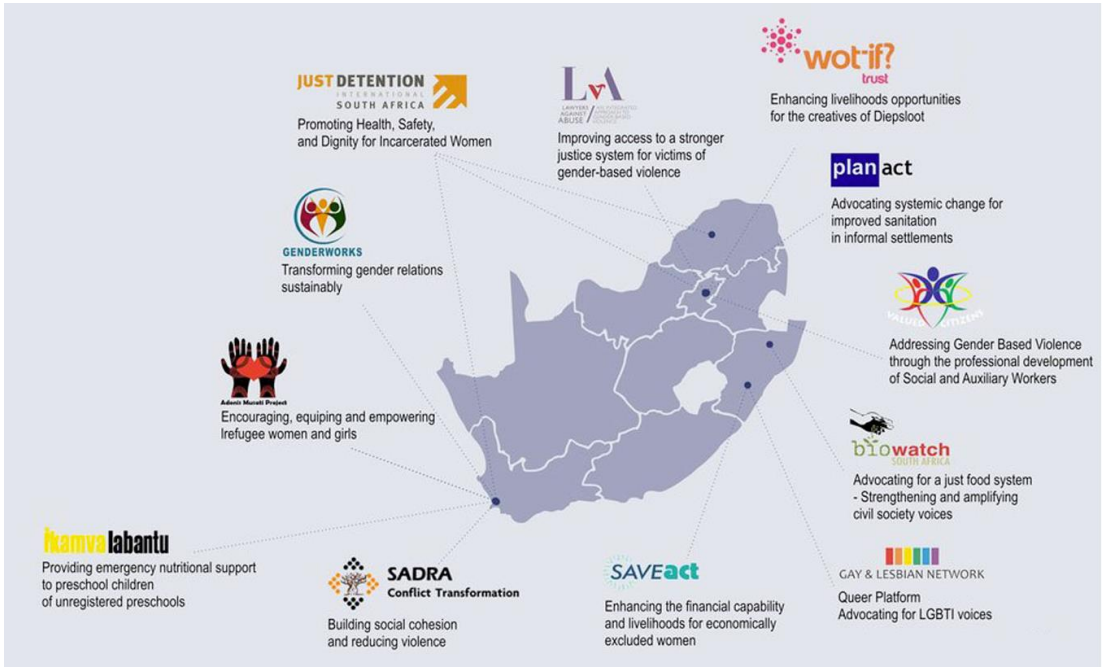
Numerous NGOs play a significant role in the environmental and conservation efforts to protect South Africa's diverse ecosystems. NGOs like the Endangered Wildlife Trust and the World Wide Fund for Nature (WWF) have been active in conservation efforts (WWF, 2023).

Another focus of NGOs in South Africa is community development and empowerment, and various NGOs continue working at the grassroots level to empower marginalised communities through skills development, education, and community-based initiatives. Organisations such as the Freedom House have launched various programs such as the Civic Education and Participation in South Africa that seeks to ensure that South African citizens have knowledge of their constitutional rights and that have been awarded platforms and tools so that they can engage meaningfully in the political process (Freedom House, 2022).

Other NGOs focus on women's gender equality with an interest in promoting gender equality and addressing issues such as gender-based violence. Other NGOs focus on humanitarian relief, such as the Gift of the Givers, providing humanitarian assistance during crises. Another area is research and policy advocacy, where think tanks and research-oriented NGOs have contributed to policy development and reconciliation efforts. The Institute for Justice and Reconciliation is an example of such an NGO.

Developed countries such as the United States and France also support civil society organisations in South Africa. In 2019, the Embassy of France to South Africa supported the work of 12 South African civil society organisations to strengthen social cohesion, human rights, and democratic governance (Institut Francais, 2023).

Fig 1: Civil Society Development Fund: Mapping of projects supported in 2019-20



Source (Institut Francais, 2023)

2.1.1 The Power Africa Program in South Africa

In 2014, the United States government launched Power Africa, a program to enhance energy accessibility across Africa, encompassing South Africa within its scope. The program's central hub is in Pretoria, South Africa, and its overarching objectives are to facilitate 60 million connections and the installation of 30,000 megawatts of new clean energy in Sub-Saharan Africa (USAID, 2021). The Southern Africa Energy Program (SAEP) was launched by Power Africa to specifically look at efforts in Southern Africa, including South Africa, with a mandate of helping Southern Africa increase power generation and access while promoting investment in the energy sector (USAID.GOV, 2021a).

SAEP receives funding from the United States Agency for International Development (USAID) as part of its commitment to advancing the U.S. Government's Power Africa initiative. Power Africa is a collaborative effort involving 12 U.S. Government agencies, over 145 private companies, and 18 bilateral and multilateral development partners, all working together to assist sub-Saharan African governments in expanding access to electricity (USAID.GOV, 2021a).

SAEP works with utilities, transmission and distribution companies, national ministries, the private sector, and regulators, as depicted in Fig 2

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2.2 The Monitoring and evaluation systems in South Africa

South Africa's history with Monitoring and Evaluation (M&E) systems has progressed meaningfully over the years, driven by the country's changeover from Apartheid to democracy and its ongoing development challenges. As discussed in the introduction, Apartheid created a lot of injustice and segregation, especially in delivering public services. As it is today with the current government, the newly democratic elected government of 1994 had immense pressure to correct these injustices by ensuring access to and good service delivery to previously underserved vulnerable groups, such as people with disabilities, children, and communities. All citizens have rights to health care, housing, education, water, and other necessities (Ajam & Engela, 2010). The constitution of 1996 created spheres of government to ensure that all government functions were performed. These included national government for national policymaking, provincial/local government for education and health services, and municipal governments.

South Africa has nine provinces, each with its own Legislature, Premier, and Executive Council (Government of South Africa, 2021). With a population estimated to be 60,14 million at mid-year 2021, as reported by (Stats SA, 2021), it is clear that the government requires adequate and functional tools to ensure service delivery to its people. Some projects need donor assistance to ensure that the government achieves its mandate of serving its people. As discussed in the introduction, there are an estimated 200,000 NGOs in South Africa, which continues to increase. One reason for growth is

unemployment, economic recession, and poor service delivery (Radebe & Nkonyeni, 2020).

South Africa's history with M&E systems has evolved over the years. During the apartheid era (1948-1994), the government enforced racial segregation and discrimination policies. The government at that time was known for limiting transparency and suppressing information in its operations (Heintz, 2007).

As discussed earlier, 1994 marked the end of Apartheid in South Africa. President Nelson Mandela and his government had immense pressure and faced the monumental task of resisting the policies they had inherited and addressing historical injustices. The government recognised the need for transparent and accountable governance (The Presidency, 2007).

The primary obstacle faced by the government was the redistribution of land, given the displacement of many South Africans under the previous regime. Consequently, the inaugural monitoring and evaluation unit with the newly established government department in South Africa emerged with the National Department of Land Affairs. This department underwent reform in 1994, introducing new land policies and programs (Naidoo & General, 2016).

The initial three years (1995-1998) following the government's establishment of the monitoring and evaluation unit were dedicated to activities such as staff recruitment, capacity building, and the establishment of systems to generate reliable data concerning the land reform program. This was imperative because, during that period, there was no unified land reform system within the institution, necessitating the development of parallel information systems.

In order to provide a comprehensive approach to evaluation in the country, the National Evaluation Policy Framework was promulgated in 2011. This was to improve and standardise the quality of evaluations across government departments and programs (National Treasury 2011).

Even though there have been efforts to enhance monitoring and evaluation systems, many challenges have been faced by South Africa. Data quality has been an issue, there has been duplication of reporting across departments, and the need for more effective theories of change to underpin monitoring and evaluation efforts (Ajam & Engela, 2010)

The Department of Planning, Monitoring, and Evaluation (DPME) was established by the government in 2010 to coordinate and oversee the monitoring and evaluation

efforts at the national level. The Department of Planning, Monitoring, and Evaluation is essential in advancing the government's actions and commitments to improving service delivery and accountability (Government of South Africa, 2021). The Department of Monitoring and Evaluation has worked to build capacity to undertake evaluations by providing a wide range of support, including guidelines, training, and standards. Standards for the quality of evaluations have also been established, as well as guidelines on how to conduct evaluation systems, competencies quality assessments, communication elements, and various capacity development elements(B. Smith, 2019)

It is evident that there have been ongoing efforts to refine monitoring and evaluation systems and practices to address the country's needs. There have been efforts to ensure that monitoring and evaluation systems are functional, practical, and aligned with national development goals.

2.2.1 Root causes of the ineffectiveness of a donor-driven monitoring and evaluation system

The effectiveness of a donor-driven monitoring and evaluation system is crucial for assessing the impact, progress, and outcomes of projects and programs. The ineffectiveness of a monitoring and evaluation system can be attributed to several root causes. Khan (2003) attributes the success of any monitoring and evaluation system to its structure, implying that an organisation or a monitoring and evaluation system with no structure is a root cause of the effectiveness of a system. Kusek & Rist, (2004) adds to this notion that another root cause is the lack of establishing clear responsibilities, clear roles, and political lines of authority. Suppose the purpose of the system and objectives are not clearly defined and aligned with the goals and strategies of the organisation. In that case, it is most likely to cause ineffectiveness and confusion.

Resistance to change, especially to adopt new monitoring and evaluation processes or technologies, can impede the development of an effective system. According to the Rockefeller Foundation (2014), technology use is critical for an M&E system to be successful. Lack of technology implementation is a significant root cause of the failure of a monitoring and evaluation system.

According to Britton, (2009) lack of necessary competencies to use and analyse information from its monitoring and evaluation system is also a pointer to the ineffectiveness of a system.

Data collected should be limited to only what is intended to be used; incomplete or inaccurate data can undermine the usefulness and credibility of the system. Data quality

issues are because of poor data collection methods, data entry errors, and lack of validation processes.

Radebe & Nkonyeni, (2020) attributes the lack of stakeholder engagement to the failure of a system. Key stakeholders, such as beneficiaries if not involved in the initial stages and implementation of the monitoring and evaluation system, can result in the system not meeting the intended needs and expectations.

2.2.2 Symptoms.

This section briefly discusses the symptoms of an ineffective monitoring and evaluation system. Identifying symptoms is paramount for an organisation to address the underlying issues and improve its monitoring and evaluation processes. According to Gebremedhin et al., (2010), a symptom is a lack of structure and business processes in place or a system being used merely for adherence or as a requirement. A system owned by users generates more reliable and valid information than a system not owned by users.

The lack of technology in gathering data, analysis, reporting, and adopting new monitoring and evaluation processes can impede the effectiveness of a system. Paper-based M&E systems involve capturing data in Excel and sending copies of reports back to donors. NGOs face challenges as some cannot employ skilled professionals (Radebe & Nkonyeni, 2020). However, a challenge arises when project managers end up with data that serves no purpose. (Kusek & Rist, 2004).

2.2.3 Consequences

According to an article by E. Smith, (2019), the absence of a clear structure can lead to misperception, inefficiency, and lack of soundness in data collection, reporting, and analysis. Gebremedhin et al., (2010) highlight that a system not owned by users will not generate reliable and valid information. This affects the credibility, soundness, and accuracy of data collected.

Kusek & Rist, (2004) argues that it is a waste of resources to collect data that serves no purpose, as managers end up with data not for use. The resistance to change can impede the system's effectiveness and hinder the ability to adapt to the organisation's changing needs (E. Smith, 2019).

2.2.4 Interventions to enhance the effectiveness of donor-driven M&E system.

Several vital interventions are required to implement donor-driven monitoring and evaluation systems effectively. It is essential to align strategies with donors' expectations, as most monitoring and evaluation systems are donor-driven. One of the interventions is to ensure that a functional monitoring tool is utilised. This tool ensures that activities are implemented as planned (Bartle, 2007). The most important aspect covered by monitoring is feedback to the relevant parties, including donors and beneficiaries of the project. According to (Khan, (2003), this feedback is vital to improve future decisions.

On the other hand, evaluation involves systematically collecting and analysing data needed to make decisions (Kusek & Rist, 2004). Evaluation helps measure the reliability and effectiveness of projects and influences future projects. All projects must have adequate resources to be successful. According to Bartle, (2007), projects are a series of activities completed to solve a particular problem within a given period.

Projects have several stages, and monitoring takes place at the project's initiation, integrating all the project stages (Bartle, 2007). Monitoring and evaluation systems for donor-driven projects should be dynamic, evolving, reflective, and participative (L. Kelly & Roche, 2008).

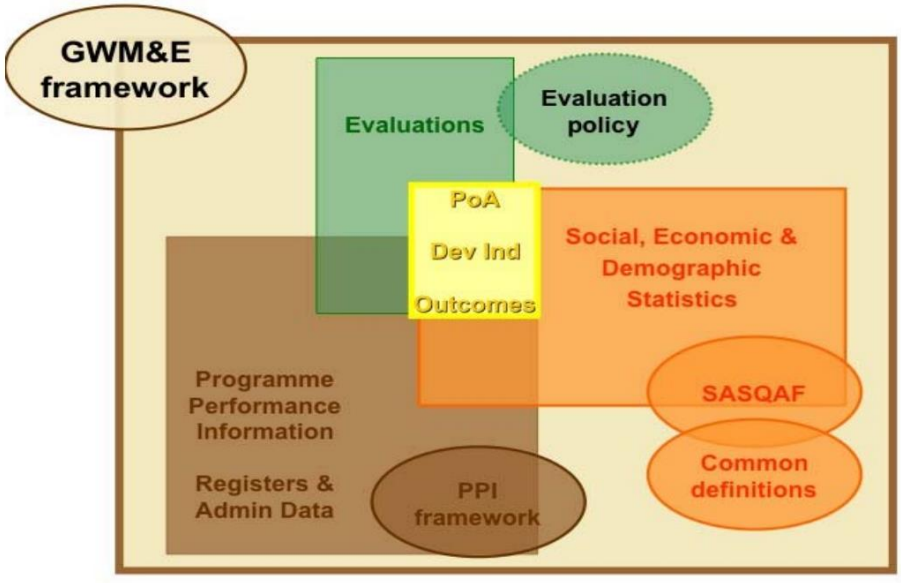
Monitoring and evaluation are integral to initiating the project or project design. It is critical for the actual implementation and key for the completion (Nyonje et al., 2012). Any project requires a functional M&E system to succeed, regardless of magnitude. An operating M&E system enables project stakeholders to monitor progress, measure outcomes, and learn from how the project evolves. Any deviations or mistakes are identified on time, and measures are taken (Kusek & Rist, 2004). According to Lopez-Acevedo et al., (2012) a monitoring and evaluation system is not a standalone product, but the information it produces significantly improves performance.

Khan, (2003) attributes the success of any system to relying heavily on its structure and that a system with a well-defined structure will produce rigor, credible, and objective information. Planning is also crucial; stakeholders should be involved in every project step. According to Kusek & Rist, (2004) clear responsibilities, clear roles and political lines of authority must be established (Kusek & Rist, 2004). Technology use is also critical for an M&E system to be successful (The Rockefeller Foundation, 2014). The system's users must be well-trained and equipped to use the system, and structural support is needed; dedicated units should be in place to deal with the needs of those involved.

Most importantly, the system must be able to speak to the organization's values and norms and align with the organizational strategy. There is a need for a framework with key elements that should underpin establishing a donor-driven monitoring and evaluation system. The existence of a monitoring and evaluation policy that informs all the actions undertaken is the first element of this framework (Goldman et al., 2019). According to a framework proposed by Holvoet & Renard, (2007) a clear organisational structure should be put in place as it is crucial in advocating, championing, implementing, and ensuring the use of monitoring and evaluation information for decision making.

In South Africa, the government adopted a government-wide Monitoring System in 2005 to promote Monitoring, Evaluation, data collection, and analysis. The government identified three areas that would contribute to Monitoring and Evaluation in government (Ajam & Engela, 2010). These areas included program performance information and social, economic, and demographic evaluations. The components of the South African government-wide Monitoring and Evaluation framework are depicted below:

Figure 3: Components of the South African GWM&E Framework (Source (Ajam & Engela, 2010)



Covid has played a significant role in modernising Monitoring and Evaluation. Technology has also been evolving in M&E. Budget allocations have grown to be results-based, and more systems are being developed to assist with data collection and

analysis. There is so much information and literature on M&E. The South African Monitoring and Evaluation Association (SAMEA) was born to bridge the competence gap by providing a platform where M&E is seen as a profession (SAMEA, 2022). Systems have been implemented, but little is written on the factors influencing the performance of the systems. More and more applications are being developed to assist the traditional way of collecting and analysing data. Organisations such as SAMEA are showcasing some of these innovations. Technology is used more in M&E work (E. Smith, 2019).This is because the traditional M&E is much more paper-based and prone to many errors as it is more of a manual process. From the information from Donors, collecting data, gathering it, analysing it, and sending it back to the donors. This process is inefficient and prone to many errors (E. Smith, 2019).

The traditional M&E activities focus more on accountability and donors and what they have achieved with the funds provided. The digital world has changed this to more than just adherence, organizations are now empowered and have moved beyond data collection to data analysis and have more insights that help with decision-making about the programs (Hoang, 2022). Moving from paper-based M&E to adopting digital technologies, according to Hoang's article 'The impact of digital technologies' has many benefits: it increases learning opportunities, is cost-effective, and is more efficient. It is also argued that it's time to go digital in the M&E field. The digitization of the Monitoring and evaluation system allows data to be collected and updated in real-time (E. Smith, 2019). Technology reduces costs in development programs, increases accuracy as reading or entering errors are minimised, opens the potential of collecting richer data as data can be collected in multiple formats, there is a greater outreach as data can be shared and collected virtually, and there are better insights as there are now more visualizations geospatial mapping and analytics (Nanda, 2017).

Data collection methods are crucial to ensuring that data collected is useful and collected timely. The most traditional methods of collecting data include interviews, questionnaires, and observations. In M&E, project managers develop indicators that are then used to monitor outcomes and help project managers to assess how the desired results are achieved (Kusek & Rist, 2004). Data must be accurate, credible, and timely. If data is not collected timely, there are chances that critical decisions that need to be made will be missed (Gebremedhin et al., 2010). Data needs to be collected accurately and routinely to be appropriately analysed. A system that users own generates reliable and valid information (Gebremedhin et al., 2010). Data collected should also be only

the data that is intended to be used. There is a challenge that project managers end up having data that is not useful (Kusek & Rist, 2004).

Another intervention is to ensure that adequate and knowledgeable resources are used to execute the functions. Understanding the skills required and the capacity involved in the Monitoring and evaluation system is essential. Assessing human capacity and capacity building is critical for an M&E system (Kusek & Rist, 2004). You can have a lot of resources, but if they are not adequately trained and do not have the skills and resources to perform their duties, the M&E system will be useless. It is also essential to understand that capacity building is not a once-off but an ongoing activity as policies change technology, hence a need for upskilling skills. Training can also be used as a time to learn from others. According to Shapiro (2011), an equipped team performs well in planning and reporting on their projects, and managers must know their team's competence. The more prepared and knowledgeable the team is, the more likely they will perform their duties well, saving time and costs.

Finally, stakeholders' involvement and participation are critical to the success of any system. Stakeholders are all those parties interested in the project or program at hand. They can either affect or be affected by the project. Stakeholders include Staff, project managers, the community, donors, decision-makers, and even the government (Radebe & Nkonyeni, 2020). Engaging all stakeholders in the project's early stages and attracting all interested and political participants is essential. This is very key to the success of any project (Jones et al., 2009). Power Africa has established formal partnerships with key stakeholders, including Private Sector Partners, development partners, multilateral partners, and governments. These engagements are critical for them to reach 60 million connections and 30,000 MW (USAID.GOV, 2021).

2.3 Methods, data, findings, and conclusions of studies on factors influencing the performance of donor-driven monitoring and evaluation systems in South Africa.

This section discusses the methods, data, findings, and conclusions of studies on donor-driven monitoring and evaluation systems. The aim is to determine the outcomes and methods of researching issues of donor-driven M&E systems in previous studies for South Africa and other countries. The study begins by sourcing data that interrogates 2.3.1 qualitative research studies on the factors influencing the performance of M&E systems conducted in South Africa and other countries.

Lastly, it sources data focusing on 2.3.2 quantitative studies that study the factors influencing the performance of M&E systems conducted in South Africa and other countries. These sources guide the understanding of the study concerning the two research methods. The research uses studies that date from five years to ten years and other studies that are out of the year range to understand the elements of the current study.

There have been few qualitative research studies on this topic, as monitoring and evaluation primarily develop specific, measurable, achievable, reliable, and time-bound indicators. Woodhill, (2005), however, argues that qualitative information is required for explanation, analysis, and sound decision-making. A study by Kambuwa and Wallis (2002) showed that in most African states, there is a growing gap between government policies and project implementations. This finding suggests that the politics and the policies of the government influence systems. Regarding Zimbabwe, a shift in policies occurred following the 2017 military – assisted government change, where projects and programs were predominantly influenced by the new administrations mantra of ' Zimbabwe is open for Business.' This is supported by Weiss (1993) study, which showed that setting up a national monitoring and evaluation system is a rational enterprise within the political context. In the case of South Africa, Goldman et al., (2019) identified the challenge of M&E expertise with government departments in South Africa, where M&E was not seen as a priority.

Politics is an inherent aspect of government, influencing not only the establishment of government institutions and structures but also the selection of individuals to oversee these structures and institutions. As Weiss, (1993) contends, the creation of a national Monitoring and Evaluation (M&E) system is a "rational endeavor

taking place within a political backdrop." As a result, all stakeholders participating in the institutionalisation process must understand how political considerations can impact this process.

In light of this, Kusek & Rist, (2004) advocate for the involvement of "resilient and consistently principled political leadership" with a genuine commitment to harnessing the advantages of instituting a national M&E system. This point is reinforced by Crawley, (2017) who emphasizes that establishing a national M&E system hinges on the capacity to identify and garner support from political champions within the political sphere, capable of challenging vested interests and facilitating the introduction of M&E systems.

Goldman et al., (2019) offer a thorough and insightful guide, complete with visual representation, highlighting the essential components for developing Monitoring and Evaluation (M&E) systems in Africa. Central to their argument in support of this framework is the importance of anchoring the M&E system within a sound and credible legislative structure, as emphasized by (Holvoet & Renard, 2007)

This framework's initial element involves a monitoring and evaluation policy that guides and lends credibility to the national M&E system's actions. According to Goldman et al., (2019) this policy should ideally encompass an M&E plan, which delineates the procedures for conducting M&E activities within the public sector. It should also address issues of autonomy and impartiality, particularly among evaluators, and establish structures for soliciting feedback from various government departments, an essential component for effective planning and budgeting. This underscores the pivotal role of an M&E policy in ensuring that intentions translate into concrete actions.

Developing and institutionalising monitoring and evaluation systems in the public sector in Africa has faced various political and economic challenges over the years. Crawley, (2017) developed a six-sphere structure that assesses the readiness of first and third-world countries in setting up monitoring and evaluation systems.

The other most-used components of a monitoring and evaluation system as proposed by the Joint United Nations Programme on HIV and AIDS are namely: organisational structure, human capacity, partnerships, national M&E plan, national M&E coasted workplan, advocacy, communication and culture, routine monitoring, surveys and surveillance, national subnational databases, supervision, and data auditing, evaluation and research and data use (UNAIDS, 2008). Most studies hinge on these 12

components. This section will discuss studies that looked at some of these components and other studies that introduced or proposed other additions.

The budgetary allocation is also essential for a monitoring and evaluation system to be effective. In a study conducted on assessing the monitoring and evaluation capacity of HIV and AIDS organisations in Swaziland Kelly & Magongo, (2004) findings showed that a monitoring and evaluation budget should be five to ten percent of the total project cost. Studies in the past have revealed that mostly M&E activities in most African countries are financed through external sources (Report on Global AIDS Epidemic, 2008)

In another study (2003) showed that stakeholder participation is the best way for any project to yield good results, especially on a country level. Crawford & Bryce, (2003) suggest that including stakeholders from the project design to its closure safeguards the project's success.

In a study on the implementation of performance management in local governance in South Africa Nzimakwe & Ntshakala, (2016) cites researchers that have concluded a strong correlation between strategic planning and organisational effectiveness, suggesting that better planning equals better performance. The study by Nzimakwe & Ntshakala, (2016) concluded that though there is an alignment between planning and performance, there is still a challenge on monitoring systems that needs to be addressed by local government.

Another study by Mapitsa & Chirau, (2019) on international pioneers such as Mexico and Colombia showed that they had centrally located units to manage their monitoring and evaluation systems. Countries like South Africa and Uganda have monitoring and evaluation departments steered from the presidency. Countries like Benin have also adopted a stand-alone ministry. Goldman et al., (2019) findings revealed that centralisation guarantees political will to push and support to monitoring and evaluation systems. However Mapitsa & Chirau, (2019) findings revealed that there is lack of capacity on policy makers to utilise evaluation reports this is supported by a study by Crawley, (2017) which also showed that there is a shortage of financial resources and time available to generate monitoring and evaluation data in most African countries.

A study by Singh, (2009) revealed that most NGOs expressed concerns regarding data collection. The problems mainly were cost, time, training, data consistency, accuracy, storage, and analysis. The study further revealed that NGOs that

had tried to introduce electronic systems for data collection encountered difficulties with infrastructure and maintenance. However, the study concluded that NGO data collection, storing, and filing are essential. A study on M&E systems of HIV and AIDS projects in Child Fund Uganda by Ediau (2012) revealed that data was not routinely collected, stored, analysed, or shared by the Child Fund and stakeholders. This had a negative effect on effective data utilisation on tracking performance and informing program improvement.

Data collection and post-data collection activities were reported to be an issue in a study by Obure (2008) of RMB in Northen Ghana. The storage, processing, and interpretation of the data were not handled effectively. This showed that stakeholders did not have the capacity and knowledge to handle the data collected. UNAIDS (2008) framework for a functional monitoring and evaluation system notes that it is important to have a dedicated and adequate number of monitoring and evaluation staff with the right skills for the work and who have received the proper training. A study in Kenya, Mibey (2011) recommended the addition of capacity building as a component of future projects in Kenya. These recommendations meant a need to invest in training and development in technical areas of monitoring and evaluation. Another study in Kenya on non-governmental organisations also revealed a challenge in implementing and managing monitoring and evaluation activities because of insufficient monitoring and evaluation capacity. This study was for Aga Khan Foundation, Nairobi, Kenya and it determined how the performance of their monitoring and evaluation system was aided by training in monitoring and evaluation.

An assessment by UNDP, (2009) on Civil Society Organisations in the Pacific discussed the challenges of the organizations' inadequate monitoring and evaluation systems. Lack of training and technical skills where some factors highlighted. This assessment revealed that the CSO lack of monitoring and evaluation mechanisms, including skills, was a systematic gap across the region.

Most NGOs in South Africa use the logical Framework as their foundation for evaluation and reporting. Quantitative indicators have been shown to be easily measured to demonstrate success, and qualitative measured have been avoided (Bornstein, 2006). Another study by Bryant (2007) showed that NGOs with no funding were better with evaluation than those with a budget, because those with funding were more concerned about compliance than fulfilling the organisation's needs.

2.4 An introduction to monitoring and evaluation studies and its components and processes.

The section reviews the literature on monitoring and evaluation systems to gather information, which focuses on (section 2.4.1) the description of monitoring and evaluation and its purpose in (Section 2.4.2). The established facts are discussed in (Section 2.4.3). Section 2.4.4 discusses the key issues and debates, while section 2.4.5 looks at the significant components.

2.4.1 Describing monitoring and evaluation

Monitoring and evaluation has become an essential tool and plays a significant role worldwide in development. Kusek & Rist, (2004) describes it as a tool that governments and organisations have adopted to improve accountability, efficiency, and effectiveness. The feedback and lessons learned through monitoring and evaluation assist in correcting current mistakes, and those corrections will improve future decisions (Khan, 2003a).

According to Kelly & Roche, (2008) 4 components define excellent monitoring and evaluation systems for civil society programs. The first one is that a system should be dynamic, meaning that an active system promotes learning and seeks feedback about the intervention's benefits, problems, and impacts. Secondly, an approach should be participative, meaning that it should be inclusive and overcome barriers of power, gender, culture, age, and other issues that limit stakeholders' participation in the initial stages. The third aspect is that a system should be reflective. It should allow stakeholders to analyse and reflect on underlying assumptions which underpin the intervention. Lastly, a system should be evolving, meaning that a system should adapt and change to keep improving and provide timely information that informs ongoing improvements regarding the intervention.

Bhana & Govender, (2010) highlight the four major components of monitoring and evaluation: monitoring, formative evaluation, process evaluation, and summative evaluation. The monitoring component is concerned with data collection through indicators designed to track activities and monitoring results. However, Monitoring is divided into two levels responsible for tracking results by Kusek & Rist, (2004), results monitoring and implementation monitoring. Implementation monitoring is responsible for tracking inputs, activities, and outputs, and results monitoring focuses on alignment

of outputs. According to Bhana & Govender, (2010) evaluation is performed at the final evaluation stage.

There are three main evaluation goals: to measure, understand, and learn (Berriet-Solliec et al., 2014). Evaluation involves assessing a program, and it also involves data collection and analysing based on defined standards.

2.4.2 The purpose of evaluation

The overall primary purpose of evaluation is to enhance the effectiveness and accountability of programs while supporting learning and continuous enhancement. According to Berriet-Solliec et al., (2014) the purpose of evaluation is to assess the effectiveness of an intervention and that to measure, understand and learn are the three main goals of evaluation.

According to (Guerra, 2012) the overarching goal for evaluation is to utilise the data generated so that it can inform decision-making that will lead to improved performance. Regularly evaluating and adjusting your activities is crucial to maximize their effectiveness. Evaluation serves as a valuable tool for pinpointing areas needing improvement, thus aiding in the more efficient achievement of your objectives. Moreover, sharing insights on what worked well and what didn't benefits your environmental education efforts and contributes to their advancement.

According to EvalCommunity, (2023) evaluation serves a crucial function in enhancing accountability within programs and projects. Through the evaluation process, the effectiveness and efficiency of the resources allocated to a program or project can be systematically appraised. This evaluation delivers valuable insights to funders, stakeholders, and the broader community regarding the program's success in achieving its intended goals and objectives. This data, in turn, can be wielded to establish a system of accountability for program managers and implementers, ensuring that the resources are being put to good use and that they are being utilized with effectiveness and efficiency.

A study by Karanja & Yusuf, (2018) showed that Monitoring and evaluation stand as invaluable tools that enable project managers to gauge the alignment of their plans with the actual progress of a project, and to promptly recognize any shifts in conditions. These processes furnish the management team with essential insights that inform decision-making throughout the project's lifecycle.

Furthermore Karanja & Yusuf, (2018) study revealed that the significance of monitoring and evaluation (M&E) extends to projects of varying scales, whether large or small, as they play a pivotal role in identifying project components that are on track and those that require adjustments or potential replacement. M&E is a universal asset for projects, serving as a compass that helps guide them toward successful outcomes.

In summary, evaluation helps to determine if a project is achieving its designed goals, it provides mechanisms for accountability, it provides evidence and insights for decision making, it helps with identifying risks and challenges in the initial stages of implementation, it fosters continuous improvement, and it also contributes to the body of knowledge by documenting the outcomes and insights in that particular field.

2.4.3 Established facts in evaluation

Evaluation improves implementation through process evaluation by increasing efficiency and highlighting weaknesses, which in turn improve the interventions (Bhana & Govender, 2010). Program evaluation offers a way to understand and improve community health and development practice using methods that are useful, feasible, proper and accurate (University of Kansas, 2023).

The evaluation needs to answer specific questions, and developing questions refines the focus of the evaluation. Evaluations are driving forces for developing and adapting strategies and improving programs. Evaluations help to determine if what is being done is worth the cost (University of Kansas, 2023).

Within South African NGOs, many organizations embraced the logical framework as a fundamental framework for conducting evaluations and reporting. This approach also functioned as a planning tool, leading organizations to adhere to predetermined timeframes and specified deliverables. However, these inflexible project funding timelines and Logical Framework Approaches (LFAs) did not align with the development work's intricate and often uneven nature. Additionally, the prevalent preference for quantitative indicators over qualitative ones offered certain advantages, as they facilitated easy measurement to demonstrate success, while assessments of how well the information was comprehended or subsequently utilized were largely disregarded Bornstein, (2006).

Evaluations are important to stakeholders. It's crucial to recognize that stakeholders may initially appear to have minimal interest or influence in the project, but project managers should still attend to them because they may later emerge as significant stakeholders. Best practices underscore the importance of stakeholder involvement as a

central factor in facilitating effective evaluations. Involving stakeholders early in the evaluation process, garnering support from influential champions, and engaging political entities interested in understanding or utilizing evaluation instruments are recommended.

Proudlock (2009) established that the entire impact evaluation process, especially the analysis and interpretation of results, can significantly benefit from the participation of the intended beneficiaries. After all, they are the primary stakeholders in the best position to assess their situation. However, it's essential to manage stakeholder engagement carefully, as excessive involvement could lead to undue influence on the evaluation process. At the same time, too little involvement may result in evaluators dominating the process Patton, (2008).

The decisions concerning the purpose and scope of impact evaluations are inherently political and bear significant implications for selecting appropriate methodologies, the type of knowledge and conclusions generated, and how this knowledge will be applied. Therefore, it's crucial to allocate adequate time for the comprehensive involvement of all stakeholders in determining the purpose and scope of impact evaluations (Patton, 2008).

2.4.4 Key issues and debates in the study of evaluation

Evaluations tend to be too technical, and this has sparked debates on the credibility and usability of the results. Debates have even sparked on the definitions of evaluation. White, (2010) discusses four arguments in a paper on the contribution to current debates on evaluation, and one the debates is on contribution rather than attribution. There is always confusion as to mistaking claims of attribution to mean sole attribution (White, 2010). Other debates are on measuring impact and whether methodologies such as randomised control trial are better in providing credible evidence than non-experimental methodologies (Gargani & Donaldson, 2011). Bhana & Govender, (2010) argue that randomised control trials are the evaluation standards.

Some evaluation approaches emphasising stakeholder engagement, such as empowerment evaluation, lack rigorous evidence to indicate that empowering the stakeholders leads to empowered outcomes (Miller & Campbell, 2006).

Chirau, (2019) argues that politics is a channel through which various stakeholders use their power to affect the evaluation process and outcomes according to their own schemas. Politics has been said to be a key issue facing evaluation. Others

argue that political interference can be corrected by promoting the appropriate use of data.

2.4.5 Major components of evaluation

Evaluation can be classified into five types: formative, process, summative, outcome, and impact (Sufian et al., 2015). Process evaluation determines whether a program is delivered as intended to the targeted recipients, whereas Formative evaluation provides information to guide program improvement (Rossi et al., 2004). According to Sufian et al., (2015), during the implementation of a program, it is appropriate to use formative and process evaluation. Bhana & Govender, (2010) suggest that formative evaluation also uses elements such as the logic model and that process evaluation ensures that an evaluation is implemented according to the plan.

Summative evaluation informs judgments about whether the program worked and requires making explicit the criteria and evidence being used to make "summary" judgments. Outcome evaluation focuses on the observable conditions of a specific population, organizational attribute, or social situation that a program is expected to have changed, and impact evaluation examines the program's long-term goals (Sufian et al., 2015). Summative, outcome, and impact evaluations are appropriate to conduct when the program has been completed or has been ongoing for a substantial period (Rossi et al., 2004).

According to a study by Karanja & Yusuf, (2018) there exist two distinct types of evaluations in the realm of projects: Formative evaluation, conducted while the project is in progress, and Summative evaluation, carried out once the project has reached completion. The study goes on to elucidate that the evaluation process encompasses several facets, including an examination of the project's intended objectives, an assessment of the progress made toward achieving those objectives and their impact on predefined targets, an analysis of the project strategy's effectiveness, an evaluation of resource utilization efficiency, consideration of opportunity costs, and an exploration of the project's sustainability. This comprehensive evaluation process also delves into the implications and ramifications for the various stakeholders involved.

2.4.6 Major processes of evaluation

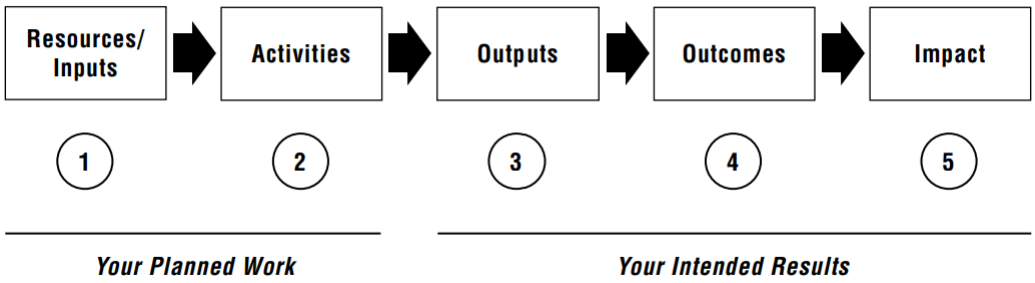
Most studies agree that the program evaluation process has four phases: implementation, completion, dissemination, and reporting. Sufian et al., (2015) discuss these phases as follows: Implementation and planning involves determining the feasibility of the evaluation, identifying stakeholders, and specifying long and short

goals. Completion will examine the program's immediate outcomes and summarise the overall performance, while dissemination and reporting look at guidelines of presenting results, the audience who will receive the results, and who will present the results.

A Logic Model is used to describe the various components of a program in a structured manner. Logic models serve as the mechanism for articulating the theory of change for a program and tell the story about "how the program will work," specifying the key elements of a program, including the "resources or inputs, activities, outputs, short, intermediate and long term outcomes" (McLaughlin & Jordan, 2004). According to Knowlton and Phillips (2013) a Logic Model is a visual method of presenting data and its aim is to show and bring context to the relationship of elements that bring transformation. The (2004) mentions 3 types of logic models: outcome, activities, and theory.

Logic models can be drawn in different ways. Sometimes, they are shown as a series of boxes (inputs->processes->outputs->outcomes->impacts), sometimes they are shown in a table, sometimes they are shown as a series of results, with activities occurring alongside them rather than just at the start.

Figure 4: Basic Logic Model: Source Kellogg Foundation, (2004)



A logic model includes inputs, activities, outputs, outcomes, and impact goals. Inputs such as budget and human resources are needed to support the program. Activities are the steps required to produce outputs and outputs focus on goods provided to the participants. Changes resulting from activities and outputs provided are outcomes; long-term outcomes are the impact. McLaughlin & Jordan, (1999) summarises by saying that the logic model links outcomes to program activities.

The other tool used is the Logical Framework. The logical Framework is a tool for planning with a matrix that provides an overview of a program's goals, activities and

anticipated results. A log frame must include an intervention's goals and objectives (Crawford & Bryce, 2003).

2.5 Key attributes in evaluation.

In this section, the contextualised evaluation (Section 2.4) and the following on the discussion on components of evaluation is discussed. This section breaks down the component(s) in which this research on factors influencing a donor-driven monitoring and evaluation system is sitting to ultimately get to the attributes that are key to this research. On identifying these attributes, we discuss them, paying attention to their information needs and sources and how they link with each other.

2.5.1 The inputs

Inputs can include human and material resources, such as funding, staff, equipment, materials, and time. According to the Kellogg Foundation (2004) inputs include human, financial, organisational, and community resources a program has available to direct toward the work. The inputs for the Power Africa project are budget, staff, guidelines, equipment and supplies, and facilities in different sub-Saharan countries.

The above inputs are essential for the successful implementation and execution of the project's goals, which include expanding access to electricity and promoting sustainable energy development in the region. The effective utilisation of these inputs is crucial to achieving Power Africa's goal of 30 000 MW and 60 million connections. This, in return, will bring about positive change in the lives of millions of people in sub-Saharan Africa.

2.5.2 The Activities

Activities are interventions that the program undertakes in order to achieve its objectives. Examples are training, counseling, or outreach. Activities are the processes, tools, events, technology, and actions that are an intentional part of the program implementation. These interventions are used to bring about the intended program changes or results (Kellogg Foundation, 2004). The activities for Power Africa include developing guidelines and policies, mobilising private partner engagement for funding and equipment supplies, and proving advisory services that will enhance and improve policy regulations in the countries they are working in.

2.5.3 The outputs

According to the Kellogg Foundation, (2004) outputs are the direct products of program activities and may include types, levels and targets of services to be delivered by the program. According to the United Nations Development Program (UNDP, 2011) outputs measure what needs to be produced by the intervention to achieve the program outcome. In the case of the Power Africa Programme, outputs will include developed guidelines and reform policies projects that have reached financial closure and have secured funding. Other outputs include advisory services, meetings completed in the supported countries, and equipment successfully procured.

2.5.4 The Outcomes

Outcomes are the specific changes in program participants' behavior, knowledge, skills, status, and level of functioning. Short-term outcomes should be attainable within 1 to 3 years, while longer-term outcomes should be achievable within a 4-to-6-year timeframe. The logical progression from short-term to long-term outcomes should be reflected in the impact occurring within 7 to 10 years (Kellogg Foundation, 2004). In other words, outcomes are changes that occur or the difference that is made for the target group. For the Power Africa Program outcomes include electricity, climate, and gender policy reforms in the targeted countries. Power Project commissioned (producing electricity) and contributing MW to the grid. The short-term outcomes are more communities accessing affordable electricity and more businesses being connected. Schools and hospitals with cleaner and renewable energy.

2.5.5 The impact

The impact is the fundamental intended or unintended change occurring in organisations, communities, or systems because of program activities within 7 to 10 years. Impact often occurs after the conclusion of project funding (Kellogg Foundation, 2004). In other words, the impact is the ultimate intended change in an organisation or community. The Power Africa program's overall objective is to increase MW and connections by 2030, the impact will be realised after 2030. The impact will include decreased mortality rate and healthy communities due to accessibility of health facilities. Poverty rate reduction due to high employment and empowered entrepreneurs and high literacy rate because of the growth of small towns and schools with access to electricity.

Gender inequality is reduced through women's empowerment, as they spend less time searching for firewood and have more time available for personal development.

2.6 Theoretical framework

This section discusses the theories that inform the process of monitoring and evaluation. These are contextualised with evaluation in (section 2.4) and linked to the key attributes of evaluation in (section 2.5). Therefore, this section identifies and discusses the established frameworks this research will employ to interpret its empirical results in Chapter 5.

The underpinning of monitoring and evaluation processes for projects and programs within organisations is rooted in theories that primarily establish the foundational frameworks for evidence-based practices. These theories serve a crucial role in delineating practical approaches that can be employed to cultivate a comprehensive understanding of the effectiveness of programs and projects (William et al., 1991).

In the context of conducting monitoring and evaluation, it is imperative to embark on a holistic approach that commences by delving into the most pertinent theory before addressing the methodological aspects. This entails contemplating the purpose of monitoring and evaluation to identify the theoretical underpinnings, subsequently crafting evaluation queries to guide the methodology. By emphasizing theory right from the outset of a project or program, the entire process, encompassing stakeholder engagement, methodology selection, data collection, analysis, and reporting, becomes deliberate, purpose-driven, and more valuable for the client. There are many theories that have been developed and that can be used to understand monitoring and evaluations, this study utilised three theories namely the program theory, results theory and the theory of change to understand.

2.6.1 The Program theory

A program theory is a structured representation of how a program is expected to achieve intended outcomes. A program theory is similar in concept to logic models, which have become increasingly popular in human services programs over the past several years (Hosley, 2005).

A Program theory serves as a roadmap for program planning, and it helps program stakeholders clarify expectations and assumptions about how a program will impact the lives of its beneficiaries. It's a tool that is used to monitor and assess whether the program is on track to achieve intended outcomes.

A program theory typically includes components such as Inputs, Activities, Outputs, intermediate outcomes, Long-term outcomes, and assumptions. A Program theory looks at assumptions in the design of a program, the activities, and the execution. It ensures achievement of the outcomes for the program. In the case of Power Africa, a, program theory spells out how power Africa expect the changes to happen. There should be solid evidence and well-established connections supporting that Power Africa activities will accomplish the overall goal of 30,000 MW and 60 million connections.

Program theory in a donor-driven monitoring and evaluation program such as the Power Africa program is a foundational concept that helps Power Africa stakeholders to understand how a program is expected to work and how it will lead to the desired outcomes. A program theory guides the design of the monitoring and evaluation process, ensuring that the program's performance and impact can be effectively assessed and communicated to donors and other stakeholders.

According to Bickman, (1987) a program theory is the construction of a plausible and sensible mode of how a program is supposed to work. Bickman, (1987) further describes that these models are developed for a particular program and do not represent an off-the-shelf use of a single established theory.

There are a number of benefits that comes from an evaluation that has clear program theory, program theory can make important contributions to social science theory if the program (independent variable) and measure of program outcomes (dependant variables) are theoretically meaningful (Bickman, 1987). Another contribution is to assist policy makers. The ability to generalise from a specific evaluation is also significant for policymakers. The ability to understand the constructs underlying the program should help policymakers know if different operationalisations of the program will work in a fashion similar to the program that was evaluated (Bickman, 1987). According to Bickman, (1987) a program theory helps with identifying the problem and target group. A program theory should be able to clarify the relationship between the program and the problem.

Among other benefits of a program theory as highlighted by Bickman, (1987) is to be able to specify intervening variables, it provides casuals links between the operation of the intended effects. The theory specifies how the program activities relate to the ultimate outcomes of the project (Bickman, 1987).

Building a program theory involves first identifying those elements that the stakeholders believe are necessary to achieve their desired results, and then developing a model that

shows how the elements relate to each other in that process (Mertens & Wilson, 2019). The theory must be developed to create valid measurement and design plan. The evaluator must make decisions about what variables must be measured and how they should be measured (Bickman, 1987).

The strengths of program theories are that they offer valuable benefits by providing stakeholders with a clear framework to understand program design, implementation, and expected outcomes (Mertens & Wilson, 2019). They serve as a roadmap for evaluation, helping stakeholders assess program effectiveness and identify areas for improvement. In addition, program theories promote a culture of learning and adaptation, enabling organisations to refine their strategies based on evidence and experience (Bickman, 1987).

However, program theories may fall short of capturing the full complexity of social interventions and the dynamic environments in which they operate. Real-world contexts are often multifaceted, with numerous interacting factors influencing program outcomes. As a result, program theories may oversimplify these complexities, leading to gaps in understanding and ineffective interventions (Mertens & Wilson, 2019).

Furthermore, while program theories outline the logic behind program activities and expected outcomes, they may not accurately predict how interventions will unfold in practice. External factors, unforeseen events, and contextual nuances can all impact program outcomes in ways that are not accounted for in the theory (Mertens & Wilson, 2019).

In summary program theory as mentioned by Bickman, (1987) is an essential but neglected aspect of program evaluation. Bickman, (1987) lists ten functions of program theory as follows: Contributing to social science knowledge, assisting policymakers, discriminating between theory failure and program failure, identifying the problem and target group, providing program implementation description, uncovering unintended effects, specifying intervening variable, improving formative use of evaluations, clarifying measurement issues and improving consensus formative.

2.6.2 Results Theory

A result theory is a structured representation of the expected outcomes. It is known as a results framework. It defines a program's desired outcomes and impact and helps ensure accountability and effectiveness in achieving its goals (UNDP, 2009). According to

Patton, (2011) a result theory includes components such as outcome statements that describe the desired outcomes of the program, indicators that are specific and measurable pointers that measure progress, baseline data, targets, assumptions, causality, and logic. The result theory emphasises on results to provide clarity around key projects objectives. This is the common tool used by donor-driven programs such as the Power Africa. The results framework was introduced in the 1990s by USAID as a tool to monitor programs throughout the agency. A good results framework is based on a good mix of logic, analysis, standard theories in the technical sector, and the expertise of on-the-ground manager (TolaData, 2019).

The Washington State Department of Health defines a results framework as both a planning and management tool that provides the basis for monitoring & evaluation. A results framework provides a program-level framework for stakeholders to monitor the achievement of results and to adjust relevant programs and activities when necessary. It gives all stakeholders with an instant idea of what a program is trying to achieve. The Results Framework focuses primarily on the impact and the outcomes of the work done through the program.

According to the World Bank, (2015) a results framework is an explicit articulation in a graphical display, matrix, or summary of the different levels, or chains, of results expected from a particular intervention project, program, or development strategy. A results framework also often identifies any underlying critical assumptions that must be in place for the intervention to be successful, that is, to lead to achieving the targeted outcomes and impacts (World Bank, 2015).

According to the World Bank, (2015) a results framework is beneficial for monitoring management and evaluation in several ways such as help in focus on specific outcomes, highlighting key linkages in the theory of change that underpins the intervention, it helps to measure progress towards strategic objectives, and it helps achieve strategic objectives.

Other studies indicate that the results framework is similar to a log-frame or theory of change. According to TolaData (2019), a results framework helps practitioners plan and understand the various facets of a project intervention and demonstrate it in a clear and graphical manner.

The elements of the chain of series are laid out under different levels and connected by a cause-and-effect relationship. In short, a person looking at a results framework can understand the basic theory for achieving key project objectives (TolaData, 2019).

The Power Africa program overall goal is to increase 30 000 MW and 60 Million connections by 2030, The results framework can be used to show the objectives and results at different levels, as shown in the example below by TolaData (2019).

The results framework displaying the cause-and-effect relationship among different levels of the Community A project.

It is essential to remember that a results framework must always be current to be effective. It is recommended that it should be revised when results are not achieved within the expected timeframe or when critical assumptions are no longer valid. The results framework can also be updated when it's noticed that the underlying development theory or critical problems with operations, policy or resources were not adequately recognised.

According to TolaData, (2019), building a results framework alone is not enough to solve the problems that a project sets out to tackle. It is indispensable to measure the intervention at each level to track the real progress and identify and analyse issues causing delays or unexpected results.

The World Bank (2015) lists the following as uses of a result framework, planning, consensus, coordination and ownership, management, communication and reporting, evaluation, harmonisation, and learning from experience.

There are also challenges with using the results theory. Some of the challenges include the need to invest time and resources at the start of the intervention, the effects of the intervention can be challenging to measure fully, the results framework can become overly complicated, and involving program staff in the evaluation process could be biased results measurement. Additionally, they may struggle to account for unexpected or unintended consequences of interventions, limiting their predictive power. Furthermore, developing a comprehensive result theory requires careful consideration of causal relationships and may be resource-intensive, requiring time and expertise to build and validate. Despite these limitations, result theories remain a valuable tool for planning, monitoring, and evaluating programs, providing a structured approach to understanding and assessing program impact.

In summary, a results framework underpins a strategic planning process. It serves as a living management tool—fostering ownership and consensus, guiding corrective actions, facilitating the coordination of development efforts, charting the course for achieving a strategic objective, and ultimately serving as a key accountability tool for evaluation (World Bank, 2015).

2.6.3 The theory of change

The theory of change (ToC) approach seems to have first emerged in the United States in the 1990s in the context of improving evaluation theory and practice in community initiatives (Stein & Valters, 2012). According to the United Nations Development Group, a theory of change is a method that explains how an intervention is expected to lead to specific development change, drawing on a causal analysis based on available evidence.

A theory of change is primarily used in non-profit organisations. The first step of an NGO is to identify the problem it is trying to solve. For example, in this study, Power Africa wants to solve the electricity crisis, it must choose the approach to solving this problem. It must then develop and implement a strategy to achieve its goals. In the nonprofit world, the framework for describing such a strategy is called a "theory of change" (Stanford Pacs, 2020). A theory of change sketches the sequence of causes and effects that underlie a nonprofit's strategy, beginning with the organization's activities and ending with its intended outcome (Stanford Pacs, 2020).

Though theories of change may differ by organisations in how they are developed and how they look. There are agreed elements that are common to many theories of change. Developing a Theory of Change would normally involve analysing the forces that can potentially affect any desired outcomes (Jones, 2010). Other elements include identifying the organisation role in the change process, developing a conceptual pathway, identifying assumptions, ongoing monitoring of change, and critical reflecting.

The theory of change is mainly used, and according to James (2011) Increasing pressure from organisations' boards and funders to articulate long-term impact has caused many to look for how to represent what they do. They want to find ways to explore and express change that reflect a more complex and systemic understanding of development rather than portraying a linear process(James, 2011).

There are also debates as to the reasons for using the Theory of Change. James (2011) argues that most organisations use the theory of change because of a funder influence or because they are affiliated with an international organisation while Stanford Pacs, (2020) highlights that a theory of change provides a framework for understanding an organization's ultimate outcomes or goals and how it plans to achieve them. Stanford Pacs, (2020) highlights that an organisation will rely on evaluation to assess whether it is achieving its intended outcomes, implying that a theory of change is an important part of an organisation evaluation process.

A theory of change is regarded as a learning tool, in other words it provides a framework for learning about how its implementation is actually working and to make appropriate course corrections (Stanford Pacs, 2020). An organisation must ask very important questions as to whether there are gaps in the theory of change, if beneficiaries are being satisfied with the program and if the program is creating any unintended harms and how those harms can be mitigated. The information that an organization seeks when implementing a program can be described in three general categories: getting beneficiary feedback, monitoring activities and outcomes, and evaluating the ultimate outcome (Stanford Pacs, 2020).

This study research questions are influenced by the approach that has been mostly used or attributes that makes a good theory of change. Such attributes include stepping outside a project box and thinking about the change and how it happens, looking at the Power Africa overall theory of change and not only the South Africa Energy Program, drawing lessons from others, involving key stakeholders, focusing on

change and key actors, representing a theory with validity but in a simple manner and building in on ongoing leaning and reflection.

As seen in the discussions above, a theory of change (ToC) is a dynamic framework that outlines the causal pathways through which interventions are expected to lead to desired outcomes. Its strengths lie in providing a comprehensive understanding of how change is expected to occur, including identifying inputs, activities, outputs, outcomes, and impacts. ToCs help stakeholders clarify their assumptions, articulate their goals, and design effective interventions by mapping out these pathways. Additionally, ToCs facilitate monitoring and evaluation by defining key indicators and milestones for tracking progress and assessing impact. However, ToCs may face challenges in accurately predicting outcomes, as they often oversimplify complex social systems and may not adequately account for contextual factors or unintended consequences. Developing a ToC requires significant time, resources, and stakeholder engagement to accurately reflect the diverse perspectives and dynamics of the intervention context. Despite these limitations, ToCs remain valuable for fostering learning, adaptation, and accountability in program planning and implementation.

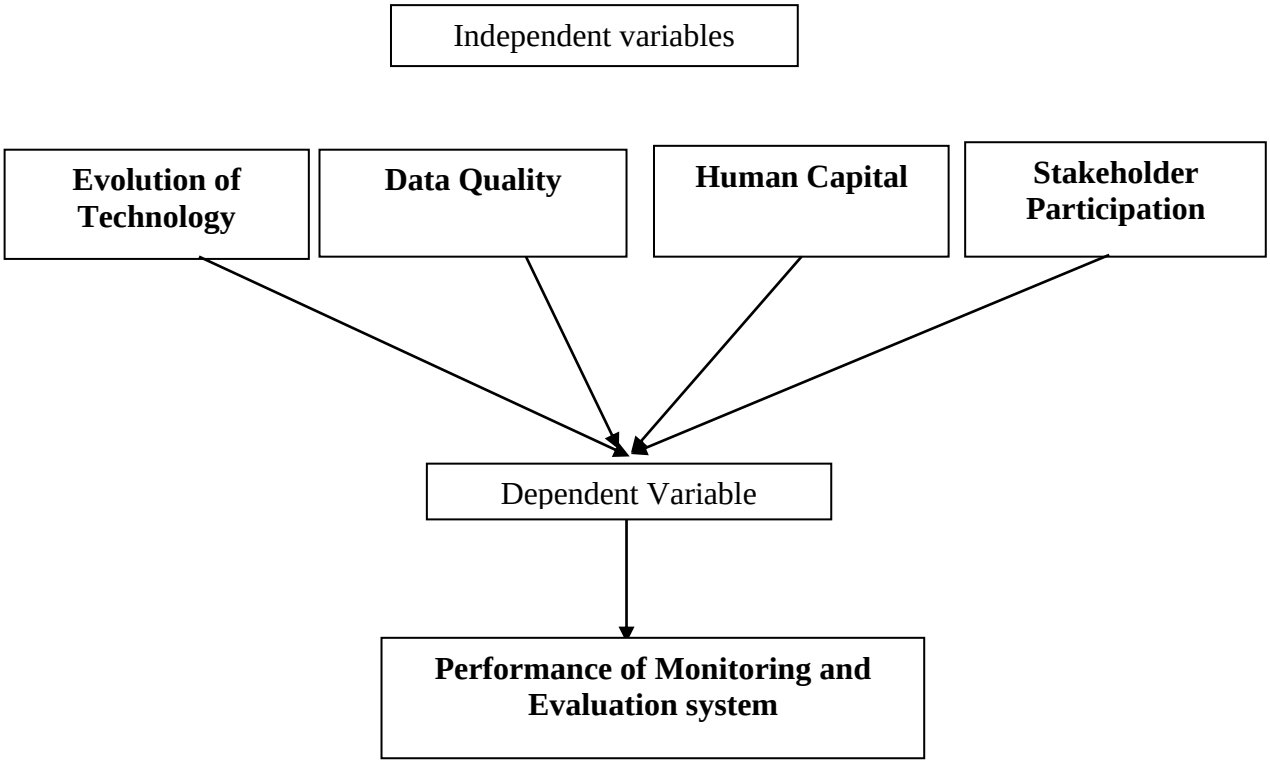
2.7 A conceptual framework

Wotela, (2017) argues that the primary outcome of the literature review is the conceptual framework. A conceptual framework is a model that seeks to identify the concepts under study and their relationship (Mugenda & Mugenda, 2003).

The government of South Africa 2011 introduced the National Evaluation Policy Framework, which provided the basis for a system of evaluations used for learning and used to improve the impact and effectiveness of government (Ajam & Engela, 2010). The government developed a plan embedded into national and sub-national planning processes. Since the formation of the DPME, most government functions have faced service delivery challenges. The first challenge is the data quality being collated from other government departments by DPME. Most evaluations lacked good data, meaning initial assessments were impractical. In addition to the quality of data, other challenges include no culture of compliance, duplication of reporting across departments, and no influential theories of change to underpin the Monitoring and Evaluation. Lessons learned by the DPME over the years are that there must be political buy-in for a national M&E system to function (Ajam & Engela, 2010).

With this background, when the Power Africa program was initiated in 2014, it needed a framework that would work in the South African context. Systems that will improve data quality and functional monitoring and evaluation methods must be implemented. Below is an illustration of a framework of factors influencing the performance of Power Africa's donor-driven monitoring evaluation system.

Figure 2: Conceptual framework



The above conceptual framework depicts how variables are related to one another. The independent variables influence the dependent variable. The independent variables in the study were the evolution of technology, data quality, human capital, and stakeholder participation. The dependent variable in this study was the performance of the Power Africa donor-driven monitoring and evaluation system in South Africa.

The research first variable was the evolution of technology. The COVID-19 pandemic has played a pivotal role in modernizing the field of Monitoring and Evaluation (M&E). Concurrently, technological advancements have driven innovation in M&E practices. Budget allocations have shifted towards results-based models, and various systems have emerged to aid in data collection and analysis. The realm of M&E is now teeming with a wealth of information and literature.

Recognizing the need to bridge the competency gap in M&E and establish it as a profession, the South African Monitoring and Evaluation Association (SAMEA) was founded (SAMEA, 2022). While various M&E systems have been implemented, scant attention has been given to the factors influencing their performance. A surge in the development of applications is aimed at augmenting the conventional methods of data collection and analysis. Organizations like SAMEA are at the forefront of showcasing these innovations, contributing to the increasing use of technology in M&E work (E. Smith, 2019). This shift towards technology is a response to the limitations of traditional, paper-based M&E, which is prone to errors due to its manual nature. In contrast, modern M&E processes involve data collection, analysis, and transmission more efficiently. Donors increasingly opt for these streamlined methods to enhance efficiency and minimize errors (E. Smith, 2019).

The traditional M&E activities focus more on accountability and donors and what they have achieved with the funds provided. The digital world has changed this to more than just adherence organizations are now empowered and have moved beyond data collection to data analysis and have more insights that help with decision-making about the programs (Hoang, 2022).

Moving from paper-based M&E to adopting digital technologies, according to the article 'The impact of digital technologies,' has benefits. It increases learning opportunities, is cost-effective, and is more efficient.

It is also argued that it's time to go digital in the M&E field. The digitization of the Monitoring and evaluation system allows data to be collected and updated in real-time (E. Smith, 2019).

Technology reduces costs in development programs, increases accuracy as reading or entering errors are minimised, opens the potential of collecting richer data as data can be collected in multiple formats, there is a greater outreach as data can be shared and collected virtually, and there are better insights as there are now more visualizations geospatial mapping and analytics (Nanda, 2017).

The second variable as depicted by the conceptual framework, is data quality. Data is collected in many ways. The most traditional methods of collecting data include interviews, questionnaires, and observations. In M&E, project managers develop indicators that are then used to monitor outcomes and help project managers to assess how the desired results are achieved (Kusek & Rist, 2004).

Data must be accurate, credible, and timely. If data is not collected timely, there are chances that critical decisions that need to be made will be missed (Gebremedhin et al., 2010). Data needs to be collected accurately and routinely to be appropriately analysed. There are concerns about the costs involved in collecting data, the time taken, the amount of training required, data accuracy, where to store the data, and how to analyse the data. As many organisations move to the digital world, others complain about the costs. There is also a concern about ownership of the system and data. A system that users own generates reliable and valid information (Gebremedhin et al., 2010).Data collected should also be only the data that is intended to be used. There is a challenge that project managers end up having data that is not useful (Kusek & Rist, 2004). It is critical to identify the data sources relevant to the indicators developed. There should be a difference between the sources of data and the methods of collecting data.Data collection is critical for any program, including the Power Africa Program, as seen by the Power Africa Tracking Tool system that was developed to be used by projects on the ground to collect information on the stages of the projects, the current status, issues and obstacles and any interventions required (USAID.GOV, 2021b).

The third variable discussed is human capacity. For any system to be effective, adequate, and knowledgeable resources should be used to execute the functions. Understanding the skills required and the capacity involved in the Monitoring and evaluation system is essential. Assessing human capacity and capacity building is critical for an M&E system (Kusek & Rist, 2004). You can have a lot of resources, but if they are not adequately trained and do not have the skills and resources to perform their duties, the M&E system will be useless.

Capacity building is also ongoing as policies change technology, hence a need for upskilling skills. Training can also be used as a time to learn from others. An equipped team performs well in planning and reporting on their projects. Managers must know their team's competence (Shapiro, 2011). The more prepared and knowledgeable the team is, the more likely they will perform their duties well, saving time and costs.

The fourth and last variable discussed is stakeholder participation. Stakeholders are all those parties interested in the project or program at hand. They can either affect or be affected by the project. Stakeholders include Staff, project managers, the community, donors, decision-makers, and even the government (Radebe & Nkonyeni, 2020).

Engaging all stakeholders in the project's early stages and attracting all interested and political participants is essential. This is very key to the success of any project (Jones et al., 2009). Power Africa has established formal partnerships with key stakeholders, including Private Sector Partners, development partners, multilateral partners, and governments. These engagements are critical for them to reach 60 million connections and 30,000 MW (USAID.GOV, 2021b).

3 RESEARCH STRATEGY, DESIGN, PROCEDURE AND METHODS

This chapter identifies and describes the research approach, design, procedure, and methods we employ in this research to collect, process, and analyse empirical evidence. Broadly, it has three objectives, namely, to identify and describe the research strategy (Section 3.1), the research design (Section 3.2), as well as the procedure and methods (Section 3.3). The chapter also describes the reliability and validity measures (Section 3.4) that this research applies to make it credible and our choices' technical and administrative limitations (Section 3.5).

3.1 Research strategy

According to Bryman, (2012) a research strategy is a general orientation to conduct of social research. A research strategy guides a researcher in planning, executing, and monitoring the study (Johannesson & Perjons, 2014). Three research strategies are quantitative, qualitative, and mixed methods (Bryman, 2012; Wagner, 2012). This study used the quantitative research strategy. This strategy determines the relationship between variables of interest (Bryman, 2016). Bryman (2012) emphasizes that the quantitative research strategy is the only one to test the theories. On the one hand, it can check the relationship between theory and research using the collected quantifiable data. This strategy concerns generalising and replicating the research results and findings (Bryman, 2012).

3.2 Research design

The research design provides the components and plan and creates a framework upon which answers to the research questions can be sought. The research design is the backbone of the research (Bryman, 2016).

This study used a cross-sectional research design. This design is associated with quantitative strategy as it looks at relationships between variables (Bickman & Rog, 2008). A questionnaire designed with questions that sampled participants was used. This design has to be applied with care as it cannot postulate cause-effect relationships (Bickman & Rog, 2008).

The choice of a cross-sectional research design for this study is justified by its alignment with the research questions and objectives. Cross-sectional designs are particularly suitable for investigating relationships between variables at a specific time, making them well-suited for studies exploring associations or patterns among different factors. Using

a questionnaire to collect data from a sample of participants, the study can efficiently gather information on various variables of interest within a relatively short timeframe. Furthermore, the quantitative nature of the cross-sectional design aligns with the study's focus on examining relationships between variables. This approach enables the researcher to analyze data using statistical methods to identify correlations, associations, or trends among the variables under investigation. Such quantitative analysis adds rigor to the study and allows for objective interpretation of the findings. However, it is essential to acknowledge the limitations associated with cross-sectional designs, as highlighted by Bickman and Rog (2008). One of the main limitations is the inability to establish cause-and-effect relationships between variables. While cross-sectional designs provide valuable insights into associations between variables, they cannot determine the direction of causality. Therefore, caution must be exercised when interpreting the findings to avoid making causal inferences.

In summary, the choice of a cross-sectional research design for this study is justified by its suitability for exploring relationships between variables and its quantitative nature, which facilitates rigorous analysis. However, the limitations of this design, particularly its inability to establish causality, must be considered and addressed appropriately in the interpretation of the study findings.

3.3 Research procedure and methods

This section documents the actual procedure and the methods employed in this research to collect, process, and analyse empirical evidence. Broadly, we detail the data and information collection instruments (Section 3.3.1), the target population and sampling of respondents (Section 3.3.2), the ethical considerations during the research process (Section 3.3.3), data and information collection process and storage (Section 3.3.4), data and information processing and analysis (Section 3.3.5) as well as the background description of the respondents who provided empirical evidence for this research study (Section 3.3.6).

3.3.1 Research data and information collection instrument(s)

In order to get information from a more prominent target population in a short time, an online self-completion questionnaire can be used (Bryman, 2012). In conjunction with choosing the type of design, the researcher explores possible tools for data collection (Bickman & Rog, 2008). A data collection instrument is utilised to gather information from a studied population in order to answer a specific research question and draw conclusions (Bickman & Rog, 2008)

The research understudy utilised the online self-administered questionnaire. There are other advantages of using this type, such as the process being less expensive and not biased as participants answer questions on their own time and alone(Bryman, 2012). The developed questionnaire is shown in the Appendix and was tested for reliability and validity. Google Forms was used, and selected participants received individual emails that directed them to complete the online self-administered questionnaire.

3.3.2 Research target population and selection of respondents

3.3.2.1 Research target population

The population is the universe of units from which a sample is to be selected(Bryman, 2012). The target population for the research understudy was 203 users of the Power Africa Monitoring and Evaluation System in Pretoria, South Africa. These users are the key Power Africa stakeholders M&E professionals, and system owners. Some of the users were involved in the design of the system. The population should have participants who can assist with achieving the desired aim and objectives of the study (Bryman, 2012). The target population (203) comprised four subgroups within

the Power Africa Program using the Monitoring and Evaluation System. The users were categorized and assigned to a user group depending on their roles and functions. All user groups were considered to ensure complete representation. The user groups were as follows, Implementing Partners (IP1 – 65), (IP2-86), (IP3 – 27) and (IP4- 25). These were the key groups within the Power Africa Program.

3.3.2.2 Sampling or selecting respondents from the target population

The sample was the Power Africa individuals who participated in the research. The two sampling methods to choose from were probability sampling, which involves random selection, and non-probability sampling, which involves non-random selection (Bryman, 2012). For this research, probability-stratified random sampling was utilised. A represented sample from each user group was selected. The detailed selection of the sample is presented in Appendix 3.1.

Table 1: List of targeted user groups

Total Population	**203**	
Sample Size	**175**	
User Group	**Population**	**Sample**
IP1	65	56
IP2	86	70
IP3	27	25
IP4	25	24
Total	**203**	**175**

3.3.3 Ethical considerations when collecting research data.

To protect the research participants, ethical research is conducted. When conducting research, ethical considerations must be applied, such as being granted permission to conduct a study and for the researcher to ensure that participants are not subjected to any type of harm when participating in the research.

The participants were introduced to the research in detail and to the process, highlighting the purpose of the study and how the findings will be analysed. The questionnaire attached in the Appendix contains the introduction letter of the researcher. The Wits School of Governance Ethics and Research Committee reviewed and approved the proposal, granting permission to conduct the study. The responses are protected as they were only accessed by the researcher using a Google-protected email address. The questionnaire accompanied the consent form; the person could accept or

decline it. Once declined, they could not proceed with the questions, and those who accepted could proceed.

3.3.4 Research data and information collection process

The study used an online self-administered questionnaire. The benefits include more significant volumes of data and, most importantly, automatic capturing and analysis. The process was fully automated as questionnaires were emailed to participants, who responded online. Feedback was available immediately, and the researcher could follow up on participants. Information provided is secure and automatically kept on Google Drive, which is accessible only by the password of the researcher.

3.3.5 Research data and information processing and analysis

3.3.5.1 Research data and information processing

Since this study utilised a quantitative approach, the data processing required data coding, entry of data into a computer, and cleaning up the data. The advantages of using the online self-completion questionnaire were that the data required minimum coding, and some sections were automatically coded and analysed, leaving the researcher with less work to do. Some questions were marked as compulsory, meaning that the participant was prompted to go back and complete them before proceeding should they have skipped the question. The researcher checked a 20 percent sample of data for errors, and very few errors were found, which meant no further verification was required.

3.3.5.2 Research data and information analysis

The study was to examine if there was a relationship between the independent variables, which included the evolution of technology, data quality, Human Capital and stakeholders, and the dependent variable, performance on an M&E system. Inferential statistics and descriptive statistics combined can determine statistical significance, this helps the analysts to see how confident they are that the results from the study are generalizable to the population from which the sample was drawn (Creswell, 2009).

In this study, a probability sample was utilised to find evidence and infer the population regarding the implementation of the intervention. Descriptive and inferential statistics enabled the researcher to draw conclusions. Other tools such as Excel, STATA, and SPSS were also utilised to analyse data.

3.3.6 Description of the research respondents

This section aimed to show the nature of the research participants, all user groups were considered enriching the research findings and credibility. Personal details and positions were not provided in their background to ensure absolute anonymity in the research. Out of a total sample of 175 targeted respondents, 134 responded to the online questionnaires, giving a 77% response rate. A non-achievement rate of 23% was due to respondents being either busy or out of station during the study period.

Table: List of targeted user groups

Total Population	**203**			
Sample Size	**175**			
User Group	**Population**	**Sample**	**Responses**	**Response Rate**
IP1	65	56	43	77%
IP2	86	70	48	69%
IP3	27	25	22	88%
IP4	25	24	21	88%
Total	**203**	**175**	**134**	**77%**

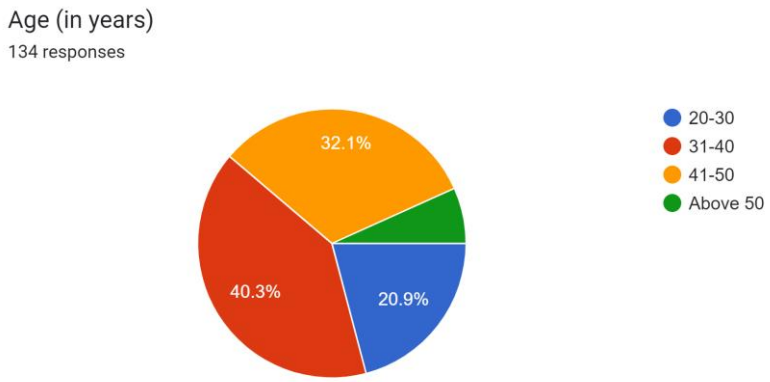
3.3.6.1 Background Information of the Respondents

The background respondent's information included age, gender, level of education, and marital status. Details and profiles of respondents in this study are shown in the tables below:

3.3.6.2 Age of Respondents

The chart below shows that out of 134 respondents 28 (20.9%) of respondents were between 20-30 years, 54 (40.3%) respondents were between 31-40 years, 43 (32.1%) respondents were between 41-50 years and 9 (6.7%) were above 50 years.

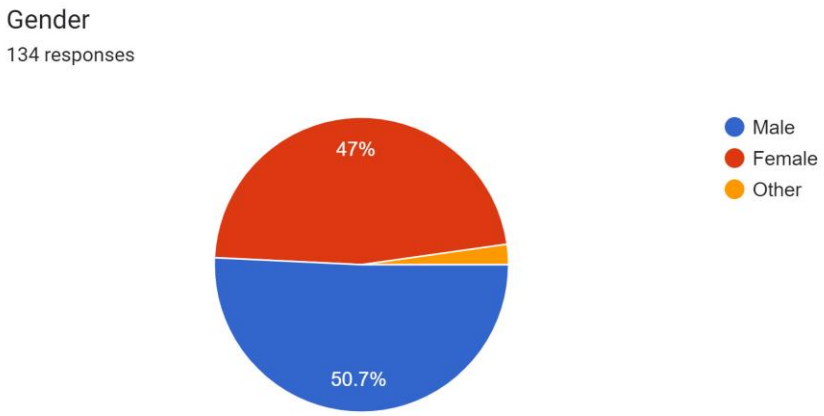
Figure: Age of respondents



3.3.6.3 Gender of respondents

As shown below. 68 (50.7%) of the respondents were males, 63 (47%) of the respondents were females, and 3 (2.2%) were in the category of other.

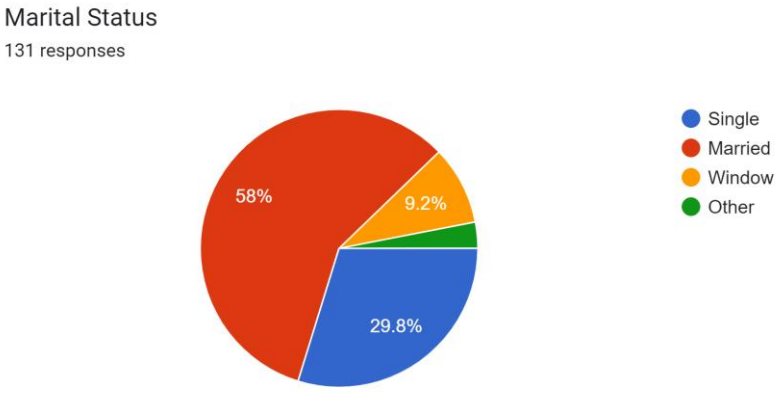
Figure: Gender of respondents



3.3.6.4 Marital status

As shown below. 39 (29.8%) of the respondents were single, 76 (58%) of the respondents were married, 12 (9.2%) of the respondents were windowed, and 4 (3.1%) of the respondents were in the other category.

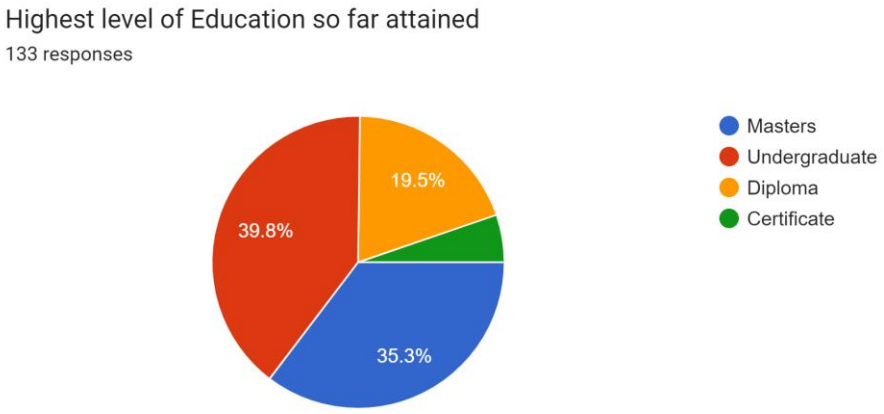
Figure: Marital Status



3.3.6.5 Highest Level of Education

As shown below. 47 (35.3%) of the respondents have a master's degree, 53 (39.8%) of the respondents have an undergraduate degree, 26 (19.5%) of the respondents have a diploma and 7 (5.3%) have a certificate.

Figure: Highest Level of Education



The above results indicate that most respondents were at the undergraduate level. However, all participants had reasonable knowledge of Monitoring and Evaluation, and their responses were appropriate.

3.4 Research strengthens—reliability and validity measures applied.

According to (Bryman, 2012), reliability is the degree to which a measure or a concept is stable, and validity is a concern with the integrity of the conclusions generated from a piece of research. In other words, reliability concerns whether the same results will be obtained if the same research is repeated, and validity checks if the researcher is measuring why it is supposed to be measured. External validity refers to the extent to which study findings can be inferred or generalised to a larger population (Bryman, 2012). External validity is strong if population sampling is randomly selected. This research employed a random sampling method to sample respondents from a larger population. Data was checked thoroughly to ensure no errors, the researcher performed routine checks, and controls were put in place.

3.5 Research limitations

This study was conducted to attain a master's degree. The researcher experienced time constraints in collecting and gathering data. More than half of the responses were obtained and used. The cross-sectional design was used for collecting data for this study. This design prohibits definitive statements regarding the direction of associations among study variables. Lastly, the study lacks ecological validity because it used a self-administered questionnaire that does not capture the daily life conditions of the studied participants.

4 PRESENTATION OF RESEARCH RESULTS

The study examined factors influencing the performance of Power Africa's donor-driven monitoring and evaluation system in South Africa. In this chapter, empirical research results are presented. The presentation is done through the application methodology outlined in Chapter 3. This chapter aims to comprehensively represent data collected and analysed to address the research questions and objectives established in Chapter 1.

The following research questions guided the discussion and presentation of the research findings:

1. How does the evolution of technology influence the performance of the M&E system?
2. How has human capital influenced the performance of the system over time?
3. How does data quality influence the performance of an M&E system?
4. How does stakeholder participation influence the performance of an M&E system?

This chapter presents the research results gathered during the data collection period. It seeks to discuss the findings of the four research questions in Section 1.2.3, which are presented as follows: Section 4.1, Section 4.2, Section 4.3, and Section 4.4.

Chapter Two, Section 2.7, presented the framework for the study, and Sections 2.1 and 2.2 explored the research problem. Section 2.3 elaborated on the knowledge gap, as well as the presentation of implementation as a field of study in Section 2.4 and the attributes of implementation. Sections 2.5 and 2.6 presented the framework for interpreting the empirical research results.

4.1 The influence of technology evolution on Power Africa Donor-driven monitoring and evaluation system performance.

There has been a recent increase in the use of technology in M&E work (E. Smith, 2019).This is because the traditional M&E is much more paper-based and prone to many errors as it is more of a manual process. From the information from Donors, collecting data, gathering it, analysing it, and sending it back to the donors. This process is inefficient and prone to many errors (E. Smith, 2019). This section presents the empirical results to determine the influence of technology evolution on M&E system performance and compares the statistical results to those of similar studies. Broadly, we

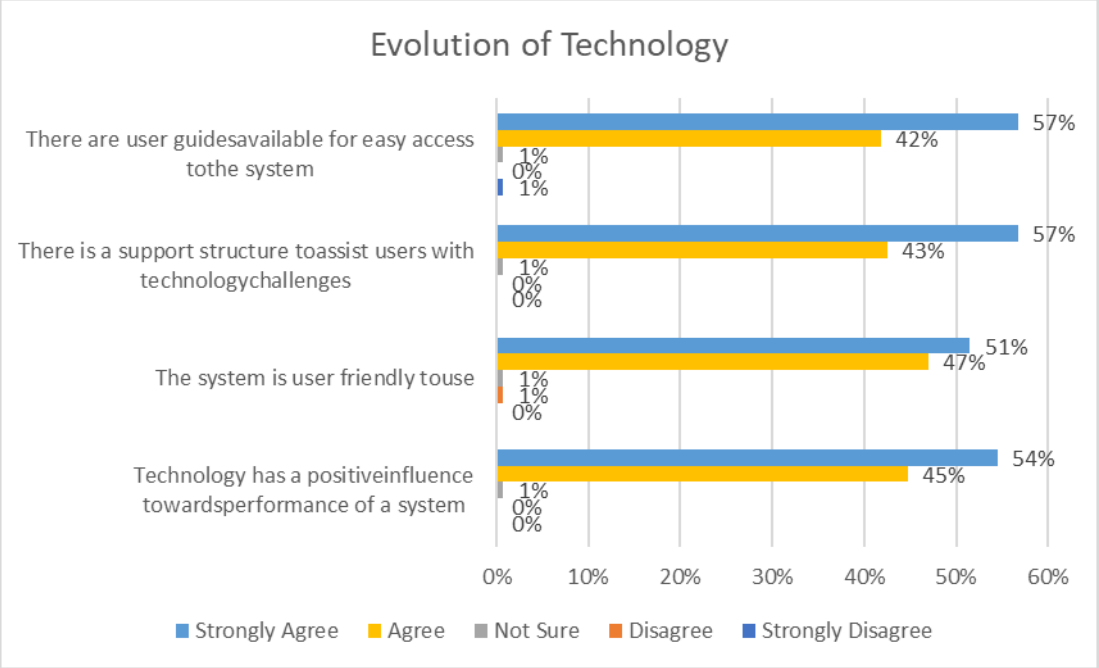
present the descriptive statistics (Section 4.1.1.1) and the statistical hypothesis testing for this relationship (Section 4.1.1.2) before moving on to compare these empirical results to what other similar studies found (4.1.2).

4.1.1 Presentation of the empirical results

4.1.1.1 Descriptive statistics

The study's first objective was to determine how the performance of the Power Africa Donor-driven monitoring and evaluation system in South Africa was influenced by the evolution of technology. The evolution of technology was measured using different variables and a five-point Likert scale. The Likert scale's simplicity and versatility made it accessible to respondents to respond to the questions efficiently. The five-point Likert scale made the interpretability and the reporting of results more effortless. The results are shown below in Figure 5:

Figure 7: Evolution of Technology



On the statement that there are user guides available for easy access to the system, (1) 1 % Strongly disagreed, (1) 1% was not sure while (56) 42% agreed, and (76) 57% strongly agreed. This implies that the majority (98%) agreed.

On the statement that there is a support structure to assist users with technology challenges, (1) 1% were not sure, (57) 43% agreed, and (76) 57% strongly agreed. This implies that most (99%) respondents agreed with this statement.

On the statement that the system is user-friendly to use, (1) 1% disagreed, (1) 1% were not sure, (63) 47% agreed, and (76) 51% strongly agreed. This implies that most respondents (98%) agreed with this statement.

On the statement that technology has a positive influence on the performance of a system, (1) 1% was not sure, while (60) 45% agreed and (73) 54% strongly agreed. This implies that the majority of respondents (99%) agreed.

4.1.1.2 Statistical hypothesis testing

Correlation analysis was carried out to determine the influence of technology on Power Africa's Donor-driven monitoring and evaluation system after cleaning up the data, coding it, and averaging it with Excel. The correlation coefficient (r) was calculated using Excel, as shown below, and used to determine the strength of the relationship between the evolution of technology and the performance of Power Africa Donor-driven monitoring and evaluation. The results shown in Table 3 indicate a significant positive relationship between the evolution of technology (0.704) and the performance of the Power Africa Donor-driven monitoring and evaluation system. The table below shows the correlation between the variable's performance and the evolution of technology. The average percentage of each variable response is displayed and then used to measure how strong and in which direction the variables relate.

Table 3: Correlations between the evolution of technology and the performance of M&E system

Performance	Evolution	
66	66.5	0.703526
62.5	66	
64	66.5	
64	66	

4.1.2 Comparison of results to other similar studies

In this section, we compare the findings of our study to those similar studies that looked at technology and M&E. The study questions addressed the usefulness and influence of technology on the performance of a system. The results indicate a positive relationship between the evolution of technology and the performance of an M&E system. The study findings agree with SAMEA (2022) that advocates the use of technology in M&E. This is seen in the statement that technology has a positive influence on the performance of a system, (1) 1% was not sure, while (60) 45% agreed and (73) 54%

strongly agreed. This implies that the majority of respondents (99%) agreed. According to Smith (2019) a manual M&E system is prone to errors.. Another study by Hoang (2022) brings an important aspect of insight when there is use of technology and easy decision-making. This agrees with the study results on the statement that the system is user-friendly: (1) 1% disagreed, (1) 1% were not sure, (63) 47% agreed, and (76) 51% strongly agreed. This implies that most respondents (98%) agreed with this statement. This is also supported by the study done by Nanda (2017), who agrees with Hoang, (2022) on the use of technology. Hoang, (2022) advocates the use of technology and how it has changed this to more than just adherence but how organizations are now empowered and have moved beyond data collection to data analysis and have more insights that help with decision-making about the programs.

In conclusion, in addition to comparing the findings of our study with similar research on technology and Monitoring and Evaluation (M&E), it's crucial to recognize the broader implications of these results. The positive relationship between technology evolution and M&E system performance highlighted in our study echoes the advocacy of The Rockefeller Foundation. The Rockefeller Foundation, as a scientific philanthropy, actively backs initiatives aimed at harnessing technology and integrating technology into M&E practices. The overwhelming agreement among respondents regarding the positive influence of technology on system performance underscores the growing recognition within the field. As Smith (2019) highlighted, reliance on manual M&E systems can lead to errors, emphasizing the need for technological solutions to enhance accuracy and efficiency. Moreover, insights from Hoang (2022) and Nanda (2017) emphasize the transformative potential of technology beyond mere data collection, enabling organizations to delve into data analysis and gain actionable insights for informed decision-making. These findings reinforce the importance of embracing technological advancements in M&E and shed light on the shift towards more empowered and informed approaches to program management and evaluation in the digital age.

4.2 The influence of data quality on Power Africa Donor-driven monitoring and evaluation system performance.

This section presents the empirical results to determine the influence of data quality on M&E system performance and compares the statistical results to those of

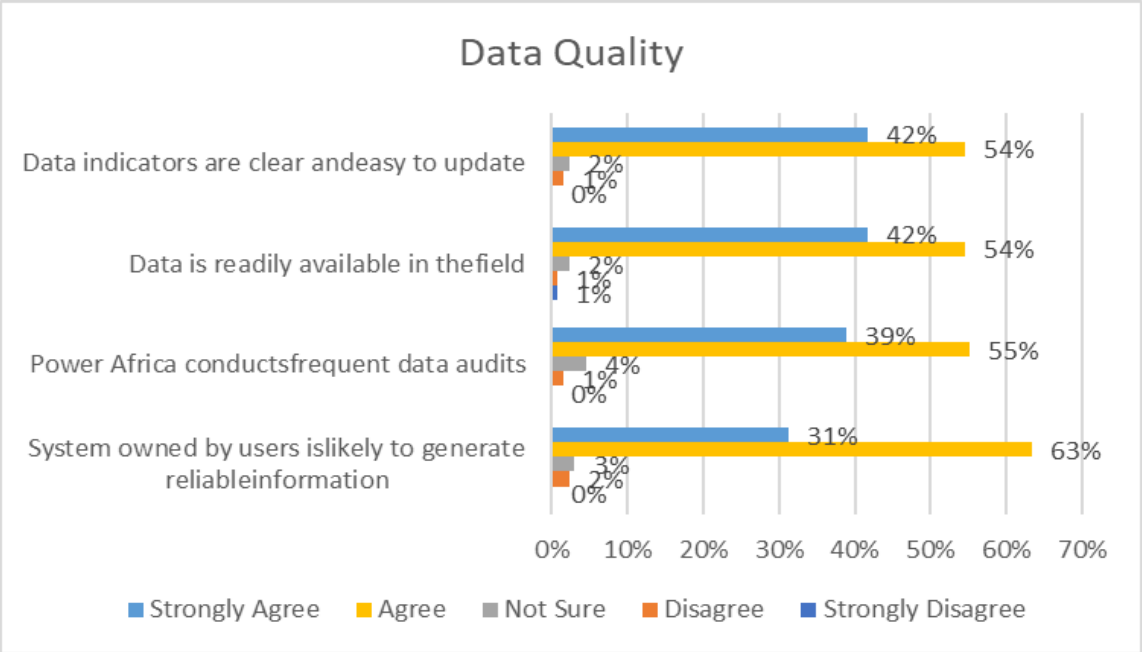
similar studies. Broadly, we present the descriptive statistics (Section 4.2.1.1) and the statistical hypothesis testing for this relationship (Section 4.2.1.2) before moving on to compare these empirical results to what other similar studies found (4.2.2).

4.2.1 Presentation of the empirical results

4.2.1.1 Descriptive statistics

The study's second objective was to determine how data quality influenced the performance of Power Africa's Donor-driven monitoring and evaluation system in South Africa. Data Quality was measured using different variables and a five-point Likert scale, whose results are shown below in Figure 6:

Figure 8: Data Quality



The figure above presents that on the statement that data indicators are clear and easy to update, (2) 1 % disagreed, (3) 2% were not sure (73) 54% agreed, and (56) 42% strongly agreed. This implies that most respondents (96%) agreed.

On the statement that data is readily available in the field, (1) 1 % strongly disagreed, (1) 1 % disagreed, (3) 2% were not sure, while (73) 54% agreed, and (56) 42% strongly agreed. This implies that the majority (96%) agreed.

On the statement that Power Africa conducts frequent data audits, (2) 1 % disagreed, (6) 4% were not sure while (74) 55% agreed, and (52) 39% strongly agreed. This implies that the majority (94%) agreed.

On the statement that a system owned by users is likely to generate reliable information, (3) 2% disagreed, (4) 3% were not sure, while (85) 63% agreed, and (42) 31% strongly agreed. This implies that the majority (94%) agreed.

4.2.1.2 Statistical hypothesis testing

Correlation analysis was carried out to determine the influence of data quality on Power Africa's Donor-driven monitoring and evaluation system, after cleaning up the data, coding it, and averaging it in Excel. The correlation coefficient (r) was calculated using Excel, as shown below, to determine the strength of the relationship between data quality and Power Africa Donor-driven monitoring and evaluation performance. The results shown in Table 4 indicate a positive relationship between data quality (0.174) and Power Africa Donor-driven monitoring and evaluation system performance. The table below shows the correlation between the variable's performance and data quality. The average percentage of each variable response is displayed and then used to measure how strong and in which direction the variables relate.

Table 4: Correlations between data quality and performance of M&E system

Performance	Data quality	
66	63.5	0.174078
62.5	63	
64	64.5	
64	64.5	

4.2.2 Comparison of results to other similar studies

In this section, we compare the findings of our study to those similar studies that looked at data quality and M&E. The study questions addressed the importance of data and its influence on a system's performance. The results indicate a positive relationship between data quality and the performance of an M&E system. Two prominent authors in the M&E field, such as Kusek and Rist (2004) and Gebremedhin et al. (2010), holds similar opinion about the importance of accurate data in M&E. The study by Gebremedhin et al. (2010) also suggests that a system owned by users produces reliable data. On this statement that a system owned by users is likely to generate reliable information, (3) 2% disagreed, (4) 3% were not sure, while (85) 63% agreed, and (42) 31% strongly agreed. This implies that the majority (94%) agreed with Gebremedhin et al., (2010), as mentioned above.

In conclusion, expanding on the comparison between our study's findings and related research on data quality and Monitoring and Evaluation (M&E), it becomes evident that

the significance of accurate data resonates across multiple studies within the field. Our results reinforce the prevailing notion, as advocated by influential authors like Kusek and Rist (2004) and Gebremedhin et al. (2010), regarding the pivotal role of high-quality data in bolstering the effectiveness of M&E systems. Gebremedhin et al. (2010) particularly emphasize the importance of user ownership in ensuring data reliability, a sentiment echoed by our study's respondents. The overwhelming agreement among participants regarding the reliability of data generated by user-owned systems underscores the validity of Gebremedhin et al.'s findings. It highlights the critical link between data ownership, quality, and system performance. These insights affirm the importance of prioritising data quality within M&E practices and emphasize the need for user-centric approaches to data management and system design to maximize the utility and reliability of M&E data.

4.3 The influence of human capacity on Power Africa Donor-driven monitoring and evaluation system performance.

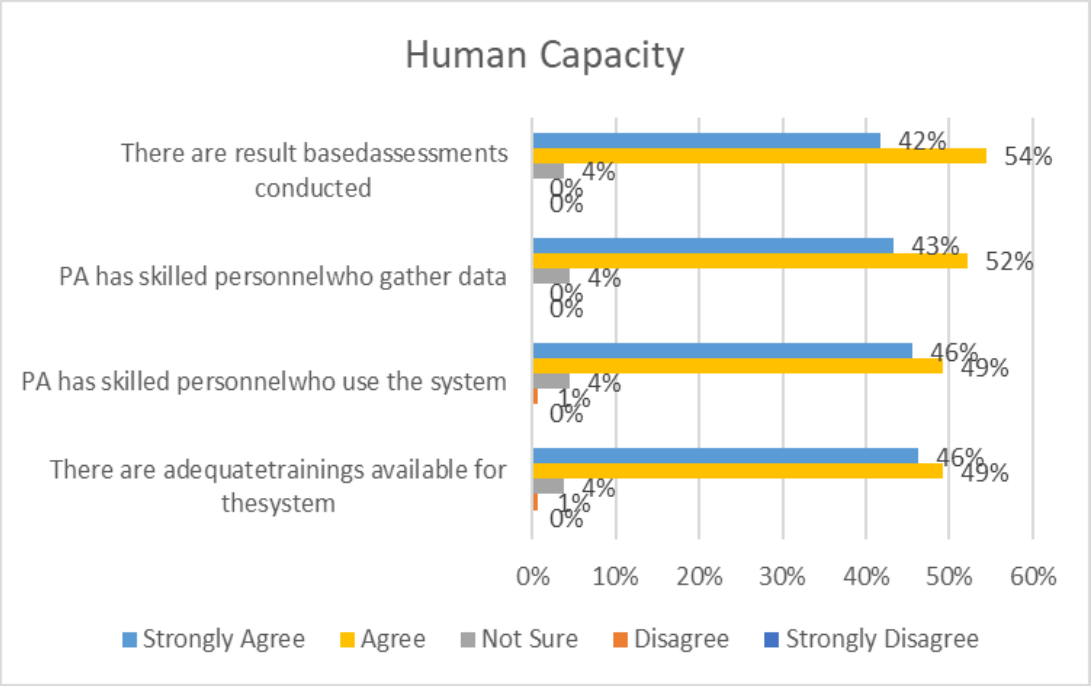
This section presents the empirical results to determine the influence of human capacity on M&E system performance and compares the statistical results to those of similar studies. Broadly, we present the descriptive statistics (Section 4.3.1.1) and the statistical hypothesis testing for this relationship (Section 4.3.1.2) before moving on to compare these empirical results to what other similar studies found (4.1.2).

4.3.1 Presentation of the empirical results

4.3.1.1 Descriptive statistics

The study's third objective was to determine how human capital influenced the performance of Power Africa's Donor-driven monitoring and evaluation system in South Africa. Human capital was measured using different variables and a five-point Likert scale, whose results are shown below in Figure 7:

Figure 9: Human Capacity



On the statement that there are result-based assessments conducted, (5) 4% were not sure, while (73) 54% agreed and (56) 42% strongly agreed. This implies that the majority (96%) agreed.

On the statement that PA has skilled personnel who gather data, (6) 4% were not sure, while (70) 52% agreed and (58) 43% strongly agreed. This implies that the majority (95%) agreed.

On the statement that PA has skilled personnel who uses the system, (1) 1% disagreed, (6) 4% were not sure while (66) 49% agreed, and (61) 46% strongly agreed. This implies that the majority (95%) agreed.

On the statement that there are adequate trainings available for the system, (1) 1% disagreed, (5) 4% were not sure while (66) 49% agreed, and (62) 46% strongly agreed. This implies that the majority (95%) agreed.

4.3.1.2 Statistical hypothesis testing

Correlation analysis was carried out to determine the influence of human capacity on Power Africa's Donor-driven monitoring and evaluation system after cleaning up the data, coding it, and averaging it in Excel. The correlation coefficient (r) was calculated using Excel, as shown below, to determine the strength of the relationship between human capacity and Power Africa Donor-driven monitoring and evaluation

performance. The results shown in Table 4 indicate a positive relationship between human capacity (0.426) and the performance of Power Africa's Donor-driven monitoring and evaluation system. The table below shows the correlation between the variable's performance and human capacity. The average percentage of each variable response is displayed and then used to measure how strong and in which direction the variables relate.

Table 5: Correlations between human capacity and performance of M&E system

Performance	Human Capacity	
66	64	0.426401
62.5	63.5	
64	64	
64	64.5	

4.3.2 Comparison of results to other similar studies

In this section, we compare the findings of our study to those similar studies that looked at human capacity and M&E. The study questions addressed the importance of how human capacity and capacity building influence the performance of an M&E system. The study results revealed that skilled personnel are required for the success of a system. Kusek and Rist, (2004) agree with this notion of capacity building and assessing human capacity as critical for an M&E system. This is also supported by Shapiro (2011), who emphasizes that managers should know their team's competencies. In summary, investing in the development and well-being of employees is essential for organisational growth, competitiveness, and long-term sustainability.

4.4 The influence of stakeholders on Power Africa Donor-driven monitoring and evaluation system performance.

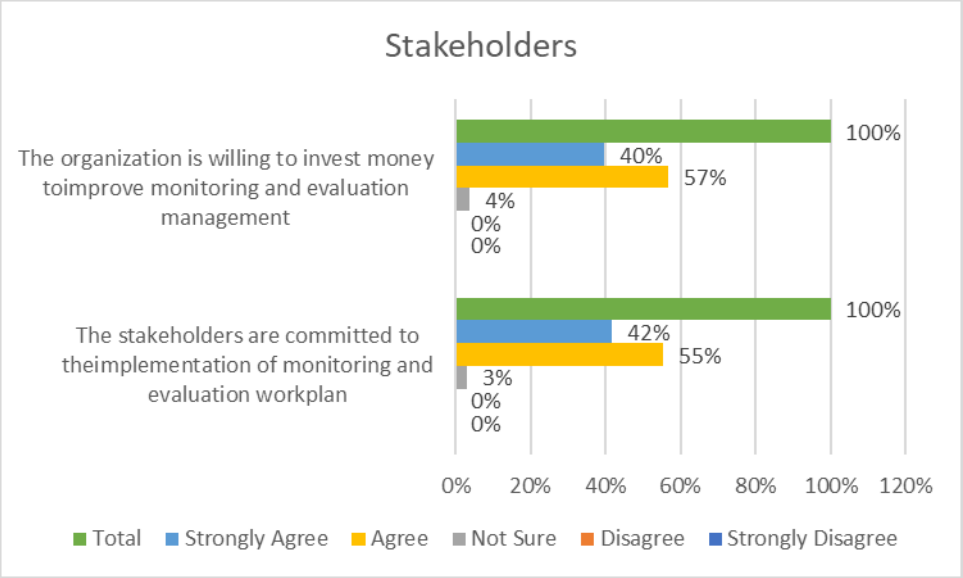
This section presents the empirical results to determine the influence of stakeholders on M&E system performance and compares the statistical results to those of similar studies. Broadly, we present the descriptive statistics (Section 4.4.1.1) and the statistical hypothesis testing for this relationship (Section 4.4.1.2) before moving on to compare these empirical results to what other similar studies found (4.4.2).

4.4.1 Presentation of the empirical results

4.4.1.1 Descriptive statistics

The study's fourth objective was to determine how stakeholders influenced the performance of Power Africa's Donor-driven monitoring and evaluation system in South Africa. Stakeholders were measured using different variables and a five-point Likert scale, whose results are shown below in Figure 8:

Figure 10: Stakeholders



On the statement that the organization is willing to invest money to improve monitoring and evaluation management, (5) 4% were not sure, while (76) 57% agreed and (53) 40% strongly agreed. This implies that the majority (97%) agreed.

On the statement that the stakeholders are committed to the implementation of monitoring and evaluation, (4) 3% were not sure, while (74) 55% agreed and (56) 42% strongly agreed. This implies that the majority (97%) agreed.

4.4.1.2 Statistical hypothesis testing

Correlation analysis was carried out to determine the influence of stakeholders on Power Africa's Donor-driven monitoring and evaluation system, after cleaning up the data, coding it, and averaging it in Excel. The correlation coefficient (r) was calculated using Excel, as shown below, to determine the strength of the relationship between stakeholders and Power Africa Donor-driven monitoring and evaluation performance. The results shown in Table 4 indicate a positive relationship between stakeholders (0.999) and the performance of Power Africa's Donor-driven monitoring and evaluation system. The table below shows the correlation between the variable's performance and

stakeholders. The average percentage of each variable response is displayed and then used to measure how strong and in which direction the variables relate.

Table 6: Correlations between stakeholders and performance of the M&E system

Performance	Stakeholders	
66	65	0.999454
62.5	64.5	

4.4.2 Comparison of results to other similar studies

In this section, we compare the findings of our study to those similar studies that looked at stakeholders and M&E. The study questions addressed the importance of stakeholder involvement and how it influences the performance of an M&E system. Two questions were asked, and responses indicated that stakeholders' involvement affects the performance of the M&E System. Further studies are required on this notion of stakeholder involvement. Only one study was looked at, which agrees with the study results that stakeholder engagement and participation are critical to the success of any project (Jones et al., 2009). However, other studies argue that stakeholders complain that M&E systems are expensive, so stakeholders will only use the tool for compliance (Gebremedhin et al., 2010). According to USAID.GOV (2021b) Power Africa has established formal partnerships with key stakeholders, including Private Sector Partners, development partners, multilateral partners, and governments. These engagements are critical for them to reach 60 million connections and 30,000 MW (USAID.GOV, 2021b). In Summary, the involvement of individuals with a vested interest in an program's outcome is crucial for its success and sustainability as shown by the study results.

5 DISCUSSION OF RESEARCH FINDINGS

According to Wotela (2018), it is suggested that the empirical research results should be subject to discussion and interpretation through the utilization of interpretative frameworks, along with other relevant supporting literature. This particular component examines and deliberates on the empirical research findings outlined in Chapter 4. It considers the existing literature and, more specifically, the general system and program theories. The discussion of the findings is within the context of the research conceptualisation as well as the aspects of the physical context (Section 2.1), the problem analysis (Section 2.2), and the knowledge gap analysis (Section 2.8). Therefore, this chapter presents and discusses the summary findings.

5.1 The influence of the evolution of technology, human capacity, data quality, and stakeholders' involvement on Power Africa Donor-driven monitoring and evaluation system performance.

The study aimed to assess the factors influencing the Power Africa M&E system; it focused on exploring how much technology, human capacity, data quality, and stakeholders' participation influence the system's performance.

The research results indicate a positive correlation between human capacity and the performance of Power Africa's Donor-driven monitoring and evaluation system. The correlation coefficient value was 0.426. The results are influenced by the underlying theory of change that supports the intervention. Stanford Pacs, (2020) highlights that a theory of change provides a framework for understanding an organization's ultimate outcomes or goals and how it plans to achieve them. These findings align with the conclusions drawn in a 2004 study, which emphasized the importance of assessing and building human capacity as a critical element in improving M&E system performance. Similar findings were also supported by Shapiro (2011), who emphasizes the need for managers to be aware of their team's competencies. Based on the above findings, skilled personnel are crucial in effectively designing, implementing, and managing M&E systems. They possess the necessary knowledge and skills to ensure the quality and reliability of data collected, the accurate analysis of data, and the utilization of evaluation findings for program improvement and decision-making. Their expertise dramatically enhances the overall effectiveness of M&E systems in driving organizational growth and impact.

The study also found a positive correlation (0.174) between data quality and the performance of the Power Africa Donor-driven monitoring and evaluation system. The results Theory emphasises on results to provide clarity around key projects objectives. According to the World Bank, (2015) a results framework is beneficial for monitoring management and evaluation in several ways such as help in focus on specific outcomes, highlighting key linkages in the theory of change that underpins the intervention, it helps to measure progress towards strategic objectives, and it helps achieve strategic objectives such as data quality.

This is consistent with previous studies by Kusek and Rist (2004) and Gebremedhin et al. (2010), which emphasized the importance of data quality in ensuring the accuracy and effectiveness of M&E systems. Gebremedhin et al. (2010) also highlighted the significance of user ownership in producing reliable data.

It is evident that robust data collection methods, management systems, and validation processes are crucial in enhancing the quality of M&E data. These measures ensure accuracy, reliability, integrity, consistency, comparability, timeliness, and accountability, enabling organizations to make informed decisions, track progress, and improve the effectiveness of their programs and interventions. When conducting M&E activities, organizations share their findings with various stakeholders, including donors, policymakers, and the public.

The study results reveal a significant positive correlation between the evolution of technology (0.704) and the performance of the Power Africa Donor-driven monitoring and evaluation system. The program theory stipulates how evolution of technology will impact the program. According to Bickman, (1987) a program theory is the construction of a plausible and sensible mode of how a program is supposed to work. The findings align with SAMEA (2022), which advocates for using technology in M&E. According to Smith (2019), a manual M&E system is prone to errors. Another study by Hoang (2022) highlights the importance of technology in providing insights for easy decision-making and supports the use of technology recommended by Nanda (2017). Hoang (2022) emphasizes that technology has transformed M&E systems from collecting data to analysing it. This provides organizations with more insights to make better decisions about their programs.

In conclusion, technology has the potential to revolutionize M&E systems, leading to more effective and efficient interventions. By leveraging technological advancements, organizations can enhance their ability to measure and evaluate outcomes, resulting in improved data accuracy, analysis, and information dissemination. Therefore, technology can significantly improve the effectiveness and efficiency of the M&E system.

Regarding stakeholder participation, there is a positive relationship between stakeholders (0.999), and the performance of Power Africa's monitoring and evaluation system, which donors drive, was assessed. A Program theory serves as a roadmap for program planning, and it helps program stakeholders clarify expectations and assumptions about how a program will impact the lives of its beneficiaries. It's a tool that is used to monitor and assess whether the program is on track to achieve intended outcomes.The examined study indicates that stakeholder engagement and participation are critical for project success (Jones et al., 2009). However, other studies suggest that stakeholders find monitoring and evaluation systems costly and only use them to comply (Gebremedhin et al., 2010). It is worth noting that collaboration, communication, and shared ownership are essential for developing and implementing a relevant and effective monitoring and evaluation system, as demonstrated by this study and other reviewed studies. By involving stakeholders from diverse backgrounds, maintaining transparent and open communication channels, and promoting shared ownership, organizations can ensure that their monitoring and evaluation systems accurately measure and assess the impact of their programs, resulting in better decision-making and program outcomes.

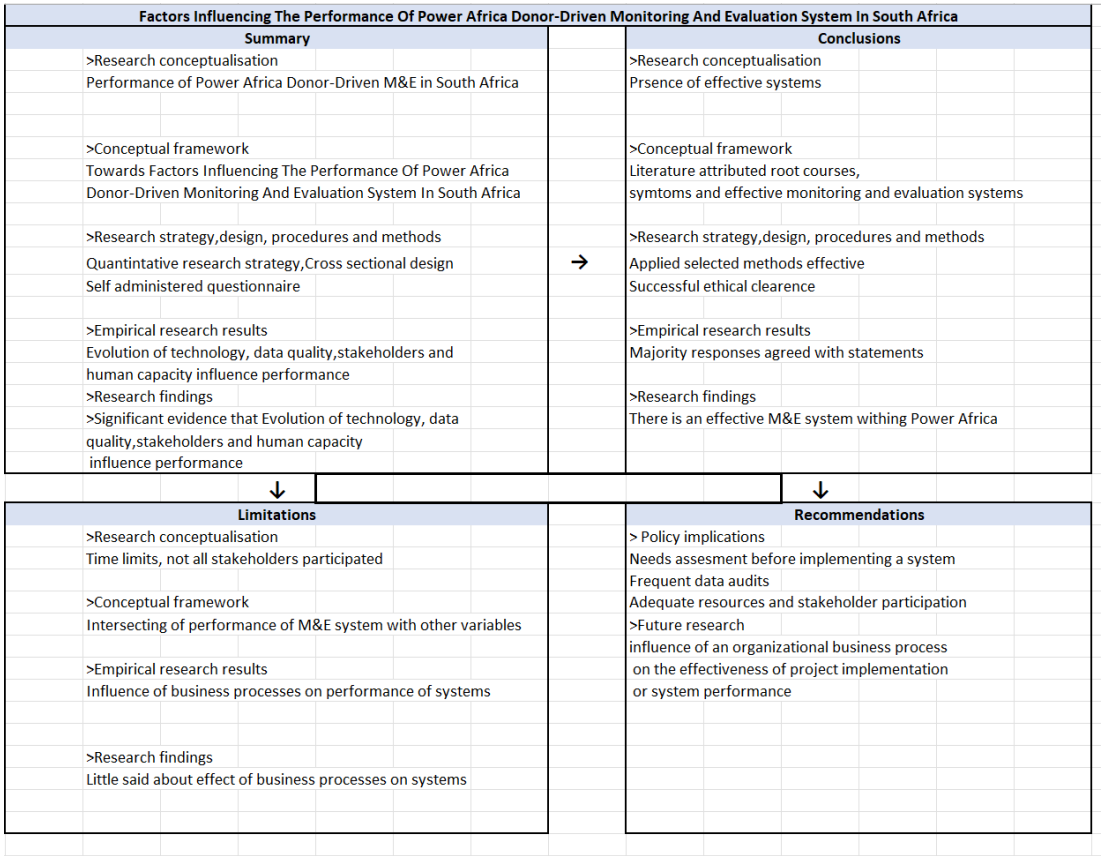
In conclusion, the Power Africa donor-driven system, consisting of the Power Africa Information System (PAIS) and the Power Africa Tracking Tool (PATT), stands out as a pivotal component of Power Africa's operations, as underscored in both the Power Africa Annual Report and the Toolbox (USAID.GOV, 2021b). These tools have endured transitions in leadership, spanning from their inception during Phase 1 of Power Africa under President Obama's administration, through the tenure of President Donald Trump, and persisting into the current administration of President Joe Biden. This sustained utilisation across different administrations serves as a testament to the enduring value and effectiveness of these tools in facilitating Power Africa's mission. It indicates the functionality, adaptability, and continuous improvement of the tools that assist Power Africa in achieving its multifaceted goals. Through their consistent use and

integration into Power Africa's operations, these tools have become integral to the initiative's success, highlighting their indispensable role in driving progress and facilitating collaboration across sub-Saharan Africa's energy sector.

6 SUMMARY, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

This chapter consists of objectives, which are: (6.2) summarising the research report, (6.3) drawing the conclusion, (6.4) discussing the limitations of the research report, and (6.5) making recommendations for future research studies and policy essentials. Specifically, (6.1) provides a summary of the essential elements encompassing the research conceptualisation, the conceptual framework (Section 2), the research methodologies (Section 3), the presentation of research results (Section 4), and the discussion of research findings (Section 5). The main objective of this chapter is to solidify the entire research report and provide confirmation of the achievement and answers to the research purpose (Section 1.2.2) research questions and corresponding hypothesis (Section 1.2.3), as depicted in Figure 11.

Figure 11: The outline of the summary, conclusion, and recommendation for the study



6.1 Summary

The study examined factors influencing the performance of Power Africa's donor-driven monitoring and evaluation system in South Africa. The study set out to determine how the evolution of technology affected the performance of Power Africa donor-driven Monitoring and evaluation system, how data quality influenced the performance of Power Africa donor-driven monitoring and evaluation system, how stakeholders influenced the performance of Power Africa donor-driven monitoring and evaluation system and how human capital influenced performance of Power Africa donor-driven monitoring and. evaluation system.

The study randomly sampled and provided questionnaires to implementing partners using the Power Africa monitoring and evaluation system. The main empirical findings are in Chapter 4. The findings were summarised with the above research questions. This section synthesises the empirical findings to answer the study's four questions.

The findings revealed that Power Africa has developed an internal tracking, monitoring, and evaluation system using the latest technology. The use of the latest technology created a positive influence towards the system, as shown in the findings. The system is user-friendly, there is a support structure to assist users with technology challenges, and there are also user guides available, and there is easy access to the system.

As discussed in (Section 5.1), the findings revealed that Power Africa collects data across Southern Africa and reports quarterly on results and their indicators. The system has played a significant role in data collection as it is done electronically. The findings showed that Power Africa data indicators are clear and easy to update, and the data is readily available in the field. Power Africa also conducts frequent data audits. Power Africa's monitoring and evaluation system is available for all users, and results show that it generates reliable information.

Findings, as discussed in (Section 5.1) revealed that result-based assessments are critical for the performance of a monitoring and evaluation system. Power Africa's system functions well because skilled personnel gather data across the sub-Sahara. Power Africa has experienced personnel who use the system, and there is always adequate training that is conducted for new users and refresher training for existing users. In addition to the training, Power Africa also conducts open-hour sessions where users with queries or questions meet with the administrators to resolve and answer their

queries. These findings clearly show that human capacity influences the performance of donor-driven monitoring and evaluation systems.

Lastly, in (Section 5.1) the study revealed that donors are willing to invest money to improve monitoring and evaluation management. The stakeholders are committed to the implementation of monitoring and evaluation work plans. Stakeholders have played a critical role in the performance of Power Africa's donor-driven monitoring and evaluation system.

6.2 Conclusions

Applying content analysis, descriptive and correlation coefficient analysis has proved most effective in determining the relationship between the performance of the monitoring and evaluation system and the independent variables, the evolution of technology, data quality, human capacity, and stakeholder participation.

The study confirmed that the evolution of technology has a positive relationship with the performance of donor-driven monitoring and evaluation systems. The use of the latest technology and ensuring that the system is user-friendly, availability of a support structure to assist users with technology challenges, availability of user guides, and easy access to the system are all critical to the performance of a system.

The findings showed that Power Africa data indicators are clear and easy to update, and the data is readily available in the field. Power Africa also conducts frequent data audits. Power Africa's Monitoring and evaluation system is available for all users, and results show that it generates reliable information. The study confirms that data quality has a positive relationship with the performance of donor-driven monitoring and evaluation systems.

Human Capacity is crucial for good monitoring and evaluation results. The study has confirmed that result-based assessments are critical for the performance of a monitoring and evaluation system. The study demonstrates that human capacity positively relates to donor-driven monitoring and evaluation system performance.

The study confirmed donors are willing to invest money to improve monitoring and evaluation management. The stakeholders are committed to the implementation of monitoring and evaluation work plans. Stakeholders have played a critical role in the performance of Power Africa's donor-driven monitoring and evaluation system. The study confirms that stakeholders have a positive relationship with the performance of donor-driven monitoring and evaluation systems.

6.3 Limitations

Additionally, it's essential to acknowledge that, due to time constraints and the unavailability of some participants, not all implementing partners within the target population could respond to the online questionnaires. This may have introduced potential non-response bias, as participants may have different characteristics or perspectives from those who did not. While this could be considered a limitation, it is worth noting that the sample size obtained was still sufficient for conducting a comprehensive analysis, allowing for drawing meaningful conclusions and insights relevant to the study's objectives.

6.4 Recommendations

Based on the findings of this study and the conclusions made, the study makes the following recommendations for policy action:

It is crucial to perform a needs assessment that looks at the current systems and what is available in the market and determines if it's built using the latest technology. The technology used should ensure that the system is user-friendly, availability of a support structure to assist users with technology challenges, user guides, and easy access to the system. It is recommended that technology be incorporated into M&E practices to empower organisations to collect, analyse, and communicate data more effectively, ultimately leading to better decision-making and improved project outcomes. However, it is imperative to carefully plan and manage technology integration to maximize its benefits while mitigating potential challenges and risks.

Data is critical in any M&E system. The data should be credible. The validity and reliability of the data ensure the credibility of the system. The data indicators should be clear and easy to update, and the data should be readily available in the field. Frequently, data audits should be performed to ensure that data is available and accurate. Data collection training, standardised data collection tools, data entry protocols, and frequent data audits should be incorporated, as data quality is critical for effective monitoring and evaluation. By implementing these recommendations, project stakeholders and organizations can ensure that data collected in monitoring and evaluation activities are accurate, reliable, and fit for purpose. High data quality enhances the validity and credibility of evaluation findings and facilitates informed decision-making.

Human Capacity has a positive relationship to performance is a system. Therefore, the organisation's Human Capacity Department policy should ensure that onboarded staff are oriented, adequately trained, and provided with all necessary tools to perform their roles. Result-based assessments and appraisals should be performed quarterly to ensure the positive performance of a monitoring and evaluation system. Organisations can invest in training programs and professional development, establish mentorship and coaching programs, encourage certifications and accreditations with bodies such as SAMEA, etc. These recommendations will enable organisations to build strong and capable teams that contribute to evidence-based decision making and achieving goals and objectives.

Considering all stakeholders before imposing a system in an organisation is essential. The commitment of all critical stakeholders ensures the performance of a monitoring and evaluation system. It promotes transparency and accountability, and brings valuable perspectives and insights to the processes. Stakeholders' involvement also instills a sense of ownership and commitment to the project's success. Stakeholder involvement in monitoring and evaluation is essential for ensuring process relevance, accuracy, and effectiveness. It promotes transparency, accountability, and the use of data for informed decision-making, ultimately contributing to better project outcomes and the achievement of program objectives.

6.5 Suggestions for further research

The following areas are suggestions for further research: the influence of an organizational business process on the effectiveness of project implementation or system performance. Is a system that speaks to the organization's business processes more functional and accepted than one that will introduce or change the organization's existing business processes, thereby introducing change?

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APPENDICES

Appendix 1.1: Online Self- administered questionnaire

PARTICIPANT INFORMATION AND INFORMED CONSENT

Dear Sir/Madam

My name is Blessing Muvuti, and I am a Masters student in Management at the University of the Witwatersrand. As part of my studies, I have to undertake a research project. I am examining factors influencing the performance of Power Africa's donor-driven monitoring and evaluation system in South Africa.

I would like to invite you to take part in a self-administered questionnaire. This activity will involve answering questions about the Power Africa donor-driven monitoring and evaluation system and will take around 5 minutes.

The questionnaire will be completely confidential and anonymous as I will not be asking for any personal identifying information, and the information you give to me will be held securely and not disclosed to anyone else. You will not receive any direct benefits from participating in this study, and there are no disadvantages or penalties for not participating. This questionnaire is voluntary. You may withdraw at any time or not answer any question if you do not want to. You are free to stop participating should you experience any distress in the questionnaire.

Should you have any questions afterward, please feel free to contact me.

Yours sincerely,
Blessing Muvuti

Researcher: Blessing Muvuti, 2112103@students.wits.ac.za , +27 79 228 9166

CONSENT FORM

Title of Project: Factors influencing the performance of Power Africa donor-driven monitoring and evaluation system in South Africa

Name of Researcher: Blessing Muvuti

I, …….., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study.	YES	NO
I agree that direct quotations from my online questionnaire may be used by the researcher in their research report.	YES	NO
I agree that my participation will remain anonymous (my name will not be used by the researcher in their research report.	YES	NO
I agree that other researchers may use the information I provide depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on	YES	NO

…… (signature)
…… (name of participant)
…… (date)

…… (signature)
…… (name of researcher/person seeking consent)
…… (date)

Section A: General Information

1. User Role

……..

2. Gender 1. Male [] 2. Female [] 3. Other []
3. Age (in years) 1.20-30 [] 2. 31-40[] 3. 41-50 [] 4. Above 50 []
4. Marital status 1. Single[] 2. Married [] 3. Widow[]

   Other, please specify…….
5. Highest level of education so far attained

   1. Masters [] 2. Undergraduate [] 3. Diploma [] 4. Certificate []

   Other, please specify…….
6. Your work experience with Power Africa Monitoring and Evaluation System

   1. None [] 2.1-4 [] 3. 5-8 [] 4. 9-12[] 5. Above 12 []

Section B – Factors Influencing Performance

In this section, you will be asked to provide your opinion on how data quality influences the performance of the Power Africa Monitoring and Evaluation system

Please respond to most of the items in the sections using the scale by ticking the appropriate option.

1. SD – Strongly Disagree
2. D – Disagree
3. NS- Not Sure
4. A- Agree
5. SA-Strongly Agree

No	Statement	Codes				
Section B: Evolution of Technology		**SD**	**D**	**NS**	**A**	**SA**
1	Technology has a positive influence on the performance of a system	1	2	3	4	5
2	The system is user friendly to use	1	2	3	4	5
3	There is a support structure to assist users with technology challenges	1	2	3	4	5
4	There are user guides available for easy access to the system	1	2	3	4	5
Section C: Data Quality		**SD**	**D**	**NS**	**A**	**SA**
5	A system owned by users is likely to generate reliable information	1	2	3	4	5
6	Power Africa conducts frequent data audits	1	2	3	4	5
7	Data is readily available in the field	1	2	3	4	5
8	Data indicators are clear and easy to update	1	2	3	4	5
Section D: Human Capacity						
9	There are adequate trainings available for the system	1	2	3	4	5
10	PA has skilled personnel who use the system	1	2	3	4	5
11	PA has skilled personnel who gather data	1	2	3	4	5
12	There are result-based assessments conducted	1	2	3	4	5
Section E: Stakeholders						
13	The stakeholders are committed to the implementation of the monitoring and evaluation work plan	1	2	3	4	5

14	The organization is willing to invest money to improve monitoring and evaluation management	1	2	3	4	5
Section G: Performance of Power Africa Monitoring and Evaluation System						
15	There is an information system or database used to provide data	1	2	3	4	5
16	Do all staff get feedback after measurement of project activities	1	2	3	4	5
17	The organization has adequate capacity to conduct evaluations	1	2	3	4	5
18	The current system is fully functional and easy to use	1	2	3	4	5

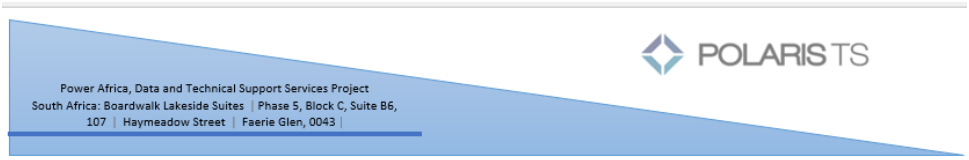
I *thank you* for taking the time to complete this *survey*.

Appendix 2.1: Short bio of the researcher

My name is Blessing Muvuti, and I am registered for Masters in Management (Public sector monitoring and evaluation) at the University of the Witwatersrand, Johannesburg.

I am conducting this research to examine factors influencing the performance of Power Africa's donor-driven monitoring and evaluation system in South Africa. This research is undertaken only for the purpose of compiling a research report to fulfill a Master's degree with no other interest besides academics. I do not have any sponsor or interest group for the research undertaken.

Appendix 3.1: Letter permitting the researcher to carry out the research



7 November 2022

Dear Mr Muvuti

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT POLARIS TECHNICAL SERVICES (PTS) FOR THE POWER AFRICA MONITORING AND EVALUATION SYSTEM UNDER THE DATA AND TECHNICAL SUPPORT SERVICES (DTS)

In reference to the above, we wish to confirm that your request to conduct research within DTS for the Power Africa Program has been approved.

Please submit your sample questionnaires and approval from the school for our records.

If you require any additional information, please feel free to contact us.

Sincerely,

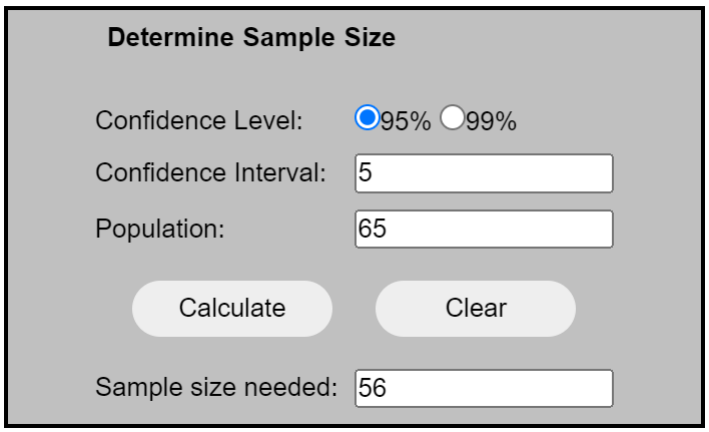
Kate Mwaura

(Director)

Power Africa, Data and Technical Support Services Project
South Africa: Boardwalk Lakeside Suites | Phase 5, Block C, Suite B6, 107 | Haymeadow Street | Faerie Glen, 0043 |
Contact : Kate Mwaura: Director Kate@polarists.co.za : +27 72 707 0655

Appendix 4.1: Sample size

Sampling was done using the formula (Creative Research Systems, 2012). A confidence level of 95% and a confidence interval of 5 was used. For a full representation of each user group, each user group was calculated separately. Below is an example of how the sample for Ips was determined:



The table below shows the sample size for each user group.

Total Population	**203**	
Sample Size	**175**	
User Group	**Population**	**Sample**
IP1	65	56
IP2	86	70
IP3	27	25
IP4	25	24
Total	**203**	**175**