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Technical, Vocational Education and Training (TVET) factors influencing graduate employability in South Sudan.

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TECHNICAL, VOCATIONAL EDUCATION AND TRAINING (TVET) FACTORS INFLUENCING GRADUATE EMPLOYABILITY IN SOUTH SUDAN

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

Ayiba Israeline Joseph Minga

Approval

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ABSTRACT

The Technical and Vocational Education and Training (TVET) system has the potential to significantly contribute to human resource development and economic growth in developing countries. South Sudan, a young nation that gained independence, has a predominantly youth population. Unfortunately, the youth in South Sudan face low educational attainment, with many school-aged children currently out of school. This educational gap has resulted in a shortage of skilled workers, leading to high youth unemployment rates, with a substantial proportion of young people lacking formal employment. This study aims to investigate how factors such as Performance Dimension, Stakeholder Engagement, and Solid Foundation affect the employability of TVET graduates. The research was grounded in the Education–Employment Linkage Theory, UNESCO framework, and Human Capital Theory, employing a descriptive research design and evaluative approach. The study focused on several operational TVET institutes in South Sudan, utilizing purposive, snowball, and stratified sampling to gather data. Primary data was collected and analyzed through thematic, descriptive, correlation, and regression analyses. The target population comprised numerous individuals from various TVET institutes, construction companies, TVET Consultants and officials from the Ministry of Education. A sample size of participants was drawn using various sampling methods, including simple random sampling, stratified sampling, purposive sampling, and snowball sampling. The participants included project managers, engineers, technicians, current learners, recent graduates, and government officials. The study achieved a significant response rate, with most questionnaires returned. Regression analyses were employed to examine the relationship between TVET factors and graduate employability. The findings revealed that the Performance Dimension had the greatest impact on the employability of graduates from TVET institutes, demonstrating a notable beta coefficient, which accounted for a substantial portion of the variability in graduate employability. Additionally, the multiple regression analysis established that TVET factors significantly contribute to the employment prospects of graduates in the construction sector. However, challenges such as a lack of vision and strategic frameworks, insufficient governance structures, and inadequate funding mechanisms could impede progress, as indicated by the negative beta coefficient associated with the solid foundation. Considering these findings, the study recommends several actions: enhancing the relevance of the curriculum, strengthening stakeholder engagement, promoting awareness of the benefits of TVET, improving governance and strategic frameworks, increasing funding and resource allocation, and implementing career services and support programs.

Keywords: *Access, Equity, Quality, Relevance, Stakeholder, Vision and Strategic Framework, Governance's arrangements, Funding and Expenditures.*

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DEDICATIONS

I dedicate this dissertation to Almighty God for His boundless grace, which has been instrumental in the success of this research project, and to my family for their steadfast support and love during my academic journey.

TABLE OF CONTENTS

DECLARATION ii
ABSTRACT iii
ACKNOWLEDGEMENTS iv
DEDICATIONS v
Add list of tables ix
Add list of figures x
ACRONYMS AND ABBREVIATIONS xi
OPERATIONAL DEFINITIONS OF KEY TERMS xii
CHAPTER ONE 1
INTRODUCTION TO THE STUDY 1
1.1 Background Information 1
1.1.1 Performance Dimensions 5
1.1.2 Stakeholder Engagement 6
1.1.3 Solid Foundations 8
1.1.4 Youth Employability 10
1.1.5 Core skills for employability 12
1.1.6 Overview of TVET Institutions in South Sudan 13
1.2 Problem statement 14
1.3 Research Objectives 15
1.4 Research Questions 16
1.5 Significance of the study 16
1.6 Scope of the Study 18
CHAPTER TWO 19
LITERATURE REVIEW 19
2.1 Introduction 19
2.2 Theoretical Review 19
2.2.1 Education– Employment linkage theory 19
2.2.2 Human Capital Theory 21
2.3 UNESCO Strategy 23
2.4 Empirical Review 27
2.4.1 Performance dimensions of formal TVET and Employability. 28
2.4.2 Stakeholder engagement and employability 33
2.4.3 Solid foundation and employability 37

2.5 Conceptual Framework 45
CHAPTER THREE 47
RESEARCH METHODOLOGY 47
3.1 Introduction 47
3.2 Research Philosophy 47
3.3 Research Design 47
3.4 Population and Sampling 48
3.4.1 Target Population 48
3.4.2 Sampling Procedures 50
3.4.3 Sample Size Calculation 51
3.5 Data Collection Instruments 52
3.6 Data Collection Procedures 53
3.7 Data Analysis 54
3.8 Diagnostic Tests 55
3.9 Research Quality 56
3.9.1 Validity 56
3.9.2 Reliability 57
3.9.3 Piloting 57
3.10 Ethical Consideration 58
CHAPTER FOUR 59
DATA ANALYSIS AND INTERPRETATION 59
4.1 Introduction 59
4.2 Demographics Profile 59
4.2.1 Response Rate 59
4.2.2 Location Percentage 60
4.2.3 Demographics Profile Presentation 61
4.3 The influence of TVET performance dimension on graduate employability of TVET institution 63
4.3.1 Descriptive statistics of TVET performance dimension on graduate employability 63
4.3.2 Results from the open-ended questionnaires 68
4.3.3 Relationship between TVET performance dimension and graduate employability from TVET institutes 71
4.4 The influence of TVET stakeholder engagement on graduate employability of TVET institution 75

4.4.1 Descriptive statistics of TVET stakeholder engagement on graduate employability 76
4.4.2 Results from open ended questionnaires 80
4.4.3 Relationship between stakeholder engagement and graduate employability from TVET institutes 83
4.5 The influence of TVET solid foundation on graduate employability of TVET institution. 86
4.5.1 Descriptive statistics of TVET solid foundation on graduate employability 86
4.5.2 Results from open ended questionnaires 89
4.5.3 Relationship between TVET solid foundation and graduate employability from TVET institutes 91
4.6 Overall relationship between 3 TVET factors and graduate employability from TVET institutes 94
4.7 Chapter summary 99
CHAPTER FIVE 101
SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS 101
5.1 Introduction 101
5.2 Summary of findings 101
5.3 Discussion of Findings 102
5.3.1 TVET Performance Dimension and Graduate Employability 102
5.3.2 TVET Stakeholder Engagement and Graduate Employability 104
5.3.3 TVET Solid Foundation and Graduate Employability 105
5.4 Conclusions 106
5.5 Suggested Areas for Further Research 108
5.6 Limitation of the Study 108
REFERENCES 110
APPENDICES 117
APPENDIX 1: INTRODUCTION LETTER 117
APPENDIX 2: ENTERPRISE'S RESEARCH QUESSIONNAIRE 124
APPENDIX 3: TVET STAFF AND GOVERNMENT OFFICIAL'S RESEARCH QUESSIONNAIRE 129
APPENDIX 4: LEARNER'S RESEARCH QUESSIONNAIRE 134

Add list of tables

Table 2. 1A: Hierarchical framework 26
Table 2. 1B: Hierarchical framework 27
Table 2. 2A: Summary of Literature and Research Gaps 42
Table 2. 2B: Summary of Literature and Research Gaps 43
Table 2. 2C: Summary of Literature and Research Gaps 44
Table 2. 3: Operationalization of Variables 46

Table 3. 1: Categories of targeted population from each County. 49
Table 3. 2: Targeted population 50
Table 3. 3: Sample size of the study population 52

Table 4. 1: Response rate 59
Table 4. 2A: Gender and Position of Respondents 61
Table 4. 2B: Gender and Position of Respondents 62
Table 4. 3: Performance Dimension descriptive statistics for Enterprises 64
Table 4. 4A: Performance Dimension descriptive statistics for TVET Staff and Government Officials 65
Table 4. 4B: Performance Dimension descriptive statistics for TVET Staff and Government Officials 66
Table 4. 5: Performance Dimension descriptive statistics for Learners 67
Table 4. 6A: Open ended results for Performance Dimensions 69
Table 4. 6B: Open ended results for Performance Dimensions 70
Table 4. 7: Normality test and Collinearity Diagnostics for TVET Performance Dimension 72
Table 4. 8: Model Summary and ANOVA for Performance Dimension 73
Table 4. 9: Regression Coefficients for Performance Dimension 74
Table 4. 10: Stakeholder Engagement descriptive statistics for Enterprise 76
Table 4. 11: Stakeholder Engagement descriptive statistics for TVET staffs and Government officials 77
Table 4. 12: Stakeholder Engagement descriptive statistics for Learners. 79
Table 4. 13: Open ended results for Stakeholder Engagement 81
Table 4. 14: Normality test and Collinearity Diagnostics for Stakeholder Engagements 83
Table 4. 15: Model Summary and ANOVA for Stakeholder Engagement 84
Table 4. 16: Regression Coefficients for Stakeholder Engagement 85
Table 4. 17: Solid foundation descriptive statistics for Enterprise 87
Table 4. 18: Solid foundation descriptive statistics for TVET Staffs and Government officials 88
Table 4. 19: Open ended results for Solid Foundation 90
Table 4. 20: Normality test and Collinearity Diagnostics for Solid Foundation 91
Table 4. 21: Model Summary for Solid Foundation 92
Table 4. 22: Regression Coefficients for Solid Foundation 93
Table 4. 23: Combined regression parameters of three groups respondent 94
Table 4. 24: Regression Model Summary 96

Add list of figures

Figure 2. 1: Education– employment linkage theory (Rageth & Renold, 2019). 21
Figure 2. 2: Priority area for TVET (UNESCO, 2021).....25
Figure 2. 3: Conceptual Framework 45

Figure 4. 1: Location of Enterprises Percentage. 60
Figure 4. 2: Location of TVET Institutes Percentage. 61

List of Equation

Equation 3. 1: Regression Analysis 55

ACRONYMS AND ABBREVIATIONS

BD	Business Development
CTM	Career Training with Mentoring
GOSS	Government of South Sudan
ILO	International Labor Organization
IVET	Initial Vocational Education and Training
L/MIC	Low-Medium Income Countries
MoGEI	General Education and Instruction
MoLPS	Ministries of Labour and Public Service
MoLPSHRD	Ministry of Labour, Public Service and Human Resources Development
NGO	Non-governmental organization
PPP	Public-Private Partnerships
RTB	Rwanda TVET Board
SDG	Sustainable Development Goal
TVET	Technical Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
VTCs	Vocational Training Centers
WBL	Work-Based Learning

OPERATIONAL DEFINITIONS OF KEY TERMS

Access	The ability of individuals to enroll in and participate in TVET programs, which can be influenced by factors such as location, financial resources, and admission policies.
Employability	The set of skills, knowledge, and attributes that enhance an individual's ability to secure and maintain employment, often influenced by the quality and relevance of TVET programs.
Equity	The principle of fairness in access to education and training opportunities, ensuring that all individuals, regardless of background, have the chance to participate in TVET.
IVET	Primarily aimed at young individuals who are entering the workforce for the first time, typically after completing secondary education.
Life Learning Skills	Skills that enable individuals to adapt to changing circumstances and continue learning throughout their lives, essential for personal and professional development.
Quality	The standard of education and training provided by TVET institutions, which affects the effectiveness of skill development and the employability of graduates.
Relevance	The alignment of TVET programs with current labor market needs and industry demands, ensuring that training is applicable and valuable to employers.
Soft skills	Interpersonal skills such as communication, teamwork, and problem-solving that complement technical skills and are essential for workplace success.
Technical Skills	Specific, practical skills related to a particular field or occupation that are developed through hands-on training in TVET.
VET	VET can be offered at various levels, including secondary education, post-secondary education, and adult education, and may not always emphasize technical skills.
Youth unemployment	The share of the labor force ages 15-24 without work but available for and seeking employment.

CHAPTER ONE
INTRODUCTION TO THE STUDY

Chapter one provides background information on the study, emphasizing the key factors influencing graduate employability, including the Performance Dimension, Stakeholder Engagement, and Solid Foundation. It also discusses youth employability in South Sudan, outlining the core skills necessary for employability and providing an overview of TVET institutes in the country. Additionally, this chapter presents the problem statement, outlines the research objectives, highlights the significance of the study, and defines its scope.

1.1 Background Information

Technical, Vocational Education and Training (TVET) refers to educational and training programs that focus on providing students with practical skills and knowledge that are relevant to specific trades, occupations, or vocations. TVET is at the intersection of education and the world of work and is expected to facilitate the insertion of young people and adults into the labor market, and their career progression (UNESCO, 2021). TVET programs typically include a mix of classroom instruction, hands-on training, and experiential learning opportunities, and may be offered at the secondary, post-secondary, or higher education level. These programs are designed to prepare students for careers in a wide range of fields, including manufacturing, construction, engineering, and healthcare, hospitality, and information technology (Okoth, 2023).

TVET plays a crucial role in promoting economic development and sustainable development (Okoth, 2023). TVET contributes to sustainable development by empowering individuals, organizations, enterprises, and communities and fostering employment, decent work, and lifelong learning to promote inclusive and sustainable economic growth and competitiveness, social equity and environmental sustainability (UNESCO, 2016). TVET is viewed as a tool for productivity enhancement and poverty reduction in a region (Pavlova, 2014). TVET also has a role to play in equipping youth with the knowledge, values, skills, and attitudes they need to understand their rights and empower them to engage and promote a just world of work and just societies (UNESCO,

2022). The skills young people and adults need to thrive in the world of work will evolve rapidly, whether job specific skills, foundation skills, transversal/soft skills, or more broadly the capacity to handle change and to engage in both local and global communities (UNESCO, 2022). The aim of TVET is to provide students with the skills and knowledge they need to succeed in their chosen career, and to help address any skills gaps in the job market (TVET Journal, 2023).

Literacy in South Sudan remains very low, although literacy levels among adolescents and youth have improved over time with education interventions from the government and development partners. The literacy rate for adolescents and youth aged 15–24 years was 36.7% in 2008 (44.1% for males and 29.6% for females), while in 2015 it was 44.4% (46.9% for males and 41.7% for females). In 2016, the literacy rate for adolescents and youth was 44.3%, with the individual rates for males and females unchanged from 2015. In 2018, the literacy rate among adolescents and youth aged 15–24 years was 47.9% (48.43% for male and 47.37% for females). It is evident there has been a progress in improving the literacy of adolescents and youth, but further interventions are needed to improve literacy, especially since many adolescents and youth are out of school (Government of South Sudan, 2019).

The top seven countries that have made significant strides in cultivating vocational students. Among them, Germany, Switzerland, and South Korea emerge as pioneers in vocational training, boasting robust systems that have become models for others to emulate. Germany's renowned dual education system integrates vocational training with theoretical instruction, preparing students for real-world challenges and ensuring a well-prepared workforce contributing to the nation's economic growth. Switzerland's strong emphasis on apprenticeship programs and close collaboration between educational institutions and industries has resulted in a high rate of employability among graduates. South Korea's innovative approach to vocational education focuses on developing specialized skills aligned with market needs, creating a competitive advantage in the global job market. The other countries are Japan, Australia, the United Kingdom, and the United States, each with its unique approach to nurturing vocational talent (Anderson, 2023).

Countries like the Asian Tigers—Hong Kong, Singapore, South Korea, and Taiwan have invested heavily and successfully adopted policies not only in university education and polytechnic training but also in technical and vocational education which have resulted in the emergence of a highly skilled workforce. These countries successfully used technical and vocational training to upskill their economies, which made their workers more productive and their respective economies more innovative. It, therefore, becomes increasingly clear that skills development policies such as TVETs play a critical role in national development (African Union, 2021).

African Countries like Rwanda, Ethiopia, and Morocco are explicitly addressing the needs of the informal economy by opening their TVET educational system to informal economy needs. Other countries that are prioritizing skills development and TVET initiatives include Cameroon, Cote d'Ivoire, Ethiopia, Kenya, Ghana, Uganda, among others (African Union, 2021).

It is estimated that only about thirty of the sixty-two TVET-oriented public and private institutions that exist in the South Sudan are currently operational. At present, the exact number and location of these functioning TVET institutions and centers is difficult to ascertain because of the conflict situation in the country and the absence of a credible and centralized TVET data and information system. Vocational education is currently offered at only five public secondary technical/commercial/agricultural schools under the Ministry of Education, Science and Technology (MoEST). All five institutions are in Wau or the capital Juba. Several other technical secondary schools are not in operation because of severe infrastructure damage to their facilities and the insecurity in parts of the country (UNESCO, 2014). This study will focus on UNESCO framework and ILO. In 2016, there were 25 TVET centers in the country, 13 government-owned and 12 managed by NGOs. In 2016, 5,178 students were trained in TVET centers, and 393 students in teacher training institutes (Government of South Sudan, 2019). In 2021, There were 7 TVET institutions serving about 2,500 students (Akec, 2021).

According to (RTB, 2024), High-quality TVET systems that have a strong work-based learning element facilitate young people's transition to work and contribute to reducing unemployment and supporting economic development. TVET programs hinge on three

interrelated elements: Their ability to meet key performance dimensions, productive (inter)actions among stakeholders, and solid foundations, all these three elements are interdependent.

While the focus of the research is not on the labor market, let's briefly touch upon the labor market situation in South Sudan. According to (Eissa, 2013) the labor market in South Sudan is characterized by two key facts. First, most workers are engaged in "unpaid" work. This results not only from the concentration of work in subsistence agriculture, but also from substantial engagement in the informal sector. Second, there is a notable lack of marketable skills, represented by low levels of schooling and technical and vocational skills. (Eissa, 2013) also indicated that South Sudan should focus on increasing the skills of the domestic work force, improving the standard of living generated by unpaid work, and building institutional capacity to provide a market for skilled work by encouraging productive foreign investment.

Action Towards inclusive and equitable quality education and lifelong learning for all adopted in 2015, devotes considerable attention to technical and vocational skills development, specifically regarding: access to affordable, quality TVET; the acquisition of technical and vocational skills for employment, decent work, and entrepreneurship; the elimination of gender disparity; and ensuring access for the vulnerable.

The key factors influencing graduate recruitment decisions include personal attributes such as self-efficacy and resilience, educational qualifications like academic performance, work experience, and relevant skills, as well as labor market conditions, including the availability of employment opportunities, salary expectations, and job security (Kanual & John, 2023). Additionally, career expectations such as job satisfaction, opportunities for advancement, and work-life balance, along with overall well-being and attributes, play a significant role (Kanual & John, 2023). According to (Paul, 2022), youth unemployment in many countries is influenced by factors such as poor economic performance, lack of privatization, a high percentage of youth in the population, inadequate training opportunities, skills mismatch, lack of experience, and low-quality education. In South Sudan, unemployment is further exacerbated by widespread corruption, dysfunctional public and private institutions, and a weak labor market (Paul, 2022). This study

specifically concentrates on three main factors affecting employability outcome: performance dimension, stakeholder engagement, and solid foundation, aligning with the UNESCO framework (The World Bank, UNESCO and ILO, 2023).

1.1.1 Performance Dimensions

According to (The World Bank, UNESCO and ILO, 2023), first key performance dimension for a formal TVET system is access, which determines how many people can enroll and benefit from acquiring the skills and related degrees or certifications programs in such systems deliver. There are many obstacles to learners who want to enroll in formal TVET. These may relate to supply-side constraints like limited number of TVET institutions in certain locations, lack of programs in certain specializations, or limited enrollment capacity in popular programs or to demand-side constraints such as affordability. Many individuals, particularly in developing countries, face barriers to accessing TVET programs, including financial barriers, geographic barriers, and cultural barriers (Okoth, 2023).

Equity, the second performance dimension, helps TVET to meet higher-level employment and productivity goals as well as broad social objectives by ensuring that skills are developed regardless of who and where the students are, and that opportunities are expanded for all learners (The World Bank, UNESCO and ILO, 2023). More access does not necessarily imply more equity for groups at risk of exclusion. Equity in TVET also goes beyond access. First, equity is about ensuring that a learner's personal and social circumstances such as, gender, income, residence, origin, migrant status, ethnicity, or disability are no obstacle to accessing, learning in, or completing a TVET program. Second, equity is also about ensuring that disadvantaged learners are not tracked into subpar programs (The World Bank, UNESCO and ILO, 2023). Design of vocational institutions should take into consideration the needs of those with disabilities. Factors like adequate ramps, increased door widths, increased lobby sizes, kick plates on doors to aid wheelchair users (A. P. Opoko, 2018).

A third key performance dimension is quality as TVET systems strive to provide programs and services to their learners that meet high standards. TVET programs need to be

delivered to industry standards, which requires well-equipped and adequately resourced institutions, prepared and empowered institution leaders, and continuously well-trained and motivated teachers and trainers that are incentivized and capable of delivering high-quality programs. Complementary inputs in the form of appropriate infrastructure and equipment as well as good-quality teaching and learning resources are also required to provide quality hands-on learning and assessment. Finally, quality training also means high-quality work-based learning, and thus the participation of enterprises themselves in training (The World Bank, UNESCO and ILO, 2023).

Finally, more than for other education subsectors, TVET's relevance to labor market needs shapes its ultimate outcomes. To contribute to employment and productivity and the broader goal of sustainable transformation, TVET needs to be highly responsive to the skills needs of the economy, both current and those that emerge as labor markets evolve. Training also needs to be relevant to the local work context, including economic and social activities (The World Bank, UNESCO and ILO, 2023). This requires close collaboration between schools, industry, and government to ensure that TVET programs are responsive to changing economic and labor market needs (Okoth, 2023).

1.1.2 Stakeholder Engagement

How well TVET functions in aligning skills supply and demand depends on a wide range of stakeholders, all whose actions and interactions shape its ability to improve its performance and achieve the needed outcomes. Stakeholders on the supply side are responsible for the provision and regulation of education and training programs and services; others on the demand side are TVET users and clients. Finally, there are stakeholders in the middle, whose function is to mediate between supply and demand to facilitate good matches between learners and institutional programs or services (The World Bank, UNESCO and ILO, 2023).

Learners are defined broadly to include not only those currently engaged in a TVET program but also those who may be thinking of pursuing TVET pre-employment or for reskilling or upskilling and those who have completed their TVET studies and are either transitioning to the world of work, pursuing further education, or already employed. This

study will focus on currently engaged learners and those who completed. TVET institutions, private or public, provide formal training; within them are additional stakeholders, such as managers and teachers. Enterprises are the third essential group of TVET stakeholders and, together with learners, its key client. We define enterprises widely to encompass private, nongovernmental, and public employers regardless of size or whether they are formal or informal, self-employed, or household enterprises. In their study, they indicated that in addition to generating critical labor market information and employing TVET graduates, they contribute to TVET by advising on curricula, supplying financial resources, and enabling WBL.

There are three ways in which employers, individually or through their organizations, can influence TVET outcomes through actively providing training or WBL (providing); by influencing and defining TVET's fundamentals (shaping); and by financing third parties to provide TVET (funding).

Beyond this core, other actors are also part of the complex TVET ecosystem. Among them are government and administrative bodies, such as TVET agencies and national and subnational line ministries that set policy and regulate, manage the entire process, or operate institutions and programs within it. Representative organizations, such as employers' organizations, workers' organizations, teachers' unions, student and parent associations, professional groups, and networks of public and private TVET institutions. Other actors, particularly public and private intermediation services, counselors, and career guidance services, contribute to the success of TVET by supporting the transition from training to work. So do executing bodies responsible for policy implementation or regulatory oversight. These bodies may be public, private, or result from a public-private partnership; they include, for example, agencies responsible for curriculum development, accreditation and certification, quality assurance, teacher development, and the collection of labor market data. Finally, there are other actors who influence TVET less directly, such as academics, civil society organizations, local communities, and international development partners (The World Bank, UNESCO and ILO, 2023). The current study will focus on the core actors (stakeholders).

1.1.3 Solid Foundations

The performance of TVET systems rests on three pillars: vision and strategic framework (plans); governance arrangements (tools); and funding and expenditure mechanisms (The World Bank, UNESCO and ILO, 2023).

A solid foundation starts with a clear vision of about TVET's role in the education and training system, the economy, and society. A clear vision that is shared among TVET's stakeholders can then be the basis for a strategic framework that sets up the design, specific objectives, and outcomes for the system, along with the critical elements necessary to achieve them. Such a vision needs to be realistic about the system's strengths and weaknesses and the constraints and risks posed by the overall economic environment. A vision and strategic framework would answer important questions such as: What are TVET's objectives and how should these be measured? What types of skills should TVET focus on (particularly vis-à-vis general education) and how? What is the role of work-based learning and what balance should be struck between public and private provision, and school-based versus apprenticeship-based training? How will TVET be integrated and articulated with the rest of the education and training system? How will the roles and responsibilities of different stakeholders be agreed and monitored? How will the system be financed and by whom (The World Bank, UNESCO and ILO, 2023)?

To implement the vision and strategic framework for TVET, appropriate governance structures need to be in place. Governance relates to the formal and informal structures and processes designed to ensure the effective implementation of strategies and policies. This pillar includes the provision of legal, regulatory, and/or normative frameworks, the management of TVET provider networks, the management of public–private partnerships for TVET and skills provision, the evaluation and review of TVET policies, research, and development.

A final pillar of the system's foundations focuses on funding and expenditure mechanisms. Together with sound management, funding for TVET should be stable, predictable, sustainable, and sufficient. There are, broadly, three main domestic sources of formal TVET financing: governments, households, and employers. Cost-sharing

between these sources can be efficient while reducing reliance on a single source. Additional sources can include income- generating activities of TVET providers. In many L/MICs development partners and external assistance are also a source of funding (The World Bank, UNESCO and ILO, 2023).

The funding from each actor can take different forms. Household expenditures, for example, can cover tuition fees, the costs of learning materials and travel expenses, but also include the opportunity cost of foregone wages. Financing sources for public and private TVET providers are often quite distinct, with public providers in most cases relying almost exclusively on government funding whereas private providers draw much more on the financing from households and firms. Financing mechanisms can also differ, as central or sub-national governments may provide funding to individuals, TVET providers, and enterprises providing workplace training. Funds can be provided directly (through transfers) or indirectly, such as through tax exemptions or vouchers. Given the complex nature of TVET financing, social dialogue involving employers and workers' representatives is important to develop sustainable financing arrangements in TVET (The World Bank, UNESCO and ILO, 2023).

The current study defines TVET element among the technical institutions in South Sudan and will be measured using conceptual framework to understand outcomes as adopted from (The World Bank, UNESCO and ILO, 2023) model; key performance dimensions, stakeholder interactions, and system foundations for TVET. TVET ability to meet key performance dimensions is related to access, equity as well as quality and relevance. The core stakeholders are learners, TVET institutions, and enterprises. other actors are government and administrative bodies, Representative organizations, public and private intermediation services, and executing bodies. There are three main domestic sources of formal TVET financing, governments, households, and employers. Political apathy is an intervening factor. An Intervening variable is influenced by the independent variable and then influences the outcome of the dependent variable (Adeel, 2023).

1.1.4 Youth Employability

Globally, according to UNESCO, 31% of young women and 14% of young men worldwide who are not in employment, education, or training in 2019, and the number of young people in employment fell by 34 million in 2020. About 12 % of young people in employment live in extreme poverty (UNESCO, 2022). According to UNESCO, Young people aged 15-24 represent 20% of the African population but over 40% of those who are unemployed (Kareem, 2024). 75% of the working-age population (aged 15–64 years) is economically active. A significant share of the active population (12.6%) is without jobs. Among the inactive population, about 25% are in education, but an even larger share is comprised of discouraged workers (31%). The remaining inactive persons are neither in education nor interested in employment (UNESCO, 2014).

With its unique focus on workforce development, TVET has the potential to contribute to employment and productivity to better support sustainable economic transformation (The World Bank, UNESCO and ILO, 2023). TVET is central to the accumulation of the human resources as a requisite for achieving the economic growth and better employability, mobility, and safety at the workplace (RTB, 2024).

TVET serves as a valuable tool for addressing social and economic challenges in both developed and developing nations (Morris, 2016). According to (The World Bank, UNESCO and ILO, 2023), Employability refers to the chances of obtaining and maintaining productive employment. Studies examining the labor market impacts of formal TVET generally come in two varieties: rigorous impact evaluations of specific programs or observational studies of labor market returns by educational attainment. By randomizing participation in TVET or using a good comparator group, the first type of study can attribute employment or earnings impacts to enrollment or completion of TVET rather than other factors (whether observable or not) that could have influenced both TVET enrollment and labor market outcomes. Observational studies of TVET are much more common. They are usually based on regression analysis, explaining labor market outcomes as a function of education, experience, and other personal characteristics of the individual or features of the education itself. They often compare outcomes for graduates of TVET with those of general education programs at the same level (The World Bank,

UNESCO and ILO, 2023). National TVET systems should offer equitable access to skills development for jobs, entrepreneurship, and economic opportunities (The World Bank, UNESCO and ILO, 2023).

Education which is workforce oriented through the mastery of technical skills and employability skills is needed to sustain the development of a knowledge-based economy. In addition to technical skills in the field, workers must also have skills that are generic. Employability skills are some of the non-technical skills which can be transferred into a variety of occupations. It is necessary to enter the workforce, to remain on the job and develop careers in the workplace, or for career development in the new workplace. These skills include: the ability to work independently, manage yourself, work in teams, adapt to change, solve complex problems, as well as think creatively and innovatively (Yahya, Iskandar, & Sunardi, 2017).

Technical skills are the specialized knowledge and expertise required to perform specific tasks and use specific tools and programs in real world situations. Diverse technical skills are required in just about every field and industry, from IT and business administration to health care and education (Coursera Staff, 2024). TVET programs contribute to employment and productivity. The TVET modernization process has begun with developing a clear picture of the programs focusing on sectors with a high employment potential namely, Construction and building services, Energy, Technical services, Hospitality and Tourism, ICT and Multimedia, Arts and Crafts, Agriculture and Food processing, Transport and logistics, Manufacturing and Mining, Beauty and Aesthetics and aligning TVET policy with national economic development plans. TVET programs have been streamlined to articulate the pathways and ensure demand-driven, growth-oriented and technology led work (RTB, 2024).

Self-employment is focused on the performance of an individual working for themselves for personal gain and income instead of wages earned from employment. Self-employment from a socio-economic perspective is limiting as emphasis is placed on creating employment for one individual. Entrepreneurship on the other hand emphasizes the creation or innovation of bringing something new to market. The introduction of innovation into the market includes business startup activity. It goes beyond self-

employment as it creates an opportunity for a larger business to be established that has potential to lead to job creation creating greater socio-economic benefits for society (Maritz & Laferriere, 2016). According to (Anderson, 2023), TVET opens doors to entrepreneurship and self-employment, enabling individuals to create their businesses and contribute to the economy. The success of vocational education in driving national prosperity can be seen in countries like Germany, where its skilled workforce underpins its strong manufacturing industry, and Switzerland, which benefits from a highly trained workforce that attracts international investments. This study will incorporate both entrepreneurship and self-employment in conducting the research.

High quality TVET with good links to the labor market is essential for encouraging inclusive and sustainable growth and enabling the country to diversify its economies and provide decent work (RTB, 2024). In the current study, Employability for listed TVET institutions will be measured by technical skills, employability skills and entrepreneurship skills.

1.1.5 Core skills for employability

ILO defines employability as the set of "portable competencies and qualifications" that enhance an individual's ability to utilize available education and training opportunities to secure and maintain decent employment, advance within a company, and adapt to evolving technology and labor market conditions. Core employability skills build on the foundation established through basic education and include technical skills required for specific jobs (such as nursing, accounting, technology use, or operating a forklift) as well as professional and personal attributes like honesty, reliability, punctuality, and loyalty. These core skills empower individuals to continuously acquire and apply new knowledge, which is essential for lifelong learning. Various organizations refer to these skills using different terms, including “key competencies,” “soft skills,” “transferable skills,” or “essential skills” (ILO, 2013). This study will assess employability based on technical skills, soft skills, lifelong learning, and entrepreneurial skills.

1.1.6 Overview of TVET Institutions in South Sudan

TVET institutions are major suppliers of workforce who will be in the forefront in dealing directly with sustainable issues as the better education and training is also necessary for decent work and socially sustainable, fair growth (RTB, 2024). TVET and skills policies include formal, non-formal and informal vocational learning, workplace and work-based learning, and other learning opportunities in the formal and informal economies. These policies support a life-long learning approach to economic growth, and good employment and social objectives (RTB, 2024). Also In South Sudan, TVET is provided in formal, non-formal and informal settings, and it aims to equip youth and adults with the qualifications needed to meet the economic and social development challenges of the country (UNESCO, 2014).

Vocational education is currently offered at five (5) public secondary technical schools under MoEST: technical secondary schools in Juba and Wau, commercial secondary schools in Juba and Wau, and an agricultural secondary school in Wau. Several other schools are not operational because of severe damage and the conflict situation in the country (UNESCO, 2014).

Several other technical secondary schools are not in operation because of severe infrastructure damage to their facilities and the insecurity in parts of the country. Vocational training, on the other hand, is provided through a network of public vocational training centres (VTCs), operating under the Ministry of Labour, Public Service and Human Resources Development (MoLPSHRD) and several private providers, which are mainly non-governmental organizations (NGOs) and faith-based organizations. The VTCs offer both non-formal short courses (3–6 months) and long duration (formal) courses of up to two years. MoCYS also operates youth training centres which run unstructured informal basic occupational skills training courses (lasting between 1 week and 3 months) that target mainly unemployed individuals and internally displaced persons through some form of apprenticeship at the community level (UNESCO, 2014).

As of July 2011, when South Sudan declared independence, the country had nine public universities, of which only five were operational, along with 34 private universities, most

of which were unaccredited by the Ministry of Higher Education and many of which were subsequently closed (Akec, 2021). By 2021, South Sudan had reduced its number of functioning public universities to five, while only two private universities were accredited, collectively educating 36,000 students, which accounts for 94% of the total university enrollment. In contrast, there were seven TVET institutions serving approximately 2,500 students, representing a mere 6% of students enrolled in tertiary education students (Akec, 2021).

1.2 Problem statement

The youth population in South Sudan constitutes approximately 73% of the total population, resulting in a significant pool of job seekers within this age group. This demographic reality intensifies competition for the limited job opportunities available, leading to higher unemployment rates among youth compared to the general population. Currently, youth unemployment in South Sudan is estimated to be around 50%, a figure that is further exacerbated by low levels of education and limited skills among young people (UNDP, 2022).

A critical factor contributing to this high unemployment rate is the severe shortage of vocational training programs that equip youth with the necessary skills for the labor market. Many young individuals lack practical skills and qualifications, rendering them less employable in a competitive job market (UNDP, 2024). Additionally, the increased reliance on imported skilled labor from neighboring countries further entrenches the problem of unemployment among South Sudanese youth, as it diminishes the demand for local talent and exacerbates the skills gap (UNDP, 2022).

Furthermore, the influx of foreign entrepreneurs, who possess higher levels of skills and training compared to local youth, has led to a dominance in the market, further exacerbating the unemployment issue (Atari, Abdelnour, McKague, & Wager, 2010). The development challenges faced by South Sudan, including political instability, poor infrastructure, high poverty levels, and low human capital, all contribute to the complexity of the situation (UNESCO, 2014).

This unemployment not only leads to economic stagnation, but also limits youth participation in productive activities, hindering overall economic growth and contributing to higher crime rates. (Government of South Sudan, 2019). The growth of vocational education in the country has been hindered by various factors such as insufficient funding, inadequate facilities, lack of trained personnel, and a general lack of support from political leaders (A. P. Opoko, 2018). The prolonged conflict in South Sudan has severely affected its education system, and recovery efforts have been impeded by the additional challenges posed by the COVID-19 pandemic. Insecurity and the pandemic have created reluctance among stakeholders to support TVET programs (A. P. Opoko, 2018).

Moreover, there is limited research available on the impact of TVET programs on employability outcomes and the overall landscape of TVET institutions in key regions like Juba, Wau, and Yei. Understanding these interconnected factors is essential for improving employability prospects and fostering sustainable development in South Sudan.

This study will play a role in advancing empirical evidence and proposing a strategy for TVET to strengthen stakeholder initiatives aimed at enhancing the quality and applicability of their programs. These efforts aim to foster equity, promote gender equality, facilitate the transition to environmentally friendly economies, and build sustainable societies.

1.3 Research Objectives

The study purpose is to find ways to equip youth with the necessary skills for employment, decent work, entrepreneurship, and ongoing learning, thereby contributing to the realization of Sustainable Development Goal 4 within the framework of the 2030 Agenda. The main objective is to assess TVET factors influencing graduate employability of the listed TVET institutions in South Sudan.

Specific Objectives

This research will aim to:

i. To determine the relationship between key performance dimensions for formal TVET institutes and graduate's employability in South Sudan.
ii. To determine the relationship between TVET's stakeholders and graduate employability in South Sudan.
iii. To determine the relationship between TVET solid foundation and graduate's employability in South Sudan.

1.4 Research Questions

To achieve the study objectives outlined above, the researcher will formulate the following questions:

i. What is the relationship between the key performance dimensions for formal TVET Institutes and graduate's employability in South Sudan?
ii. What is the relationship TVET stakeholder engagement and employability of graduates from TVET institutions in South Sudan?
iii. What is the relationship of the TVET solid foundation and graduate employability South Sudan?

1.5 Significance of the study

The significance of this study is reinforced by the findings presented in Chapter Four, which highlight the critical interconnected factors influencing the employability of TVET graduates in South Sudan. Specifically, the results demonstrate that improvements in the performance dimension, stakeholder engagement, and establishing a solid foundational curriculum significantly enhance graduates' readiness for the labor market. For policymakers and educational planners, these findings provide actionable insights into how curriculum relevance, stakeholder collaboration, and infrastructure upgrades can directly impact employment outcomes.

Moreover, Chapter Four's evidence underscores the importance of active partnerships between TVET institutions and industry stakeholders, illustrating how collaborative

efforts lead to more industry-aligned skills and increased internship opportunities. This directly supports the strategic recommendations for attracting private sector investment and expanding access to vocational training, thus contributing to a more inclusive and responsive TVET system. The data also reveal that improving equipment and modernizing training facilities are essential for equipping graduates with up-to-date skills, which correlates with higher employability levels.

Furthermore, the findings support the potential for national and international cooperation, aligning with UNESCO's objectives and Sustainable Development Goal 4. They underscore the importance of continuous monitoring and evaluation of educational outcomes, metrics that are integral to assessing progress toward achieving SDG 4 by 2030. The insights gained can help refine policies aimed at reducing youth unemployment, enhancing quality assurance, and ensuring that TVET programs meet both national development goals and global standards.

In essence, the results in Chapter Four serve as a solid evidence base that can guide stakeholders from government agencies to private investors in making informed decisions. These findings also foster a data-driven approach to curriculum development, resource allocation, and partnership building, all aimed at strengthening the vocational education framework. Consequently, the study's outcomes are poised to influence policy formulation, industrial collaboration, and educational reforms, ultimately fostering economic growth, sustainable development, and a more competent youth workforce in South Sudan.

The regression analysis not only confirms the pivotal role of the studied TVET factors but also emphasizes the practical relevance and urgency of strategic improvements making this research a significant contribution to advancing effective TVET systems in South Sudan and similar contexts.

1.6 Scope of the Study

This study aimed to examine the relationship between three key TVET factors and graduate employability. The research focused on collecting data from three distinct groups of stakeholders: students and graduates, construction industry professionals, and officials from the Ministry of Education and TVET consulting bodies. The data collection was geographically confined to three locations in South Sudan; Juba, Yei, and Aweil where the selected TVET institutions and industry partners operate. The study's scope encompassed analyzing how these factors influence employment outcomes for TVET graduates within these regions, with the ultimate goal of informing policies and strategies to enhance TVET effectiveness and graduate employability in the country.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The study's second chapter focuses on the literature review, delving into theoretical perspectives that underpin the research. It also discusses relevant empirical studies aligned with the research objectives and identifies gaps in the existing literature. The study will also be examined through the lens of the UNESCO framework. It also included the literature review of Multiple regression model. Additionally, it presents a conceptual framework illustrating the relationship between the variables studied.

2.2 Theoretical Review

The theoretical literature review helps to establish what theories already exist, the relationships between them, to what degree the existing theories have been investigated, and to develop new hypotheses to be tested (USC, 2024). A theoretical framework provides the theoretical assumptions for the larger context of a study and is the foundation or 'lens' by which a study is developed. This framework helps to ground the research focus under study within theoretical underpinnings and to frame the inquiry for data analysis and interpretation (Northcentral University, 2017). The study was based on the theory of the education-employment linkage, Human capital theory and the framework outlined by UNESCO.

2.2.1 Education– Employment linkage theory

The education-employability linkage theory has been notably developed by Ursula Renold and Johanna Kemper, along with contributions from Andrea Ghisletta and others the research emphasizes the importance of power-sharing between educational institutions and labor market actors to enhance the effectiveness of TVET programs in connecting education to employment outcomes (Caves, Ghisletta, Kemper, & Renold, 2019).

Education– employment linkage theory describes this combination in terms of power-sharing between actors from the education system and their counterparts in the employment system over key processes in the curriculum value chain of curriculum

design, curriculum application (program delivery), and curriculum updating. (Rageth & Renold, 2019) developed three ideal types of VET programs. The Linkage Theory serves to highlight the importance of connecting actors from the education and employment systems within VET.

Ideal Type 1 VET programs emphasize a strong connection between actors from the education and employment systems, enabling shared power in curriculum decisions. This approach ensures graduates receive recognized certificates and relevant qualifications for the labor market, leading to positive youth labor market outcomes. In contrast, Ideal Types 2 and 3 lack this linkage, with Type 2 focusing on education without preparing students adequately for professional careers. Lastly, Type 3 places all power with actors from the employment system, leading to challenges in coordination and control, and limiting graduate's prospects for further education or skill enhancement (Rageth & Renold, 2019).

The concept of linkage theory, as explored by Caves et al. in their article "Meeting in the Middle: TVET Programs' Education–Employment Linkage at Different Stages of Development," is now being applied in this study to examine the relationship between stakeholder engagement and youth employability. The study by Caves and the team focuses on applying this theory to major upper-secondary TVET programs in Benin, Chile, Costa Rica, and Nepal. Additionally, Ronald has specifically examined this typology in VET programs at the upper-secondary education level, typically catering to students aged 15 or 16. In contrast, the current study will concentrate on formal TVET programs and youth of all age groups in South Sudan. This theory is pertinent to the study as it finds how stakeholder engagement among TVET colleagues impacts employment and productivity (Rageth & Renold, 2019).

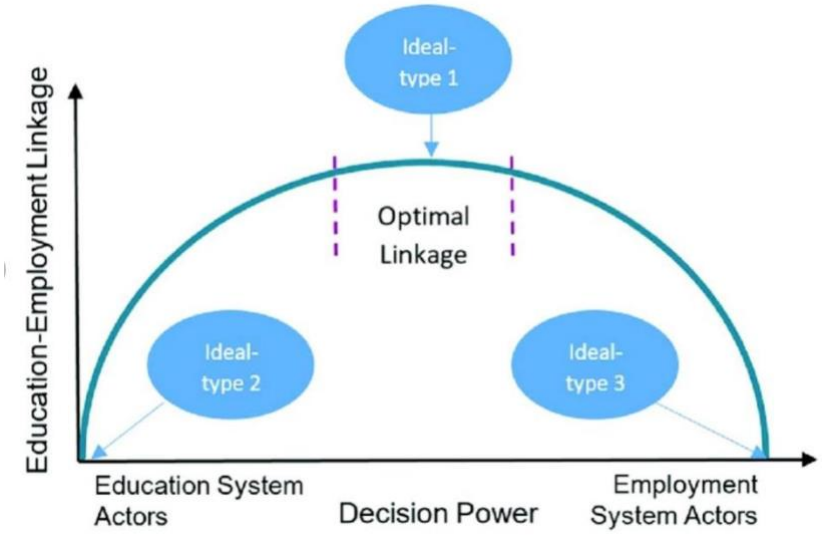

Figure 2. 1: Education– employment linkage theory (Rageth & Renold, 2019).

Figure 2.1 corresponds to the second TVET factor (stakeholder engagement) influencing employability in South Sudan. This aligns with Objective 2, which is "to determine the relationship between stakeholder engagement and graduate employability." The figure illustrates the different levels of linkage between the education and employment systems within TVET programs, emphasizing the vital role stakeholder engagement plays in shaping employability outcomes. Ideal Type 1 demonstrates the advantages of effective collaboration, while Types 2 and 3 highlight the potential risks associated with insufficient or poor engagement. The study assesses the current state of stakeholder engagement and its relationship with graduate employability, with detailed analysis presented in Chapter Four.

2.2.2 Human Capital Theory

The human capital theory was primarily developed by Gary Becker and Theodore Schultz in the 1960s (Ross, 2023). Becker's influential book, titled Human Capital, published in 1964, solidified the concept within economic literature, emphasizing that investments in education and training enhance productivity and economic output (Teixeira, 2014).

Human capital theory suggests that both individuals and societies can boost their economic productivity and growth through investments in education, training, and skills development. This aligns with Objective 2, which emphasizes that it is the shared responsibility of both individuals and society to invest in education and training to foster economic advancement. The theory asserts that education and training enhance a person's knowledge, skills, and competencies, thereby increasing their capacity to perform effectively at work and contribute positively to the economy.

Human capital theory posits that investing in education and training enhances individual productivity and economic returns, as individuals with higher education and skills typically earn higher wages and enjoy better employment opportunities due to their ability to perform complex tasks. This theory suggests a direct link between education, productivity, and earnings (Alex van der Merwe, 2010). This investment not only benefits individuals but also contributes to broader societal advantages, including economic growth, innovation, and competitiveness in the global market, leading to lower unemployment rates and higher economic development. The theory underscores the significance of both general and specific skills in improving employability and productivity, while also advocating for lifelong learning to help individuals adapt to evolving job markets and technological changes (Eleyae, 2021).

At the individual level, research has constructed models demonstrating the positive impact of human capital on the employability of college students. Factors such as academic performance, professional skills, work experience, and participation in social practice contribute to student's human capital and increase their chances of obtaining quality employment (Shiyuan, et al., 2022).

The relevance and quality of the TVET curriculum, as well as the practical training provided, are key factors in ensuring graduates possess the skills demanded by employers (Tight, 2023). Collaboration between TVET institutions and industry is important for developing industry-relevant curricula (McCracken, McIvor, Treacy, & Wall, 2017). In addition to technical skills, TVET programs should focus on developing graduate's soft skills, such as communication, teamwork, problem-solving, and critical thinking

(McCracken, McIvor, Treacy, & Wall, 2017). These skills are highly valued by employers and contribute to graduate's overall employability.

Providing TVET students with opportunities for industry exposure, internships, and work-based learning enhances their employability by giving them practical experience and helping them develop professional networks (Tight, 2023). TVET institutions should offer career guidance, job search skills training, and job placement support to help graduates transition smoothly into the workforce. This support can include resume writing workshops, mock interviews, and job fairs (McCracken, McIvor, Treacy, & Wall, 2017).

Engaging with employers through advisory boards, industry partnerships, and graduate feedback helps TVET institutions understand and respond to evolving skill demands, improving the employability of their graduates (Tight, 2023). Human capital theory provides a framework for understanding the value of investing in education and training for both individuals and organizations. (Tight, 2023) and (McCracken, McIvor, Treacy, & Wall, 2017) highlights the importance of developing relevant skills, providing practical training, and engaging with industry to enhance the employability of TVET graduates. This theory aligns with two specific objectives of this study: performance dimension and stakeholder engagement.

2.3 UNESCO Strategy

The vision to transform TVET for successful and just transition during the period 2022 to 2029, by promoting skills development for empowerment, productive employment, and decent work, and facilitate the transition to more digital, green, and inclusive economies and societies (UNESCO, 2021). This framework is applied in a case study conducted by World bank, UNESCO, and ILO entitled building better formal TVET systems principles and practice in low- and middle-income countries, however, the current study will be conducted in South Sudan. The UNESCO frameworks encompass three primary priorities, known as the main lines of action. This study will focus on priorities 1, 2 and 3 as they align with objectives 1 and 3 of the current research project.

The first main line of action focuses on "Developing skills for all individuals to learn, work, and live." The initial target involves "Building flexible lifelong learning pathways",

which facilitates access to education, training, and work opportunities (UNESCO, 2021). The World Reference Levels tool aids authorities, institutions, employers, and individuals in comprehending, comparing, and acknowledging skills, qualifications, credentials, and learning achievements across borders. The second target aims to "Develop targeted measures for inclusion and gender equality". UNESCO will support Member States in formulating inclusive policies for populations that historically encountered barriers to acquiring skills, such as women and girls, individuals from marginalized social groups, residents of remote rural areas or urban slums, people with disabilities, refugees, and internally displaced persons. The fourth target of the second main line of action is to "Support the teaching workforce and TVET institutions to promote quality, innovation, and excellence (UNESCO, 2021)." These initiatives align with objective one of the current studies, focusing on key performance dimensions including access, equity, quality, and relevance.

The second Main Line of Action 2 focuses on developing skills for inclusive and sustainable economies. The desired outcomes within this initiative involve assisting Member States in identifying the necessary skills for transitioning to digital and green economies, providing TVET to combat unemployment, particularly youth unemployment, and narrowing the gender skills gap through the enhancement of STEM and green skills, as well as competencies for sustainable development, entrepreneurship, and 21st-century skills. Additionally, it aims to support the teaching workforce and TVET institutions in promoting quality, fostering innovation, and strengthening governance while facilitating investments in skills. The fifth target of Main Line of Action 2 is "Strengthening governance and facilitating investment for the main action" (UNESCO, 2021). The framework is useful in this study since having performance dimensions and solid foundation are formed with the aim of improving employment and productivity.

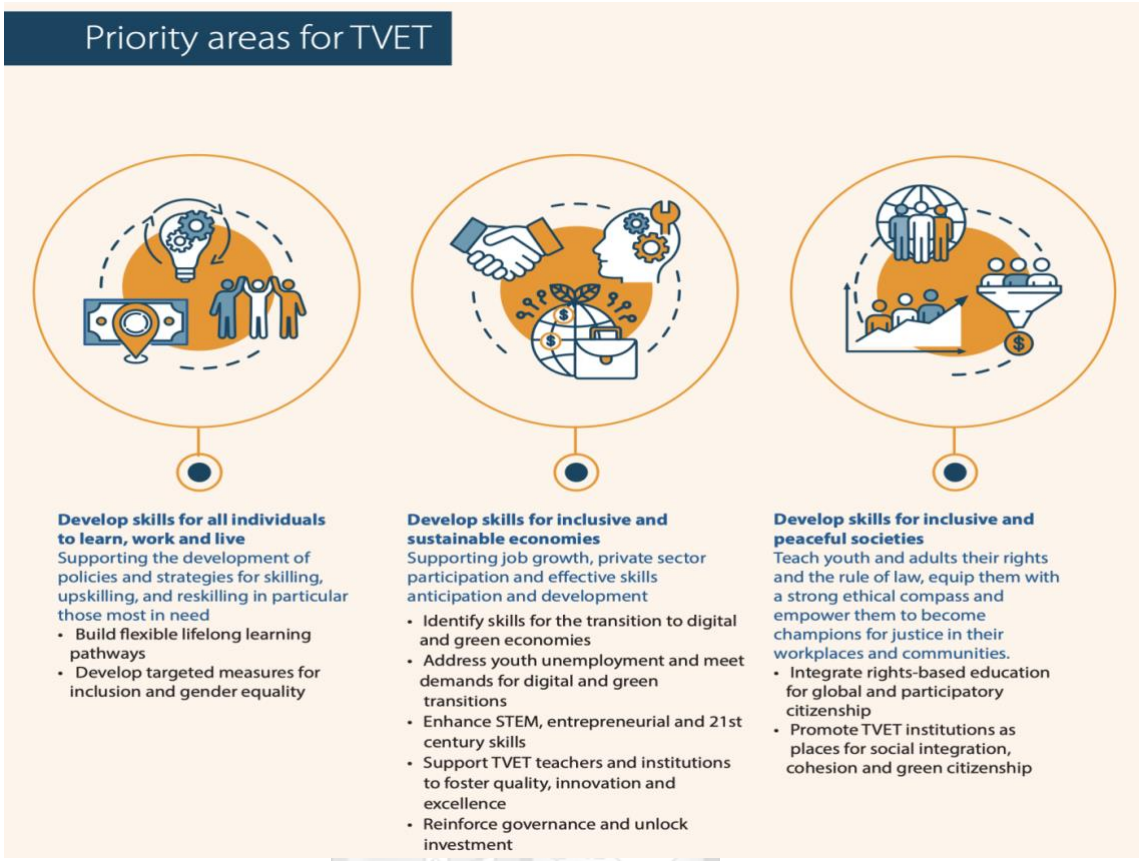

Figure 2. 2: Priority area for TVET (UNESCO, 2021)

In Figure 2.2, UNESCO emphasizes three priority areas for TVET: first, to "develop skills for all individuals to learn, work, and live"; second, to "develop skills for inclusive and sustainable economies"; and third, to "develop skills for inclusive and peaceful societies." These priorities correspond with four key indicators; Access, Equity, Quality, and Relevance which are part of the TVET performance dimensions. This aligns with Objective 1, which aims to "determine the relationship between performance dimensions and graduate employability." For individuals to effectively learn, work, and live, they must have access to adequate TVET infrastructure and resources. Equity ensures marginalized groups are given equal opportunities to participate in training. High-quality education is essential, including qualified instructors, sufficient resources, and effective assessment methods. Additionally, the curriculum must be relevant to the labor market's needs and include essential life skills alongside vocational training. Ensuring quality teachers and relevant content helps graduates acquire the necessary skills and knowledge. When individuals are equipped with these competencies, they can contribute positively to

a country's economic growth, fostering sustainability. A sustainable economy, in turn, promotes social peace, creating an inclusive and harmonious society (UNESCO, 2021).

The second priority, "Develop Skills for Inclusive and Sustainable Economies," aligns with Objective 3, which is "to determine the relationship between solid foundation and graduate employability" hence corresponds with three key indicators; Vision and Strategic Framework, Governance Arrangements, and Funding and Expenditures which are elements of the "solid foundations" of the TVET system. This priority emphasizes the need for a clear vision that aligns TVET with national economic objectives, highlighting the importance of sustainability and inclusivity in economic development (UNESCO, 2021). A strategic framework should outline how TVET can contribute to creating a skilled workforce capable of meeting the demands of a dynamic economy. Effective governance structures are essential for ensuring that TVET systems respond appropriately to labor market needs (UNESCO, 2021).Furthermore, investing in education and training can strengthen a country's economic stability.

Understanding the governance structures and funding mechanisms that support TVET provided insights into how these factors influence the quality and accessibility of vocational education (UNESCO, 2021). The study examined seven (7) TVET institutions, Eight (8) construction companies, TVET consultants and Ministry of education their impact on youth labor market outcomes. This helped to propose actionable policy recommendations for improving TVET systems to better serve youth and meet labor market needs.

Table 2. 1A: Hierarchical framework

No:	Elements	Descriptions
1	Higher Level Outcomes	The top of the hierarchy shows that "Employment and Productivity" are the ultimate goals.
2	Main Outcome:	Employability is the primary outcome that contributes to the higher-level goals.
3	Key Performance Dimensions:	Two main dimensions are highlighted. ▪ Access and equity ▪ Quality and relevance
4	Cross-cutting Considerations:	Two factors are listed as cross-cutting: ▪ Sustainability ▪ Efficiency

Source: The World Bank, UNESCO and ILO, 2023)

Table 2. 2B: Hierarchical framework

No:	Elements	Descriptions
5	Stakeholders:	The core of the diagram shows the main stakeholders in TVET provision: ▪ Learners ▪ Enterprises ▪ Public and private TVET institutions These core stakeholders are surrounded by ▪ Government and administration ▪ Representative organizations ▪ Executing bodies ▪ Other actors
6	Foundations:	The base of the framework lists three foundational elements: ▪ Vision and strategic framework ▪ Governance ▪ Funding and expenditures

Source: The World Bank, UNESCO and ILO, 2023)

Table 2.1 presents a hierarchical framework that outlines the outcomes, performance dimensions, stakeholders, and foundational elements of TVET systems (The World Bank, UNESCO and ILO, 2023). The research objective was derived from this framework by analyzing the TVET factors that influence graduate employability, as outlined in the table. This framework demonstrates the interconnected nature of TVET systems, highlighting how various stakeholders, performance dimensions, and foundational components contribute to the primary goal of enhancing employability, which ultimately leads to improved employment and productivity outcomes. The table emphasizes the necessity of considering multiple factors and stakeholders in the development and accessibility of TVET programs. In this study, the stakeholder indicators examined include learners, TVET institutions, enterprises, and government officials. The performance dimensions adopted are Access and Equity, Quality and Relevance, while the indicators for solid foundations are Vision and Strategic Framework, Governance Arrangements, and Funding and Expenditures.

2.4 Empirical Review

This empirical review presents summarized previous studies that have explored the factors of TVET institutes and the impact on the employment and productivity of TVET graduates. The research studies included in the review varied in geographical and contextual scopes.

2.4.1 Performance dimensions of formal TVET and Employability.

The performance dimensions of formal TVET; Access, Equity, Quality, and Relevance are critical for evaluating the effectiveness of vocational training systems.

Access is a primary performance aspect of a formal TVET system, defining the enrollment and benefits individuals can attain from acquiring skills and certifications offered within these programs. Factors impacting access include the availability of institutions, specialized programs, enrollment capacity in high-demand programs, and affordability (The World Bank, UNESCO and ILO, 2023). The ability of students to access quality education plays a crucial role in their employability. A study in Philippines suggested that graduates who had access to a relevant and practical curriculum were more likely to find employment related to their field of study. This is particularly important in a competitive labor market where educational background can significantly impact job opportunities (Albina & Sumagaysay, 2020). Access to quality education and training programs is crucial for all students, regardless of their socioeconomic background. The study in Thailand indicates that disparities in access can lead to inequalities in skill development, which ultimately affects employability. Ensuring that all students have access to high-quality TVE institutions is essential for producing a skilled workforce that meets labor market demands (Sa-Nguanmanasak et al., 2019).

In summary, Access refers to the availability of TVET programs to all segments of the population, particularly marginalized groups. Research indicates that limited access to vocational training contributes to high youth unemployment rates. For instance, in many developing countries, including South Sudan, geographical, financial, and social barriers prevent youth from enrolling in TVET programs. A study conducted between New Zealand and China highlights that increasing access to vocational training can significantly enhance employability among young people, as those who participate in such programs are better equipped with market-relevant skills (Liu & Clayton, 2016).

Equity, the second performance dimension in TVET systems, plays a crucial role in achieving higher-level employment and productivity outcomes, as well as broader social objectives. It ensures that skills are developed without regard to the learner's background

or location, expanding opportunities for all individuals. Equity first involves removing barriers based on personal and social factors such as gender, income, location, origin, migrant status, ethnicity, or disability to access, learn, and complete TVET programs. Secondly, equity prevents disadvantaged learners from being placed in subpar programs (The World Bank, UNESCO and ILO, 2023).

A study also touches on the concept of equity, particularly in terms of ensuring that all students, regardless of their background, can benefit from quality education. The findings indicate that some graduates faced challenges in securing employment due to personal circumstances, such as family concerns. This highlights the need for equitable access to resources and support systems that can help all graduates transition successfully into the workforce (Albina & Sumagaysay, 2020). Research emphasizes the importance of equity in education, suggesting that efforts should be made to address socioeconomic inequalities that may hinder certain groups from obtaining the skills necessary for employment. By promoting equitable access to educational resources and opportunities, institutions can help level the playing field and ensure that all students have the chance to succeed in the job market (Sa-Nguanmanasak et al., 2019).

In summary, Equity in TVET involves ensuring that all individuals, regardless of their background, have equal opportunities to participate in vocational training. The literature emphasizes that marginalized groups often face systemic barriers that limit their participation in TVET. Addressing these inequities is crucial for maximizing the potential workforce and reducing unemployment rates among disadvantaged youth. Programs in Malaysian aimed at increasing equity have shown promise in enhancing overall participation rates in vocational training (Yusop, Rasul, Yasin, & Hashim, 2023).

Quality represents the third key performance dimension in TVET systems, aiming to deliver programs and services that meet rigorous standards. This involves aligning TVET programs with industry benchmarks and equipping institutions with resources, competent leaders, proficient teachers, and continuous training to ensure program excellence. Additionally, quality is reflected in adequate infrastructure, equipment, and learning materials for hands-on education and assessment. Lastly, quality training encompasses high-quality work-based learning, with active involvement from enterprises in the training

process (The World Bank, UNESCO and ILO, 2023). The quality of the curriculum is emphasized as a critical factor in preparing graduates for the workforce.

A study indicates that a curriculum aligned with industry demands helps bridge the skills gap that many graduates face. Graduates reported that competencies such as communication skills and information technology skills, which were part of their education, were highly valued in their jobs. This suggests that high-quality education directly correlates with better employment prospects (Albina & Sumagaysay, 2020). The quality of education directly impacts the employability of graduates. The study found that Malaysian TVE students possessed better employability skills than their Thai counterparts, indicating that the quality of training and education provided in these institutions plays a significant role in preparing students for the workforce. High-quality programs that focus on both hard and soft skills are essential for enhancing students' employability (Sa-Nguanmanasak et al., 2019).

In Summary, Quality encompasses the effectiveness of TVET programs in imparting relevant skills and knowledge. High-quality training is essential for ensuring that graduates meet industry standards. Literature suggests that many TVET institutions struggle with inadequate resources, poorly trained instructors, and outdated curricula, which undermine the quality of education provided. For example, in a study Philippines, a thematic review identified significant gaps between the skills taught in TVET programs and those required by employers, emphasizing the need for continuous curriculum updates and instructor training (Alinea, 2022).

TVET's relevance on labor market needs significantly influences its overall effectiveness compared to other educational sectors. To drive employment, productivity, and sustainable development, TVET must be closely attuned to the evolving skills demands of the economy. The study suggests that in areas dominated by informal and small businesses, where self-employment and household enterprises are widespread, and the service sector employs a significant number of non-agricultural workers, TVET must adjust to the specific realities of those contexts (The World Bank, UNESCO and ILO, 2023). The relevance of education to employment is crucial for enhancing graduates' employability, as evidenced by the study where 69.78% of respondents felt their college

curriculum was pertinent to their first job. While the previous studies focused on countries like Indonesia, the Low- and Middle-Income Countries, Philippines, Malaysia, and Thailand, the upcoming study will investigate how these interconnected factors impact employability in South Sudan.

Graduates reported that competencies such as critical thinking, problem-solving, and technical skills gained during their education were directly applicable in the workforce. Regular curriculum reviews based on industry feedback are essential to ensure that educational programs meet current market demands, thereby increasing graduate's competitiveness in the job market. Overall, aligning educational offerings with industry needs significantly influences graduate's ability to secure employment and succeed in their careers (Albina & Sumagaysay, 2020). The relevance of the curriculum to current labor market needs is critical for ensuring that students acquire the skills that employers value. The research suggests that Thai TVE institutions need to align their programs with industry requirements and trends to enhance the employability of their graduates. This includes incorporating practical training, work-integrated learning, and feedback from industry partners to ensure that the education provided is relevant to the job market (Sa-Nguanmanasak et al., 2019).

In Malaysia, the study highlights several challenges affecting access, equity, quality, and relevance in the TVET program's relationship to employment outcomes and the study concluded that by aligning the curriculum with current workforce needs and incorporating practical experiences, the TVET model equips students with the competencies and attitudes valued by employers, ultimately improving their employability and readiness for the job market (Jabarullah & Hussain, 2019). The previous study concentrated solely on VET, whereas the current study will specifically focus on TVET.

The shift to distance and mixed education due to the COVID-19 pandemic has created barriers to access for students lacking necessary technology or internet connectivity, exacerbating existing inequalities in educational opportunities across different backgrounds in Ukraine and the study confirmed that there is a significant gap between the skills taught in vocational institutions and the actual needs of the labor market, necessitating alignment of training programs with current employment trends to ensure

that graduates are adequately prepared for the workforce (Kovalchuk, Maslich, Tkachenko, Shevchuk, & Shchypska, 2022). The study employed Problem-Based Learning theory, whereas the current research will utilize Human Capital Theory and the UNESCO framework to examine the relationship between education, skill development, and employability outcomes.

Negative public perception of TVET as low-class education limits access to training, while inadequate funding creates disparities in educational quality, resulting in an uneven job market for graduates and insufficient industry linkages lead to a misalignment between the skills taught and the needs of employers, further hindering job prospects for TVET graduates in Nyeri County-Kenya (Waihura, Josephat, Richard, & Kimosop, 2019). Limited access to quality education and high dropout rates hinders skill development, particularly among marginalized groups, while the stigmatization of TVET affects equitable participation in Rwanda. The quality of training is compromised by outdated curriculums and the need for improved training of instructors, leading to a mismatch between the skills taught and those required by the job market (Diop, 2020). Both studies primarily concentrate on performance dimension factors, however, the current research aims to broaden this scope by incorporating stakeholder engagement and foundational factors that influence employability.

The existing curriculum lacks CTM modules in Nigerian, which diminishes the quality of career preparation and fails to align with the skills demanded by employers, leading to prevalent job mismatches among graduates (Okolie, Nwajiuba, & Binuomot, 2020). The study in South Sudan identified challenges such as inadequate basic education facilities, insufficient schools, and a lack of entrepreneurship skills hindering individuals from meeting market demands effectively. The research highlighted the necessity of upgrading technical programs for graduates to remain competitive in the job market and improving training for teachers and entrepreneurs due to a shortage of qualified instructors in entrepreneurship programs (Atari, Abdelnour, McKague, & Wager, 2010). Both studies employed qualitative methods, however, the current research will use a mixed methods design to further examine the performance dimensions affecting employability in South Sudan.

In summary, Relevance refers to how well TVET programs align with labor market needs. A key finding from various studies is that a lack of alignment between training outcomes and industry requirements leads to high unemployment among graduates. Research in Swiss shows that when TVET curricula are developed in collaboration with industry stakeholders, they are more likely to produce graduates with skills that are in demand (Caves, Ghisletta, Bolli-Kemper, & Renold, 2019). This relevance not only enhances employability but also supports economic growth by providing industries with a skilled workforce.

Interconnections Between the Performance Dimensions of formal TVET

The empirical literatures mentioned in chapter two illustrate that these performance dimensions are deeply interconnected:

Access and Quality: Improving access without ensuring quality can lead to increased enrollment in subpar programs, resulting in graduates who are unprepared for the job market.

Quality and Relevance: High-quality training must be relevant to current labor market demands; otherwise, even well-trained individuals may struggle to find employment.

Equity and Access: Ensuring equitable access to quality training programs is vital for maximizing participation from all demographic groups, thereby enhancing overall workforce skills.

Generally, addressing the performance dimensions of access, quality, equity, and relevance is essential for improving youth employment outcomes through effective TVET systems. The literature consistently supports the notion that enhancing these dimensions can lead to better alignment between educational outcomes and labor market needs, ultimately reducing youth unemployment rates.

2.4.2 Stakeholder engagement and employability

The effectiveness of TVET in matching skills supply and demand is influenced by various stakeholders, whose actions and collaborations impact its ability to enhance performance

and achieve desired results. Those on the supply side oversee the development and oversight of educational and training programs, while those on the demand side are the users and clients of TVET services (The World Bank, UNESCO and ILO, 2023). Additionally, there are intermediaries who facilitate connections between supply and demand to ensure optimal matches between learners and educational programs or services. In formal TVET, learners, TVET institutions, and enterprises are considered the primary stakeholders. Government agencies, administrative bodies, and representative organizations are categorized as secondary actors in the process. This research will concentrate solely on primary stakeholders and government agencies to deliver detailed findings (The World Bank, UNESCO and ILO, 2023).

Learner encompasses various individuals, including those currently in a TVET program, those contemplating TVET for pre-employment, reskilling, or upskilling purposes, and those who have finished their TVET studies and are entering the workforce, seeking further education, or already employed. TVET institutions, regardless of being private or public, provide formal training. Enterprises or employers can undertake three primary roles: actively engaging in skills development and training delivery, indirectly shaping TVET by influencing its fundamental principles, and contributing financial or in-kind resources to support TVET through external entities, like public organizations. Challenges regarding stakeholder engagement in TVET colleges were identified, impacting employability. Issues highlighted included inadequate involvement of private enterprises in L/MIC TVET systems, with poor coordination and limited engagement between stakeholders hindering progress towards shared goals. Many countries established multipartite coordination bodies to address these challenges, yet obstacles persisted, such as lack of awareness, concerns about transaction costs, and skepticism about partnership value (The World Bank, UNESCO and ILO, 2023).

This research dives into the experiences of apprentices, teachers, and in-company trainers, highlighting the importance of effective partnerships in bridging school and workplace learning in Swiss. The findings of the study on Swiss IVET reveal that collaboration among stakeholders is perceived as weak, which negatively impacts the quality of the IVET system and apprentice's employability (Sauli, 2021). Employers benefit from VET

programs, especially dual VET systems, as they allow for better assessment of candidates' productivity and skills, leading to higher wages and shorter job search times in Switzerland. Educational institutions play a critical role by designing programs that align closely with labor market needs, while policymakers are urged to promote dual VET to enhance student motivation and employability. Additionally, students who actively engage in relevant work experiences tend to achieve better labor market outcomes, underscoring the importance of proactive involvement in VET programs (Oswald-Egg & Renold, 2021). The previous study examined stakeholders in both VET and IVET, whereas the current study will concentrate specifically on TVET stakeholders.

In Switzerland, stakeholders, including educational institutions and employers, are encouraged to recognize the advantages of dual VET, particularly its extensive workplace training component (Bolli, Oswald-Egg, & Rageth, 2017). The findings emphasized stronger connections between TVET institutions and industries are necessary for better employment outcomes in Pakistan (Bano, Yang, & Alam, 2022). The previous study was conducted in Switzerland and Pakistan, while the current study will be carried out in South Sudan.

The study in Valenzuela City, Philippines, found that various stakeholders significantly impact the employability of TVET graduates. Engaging employers in training program design ensures graduates gain relevant skills, while partnerships between TVET institutions and industry enhance practical work experience. Support from government bodies is crucial for maintaining standards and resources, and involvement from community organizations enriches training opportunities. Effective feedback among all stakeholders fosters continuous improvement in employability outcomes, highlighting the importance of collaboration in preparing graduates for successful employment (Mariano1 & Tantoco2, 2023). A study in Indonesia indicated that establishing strong connections through internships and collaborative projects provides students with practical experience, making them more attractive to employers (Indrawati & Kuncoro, 2021). The article does not specify a particular research method used in the study; therefore, the current study will employ a mixed-method design.

The research findings from Uganda emphasize the importance of collaboration among key stakeholders; employers, educational institutions, and government officials to implement strategies like industrial attachments, income-generating units, and employment agencies to connect graduates with job opportunities. Strong institutional-industrial linkages and resources for self-employment are also crucial (Kintu, Kitainge, & Ferej, 2019). This aligns with a study in Rwanda, which highlights the government's role in shaping employability through policy design and implementation. However, the Rwandan study found that despite these efforts, the employability training program did not significantly enhance employment rates or income for participants. This suggests that while stakeholder involvement is vital, the effectiveness of such programs may be limited without additional measures, such as job creation initiatives or financial support for entrepreneurs (Alcida, Bulteb, Lensinkc, Sayinzogad, & Treurnietc, 2022). The study in Uganda employed a qualitative method, while the research in Rwanda utilized a quantitative approach. In contrast, the current study will adopt a mixed-method design.

The research findings emphasize the critical role of stakeholders in enhancing the TVET system in Sudan. It highlights the need for awareness programs to educate families about the importance of TVET, collaboration between public and private sectors to improve resource allocation, and active employer involvement in curriculum development to align skills with labor market demands. Additionally, engaging the local community and addressing societal misconceptions about TVET are essential for promoting its value as a viable educational path that contributes to personal and national economic development. The study findings also suggested that the Ministry of Education should engage in PPPs and contribute funds to enhance the quality of TVET education (Ramadan & Xiaohui, 2019). The previous study employed a combination of primary and secondary data for data collection. Similarly, the current study will utilize both primary and secondary data.

The study in South Sudan highlights the importance of a supportive political climate and the active involvement of various stakeholders, including the GOSS, local communities, NGOs, and educational institutions, for the effective development of TVET. Respondents stressed the necessity of collaboration to create sustainable programs that meet local needs and address socio-economic challenges, including market disparities and foreign

competition. The findings suggest that prioritizing TVET as a government policy and enhancing stakeholder engagement are crucial for post-conflict reconstruction and the long-term success of TVET initiatives. The study does not provide a specific count of the TVET institutes involved in the research (Ataria & McKagueb, 2014). Data were gathered from historically significant technical and vocational schools in the South Sudanese County of Juba, Torit, and Lainya. The current study will include seven TVET institutes, with raw data being collected from locations in Juba, Yei, and Aweil.

A study employs an enhanced multinomial logistic regression model to explore the determinants of TVET choices among Nigerian youth. It addresses the complexities of vocational decisions within the informal sector and aims to provide data-driven insights for policymakers to design effective TVET interventions (Agbo, Odiri, Auta, & Onwusuru, 2024). Research also in Kenya investigates how a dynamic Competency-Based Education and Training (CBET) curriculum impacts the employability skills of TVET graduates. It examines trainer's qualifications and industry engagement, employing descriptive and inferential analysis to assess their influence on employability (Manase & Nyamu, 2024). The current study will utilize a multiple regression model to identify the factors from TVET institutes that influence graduate's employability in South Sudan.

2.4.3 Solid foundation and employability

The effectiveness of TVET systems is dependent on three key foundations: (i) vision and strategic framework (plans); (ii) governance arrangements (tools); and (iii) funding and expenditure mechanisms (funds). In successful TVET systems, these components are closely coordinated and work together to enhance access, equity, quality, and relevance (The World Bank, UNESCO and ILO, 2023).

Key questions that a vision and strategic framework would address include: A vision and strategic framework would answer important questions such as: What are TVET's objectives and how should these be measured? What types of skills should TVET focus on and how? What is the role of work-based learning and what balance should be struck between public and private provision, and school-based versus apprenticeship-based training? How will TVET be integrated and articulated with the rest of the education and

training system? How will the roles and responsibilities of different stakeholders be agreed and monitored? How will the system be financed and by whom? (The World Bank, UNESCO and ILO, 2023). The study indicated that A significant trade-off involves deciding how much to allocate resources towards skills that promote overall growth and economic change compared to skills that prioritize inclusivity and cater to the requirements of low-skilled youth and adults engaged in low-productivity occupations. Additionally, there are trade-offs between investing in skills that meet current labor market demands versus those that anticipate future labor needs (The World Bank, UNESCO and ILO, 2023).

The study highlights challenges in establishing a clear vision and strategic framework for TVET, which affects its impact on employability. The complex relationship between education and work complicates the alignment of diverse stakeholder objectives, resulting in differing priorities and fragmented views on essential skills and public perceptions of TVET. Additionally, maintaining public advocacy and leadership to support the TVET vision is challenging, as demonstrated by cases in Indonesia and Timor-Leste. A lack of clarity in the TVET vision can hinder effective strategy development, as seen in Armenia, where there is a disconnect between long-term goals and current priorities (The World Bank, UNESCO and ILO, 2023). The previous study was conducted in L/MIC, while the current study will focus specifically on South Sudan.

Governance encompasses both formal and informal systems and processes put in place to ensure the successful execution of strategies and policies. This aspect includes establishing legal, regulatory, and/or normative frameworks, overseeing TVET provider networks, managing public-private partnerships for TVET and skills provision, evaluating and revising TVET policies, conducting research and development, and gathering and analyzing data and statistics. The study revealed that governance challenges, such as outdated laws, poor coordination of regulatory bodies, limited capacity, and lack of investment in labor market information systems, hinder the performance of TVET systems, particularly in L/MIC (The World Bank, UNESCO and ILO, 2023). The previous study examined both informal and formal TVET, whereas the current study will concentrate solely on formal TVET.

The study said that in alignment with effective management practices, funding for TVET programs should be stable, predictable, sustainable, and sufficient. This involves ensuring that funding is sourced from a diverse set of avenues, that resource allocation adheres to suitable and transparent standards, and that the effects of funding structures on critical performance aspects are consistently assessed. The study indicated that TVET is often more expensive than general education due to factors such as high equipment and operating costs, small class sizes, and costs associated with WBL. The study shows that per-student spending on vocational programs is higher than on general programs in many countries. The study indicated that there are inefficiencies in spending, with some areas underspending while others overspend. TVET systems in low- and middle-income countries tend to rely heavily on public funding, with limited private sector contributions (The World Bank, UNESCO and ILO, 2023). The previous study employed a qualitative approach, while the current study will utilize a mixed-methods approach.

The study highlights that enhancing employability through VET requires a clear vision and strategic framework that aligns training with labor market demands, effective governance structures that engage stakeholders to ensure responsiveness to economic needs, and adequate funding and efficient expenditure management to support sustainable and impactful VET programs. It emphasizes the importance of prioritizing investments in areas that directly contribute to employability, such as training facilities and industry partnerships, to create a comprehensive approach that integrates these elements for improved outcomes in skill development and employment (McGrath & Yamada, 2023). The previous study emphasizes the global challenges of VET, addressing trends in both developing and developed countries. In contrast, the current study will focus specifically on South Sudan, highlighting the unique TVET challenges faced in that context.

The findings regarding the 4th Industrial Revolution in Germany highlight the need for a comprehensive vision and strategic framework in vocational education and training VET to align educational outcomes with labor market demands. Effective governance structures that foster collaboration among stakeholders are essential for adapting training programs to the evolving technological landscape. Adequate funding and resource allocation are crucial to support innovation in training methods and the professional

development of educators (Spöttl & Windelband, 2020). The study in Switzerland suggests that a strategic focus on VET can help bridge socioeconomic gaps in human capital investment, thereby improving mobility outcomes. Effective governance, characterized by higher public expenditures on education and health, is linked to better income mobility, while lower tax rates also contribute positively (Chuard-Keller & Grassi, 2022). Previous studies have concentrated on VET, whereas the current study will focus on TVET.

The study highlights that the governance structure of the German VET system, characterized by strong collaboration between trade unions and employer's associations, plays a crucial role in aligning training with labor market needs, thereby enhancing employability. However, it also points out that the funding mechanisms and expenditures can perpetuate social inequalities by directing working-class youth towards apprenticeships instead of higher education (Haasler, 2020) The research on the BD program in Sierra Leone highlights significant shortcomings in its alignment with the national Vision and Strategic Framework, governance practices, and funding mechanisms, all of which influence youth employment. The program failed to adequately address local job market needs and marginalized youth voices, leading to a lack of relevant training opportunities. Governance issues, such as a lack of transparency and the influence of clientelism, fostered mistrust and perpetuated social inequalities. Additionally, inconsistent funding and inequitable resource distribution limited the program's effectiveness, particularly in rural areas (Veena & Datzbergerb, 2022). The previous research concentrated on a specific program in Sierra Leone, while the current study will examine the available programs in South Sudan.

The study on "Quality Education in Rwanda" reveals that the interrelated factors of Vision and Strategic Framework, Governance, Funding, and Expenditures significantly influence employment outcomes in the country. Weak governance structures hinder effective policy implementation and resource allocation, while insufficient funding results in overcrowded classrooms and inadequate training, diminishing educational quality. the study concluded that, without targeted investments in vocational training and career guidance, graduates may remain unprepared for the workforce, exacerbating unemployment issues (Dieu,

Theogene, Philothere, & Ke, 2022). The previous study utilized a qualitative research approach, whereas the current study will adopt a mixed-methods design.

The study on the evolution of TVET in Kenya highlights the critical interplay between the Vision and Strategic Framework, governance, funding, and expenditures in influencing employability. Kenya Vision 2030 emphasizes the need for a competency-based curriculum that aligns educational outcomes with labor market demands, while effective governance structures ensure the successful implementation of policies. Adequate funding is essential for developing quality TVET programs, and PPP can enhance resource allocation and practical training opportunities. The study also indicated that, strategic investments in TVET are expected to reduce youth unemployment and foster economic growth by equipping individuals with relevant skills for the workforce (Ngure, 2022). The study was carried out in Kenya and will now be conducted in South Sudan.

Effective governance is crucial, requiring the establishment of policies that promote quality standards, collaboration among stakeholders, and targeted support for marginalized communities. the study also indicated that adequate funding is essential to improve ICT infrastructure, provide necessary resources to disadvantaged families, and support professional development for educators, which can enhance job security and create new employment opportunities in the education sector (Karani & Mary, 2022). The study primarily examined online education during the COVID-19 pandemic, focusing on Kenya while also comparing experiences from countries like New Zealand, South Africa, and India. In contrast, the current study will concentrate on South Sudan and will not address online education or the pandemic context.

The study on the unemployment of South Sudanese civil engineer graduates revealed significant challenges in the TVET sector, including a lack of a coherent vision and strategic framework, inadequate governance arrangements, and insufficient funding. Respondents noted that the absence of a clear strategic direction led to outdated curricula that did not meet industry needs, while overlapping responsibilities between the MoLPS and MoGEI created confusion and inefficiencies. Financial constraints limited resources for training, resulting in a reliance on theoretical instruction rather than practical experience, compounded by low teacher salaries that hindered recruitment and retention

(Mabe, 2013). While this study concentrated exclusively on civil engineering graduates, the current research will expand its focus to encompass the range of STEM skills offered by TVET institutes in South Sudan.

Table 2. 3A: Summary of Literature and Research Gaps

No:	Title	Findings	Research Gap
1	Building Better Formal TVET Systems Principles and Practice in Low- and Middle-Income Countries (The World Bank, UNESCO and ILO, 2023)	The study found that performance dimensions, stakeholder engagement, and a solid foundation are the key pillars of employability.	The study was conducted in low and middle-income countries (L/MIC), but the current research will take place in South Sudan.
2	Vocational Education in the Context of Modern Problems and Challenges (Kovalchuk, Maslich, Tkachenko, Shevchuk, & Shchypska, 2022)	The study highlights a significant gap between the skills taught in vocational institutions and the actual needs of the labor market, emphasizing the need to align training programs with current employment trends to better prepare graduates for the workforce.	The study employed Problem-Based Learning theory, whereas the current research will utilize Human Capital Theory and the UNESCO framework to examine the relationship between education, skill development, and employability outcomes
3	Challenges Facing Technical Training Institutes in Kenya: A Case of Nyeri, County (Waihura, Josephat, Richard, & Kimosop, 2019).	The Study highlights that negative perceptions of TVET as low-class education and inadequate funding contribute to disparities in educational quality and limited access to training, resulting in poor job prospects for graduates in Nyeri County.	The study primarily concentrates on performance dimension factors; however, the current research aims to broaden this scope by incorporating stakeholder engagement and foundational factors that influence employability.

Table 2. 4B: Summary of Literature and Research Gaps

No:	Title	Findings	Research Gap
4	Technical Vocational and Entrepreneurial Capacities in South Sudan. Assessment and Opportunity (Atari, Abdelnour, McKague, & Wager, 2010).	The study in South Sudan reveals that inadequate basic education facilities and a lack of entrepreneurship skills hinder individuals from effectively meeting market demands.	The study employed qualitative methods; however, the current research will use a mixed methods design to further examine the performance dimensions affecting employability in South Sudan
5	Assessment of Employability Skills of Technical-Vocational Education and Training (TVET) Graduates: Basis for an Enhancement Program (Mariano1 & Tantoco2, 2023).	The study in Valenzuela City, Philippines, highlights that collaboration among stakeholders, including employers, government bodies, and community organizations, is vital for enhancing the employability of TVET graduates by ensuring they acquire relevant skills and practical experience	The article does not specify a particular research method used in the study; therefore, the current study will employ a mixed-method design.
6	Short-and Medium-term Impact of Employability Training Evidence from a Randomized Field Experiment in Rwanda (Alcida, Bulteb, Lensinkc, Sayinzogad, & Treurnietc, 2022).	The study indicates that despite government efforts in policy design for employability, the effectiveness of training programs is limited without additional measures like job creation initiatives or financial support for entrepreneurs.	The article does not specify a particular research method used in the study; therefore, the current study will employ a mixed-method design.
7	The peacebuilding potential of technical and vocational education and training programmes in post-conflict Sierra Leone (Veena & Datzbergerb, 2022).	The research reveals critical misalignments with the national Vision and Strategic Framework, governance practices, and funding mechanisms, adversely affecting youth employment and training relevance. Issues such as inadequate attention to local job market needs, lack of transparency, clientelism, and inconsistent funding have perpetuated social inequalities and limited the program's effectiveness, especially in rural areas.	The previous research concentrated on a specific program in Sierra Leone, while the current study will examine the available programs in South Sudan.

Table 2. 5C: Summary of Literature and Research Gaps

No:	Title	Findings	Research Gap
8	Quality Education in Rwanda: A Critical Analysis of Quality Indicators (Dieu, Theogene, Philothere, & Ke, 2022).	The study highlights that the interconnected factors of governance, funding, and strategic frameworks critically impact employment outcomes, with weak governance and insufficient funding leading to overcrowded classrooms and reduced educational quality.	The previous study utilized a qualitative research approach, whereas the current study will adopt a mixed-methods design.
9	Factors Affecting Employment of South Sudan Technical Vocational Education and Training Graduates: A Case study of Building and Construction Industry in Juba County (Mabe, 2013).	The study on the unemployment of South Sudanese civil engineering graduates identified critical issues in the TVET sector, such as a lack of a coherent strategic framework, poor governance, and inadequate funding, which resulted in outdated curricula and a reliance on theoretical instruction.	While this study concentrated exclusively on civil engineering graduates, the current research will expand its focus to encompass the range of STEM skills offered by TVET institutes in South Sudan

2.5 Conceptual Framework

The framework utilized in a case study by the (The World Bank, UNESCO and ILO, 2023) named "Building Better Formal TVET Systems: Principles and Practice in Low and Middle-Income Countries" will now be applied in a study conducted in South Sudan.

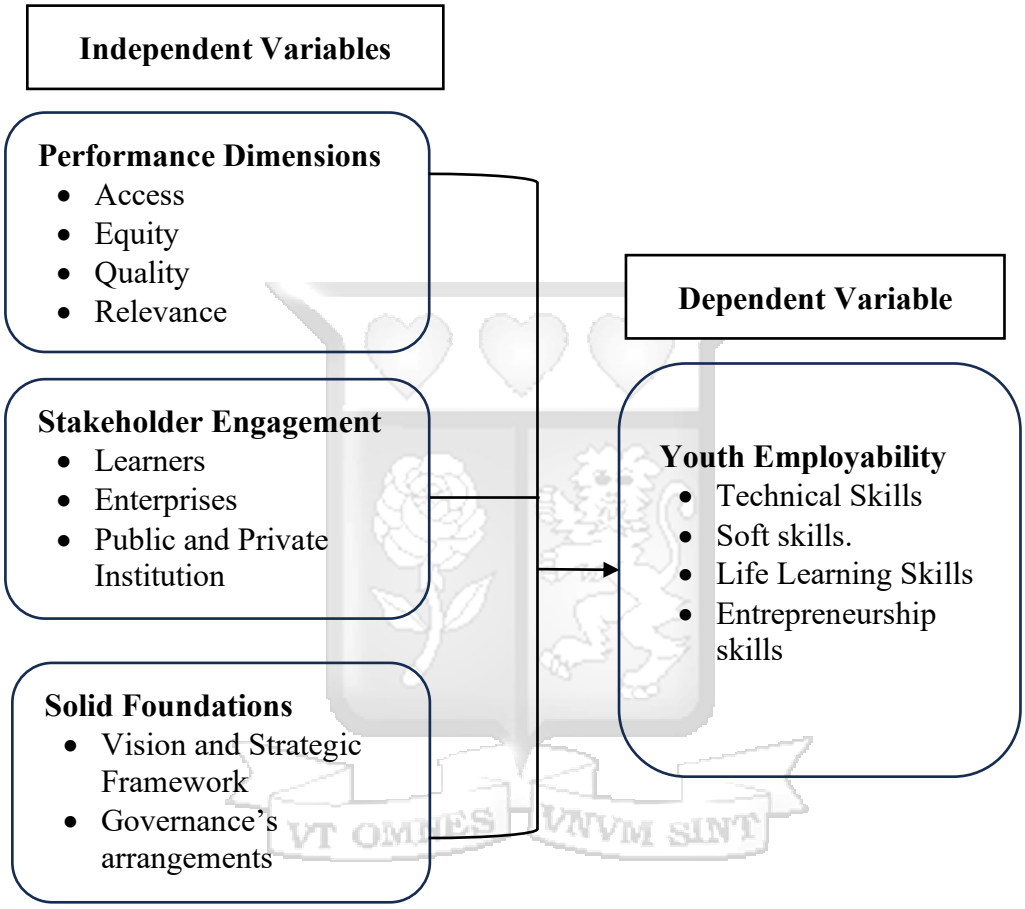

Figure 2. 3: Conceptual Framework

Table 2. 6: Operationalization of Variables

No:	Variables	Type of Variable	Indicators	Measurements	Data Collection tool	Data Analysis
1	**Youth Employability Outcome**	Dependent	• Technical Skills • Soft skills. • Life Learning Skills • Entrepreneurship skills	Quantitative data Qualitative data 5-point Likert scale	Close ended and open-ended Questionnaire	Descriptive Correlation tests. Regression tests. Thematic Analysis.
2	**Performance Dimensions**	Independent	• Access • Equity • Quality • Relevance	Quantitative data Qualitative data 5- point Likert scale	Close ended and open-ended Questionnaire	Descriptive Correlation tests. Regression tests. Thematic Analysis.
3	**Stakeholder Engagement**	Independent	• Learners • Enterprises • Public and Private Institution • Government agency	Quantitative data Qualitative data 5- point Likert scale	Close ended and open-ended Questionnaire	Descriptive Correlation tests. Regression tests. Thematic Analysis
4	**Solid Foundations**	Independent	• Vision and Strategic Framework • Governance's arrangements • Funding and Expenditures	Quantitative data Qualitative data 5- point Likert scale	Close ended and open-ended Questionnaire	Descriptive Correlation tests. Regression tests. Thematic Analysis.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodology employed in this study, covering several key components. It began with an exploration of the research philosophy that underpins the study, followed by a detailed description of the research design. The chapter then addresses the population and sampling methods, including the target population and sample size. Additionally, it discusses the data collection methods and procedures utilized in the research. The chapter further elaborates on the data analysis techniques, diagnostic tests conducted, and the ethical considerations that were considered throughout the study.

3.2 Research Philosophy

The researcher's orientation is guided by the pragmatism research philosophy. As described by (Saunders, Lewis, & Thornhill, 2023), pragmatism emphasizes a problem-oriented approach, aiming to offer practical solutions to real-world issues. A pragmatist adopts a problem-solving mindset, striving to find practical methods to achieve various research objectives. This often manifests in studies that adopt a mixed-method approach, utilizing a combination of different data types and analysis methods. The researcher embraced this philosophy because it allows knowledge to have practical relevance in specific contexts, fostering a more holistic and comprehensive understanding. Ultimately, the researcher sought to enhance graduate employability outcomes through their contributions.

3.3 Research Design

The researcher has chosen a cross-sectional design with a descriptive and evaluative approach to investigate the impact of TVET elements on employability outcomes. In this design, the researcher observes variables without manipulating them, allowing for a snapshot of data at a specific point in time (Mills, Durepos, & Wiebe, 2010). Descriptive research aims to systematically describe an object, situation, or population (Ansari, Rahim, Bhoje, & Bhosale, 2022).

For this study, a descriptive research design was used to collect quantitative data directly from selected TVET institutions and qualitative secondary data. The focused on analyzing the employability data of graduates from seven specific TVET institutes. Data collection methods included questionnaires both open-ended and closed-ended questions involving graduates, institutional staffs, industry employees and government officials from the Ministry of Education, and representatives from construction companies.

This study conducted mixed-methods research design to allow for a comprehensive investigation the relationship between TVET interconnected factors and graduate's employability in South Sudan. The quantitative phase provided statistical data and trends, while the qualitative phase offers in-depth insights and contextual understanding. By integrating both approaches, robust findings were generated and inform evidence-based recommendations for improving graduate employability is provided in chapter 5.

3.4 Population and Sampling

According to (Akec, 2021) there are currently seven accredited TVET institutions in South Sudan. This study will therefore focus on the seven accredited TVET institutions recognized by the Ministry of Higher Education located in Juba, Aweil, and Yei. This focused approach seeks to evaluate the effectiveness and influence of these TVET institutions on enhancing the employability of South Sudan's youth.

3.4.1 Target Population

The population encompasses the entire group of individuals, objects, or events that share a common characteristic and are the focus of the study (Ahmad, Alias, & Razak, 2023). It represents the total collection of elements that the researcher intends to investigate and draw conclusions from.

For this study, the target population was defined based on three main groups of individuals. First, it included students and relevant stakeholders associated with the seven operational TVET institutes in South Sudan, located across three counties: Juba, Aweil, and Yei. These institutes were selected because they are the only formal TVET providers actively functioning at the time of the study, and they are considered among the top-

performing institutions in the country. According to (Akec, 2021) and (Bentele, Peter, & Ndoromo, 2021), approximately 2,500 students are enrolled across these seven TVET institutions nationwide. Additionally, to account for recent graduates and improve representativeness, an extra 12% totaling around 300 graduates were included, bringing the targeted learner population to approximately 2,800 individuals.

Furthermore, the study targeted key staff members from these institutions: one principal from each of the seven TVET institutes, totaling seven principals; seven teachers (one from each institution, representing the different courses offered); five TVET consultants; and ten staff members from the Ministry of Education. This led to a total of 71 targeted TVET staff and government officials.

Secondly, the study included eight construction companies operating within the country. Due to the ongoing civil war and economic challenges, there is no official or publicly available data on the exact number of construction companies in South Sudan. Therefore, the selection was based on accessibility, convenience, and voluntary participation. The companies were distributed as follows: four in Juba, three in Yei, and one in Aweil. From these companies, 58 individuals were targeted, including project directors, engineers, technicians, and other relevant personnel.

Therefore, the total targeted population comprised 2,929 individuals across three groups; learners (2800), construction enterprises (58), and TVET staff/government officials (71) located in Juba, Yei, and Aweil as shown in Table 3.2, this diverse group was selected to provide comprehensive insights into the study's objectives. Table 3.1 displays numbers of categories obtained from each county, Juba, Yei and Aweil.

Table 3. 1: Categories of targeted population from each County.

Location	**Categories of Targeted Population**		
Location	**Construction Companies**	**TVET Institutions**	**Ministry of Education offices & TVET Constancy**
Juba	4	4	1
YEI	3	2	1
AWEL	1	1	1
Total	**8**	**7**	**3**

Table 3. 2: Targeted population

No:	Group of Respondents	Target Population calculations	Total Target Population
1	Enterprises Staff	(7x8) + 2 (7 staffs, 8 companies, 2 CEO)	58
2	TVET staffs and Government officials	7 + (7x7) + 5 +1 0 7 principles, 7 teachers, 5 Consultants, 10 staffs from Ministry.	71
3	Learners (current students of second year and Graduates)	2500+300	2800
Total		**2929**	**2929**

Units of observations: Learners

Units of Analysis: Learners

3.4.2 Sampling Procedures

Sample Design as both the theoretical foundation and the practical approach through which we can infer the characteristics of a population by extrapolating from the attributes of a relatively small number of units within that population (StudeerSnel, 2024). It is a structured plan for selecting a sample from a specific population (Mexon & Kumar, 2020). Sampling is the process of selecting a part of population. Sample is the selected part of the population. Sample Size is the number of people in the selected sample. Sample Frame is the list of individual or people included in the sample. Sample Technique pertains to the technique or procedure used to select members of the sample (Mexon & Kumar, 2020).

In this study, a combination of sampling methods was employed to select participants from the different groups; Enterprises, Learners, TVET staff, and government officials. Specifically, stratified sampling was adopted to ensure that each subgroup's unique characteristics were adequately represented in the sample. Stratified sampling involves dividing the overall population into homogeneous subgroups, or strata, based on specific characteristics such as employment sector, role, or educational status, as described by

(Thomas, 2022). Each member of the population belongs to exactly one stratum, and elements from each stratum are sampled proportionally using probability sampling methods to improve the accuracy and representativeness of the results.

For the enterprise group, purposive sampling was used to select specific construction companies based on accessibility and relevance, complemented by random sampling within those companies to ensure diversity among participants from CEO, Project director, Construction managers, Engineers and Technicians. Similarly, for TVET staff and government officials, purposive sampling was employed to target individuals with relevant expertise from ministry of education and individuals offering consultancy to other TVET stakeholders, followed by random sampling to select from within these groups as shown in table 3.3.

Regarding learners, purposive sampling was used to select current second year students and recent graduates, with random sampling applied to current students across all courses to ensure a representative subset. For graduates, snowball sampling was utilized, involving initial contacts identifying other alumni, thus facilitating the inclusion of a broader range of graduates who might otherwise be difficult to reach as shown in table 3.3. Measures were taken to ensure that the sample accurately reflects the diversity within each group.

3.4.3 Sample Size Calculation

In this study, Yamane's formula was employed to determine the appropriate sample size. The Taro Yamane formula, developed by Japanese American economist Taro Yamane in 1967, provides a simple method for calculating sample sizes from finite populations. According to (Ovie, 2023), the formula is expressed as:

$$n = \frac{N}{1 + Ne^2}$$

where:

n = Corrected sample size,

N = Total population size,

e = Margin of error (MoE).

Given the context of this study, the population size (N) was 2,929 individuals. The desired confidence level was 95%, corresponding to a margin of error (e) of 0.05. Substituting these values into the formula:

$$n = \frac{2929}{1 + 2929x0.05^2} = 351.938 \approx 352$$

To ensure comprehensive representation across the different groups; Enterprise, TVET staff and Government officials, and Learners. The sample was proportionally stratified among these groups, capturing the various respondent segments within each group as illustrated in Table 3.3.

Table 3. 3: Sample size of the study population

No:	Groups	Population (N)	Calculated sample size (n) $n = \frac{N}{1+Ne^2}$	Sampling method
1	Enterprises Staff	58	50	Stratified Sampling Purposive Sampling Random Sampling
2	TVET staffs and Government officials	71	60	Stratified Sampling Purposive Sampling Random Sampling
3	Learners	2800	350	Stratified Sampling Purposive Sampling Random Sampling Snowball Sampling
Total		**2929**	**460**	

When summing the individual group population sizes, the total population N amounts to 29,290, with an overall calculated sample size n of 352. However, when determining the sample sizes for each group individually, the total sample size sums up to 460. Therefore, the study adopted total sample size of 460 to ensure comprehensive representation across all groups, as shown in Table 3.3.

3.5 Data Collection Instruments

Data is comprising of information or facts, encompassing descriptive details, non-numerical content, qualitative aspects, and quantitative figures (Ahmad, Alias, & Razak,

2023). This study employed questionnaires (primary data) distributed to all seven TVET institutions, eight construction enterprises, the Ministry of Education offices, and TVET consultant offices across their various locations: Juba, Yei, and Aweil as shown in Table 3.1. The questionnaires were prepared in Excel, printed in hard copy, and made available electronically via Google Forms to facilitate access for companies with internet connectivity. Utilizing questionnaires (Appendices II, III, IV) as the data collection instrument is appropriate because they enable respondents to provide well-considered answers with a high degree of freedom to express their views and suggestions, thus enhancing efficiency when working with large samples. Both open-ended and closed-ended questions were included to cover the variables outlined in the study, aligning with the research objectives. The closed-ended questionnaires were divided into two sections: Section 1 focused on respondents' demographic information, while Section 2 employed a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), to facilitate linear regression analysis. Section 3 contained open-ended questions to gather more detailed insights.

3.6 Data Collection Procedures

Upon approval of the research proposal by the university and authorized to proceed with data collection, ethical clearance was obtained from the Strathmore University Ethics Review Board. Additionally, research licenses were secured from the Ministry of Education at the national level, along with approval from relevant authorities at the state level in Juba, Yei, and Aweil. Individual meetings were scheduled with TVET principals and heads of the TVET institutions, human resources officers of the companies, and TVET consultants to seek their approval and cooperation for the data collection process.

Principals of the TVET institutions appointed teachers to facilitate the process, while companies designated staff members from their HR departments to assist. During these meetings, all representatives were briefed on ethical procedures and research protocols, and questions regarding the clarity of the questionnaires were addressed. The objectives and importance of the study were explained, ensuring that all participants understood the purpose. Ethical considerations, including confidentiality, voluntary participation, and informed consent, were emphasized before questionnaires were administered.

Respondents' consent was obtained prior to questionnaire distribution. The questionnaires were provided for a duration of two weeks to accommodate participants' work schedules and to account for school closures caused by hot weather. Follow-up was conducted through phone calls, WhatsApp messages, and emails. Completed questionnaires were sealed and returned via courier (boda-boda), by air, or personally collected from nearby schools. Support was provided in clarifying questionnaire items, especially where language barriers were present, with research assistants enlisted as needed.

3.7 Data Analysis

Data analysis is defined as the process of converting gathered data into meaningful information. This involves employing various techniques, such as modeling, to identify trends, relationships, and ultimately draw conclusions that aid in the decision-making process (Taherdoost, 2022). Data analysis involves organizing the collected data into recognizable patterns, categories, and descriptive units. After data collection, the completeness of the questionnaires was verified to ensure that only useful and coherent data were retained, while ambiguous or contradictory responses were carefully cleaned and interpreted. A total of 335 questionnaires were received out of 460 distributed. Responses from both closed-ended and open-ended questionnaires were systematically organized using Microsoft Excel.

The closed-ended questionnaire data were analyzed with IBM SPSS Statistics software version 30, chosen for its capacity to efficiently handle large volumes of data across different respondent groups. Descriptive statistics, including standard deviation and mean, were used to present the findings, and inferential analysis such as regression was conducted to explore relationships among variables. Additionally, Spearman's correlation coefficient was calculated to assess the strength and direction of associations between key variables.

Open-ended responses were analyzed through inductive thematic analysis following Braun and Clarke's six-step process (University N. , 2025): familiarization with the data, generating initial codes, combining codes into themes, reviewing themes, defining and naming themes, and reporting findings which is presented in chapter 4. This analysis was

carried out using Word documents. The identified themes and patterns were presented in percentages to depict the prevalence of each theme. Thematic analysis, as a qualitative method, facilitated a deep understanding of respondent opinions by extracting recurring patterns and meanings within the data (Caulfield, 2023).

The analysis for this study involved descriptive statistics, correlation tests, regression analysis and thematic analysis for open ended questions. Descriptive statistics encompassed means, standard deviation, maximum and minimum values. Simple linear regression model was employed to determine the relationship between the variable for the three groups of respondents. The techniques utilized consist of regression analysis and descriptive statistics performed in SPSS. The regression model used was presented in equation 3.1.

Equation 3. 1: Regression Analysis

$$Y = b + b_1x_1 + b_2x_2 + b_3x_3 + e$$

$x_1 = Performance\ Dimenssion$

$x_2 = Stakeholder\ Eggagement$

$x_3 = Solid\ Foundation$

$y = Employability$

$b_1 = Regression\ Cofficient\ for\ Performance\ dimension = is\ the\ slpoe\ of\ X_1$

$b = Regression\ Cofficient\ for\ Stakeholder\ eggagement = is\ the\ slpoe\ of\ X_2$

$b = Regression\ Cofficient\ for\ Solid\ foundation\ = is\ the\ slpoe\ of\ X_3$

$b_0 = Employability\ Intercept = Is\ the\ value\ when\ the\ independent\ varriables = 0$

$e = Error\ Term$

3.8 Diagnostic Tests

Multicollinearity referred to a situation where there was a strong correlation between independent variables in the regression model, which could affect the relationship with the dependent variable (Taherdoost H. , 2022). It was assessed using the Variance Inflation Factor (VIF). A VIF value of 1 indicated that the variables were uncorrelated. Values between 1 and 5 suggested moderate correlation, while values between 5 and 10 indicated high correlation, implying multicollinearity among predictors. VIF values exceeding 10 meant that regression coefficients were poorly estimated due to multicollinearity

(Shrestha, 2020). Overfitting, where analysis closely matched a specific data set but failed to predict future observations accurately, was also considered (Graham, 2024).

Data on the variables were collected, and scatter plots were used to examine relationships between independent and dependent variables, primarily to check for overfitting and visual multicollinearity among independent variables. Correlation analysis was performed using SPSS software. Simple linear regression was conducted for each pair of independent and dependent variables, initially in Excel and then in SPSS. VIF was measured, and R-square differences were calculated to evaluate overfitting; large drops indicated overfitting due to too many variables. Non-redundant independent variables were selected to develop the best-fitting model, which was used to describe the dependent variable.

Normality tests, such as the Shapiro-Wilk and Kolmogorov-Smirnov tests, were performed to determine whether the data followed a normal distribution. P-values greater than 0.05 suggested the data could be considered normally distributed, allowing for the assumption of normality in the analysis (Khatun, 2021). These tests helped compare the sample distribution to a normal curve. Finally, the residuals of the models were examined for autocorrelation using the Durbin-Watson (DW) test. Scores between 1.5 and 2.5 indicated that the observations were independent, which was an important assumption for the regression analysis.

3.9 Research Quality

To enhance the quality of the research on TVET factors influencing graduate employability, the study focused on ensuring reliability, validity, and conducting pilot testing. These measures led to more accurate and useful findings, ultimately contributed to evidence-based decision-making in this study.

3.9.1 Validity

Validity relates to how accurately a method measures the intended variables. When a study has high validity, its results accurately reflect real properties, characteristics, and variations in the physical or social phenomena being studied (Middleton, 2025). To establish content validity, the research instruments were carefully developed and reviewed

by experts, primarily the study supervisors and the panelist. Their feedback and suggestions were incorporated to improve the content and clarity of the questionnaires. Based on their advice, the questionnaires were revised to better align with the study's objectives, after which data collection was conducted.

3.9.2 Reliability

Reliability pertains to the consistency of a measurement method specifically, the extent to which it yields the same results when applied repeatedly under similar conditions (Middleton, 2025). To assess the reliability of the research instruments, they were initially administered to a sample of 20 individuals. After a short interval of two weeks, the same instruments were re-administered to these participants. The correlation between the two sets of responses was then analyzed to evaluate the stability of the scores over time. This process helped determine the instrument's ability to produce consistent and dependable results across repeated administrations.

3.9.3 Piloting

A pilot study, also known as a "feasibility test," "pilot experiment," or "pilot trial," serves as an initial investigation to assess the practicality and design of a larger, more comprehensive research project. It functions as a "trial run" conducted on a smaller scale to identify potential issues and facilitate necessary adjustments prior to the main study (CASP, 2025). In this research, the pilot was conducted with a representative sample of 46 respondents, which constitutes 10% of the total sample size, as recommended by Mugenda and Mugenda (2011). The pilot took place in non-formal TVET centers and companies located in Juba that share similar characteristics with the target population, though they were not included in the main study. The purpose was to pretest the research instruments, questionnaires to evaluate their reliability, relevance, and clarity. Based on the feedback received, any ambiguities or issues in the questions were corrected before proceeding to the actual data collection.

3.10 Ethical Consideration

Ethical approval for the study was obtained from the Strathmore University Ethics Review Board, and a research permit was secured from the Ministry of Education to facilitate data collection. Prior to participation, respondents provided informed consent, acknowledging that their involvement was voluntary and that they could withdraw at any time without any repercussions. Participants were asked to complete a consent form, which is included in Appendix (I), clearly indicating their voluntary agreement to participate. Throughout the research process, confidentiality and anonymity of the participants' information were strictly maintained. Participants were informed that their responses would be used solely for the purpose of this study, ensuring that they provided honest and truthful answers. Efforts were made to actively prevent any form of discrimination or bias in participant selection, data collection, analysis, and interpretation.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter encompasses the data analysis, the presentation and interpretation of the results. This study aimed to assess TVET factors influencing graduate employability of the listed TVET institutions in South Sudan. Data was collected using questionnaires to address the research question detailed in chapter.4. This chapter begins with an overview of the response rate and the demographic profile of the participants involved in the study.

4.2 Demographics Profile

The demographics profile outlined in this study illustrates the characteristics of a specific population, encompassing factors such as gender, positions (roles) of respondents, education level, age, and years of experience, as shown in Table 4.2. The research was carried out in Juba, Yei, and Aweil as depicted in Figure 4.1 and 4.2. Questionnaires were developed for three distinct groups of stakeholders: enterprises (construction companies), learners (both current students and graduates), TVET staff, and government officials.

4.2.1 Response Rate

The response rate was calculated by dividing the number of people who completed the questionnaires (R) by the total number of individuals in the sample (n). It was typically expressed as a percentage. The response rates for each group are shown in Table 4.1.

Table 4. 1: Response rate

No:	Groups	Sample size (n)	No: of Respondents (R)	Response rate (r) $r = \frac{R}{n} x100$
1	Enterprises Staff	50	35	70%
2	TVET staffs and Government officials	60	50	83%
3	Learners	350	250	71%
Total		**460**	**335**	**73%**

Table 4.1shows response rates for each group: Enterprise at 70%, Leaners at 71%, TVET Staffs and Government officials inclusive at 83%, and an overall rate for total sample size of 73%. According to (Amaya, 2022) a 50% response rate is adequate, 60% is good, and 70% is very good. Therefore, the study's response rate is very good for analysis.

4.2.2 Location Percentage

The locations of the enterprises where the research was conducted are displayed in Figure 4.1, while Figure 4.2 illustrates the locations of the institutes involved in the research.

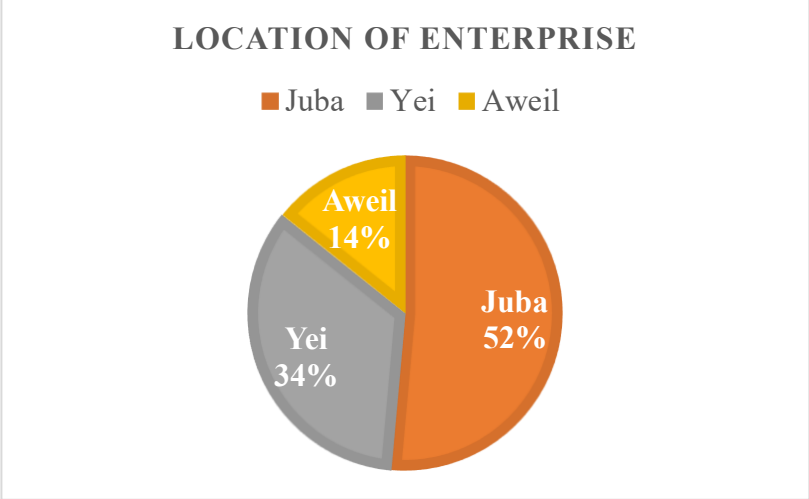

Figure 4. 1: Location of Enterprises Percentage.

Figure 4.1 illustrates the percentage of questionnaires received from the Enterprise respondents, with Juba contributing 52%, Yei accounting for 34%, and Aweil representing 14%. The enterprise used in this study is construction companies.

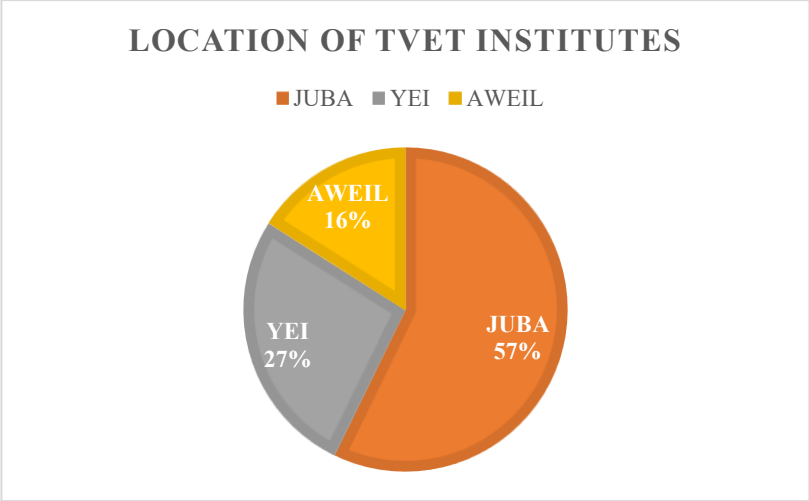

Figure 4. 2: Location of TVET Institutes Percentage.

Figure 4.2 illustrates the percentage of questionnaires received from the TVET institutes respondents, with Juba contributing the highest percentage of 57%, Yei accounting for 27%, and Aweil representing 16%.

4.2.3 Demographics Profile Presentation

Table 4.2 presents the demographic profile, which includes the current Gender, Position/Role of the Respondent, Level of Education, Age, and Years of Experience.

Table 4. 2A: Gender and Position of Respondents

Descriptions	**Frequency N (%)**		
Gender	**Ent**	**Sta**	**Inst**
Male	33 (94.3%)	43 (86%)	241 (96.4%)
Female	2(5.7%)	7(14%)	9(3.6%)
Total	**35**	**50**	**250**
Position of Respondent/Role	**Ent**	**Sta**	**Inst**
Project Manager	7(20.0%)	0(0%)	0(0%)
Project Engineer	11(31.4%)	0(0%)	0(0%)
Technicians	17(48.6%)	0(0%)	0(0%)
Government Official	0(0%)	13(26%)	0(0%)
Consultant	0(0%)	2(26%)	0(0%)
TVET Principles	0(0%)	7(4%)	0(0%)
TVET Tutors/Instructors	0(0%)	28(56%)	0(0%)
TVET Graduates	0(0%)	0(0%)	37(14.8%)
Current TVET students	0(0%)	0(0%)	213(85.2%)
Total	**35**	**50**	**250**
Level of Education	**Ent**	**Sta**	**Inst**
Completed Secondary school	1(2.857%)	7(14%)	0(0%)
Completed TVET program	12(34.286%)	29(58%)	0(0%)
Completed University Degree	15(42.857%)	11(22%)	0(0%)
Completed Primary	0	3(6%)	0(0%)
Other (Certificates)	7(20%)	0(0%)	0(0%)
Total	**35**	**50**	**250**

Table 4. 3B: Gender and Position of Respondents

Descriptions	Frequency N (%)		
Age (Years)			
15-20	0(0%)	0(0%)	65(26%)
20-30	0(0%)	0(0%)	141(56.4%)
30-40	0(0%)	0(0%)	33(13.2%)
Above 40	0(0%)	0(0%)	11(4.4%)
Total	**35**	**50**	**250**
Year of Experience			
Less than 30 years	30(85.7%)	35(70%)	0(0%)
Between 30-40	2(5.7%)	9(18%)	0(0%)
Between 40-50	2(5.7%)	4(8%)	0(0%)
Above 50	1(2.9%)	2(4%)	0(0%)
Total	**35**	**50**	**250**

From Table 4.2, among 35 Enterprise respondents to the study, 94.3% were male and the other 5.7% were female. This reflects the differing proportions of male and female respondents in the construction industry, suggesting a predominance of male participants. Most respondents were Technicians, 48.6%, followed by Project Engineers 31.4% and Project Managers 20.0%. This shows that technicians form the largest group of respondents. Furthermore, 42.857% of enterprise respondents have a university degree, 34.286% have completed a TVET program, 20.0% hold certificates, and 2.857% have certificates. 85.7% of respondents reported having less than 30 years of experience, 5.7% had between 30-40 years of experience, 5.7% had between 40-50 years of experience, and 2.9% had above 50 years of experience. These findings indicate most respondents have substantial experience to provide informed insights on the TVET factors influencing graduate employability from TVET institutions.

Of the 50 TVET staff and government officials who participated in the study, 86% were male and 14% were female. This reflects the differing proportions of male and female respondents in technical education sector, suggesting a predominance of male participants. Among the respondents, 26% were government officials, 4% consultants, 14% TVET principals, and 56% TVET tutors or instructors. Most respondents Completed TVET program, 58% and the least Completed Primary 6%. This shows that most tutors

completed TVET programs form the largest group of respondents. 70% of respondents reported having less than 30 years of experience, 18% had between 30-40 years of experience, 8% had between 40-50 years of experience, and 4% had above 50 years of experience. These findings suggest that most respondents possess significant experience, enabling them to offer informed insights regarding the factors that affect graduate employability from TVET institutions.

The study surveyed 250 learners, with a significant majority of 96.4% being male and only 3.6% female, reflecting the gender dynamics of the technical faculty. A large portion, 85.2%, were current students, while 14.8% were graduates. Age distribution showed that 26% of respondents were aged 15-20, 56.4% were 20-30, 13.2% were 30-40, and 4.4% were over 40, indicating that most respondents were young individuals facing employability challenges in South Sudan. This demographic insight highlights their potential to provide valuable perspectives on factors affecting graduate employability from TVET institutions.

4.3 The influence of TVET performance dimension on graduate employability of TVET institution

This section provides descriptive statistics regarding the influence of TVET performance dimension on graduate employability (Table 4.3 – 4.5). Thematic analysis was also employed to evaluate the open-ended questions to systematically extract and interpret the underlying themes present in respondent's answers (Table 4.6). Additionally, it determines the relationship between TVET performance dimensions and graduate employability (Table 4.7 -4.9) using regression analysis and correlation. The analysis was conducted across three distinct groups: Enterprise staff, TVET Staff, and Government and Learners leaners.

4.3.1 Descriptive statistics of TVET performance dimension on graduate employability

The study aimed to determine the relationship between TVET performance dimensions and graduate employability. Using descriptive statistics, it assessed how access, equity, quality, and relevance of TVET programs influence employability. Respondents rated

these factors on a Likert scale of 1-5, with 5 being “strongly agree” 4 being “Agree”, 3 being “undecided” 2 being “Disagree” and 1 being “strongly disagree.” The performance dimensions were evaluated across three distinct groups: enterprises, TVET Staff and Government officials, and Learner’s respondents. The mean and standard deviations are shown in Table 4.3-4.5, and the boundary limits of Likert scale are shown in table 4.3.

Table 4. 4: Performance Dimension descriptive statistics for Enterprises

Statements for (N = 35)	Min	Max	Mean	Std. Deviation
Internship programs are easily accessible to potential TVET learners in your organization.	1.00	5.00	2.4571	1.48211
The infrastructure and resources available for TVET training meet the needs of learners	1.00	5.00	2.6000	1.45925
There is equal opportunity for all learners, regardless of their backgrounds, in your organization.	1.00	5.00	3.2857	1.48664
Support structures are in place to assist disadvantaged learners in the TVET system.	1.00	5.00	3.0857	1.44245
The quality of training provided in TVET programs meets the industry standards required by your company.	1.00	5.00	2.9143	1.46270
Instructors in TVET programs are sufficiently trained and experienced to deliver quality education.	1.00	5.00	3.2857	1.42605
The skills taught in TVET programs align well with the needs of your industry	1.00	5.00	3.4571	1.24482
TVET courses are updated regularly to incorporate current industry trends and requirements	1.00	5.00	3.0286	1.50461

The study findings in Table 4.3 offer critical insights when connected to the research objectives focused on evaluating how TVET performance dimensions affect graduate employability. Most notably, the mean scores for several key areas are relatively low or moderate, indicating perceived gaps that may challenge the system’s effectiveness in producing employable graduates. Specifically, internship programs are rated with a mean of 2.46, reflecting that, according to enterprise respondents, internship accessibility is limited or not widely available in their organizations. This is a significant concern as internships are a vital component for practical skill development and employability enhancement.

Similarly, infrastructure and resources for TVET training received a low average score of 2.60, suggesting that the physical and teaching resources may be inadequate to meet learner’s needs. The quality of training aimed at industry standards also scored below the

midpoint with a mean of 2.91, pointing to room for improvement to better align programs with industry expectations.

On the more positive side, respondents noted moderate agreement regarding equal opportunities (mean = 3.29), instructor competence (mean = 3.29), and the alignment of skills taught with industry needs (mean = 3.46). These scores indicate that, from the enterprise perspective, there is a perception that TVET programs are somewhat aligned with industry requirements and that trainers possess adequate experience, which are critical factors in graduate employability.

Finally, the score for regular curriculum updates to incorporate current industry trends is also moderate (mean = 3.03), suggesting that curriculum responsiveness to industry changes is acknowledged but may not be consistently or sufficiently current.

These findings highlight specific performance dimensions particularly internship accessibility and training quality that are perceived as weak links impacting graduate employability. Improving access to practical training opportunities, infrastructure, and ensuring curricula are regularly updated to industry standards are essential strategies to bridge the gap between TVET outputs and labor market requirements. Therefore, addressing these perceived deficiencies can significantly enhance the employability of TVET graduates, fulfilling the overarching goal of ensuring TVET systems effectively contribute to workforce readiness.

Table 4. 5A: Performance Dimension descriptive statistics for TVET Staff and Government Officials

Statements for (N = 50)	Min	Max	Mean	Std. Deviation
The TVET program is easily accessible to all prospective learners in the Country.	1.00	5.00	4.0000	1.14286
There are sufficient facilities and resources for students to access the necessary training.	1.00	5.00	3.0800	1.12195
The current student enrollment rate meets the institution's expectation or capacity.	1.00	5.00	3.3400	1.11776
The student's graduation rate meets the institution's objectives.	1.00	5.00	3.8400	1.01740
The TVET program ensures equal opportunities for all demographics (e.g., gender, age, socio-economic status).	1.00	5.00	4.1000	1.14731
Support services are available for underrepresented groups to succeed in the TVET program.	1.00	5.00	2.8000	1.17803

Table 4. 6B: Performance Dimension descriptive statistics for TVET Staff and Government Officials

Statements for (N = 50)	Min	Max	Mean	Std. Deviation
The curriculum provided in the TVET program meets industry standards and needs.	1.00	5.00	3.1600	1.03726
Trainers and instructors in the TVET program are highly qualified and experienced.	1.00	5.00	2.7400	1.32187
The skills and knowledge gained from the TVET program are relevant to current labor market demands.	1.00	5.00	3.5600	1.01338
The TVET program incorporates feedback from industries to stay relevant in its offerings.	1.00	5.00	2.7200	1.19591

The study findings in Table 4.4 reveal that, overall, the TVET system is perceived as accessible, with a high average score of 4.00 out of 5, indicating that most respondents believe prospective learners can access programs across the country. However, perceptions of facilities and resources are only moderately positive, with mean scores of 3.08 for facilities and resources, suggesting that infrastructure support requires considerable improvement to enhance training quality and better prepare graduates for employment. Enrollment rates and graduation success are viewed as acceptable, with mean scores of 3.34 and 3.84, respectively, yet these figures also highlight potential gaps in achieving institutional objectives more effectively.

In terms of inclusivity and relevance, respondents generally agree that the TVET programs promote equal opportunities for different demographic groups, with a high mean score of 4.10 for ensuring equal opportunities. However, support services for underrepresented learners scored a low 2.80, indicating significant gaps in targeted assistance. Curriculum relevance and incorporation of industry feedback received relatively low ratings of 3.16 and 2.72, respectively, implying that programs are not yet fully aligned with current labor market demands. Additionally, perceptions of instructor qualifications are modest, with a mean score of 2.74, underscoring the need for capacity building among trainers. These insights point to crucial areas—such as infrastructure, curriculum updates, and faculty development—that require targeted improvements to strengthen the link between TVET performance and successful employment outcomes for graduates.

Table 4. 7: Performance Dimension descriptive statistics for Learners

Statements for (N = 250)	Min	Max	Mean	Std. Deviation
I have easy access to the TVET Institute (School).	1.00	5.00	3.8560	1.08442
I have easy access to the study materials for he TVET Programs	1.00	5.00	3.6920	1.38738
Everyone can access TVET programs equally, no matter their gender, socioeconomic status or background.	1.00	5.00	4.2360	1.02396
The enrollment process of TVET programs is free from discrimination or bias.	1.00	5.00	4.2800	1.02264
The facilities and surrounding of my TVET school are well-maintained and secure.	1.00	5.00	4.3800	0.79380
I receive hands on training (practical) for at least 50% of my courses.	1.00	5.00	4.1560	1.03535
My TVET school is well-equipped with ample facilities, computers and resources to support effective learning	1.00	5.00	4.1760	0.94901
I can intern in my fields of study with a company.	1.00	5.00	4.0560	1.06650
The skills and knowledge I gained from TVET program are relevant to the current job market	1.00	5.00	4.1960	1.04400

The study findings in Table 4.5 provide valuable insights aligned with the research objectives, which aim to assess how the performance dimensions of TVET influence graduate employability. These findings directly connect with the research objective of understanding how TVET performance dimensions influence graduate employability by highlighting strengths to build upon and areas requiring policy and institutional focus to improve employment prospects for graduates.

Learners report a relatively high level of accessibility to TVET institutes, with a mean score of 3.86 out of 5, indicating that most students perceive they can access their programs with some ease. Similarly, access to study materials is also reasonably good, with a mean of 3.69. These figures suggest that physical and educational resource accessibility are generally adequate but may still benefit from improvements to facilitate broader participation.

Learners strongly agree that TVET programs promote equity, with a mean score of 4.24 for equal opportunities regardless of gender or socio-economic background, and a similar high score of 4.28 for discrimination-free enrollment processes. This indicates that the system is perceived as inclusive, which is crucial for widening access and improving employability across diverse groups.

Additionally, the well-maintained and secure facilities (mean = 4.38) and the provision of practical training (mean = 4.16) reflect positively on the quality and relevance of training, suggesting that learners feel adequately equipped with hands-on skills aligned with industry needs. The availability of facilities and resources with a mean of 4.17 further supports this.

The fact that learners can intern with companies (mean = 4.06) and believe that the skills gained are relevant to the job market (mean = 4.20) underscores the importance of experiential learning in enhancing employability. Overall, these descriptive results support the notion that certain aspects of the TVET system—such as access, inclusivity, practical training, and relevance—are functioning well, but ongoing improvements could further strengthen their impact on graduate employment outcomes.

4.3.2 Results from the open-ended questionnaires

The qualitative data were collected through open-ended questions included in the questionnaires administered to enterprises, TVET staff, and learners. To quantify this data, responses were analyzed using thematic analysis based on Clarke and Braun's (2013) Six Step Data Analysis Process. This method involved identifying key themes from the responses related to Objective 1, which examines the relationship between TVET performance dimensions and employability. The frequency of respondents mentioning each theme was tabulated and expressed as percentages, indicating the proportion of respondents who provided answers corresponding to each theme. The findings of this analysis are presented in Table 4.6.

Table 4. 8A: Open ended results for Performance Dimensions

Provide factors that contribute most to the disparities in employment of technical skilled workers from South Sudan compared to those from foreign national.			
Themes	**Response from Enterprises**	**Frequency (N)**	**Percent (%)**
Theme 1	Educational Opportunities and Quality	7	20.0
Theme 2	Infrastructure and Resources	4	11.4
Theme 3	Economic Stability	5	14.3
Theme 4	Job Market Perceptions	4	11.4
Theme 5	Networking and Connections	7	20.0
Theme 6	Language and Cultural Barriers	4	11.4
Theme 7	Certification and Recognition	4	11.4
	Total	**35**	**100**
What specific improvements do you believe are necessary within the TVET framework to enhance employability outcomes?			
Themes	**Response**	**Frequency (N)**	**Percent (%)**
Theme 1	Curriculum Revitalization	5	14.3
Theme 2	Industry Collaboration	4	11.4
Theme 3	Quality of Instructors	4	11.4
Theme 4	Infrastructure Development	4	11.4
Theme 5	Soft Skills Training	3	8.6
Theme 6	Certification and Standards	3	8.6
Theme 7	Flexible Learning Options	3	8.6
Theme 8	Access to Career Guidance	3	8.6
Theme 9	Investment in Research and Development	3	8.6
Theme 10	Feedback Mechanisms	3	8.6%
	Total	**35**	**100**
What additional factors do you believe are important for improving TVET programs and youth employability?			
Themes	**Response from TVET Staffs and Government officials**	**Frequency (N)**	**Percent (%)**
Theme 1	Industry Collaboration	14	28.0
Theme 2	Curriculum Development	11	22.0
Theme 3	Soft Skills Training	8	16.0
Theme 4	Career Counseling Services	7	14.0
Theme 5	Quality Teaching Staff	6	12.0
Theme 6	Community Engagement	4	8.0
	Total	**50**	**100**

Table 4. 9B: Open ended results for Performance Dimensions

What barriers/challenges, if any, have you faced during your studies?			
Themes	**Response from Learners**	**Frequency (N)**	**Percent (%)**
Theme 1	Infrastructural Limitations	42	16.8
Theme 2	Limited Access to Resources	29	11.6
Theme 3	Economic Constraints	58	23.2
Theme 4	Political Instability and Conflict	47	18.8
Theme 5	Low Quality of Training Programs	33	13.2
Theme 6	Limited Recognition of Qualifications	24	9.6
Theme 7	Hot Temperatures	17	6.8
Total		**250**	**100**

According to the results in Table 4.6, most respondents from enterprises indicated that inadequate educational opportunities and quality (20%), as well as poor networking and connections (20%), significantly limited graduate employability in South Sudan. The quality of education and vocational training in South Sudan may not be on par with that of foreign countries. Limited access to modern technology and updated curriculum can lead to gaps in skills that are crucial for technical jobs. South Sudan's ongoing economic challenges, including instability and conflict, deter investment and the establishment of industries that could employ skilled workers. This limits job opportunities for local talent.

Conversely from Table 4.6, most Enterprise respondents suggested that these challenges could be mitigated through several measures: Curriculum Revitalization, Industry Collaboration, Quality of Instructors, and Infrastructure Development (all 11.4%). According to the results in Table 4.3.2, most respondents from TVET staffs and Government officials stated additional factors that are most important for improving TVET programs and youth employability; Industry Collaboration (28.0%) and Curriculum Development (22.0%). One of the respondents stated that "TVET institutes should Establish partnerships with local industries to ensure that the curriculum aligns with current job market needs".

According to the results in Table 4.6, most respondents from Learners stated the barriers/challenges, they faced during their studies, Economic Constraints (23.2%), Political Instability and Conflict (18.8%), Infrastructural Limitations (16.8%), and the

least factor as Hot Temperatures (6.8%). Many students may face financial barriers, including the costs of tuition, materials, and transportation. The ongoing conflict and political instability in South Sudan can disrupt education systems, including TVET. Students may be forced to abandon their studies due to insecurity or displacement. Some TVET institutions have inadequate facilities, including a lack of proper classrooms, training equipment, and tools necessary for hands-on learning. The extreme heat in South Sudan can create uncomfortable learning conditions, making it difficult for students to concentrate during classes or practical training sessions. High temperatures led to fatigue, dehydration, and reduced overall productivity. Schools were closed for three weeks from mid-February to mid-March 2025 because of the extreme heat in South Sudan. These challenges resulted in some students choosing to leave school.

4.3.3 Relationship between TVET performance dimension and graduate employability from TVET institutes

A simple linear regression model was employed to analyze the relationship between of TVET performance dimensions and graduate employability among respondents, which included individuals from enterprises, TVET staff, government officials, and learners. The results can be found in Tables 4.7 to 4.9.

Normality test and Collinearity Diagnostics

A normality test was conducted to evaluate whether the data adheres to a normal distribution, which helped in determining the suitable type of regression to be used, as presented in Table 4.7. Additionally, the Durbin-Watson (DW) statistic was applied to identify autocorrelated variables, while the Variance Inflation Factor (VIF) analysis was utilized to assess multicollinearity, also outlined in Table 4.7.

Table 4. 10: Normality test and Collinearity Diagnostics for TVET Performance Dimension

Variables	Ent	staff	Lean	Limits	Comments
TVET PEFORMANCE DIMESIONS P_{value} (Sig_{value})	0.109	0.266	0.1	P_{value} > 0.05	Normally distributed Parametric Methods Linear regression Peason regression
GRADUATE EMPLOYABILITY P_{value} (Sig_{value})	0.086	0.064	0.1	P_{value} > 0.05	Normally distributed Parametric Methods Linear regression Peason regression
Durbin-Watson (DW)	1.427	2.181	1.912	1.45 - 2.44	No Autocorrelation.
Tolerance (T)	1	1	1	T>0.1	No multicollinearity
Variance Inflation Factor (VIF)	1	1	1	VIF<10	No multicollinearity

From Table 4.3.3, the analysis of the enterprise population shows p-values exceeding 0.05 for both TVET performance dimensions (0.109) and graduate employability (0.086), indicating a normal distribution of the data. For the TVET staff and government population, p-values are also greater than 0.05 (0.266 for performance dimensions and 0.064 for employability), confirming normal distribution and facilitating the analysis conducted in the study. The learner population has p-values below 0.05 (0.1 for both dimensions) still follows the normal distribution trend. Therefore, for all three groups, linear regression and Pearson correlation techniques were appropriately applied in the analysis.

The results of the fitted regression line indicated no evidence of autocorrelation for all three groups, as demonstrated by the DW statistic. The DW value falls within the acceptable range of 1.45 to 2.44, which suggests the absence of autocorrelation. The multi-correlation with other variables from the three groups are low, as the tolerance values of 1.0 exceeds the threshold of 0.1. This indicates no risk of multicollinearity across all three groups. Additionally, the VIF value of 1.0, which is below the cutoff of 10, further supports this conclusion.

Model and ANOVA Summary

The model summary was performed to assess the strength and direction of the linear relationships between the variables (performance dimension and graduate employability),

as shown in Table 4.8. The ANOVA, or F-statistic in Table 4.8, was utilized to evaluate the overall significance of the model.

Table 4. 11: Model Summary and ANOVA for Performance Dimension

Variables	Ent	Staff	Lean	Limits	Comments
R -Pearson Correlation	0.009	0.111	0.592	R < or >50%	Weak and Positive correlation Weak and Negative correlation Strong and Positive correlation
R Square	0.000	0.012	0.351	R^2 < or >50%	Weak and Positive correlation
Adjusted R Square	-0.030	-0.008	0.348	R^2_{Adj} < or >50%	Weak and Negative correlation Weak and Positive correlation
ANOVA Summary					
F-Statistics	0.002	0.599	133.998	-	-
Sig_{value}	0.961	0.443	<0.001	Sig < 0.005	Sig_{value} for leaners is found to be significant at 5% level.

From Table 4.8, the R-value of 0.09 (R-value<50%) from enterprise respondents show that there is a weak and positive correlation between TVET performance dimension and graduate employability. The R Square-value of 0.000 show that 0.0% change in graduate employability is explained by TVET performance dimensions, while 100% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of -0.030 show that 3% change in graduate employability is explained by performance dimension. It also shows that the model has poor fit. The R-value of 0.111 (R-value<50%) from TVET staffs and Government Officials respondents show that there is a weak and positive correlation between TVET performance dimension and graduate employability. The R Square-value of 0.012 show that 1.2% change in graduate employability is explained by TVET performance dimensions, while 98.8% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of -0.008 show that 0.8% change in graduate employability is explained by performance dimension. It also shows that the model has poor fit.

From Table 4.8, the R-value of 0.592 (R-value>50%) from leaner respondents show that there is a strong and positive correlation between TVET performance dimension and graduate employability. The R Square-value of 0.351 show that 35.1% change in graduate

employability is explained by TVET performance dimensions, while 64.9% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of 0.348 show that 34.8% change in graduate employability is explained by performance dimension. It also shows that the model has poor fit.

The result from enterprise respondents confirms that, the overall regression model is insignificant for the data, and this was captured by ANOVA (F-Statistics) value of 0.002 and its associated value of 0.961 (F = 0.002, P = 0.961 > 0.05). This was found to be insignificant at 5% level. This shows that the overall significant of this model is poor because ANOVA measures the overall significant of the model. the result from TVET staff and Government Officials confirms that, the overall regression model is significant for the data, and this was captured by ANOVA (F-Statistics) value of 0.599 and its associated value of 0.443 (F = 0.599, P = 0.443 >0.05)). This was found to be insignificant at 5% level. This shows that the overall significant of this model is poor because ANOVA measures the overall significant of the model. the result from leaner respondents confirms that, the overall regression model is significant for the data, and this was captured by ANOVA (F-Statistics) value of 133.998 and its associated value of <0.001 (F = 133.998, P < 0.01). This was found to be significant at 5% level. This shows that the overall significant of this model is good because ANOVA measures the overall significant of the model.

Regression Coefficients for Performance Dimensions

The regression coefficients are calculated to indicate both the direction and magnitude of change, as illustrated in Table 4.9.

Table 4. 12: Regression Coefficients for Performance Dimension

Variables	Ent	Staff	Lean	Comments
β_0 $(Constants)$	3.998	3.294	2.012	Positive change
β_{x1} $Regression\ Cofficient\ for\ PD$	0.004	0.128	0.550	Positive change

From Table 4.9: TVET performance dimension (PD) coefficient value of 0.004 from enterprises respondents shows that a unit increase in performance dimension on average increased graduate employability (GE) by 0.004. This result shows that there is a direct relationship between performance dimension and graduate employability. The constant

coefficient value of 3.998 indicates that graduate employability will increase by a unit value of 3.998, even without considering the TVET performance dimension factor.

$$\boldsymbol{GE = 3.998 + 0.004PD_{Ent}}$$

TVET performance dimension (PD) coefficient value of 0.128 from TVET staffs and Government Officials respondents shows that a unit increase in performance dimension on average increased graduate employability (GE) by 0.128. This result shows that there is a direct relationship between performance dimension and graduate employability. The constant coefficient value of 2.247 indicates that graduate employability will increase by a unit value of 3.294, even without considering the TVET performance dimension factor.

$$\boldsymbol{GE = 3.294 + 0.128PD_{Sta}}$$

TVET performance dimension (PD) coefficient value of 0.004 from leaner respondents shows that a unit increase in performance dimension on average increased graduate employability (GE) by 0.391. This result shows that there is a direct relationship between performance dimension and graduate employability. The constant coefficient value of 1.793 indicates that graduate employability will increase by a unit value of 1.793, even without considering the TVET performance dimension factor.

$$\boldsymbol{GE = 2.012 + 0.550PD_{L}}$$

4.4 The influence of TVET stakeholder engagement on graduate employability of TVET institution

This section provides descriptive statistics regarding the influence of TVET stakeholder engagements on graduate employability (Table 4.10 - 4.12). Thematic analysis was also employed to evaluate the open-ended questions to systematically extract and interpret the underlying themes present in respondent's answers (Table 4.13). Additionally, it determines the relationship between stakeholder engagements and graduate employability (Table 4.14 – 4.16) using regression analysis and correlation. The analysis was conducted across three distinct groups: enterprise staff, TVET staff, and government learners.

4.4.1 Descriptive statistics of TVET stakeholder engagement on graduate employability

The study examined the relationship between TVET stakeholder engagements and graduate employability. Using descriptive statistics, it assessed how learners, public and private institution, enterprises and government agencies of TVET institutes influence employability. Respondents rated these factors on a Likert scale of 1-5, with 5 being "strongly agree" 4 being "Agree", 3 being "undecided" 2 being "Disagree" and 1 being "strongly disagree." The mean and standard deviations are shown in Table 4.10.

Table 4. 13: Stakeholder Engagement descriptive statistics for Enterprise

Statements for (N = 35)	Min	Max	Mean	Std. Deviation
TVET programs actively seek feedback from learners to enhance their training offerings	1.00	5.00	3.7429	1.12047
Learners have adequate representation in decisions that affect their training experience	1.00	5.00	3.7714	1.19030
Your company collaborates with TVET institutions to influence curriculum and training standards.	1.00	5.00	3.3429	1.45406
There are internship or apprenticeship opportunities provided by TVET programs in partnership with your company	1.00	5.00	4.0571	1.10992
Public and private institutions contribute effectively to the development of TVET frameworks.	2.00	5.00	3.9429	0.90563
The partnership between TVET programs and the private sector helps to improve training quality	2.00	5.00	4.0286	0.95442
Government policies support the effectiveness of TVET programs in meeting employment needs	1.00	5.00	3.8857	1.05081
Government assessments ensure that TVET programs maintain high educational standards	1.00	5.00	3.9714	0.98476

The study findings in Table 4.10 indicate that stakeholder engagement in the TVET system is generally perceived as active and somewhat effective. For instance, the partnership between companies and TVET programs to provide internship and apprenticeship opportunities received a high mean score of 4.0571, suggesting that such collaborations are widely recognized and valued. Additionally, respondents agreed that contributions from public and private institutions to TVET frameworks are effective, with a mean of 3.9429, and that government policies support the effectiveness of TVET programs (mean = 3.8857). These positive perceptions suggest that many stakeholders see these forms of engagement as beneficial for aligning training with labor market demands and improving employment outcomes.

However, the data also reveal areas where stakeholder engagement appears less consistent or less developed. For example, the involvement of local enterprises in shaping TVET curricula received a noticeably lower mean score of 2.54, with a high standard deviation of 1.44575. Similarly, the statement regarding collaboration between companies and TVET institutions to influence curriculum standards had a moderate mean of 3.3429 and a high variability (std = 1.45406), suggesting that perceptions of industry influence are mixed. Respondents also generally agreed that learners' feedback is sought and integrated into programs, with a mean of 4.1480, but the variability (std = 0.99703) suggests that this engagement may not be uniformly perceived across all institutions.

These findings imply that while stakeholder engagement, particularly through internships, partnerships, and policy support, plays a vital role in enhancing employability, there is still significant room for improvement. Increasing the involvement of local enterprises in curriculum development and strengthening industry collaboration could make training more relevant and targeted. The data suggest that expanding and deepening stakeholder participation especially in curriculum design and decision-making processes an significantly contribute to better preparing graduates for the evolving labor market, thus fulfilling the overarching aims of the study.

Table 4. 14: Stakeholder Engagement descriptive statistics for TVET staffs and Government officials

Statements for (N = 50)	Min	Max	Mean	Std. Deviation
Learner feedback is actively sought and integrated into the TVET program development.	1.00	5.00	3.4600	1.05386
There are platforms for learners to voice their concerns and suggest improvements.	1.00	5.00	3.8400	1.33034
Industry partnerships exist to provide internship and job placement opportunities for TVET graduates.	1.00	5.00	3.3000	1.14731
Local enterprises are actively involved in shaping the curriculum of the TVET programs.	1.00	5.00	2.5400	1.44575
There is effective collaboration between public and private institutions to enhance TVET offerings.	1.00	5.00	2.8400	1.26749
Private institutions are adequately supported in their contributions to the TVET sector.	1.00	5.00	2.7600	1.30243
Government policies effectively support TVET programs and initiatives for better employability outcomes.	1.00	5.00	3.5000	0.97416
Regular assessments from government agencies ensure the relevance and effectiveness of TVET programs.	1.00	5.00	3.2800	1.03095

The study findings in Table 4.11 offer valuable insights into the extent and quality of stakeholder engagement in TVET programs from the perspective of staff and government officials, aligning closely with the research objectives to assess how such engagement influences graduate employability. The respondents indicated a moderate level of engagement across various dimensions, with the highest mean scores observed for platforms that allow learners to voice concerns and suggest improvements (mean = 3.84) and for government policies supporting TVET initiatives (mean = 3.50). These figures suggest that stakeholders recognize some degree of active involvement, especially in mechanisms that facilitate learner feedback and policy support, which are critical factors in enhancing the relevance and quality of training aimed at improving employment opportunities.

Conversely, the data also highlight notable gaps, particularly regarding industry and enterprise involvement in curriculum development. The involvement of local enterprises in shaping TVET curricula received a relatively low mean score of 2.54, with a high standard deviation of 1.44575, indicating considerable variability in perceptions and possibly limited actual engagement in this area. Similarly, perceptions of collaboration between public and private institutions to enhance TVET offerings was moderate (mean = 2.84), and support for private institutions' contributions was also moderate (mean = 2.76). These lower scores reveal that, despite existing efforts, collaboration with industry stakeholders and private sector engagement in curriculum decision-making are insufficient, which may undermine the relevance and responsiveness of training programs to labor market needs.

These descriptive statistics suggest that while there are positive efforts toward stakeholder engagement such as feedback platforms and supportive policies. the level and depth of involvement, especially from industry and local enterprises, remain suboptimal. This partial engagement aligns with the research objective of understanding how stakeholder participation influences graduate employability. The findings imply that increasing active industry participation in curriculum design, and fostering more robust collaboration strategies, could significantly enhance the alignment of TVET programs with labor market demands, thereby improving employment outcomes for graduates. Enhancing these

engagement mechanisms is essential for realizing the full potential of TVET in achieving better employability rates.

Table 4. 15: Stakeholder Engagement descriptive statistics for Learners.

Statements for (N = 250)	Min	Max	Mean	Std. Deviation
The TVET Institution/school invite industry professionals to engage with us	1.00	5.00	3.7400	1.22573
Occasionally, we go on trips to industry sites to learn directly from professionals.	1.00	5.00	3.6280	1.30554
The school regularly seek our feedback.	1.00	5.00	4.1480	.99703
During my internship, the company staffs help me learn from them.	1.00	5.00	4.2560	.85404
We collaborate with other students from other Institutes/schools in various curriculum activities.	1.00	5.00	4.0200	1.09196
We have motivational speakers from the Ministry of Education and universities visit us (students)	1.00	5.00	3.6760	1.38372

The study findings in Table 4.12 reflect learner's perceptions of stakeholder engagement in their TVET programs and how such engagement relates to graduate employability, aligning with the research objectives to assess the role of stakeholder involvement in improving employment outcomes. The data reveal generally positive perceptions, with the highest mean score for the statement that schools regularly seek learner's feedback (mean = 4.148), indicating that learners feel their opinions are actively solicited and valued, which can contribute to more relevant and responsive training programs.

Similarly, participants strongly agree that during internships, company staff assist their learning (mean = 4.256), emphasizing meaningful engagement between learners and industry professionals that enhances practical skills and employability. Engagement through collaboration with students from other institutions (mean = 4.020) also suggests active sharing of knowledge and experiences, contributing to a broader skill set and network that can facilitate employment.

Conversely, the average ratings for direct engagement activities, such as inviting industry professionals to interact with students (mean = 3.74) and occasional trips to industry sites (mean = 3.63), indicate moderate involvement, with some variability as shown by the standard deviations (~1.2–1.3). Additionally, the presence of motivational speakers (mean

= 3.676) suggests some effort to inspire and connect students with broader industry and educational insights.

These descriptive results demonstrate that learners perceive a reasonably high level of stakeholder engagement, particularly in feedback mechanisms and internship support, which are critical for aligning training with labor market needs. The positive engagement indicated in these areas supports the research objective that active stakeholder involvement, especially from industry and educational institutions, can enhance the relevance and quality of TVET, thereby improving graduate employability. To strengthen this impact, the findings suggest a need for increasing consistent and structured engagement activities such as industry visits and professional interactions, ultimately fostering better preparedness and employment outcomes for graduates.

4.4.2 Results from open ended questionnaires

The qualitative data were collected through open-ended questions included in the questionnaires administered to enterprises, TVET staff, and learners. To quantify this data, responses were analyzed using thematic analysis based on Clarke and Braun's (2013) Six Step Data Analysis Process. This method involved identifying key themes from responses related to Objective 2, which examines the relationship between the stakeholder engagement and graduate employability. The frequency of respondents mentioning each theme was tabulated and expressed as percentages, indicating the proportion of respondents who provided answers corresponding to each theme. The findings of this analysis are presented in Table 4.13.

Table 4. 16: Open ended results for Stakeholder Engagement

Specific technical skills lacking in youth graduates from TVET institutions			
Themes	**Responses from enterprises**	**Frequency (N)**	**Percent (%)**
Theme 1	Advanced Carpentry and Joinery	5	14.3
Theme 2	Masonry and Concrete Work	5	14.3
Theme 3	Mechanics/Electrical and Repairs	5	14.3
Theme 4	Building Information Modeling (BIM)	2	5.7
Theme 5	Safety Standards and Compliance Knowledge	4	11.4
Theme 6	Quality Control and Inspection Skills	4	11.4
Theme 7	Technical Drawing and Interpretation	4	11.4
Theme 8	Entrepreneurial Skills	2	5.7
Theme 9	Practical Application of Skills	2	5.7
Theme 10	Site Surveying and Measurement Techniques	2	5.7
Specific examples of soft skills that have affected the performance of youth employees.			
Themes	**Responses from enterprises**	**Frequency (N)**	**Percent (%)**
Theme 1	Communication Skills	8	22.9
Theme 2	Problem-Solving and Critical Thinking	5	14.3
Theme 3	Adaptability and Flexibility:	4	11.4
Theme 4	Emotional Intelligence	6	17.1
Theme 5	Time Management	6	17.1
Theme 6	Team Collaboration	6	17.1
Provide an example of how stakeholder engagement has impacted your experience in the TVET program.			
Themes	**Responses from TVET Staffs and Government officials**	**Frequency (N)**	**Percent (%)**
Theme 1	Industry Partnership for Curriculum Development	12	24.0
Theme 2	Curriculum Workshops	7	14.0
Theme 3	Internship Opportunities	24	48.0
Theme 4	Feedback Mechanism	4	8.0
Theme 5	Industry Advisory Board Formation	3	6.0%
What challenges have you faced in securing employment after completing your education?			
Themes	**Responses from Learners**	**Frequency (N)**	**Percent (%)**
Theme 1	Limited Job Opportunities	19	7.6
Theme 2	Lack of Industry Demand	31	12.4
Theme 3	Skill Mismatch	23	9.2
Theme 4	Networking Barriers	55	22.0
Theme 5	Inadequate Career Guidance	7	2.8
Theme 6	Geographical Limitations	11	4.4
Theme 7	Competition from More Experienced Workers (South Sudanese Graduates Studying Abroad and Foreign Graduates)	29	11.6
Theme 8	Political Instability	27	10.8
Themes 9	Discrimination	43	17.2
Themes 10	Self-doubt (lack of confidence)	5	2.0

According to the results in Table 4.13, most Enterprise respondents indicated that technical skills such as Advanced Carpentry and Joiner, Masonry and Concrete Work,

Mechanics/Electrical and Repairs (all 14.3%), significantly lacking in South Sudanese graduate employability. This makes Enterprise to outsource employees from the foreign nationals. Additionally, most Enterprise respondents indicated that communication skills (22.9%) have impacted the performance of youth. Problem-solving and critical thinking were noted by 14.3% of respondents. Also, emotional intelligence, time management, and team collaboration (each at 17.1%) were identified as soft skills that could enhance employability in South Sudan.

According to the results in Table 4.13, most respondents from TVET staffs and Government officials indicated that stakeholder engagement has impacted their experience in the TVET program through; Internship Opportunities(48%), Industry Partnership for Curriculum Development (24%), Curriculum Workshops (14%), Feedback Mechanism (8%) and Industry Advisory Board Formation (6%) which has improve their graduates to compete in the market demands with their competitors compared to 5 years ago (2020). One of the respondents stated that "Through our ongoing dialogue with industry partners, we were able to secure internship and apprenticeship opportunities for our students". This increased awareness of TVET existence in South Sudan.

According to the results in Table 4.13, most Learner respondents stated the major challenges that faced in securing employment after completing their education; Networking Barriers (22.0%), Discrimination, (17.2%), Lack of Industry Demand (12.4%), Competition from More Experienced Workers (South Sudanese Graduates Studying Abroad and Foreign Graduates) (11.6%), and Political Instability, (10.8%), One of the respondents stated that "Industries often harbor biases against South Sudanese graduates, perceiving them as lacking the necessary technical skills, which leads employers to favor foreign candidates over local talent". This perception is exacerbated by the absence of strong networking opportunities (22.0%), further limiting the visibility and recognition of South Sudanese graduates (local talents) in the job market.

4.4.3 Relationship between stakeholder engagement and graduate employability from TVET institutes

A simple regression model was used to determine the relationship between TVET stakeholder engagements and graduate employability, with findings detailed in Table 14 to Table 16.

Normality test and Collinearity Diagnostics

A normality test was conducted to evaluate whether the data adheres to a normal distribution, which helped in determining the suitable type of regression to be used, as presented in Table 4.14. Additionally, the Durbin-Watson (DW) statistic was applied to identify autocorrelated variables, while the Variance Inflation Factor (VIF) analysis was utilized to assess multicollinearity, also outlined in Table 4.14.

Table 4. 17: Normality test and Collinearity Diagnostics for Stakeholder Engagements

Variables	Ent	staff	Lean	Limits	Comments
Stakeholder Engagement P_{value} (Sig_{value})	0.051	.083	0.1	P_{value} > 0.05	Normally distributed Parametric Methods Linear regression Peason regression
Graduate Employability P_{value} (Sig_{value})	0.086	.064	0.1	P_{value} > 0.05	Normally distributed Parametric Methods Linear regression Peason regression
Durbin-Watson (DW)	1.552	2.561	1.669	1.45 - 2.44	No Autocorrelation for Ent and Lean
Tolerance (T)	1	1	1	T>0.1	No multicollinearity
Variance Inflation Factor (VIF)	1	1	1	VIF<10	No multicollinearity

The study findings in Table 4.15 indicates that the population sizes for Enterprise respondents, TVET Staff, and Government Officials all exhibit P-values greater than 0.05 for both TVET stakeholder engagements and graduate employability, suggesting normal data distribution. Consequently, linear regression and Pearson correlation analyses were utilized for these groups. Additionally, Learner respondents also had P-values above 0.05, leading to the same analytical approach.

The results from the fitted regression line showed no evidence of autocorrelation in all three groups, as indicated by the Durbin-Watson (DW) statistic. The DW value, which

ranges from 1.45 to 2.44, suggests that autocorrelation is absent. Furthermore, the multicollinearity checks for these groups revealed low correlations with other variables, as reflected by tolerance values of 1.0, which exceed the threshold of 0.1. This indicates no multicollinearity risk across the groups. Additionally, the Variance Inflation Factor (VIF) value of 1.0, which is well below the cutoff of 10, further supports this conclusion.

Model and ANOVA Summary

The model summary was performed to assess the strength and direction of the linear relationships between the variables (Stakeholder Engagement and graduate employability), as shown in Table 4.15. The ANOVA, or F-statistic, was utilized to evaluate the overall significance of the model, as indicated in Table 4.15.

Table 4. 18: Model Summary and ANOVA for Stakeholder Engagement

Variables	Ent	Staff	Lean	Limits	Comments
R -Pearson Correlation	0.557	0.441	0.542	R < or >50%	Weak and Positive correlation Strong and Positive correlation
R Square	0.310	0.194	0.294	R^2 < or >50%	Weak and Positive correlation
Adjusted R Square	0.289	0.177	0.291	R^2_{Adj} < or >50%	Weak and Positive correlation
ANOVA Summary					
F-Statistics	14.818	11.562	103.223	-	-
Sig_{value}	<0.001	0.001	<0.001	Sig < 0.005	Sig_{value} for all groups are found to be significant at 5% level.

From Table 4.15, the R-value of 0.557 (R-value>50%) of Enterprise respondents is show that there is a strong and positive correlation between TVET stakeholder engagements and graduate employability. The R Square-value of 0.31 show that 31% change in graduate employability is explained by TVET stakeholder engagements, while 69% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of 0.289 show that 28.9% change in graduate employability is explained by stakeholder engagements. It also shows that the model has poor fit.

From Table 4.15, the R-value of 0.446 (R-value<50%) of TVET Staff and Government Officials is show that there is a weak and positive correlation between TVET stakeholder engagements and graduate employability. The R Square-value of 0.199 show that 19.9%

change in graduate employability is explained by TVET stakeholder engagements, while 80.9% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of 0.146 show that 14.6% change in graduate employability is explained by stakeholder engagements. It also shows that the model has poor fit.

From Table 4.15, the R-value of 0.542 (R-value>50%) of Leaner respondents is show that there is a strong and positive correlation between TVET stakeholder engagements and graduate employability. The R Square-value of 0.294 show that 29.4% change in graduate employability is explained by TVET stakeholder engagements, while 71.6% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of 0.291 show that 29.1% change in graduate employability is explained by stakeholder engagements. It also shows that the model has poor fit.

Table 4.15 shows that the overall regression model is significant across all respondent groups. For Enterprise respondents, the F-Statistics was 14.818 ($p < 0.001$). TVET Staff and Government Officials had an F-Statistics of 11.562 ($p = 0.001$), while Learner respondents had a notably high F-Statistics of 103.223 ($p < 0.001$). All models are deemed significant at the 5% level, indicating strong overall model significance per ANOVA analysis.

Regression Coefficients for Stakeholder Engagement

The regression coefficients are calculated to indicate both the direction and magnitude of change, as illustrated in Table 4.16.

Table 4. 19: Regression Coefficients for Stakeholder Engagement

Variables	Ent	Staff	Lean	Comments
β_0 $(Constants)$	2.409	2.297	2.751	Positive change
β_{x2} $Regression\ Cofficient\ for\ SE$	0.450	0.450	0.389	Positive change

From Table 4.16, TVET stakeholder engagements (SE) coefficient value of 0.412 of the Enterprise respondents (E) shows that a unit increase in stakeholder engagements on average increased graduate employability (GE) by 0.412. This result shows that there is a direct relationship between stakeholder engagement and graduate employability. The constant coefficient value of 2.409 indicates that graduate employability will increase by a unit value of 2.409, even without considering the TVET stakeholder engagement.

$$GE = 2.409 + 0.412SE_{Ent}$$

From Table 4.16, TVET stakeholder engagements (SE) coefficient value of 0.45 of the TVET Staff and Government Officials respondents (Sta) shows that a unit increase in stakeholder engagements on average increased graduate employability (GE) by 0.45. This result shows that there is a direct relationship between stakeholder engagement and graduate employability. The constant coefficient value of 2.297 indicates that graduate employability will increase by a unit value of 2.297, even without considering the TVET stakeholder engagement.

$$GE = 2.297 + 0.45SE_{Sta}$$

From Table 4.16, TVET stakeholder engagements (SE) coefficient value of 0.389 of the Learner respondents (E) shows that a unit increase in stakeholder engagements on average increased graduate employability (GE) by 0.389. This result shows that there is a direct relationship between stakeholder engagement and graduate employability. The constant coefficient value of 2.751 indicates that graduate employability will increase by a unit value of 2.751, even without considering the TVET stakeholder engagement.

$$GE = 2.751 + 0.389SE_{L}$$

4.5 The influence of TVET solid foundation on graduate employability of TVET institution.

This section provides descriptive statistics regarding the influence of TVET solid foundation on graduate employability (Table 4.17 – 4.18). Thematic analysis was also employed to evaluate the open-ended questions to systematically extract and interpret the underlying themes present in respondent's answers (Table 4.19). Additionally, it determines the relationship between TVET solid foundation and graduate employability (Table 4.20 - 4.22) using regression analysis and correlation. The analysis was conducted across two distinct groups: Enterprise and TVET Staff, and Government respondents.

4.5.1 Descriptive statistics of TVET solid foundation on graduate employability

The study aimed to determine the relationship between TVET solid foundation and graduate employability. Using descriptive statistics, it assessed how vision and strategic framework, governance arrangement, funding and expenditure of TVET programs influence employability. Respondents rated these factors on a Likert scale of 1-5, with 5 being "strongly agree" 4 being "Agree", 3 being "undecided" 2 being "Disagree" and 1 being "strongly disagree." The Solid Foundations were evaluated across two distinct groups: Enterprises, TVET staff and government Official respondents. The mean and standard deviations are shown in Table 4.17-4.18.

Table 4. 20: Solid foundation descriptive statistics for Enterprise

Statements for (N = 35)	Min	Max	Mean	Std. Deviation
TVET programs have a clear vision that aligns with workforce demands.	1.00	5.00	4.4571	0.95001
The strategic framework of TVET institutions is communicated effectively to stakeholders, including employers.	1.00	5.00	4.1143	0.86675
The governance of TVET institutions promotes transparency and accountability in operations.	2.00	5.00	4.0571	0.96841
Stakeholders (including companies) are involved in governance decisions affecting TVET programs.	1.00	5.00	3.3143	1.43017
Funding provided to TVET programs is adequate to support quality training and resources.	1.00	5.00	3.4286	1.52017
Resources allocated to TVET programs are utilized efficiently to enhance training outcomes.	1.00	5.00	3.5429	1.37932

The study findings in Table 4.17, reflect enterprise respondents' perceptions of the solid foundational aspects of TVET programs, directly relate to the research objectives concerning how the fundamental characteristics of TVET institutions influence graduate employability. The high mean scores for critical elements such as the clarity of the program vision (mean = 4.4571) and effective communication of the strategic framework (mean = 4.1143) suggest that enterprises perceive TVET programs as being well-aligned with workforce demands and adequately communicated to stakeholders including employers. This indicates that the programs are designed with a focus on relevance, a key factor in enhancing employment prospects for graduates.

Furthermore, the governance of TVET institutions is perceived positively, with respondents indicating that transparency and accountability are promoted (mean = 4.0571), which can foster stakeholder trust and collaboration, it's important for aligning

training with industry needs. However, the areas with somewhat moderate ratings, such as stakeholder involvement in governance decisions (mean = 3.3143) and the adequacy of funding (mean = 3.4286), show some uncertainties or gaps. The relatively high standard deviations (~1.4–1.5) highlight variability in perceptions, possibly reflecting inconsistencies in stakeholder engagement and resource allocation.

These findings suggest that enterprises generally view the foundational elements of TVET programs as strong contributors to employability, particularly the clarity of program goals and governance transparency. Still, the moderate scores relating to stakeholder involvement and funding adequacy imply that strengthening these areas could further enhance program quality and relevance, thereby positively impacting graduates' employment outcomes. The research objectives are supported by these insights, emphasizing that a solid foundational framework, characterized by clear vision, effective communication, transparent governance, and sufficient resources is crucial for preparing graduates with employable skills aligned with labor market demands.

Table 4. 21: Solid foundation descriptive statistics for TVET Staffs and Government officials

Statements foe (N = 50)	Min	Max	Mean	Std. Deviation
The TVET program has a clear vision that aligns with national employment strategies.	1.00	5.00	3.7400	0.98582
The strategic framework of the TVET institution is effectively communicated to all stakeholders.	1.00	5.00	2.8800	1.36487
The governing body overseeing the TVET program is transparent and accountable in its operations.	1.00	5.00	3.2200	1.21706
Stakeholders are adequately represented in the governance of the TVET program.	1.00	5.00	3.9000	1.14731
The TVET program receives sufficient funding to support its objectives and initiatives.	1.00	5.00	2.6600	1.47924
Funding is allocated effectively to key areas that enhance employability outcomes.	1.00	5.00	3.7600	0.93808

The study findings in Table 4.18, reflect responses from TVET staff and government officials regarding the foundational aspects of TVET programs, provide valuable insights in the context of the research objectives specifically, examining how the solid foundational elements of TVET influence graduate employability. The mean score of 3.74 for the statement that "The TVET program has a clear vision that aligns with national employment strategies" indicates a relatively high perception among staff and officials

that the programs are purposefully directed towards national employment goals, which is a positive indicator of relevance and strategic alignment. This alignment is crucial for ensuring that graduates are equipped with skills demanded by the labor market.

Conversely, the lower mean score of 2.88 for "The strategic framework of the TVET institution is effectively communicated to all stakeholders" suggests some perceived gaps in communication. Effective dissemination of strategic frameworks is essential for stakeholder engagement, program coherence, and shared understanding factors that influence program implementation quality and, ultimately, graduate employability. Similarly, the average score of 2.66 concerning whether the TVET program receives sufficient funding indicates concerns about resource adequacy, which can directly impact the quality and scope of training, infrastructure, and student support services. The relatively moderate score for "Funding is allocated effectively" (mean = 3.76) suggests that while some funding is directed appropriately, there may be room for improvement in resource distribution to support employability-enhancing initiatives.

Stakeholder representation in governance is rated highly (mean = 3.90), highlighting active engagement, which aligns with the importance of inclusive decision-making in fostering programs that meet industry needs and improve graduate employment prospects.

In relation to the research objectives, these findings suggest that while there are strong perceptions regarding the program's strategic alignment and stakeholder involvement, communication and resource adequacy are perceived as less optimal. Strengthening these foundational areas could enhance the relevance and quality of TVET programs, thereby improving graduate employability outcomes. Overall, these descriptive results underscore the importance of a well-defined, well-communicated, and adequately resourced foundation to effectively prepare graduates for the labor market.

4.5.2 Results from open ended questionnaires

The qualitative data were collected through open-ended questions included in the questionnaires directed to enterprises, TVET staff, and learners. To quantify this data, responses were analyzed using thematic analysis based on Clarke and Braun's (2013) Six

Step Data Analysis Process. This approach involved identifying key themes from the responses related to Objective 3, which explores the relationship between solid foundation and employability. The frequency of respondents mentioning each theme was tabulated and expressed as percentages, representing the proportion of respondents who provided answers corresponding to each theme. The results of this analysis are presented in Table 4.19.

Table 4. 22: Open ended results for Solid Foundation

Entrepreneurial skills that are essential for success in construction industry			
Themes	**Responses from Enterprise**	**Frequency (N)**	**Percent (%)**
Theme 1	Project Management	5	14.3
Theme 2	Negotiation Skills	9	25.7
Theme 3	Networking and Relationship Building	6	17.1
Theme 4	Risk Management	4	11.4
Theme 5	Innovation and Adaptability	11	31.4
Life learning skills are most valuable for youth in the workplace			
Themes	**Responses from Enterprise**	**Frequency (N)**	**Percent (%)**
Theme 1	Technical Skills	7	20.0
Theme 2	Financial Literacy	6	17.1
Theme 3	Leadership Skills	5	14.3
Theme 4	Work Ethic and Professionalism	8	22.9
Theme 5	Communication Skills	9	25.7
What challenges do you perceive in the current TVET framework that hinder employability?			
Themes	**Responses from TVET Staffs and Government officials**	**Frequency (N)**	**Percent (%)**
Theme 1	Curriculum Misalignment	13	26.0
Theme 2	Limited Industry Engagement	9	18.0
Theme 3	Insufficient Funding	8	16.0
Theme 4	Lack of Government Support	6	12.0
Theme 5	Perception Issues	10	20.0
Theme 6	Inadequate Evaluation Mechanisms	4	8.0

According to the results in Table 4.19, Enterprise respondents indicated the top five essential entrepreneurial skills in an enterprise are Innovation and Adaptability (31.4%), Negotiation Skills (25.7%) and Networking and Relationship Building (17.1%) Project Management (14.3%) and Risk Management (11.4%). Additionally, Enterprise respondents indicated top five life learning skills that are most valuable for graduates are Communication Skills (25.7%), Work Ethic and Professionalism (22.9%), and Technical Skills (20%), Leadership Skills (14.3%) and Financial Literacy (17.1%). TVET Staffs and Government official respondents stated challenges perceived in the current TVET

framework that hinder employability; Curriculum Misalignment (26.0%), Limited Industry Engagement (18.0%), Insufficient Funding (16.0%), Lack of Government Support (12.0%), Perception Issues (20.0%), Inadequate Evaluation Mechanisms (8.0%).

4.5.3 Relationship between TVET solid foundation and graduate employability from TVET institutes

A simple regression model was used to determine the relationship between TVET solid foundation and graduate employability, with findings detailed in (Table 20-22).

Normality test and Collinearity Diagnostics

A normality test was performed to assess whether the data follows a normal distribution, which assisted in determining the appropriate type of regression to use, as shown in Table 4.20. Furthermore, the Durbin-Watson (DW) statistic was employed to detect autocorrelation in the variables, while the Variance Inflation Factor (VIF) analysis was conducted to evaluate multicollinearity, both of which are detailed in Table 4.20.

Table 4. 23: Normality test and Collinearity Diagnostics for Solid Foundation

Variables	Ent	staff	Limits	Comments
Stakeholder Engagement P_{value} (Sig_{value})	0.061	0.282	$P_{value} > 0.05$	Normally distributed Parametric Methods Linear regression Peason regression
Graduate Employability P_{value} (Sig_{value})	0.086	0.064	$P_{value} > 0.05$	Normally distributed Parametric Methods Linear regression Peason regression
Durbin-Watson (DW)	1.440	2.281	1.45 - 2.44	No Autocorrelation.
Tolerance (T)	1	1	T>0.1	No multicollinearity
Variance Inflation Factor (VIF)	1	1	VIF<10	No multicollinearity

Table 4.20 indicates that both the enterprise and TVET staff/government official populations exhibit normal distribution, as evidenced by P-values greater than 0.05 for TVET Solid Foundation and graduate employability. Therefore, linear regression and Pearson correlation were applied for analysis in both cases.

Model and ANOVA Summary

The model summary was performed to assess the strength and direction of the linear relationships between the variables (Solid Foundation and graduate employability), as shown in Table 4.20. The ANOVA, or F-statistic, was utilized to evaluate the overall significance of the model, as indicated in Table 4.21.

Table 4. 24: Model Summary for Solid Foundation

Variables	Ent	Staff	Limits	Comments
R -Pearson Correlation	0.031	0.115	R < or >50%	Weak and Positive correlation
R Square	0.001	0.013	R^2 < or >50%	Weak and Positive correlation
Adjusted R Square	-0.029	-0.007	R^2_{Adj} < or >50%	Weak and Negative correlation
ANOVA Summary				
F-Statistics	0.031	0.643	-	-
Sig_{value}	0.861	0.426	Sig < 0.005	Sig_{value} for all groups are found to be insignificant at 5% level.

From Table 4.21, the R-value of 0.031 (R-value<50%) is show that there is a week and positive correlation between TVET Solid foundation and graduate employability for the enterprise respondent. The R Square-value of 0.001 show that 0.1% change in graduate employability is explained by TVET Solid Foundation, while 99.9% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of -0.29 show that 29.0% change in graduate employability is explained by solid foundation. It also shows that the model has poor fit.

From Table 4.21, the R-value of 0.115 (R-value<50%) is show that there is a week and positive correlation between TVET Solid foundation and graduate employability for the TVET Staffs and Government official respondents. The R Square-value of 0.013 show that 1.3% change in graduate employability is explained by TVET Solid Foundation, while 98.7% is captured in the error term. This shows that the model has poor fit. Adjusted R Square-value of -0.007 show that 0.7% change in graduate employability is explained by solid foundation.

Table 4.21 presents findings on the significance of regression models for different respondent groups. For enterprise respondents, the overall regression model is insignificant, with an ANOVA (F-Statistics) value of 0.031 and a P-value of 0.861, indicating poor significance at the 5% level. The model for TVET staff and government

officials has an ANOVA (F-Statistics) value of 0.643 and P-value (Sig_{value}) of 0.426 but is also considered insignificant at the 5% level. Overall, both models demonstrate poor significance.

Regression Coefficients for Stakeholder Engagement

The regression coefficients are calculated to indicate both the direction and magnitude of change, as illustrated in Table 4.22.

Table 4. 25: Regression Coefficients for Solid Foundation

Variables	Ent	Staff	Comments
$\beta_0\ (Constants)$	4.090	3.324	Positive change
$\beta_{x2}\ Regression\ Cofficient\ for\ SE$	-0.021	-0.058	Negative change

From Table 4.22, TVET solid foundation coefficient value of 0.021 shows that a unit increase in solid foundation on average decrease graduate employability (GE) by 0.021 for Enterprise respondents. This result shows that there is a inversely relationship between solid foundation and graduate employability. The constant coefficient value of 4.090 indicates that graduate employability will increase by a unit value of 4.090, even without considering the TVET stakeholder engagement.

$$\boldsymbol{GE = 4.090 - 0.021SF_{Ent}}$$

From Table 4.22, TVET solid foundation coefficient value of 0.0509 shows that a unit increase in solid foundation on average decrease graduate employability (GE) by 0.0509 for TVET Staffs and Government official respondents.

$$\boldsymbol{GE = 3.324 - 0.509SF_{Sta}}$$

This result shows that there is inversely relationship between solid foundation and graduate employability. The constant coefficient value of 3.324 indicates that graduate employability will increase by a unit value of 3.324, even without considering the TVET stakeholder engagement.

$$\boldsymbol{GE = 3.324 - 0.509SF_{Sta}}$$

4.6 Overall relationship between 3 TVET factors and graduate employability from TVET institutes

Correlation and regression analysis were conducted to determine the combined influence of TVET factors on graduate employability from TVET institutes. The process began with correlation and regression analysis between graduate employability and the three TVET factors (independent variables) for each distinctive group as well as for all groups combined. This analysis was performed at a 5% level of significance (95% confidence level). The results CONTAINING THE MODEL summary, ANOVA and regression coefficients are summarized in Table 4.23 and regression mode in Table 4.24.

Table 4. 26: Combined regression parameters of three groups respondent

No:	Descriptions	Enterprise	TVET staffs & Government	Leaners	Limits	Comments
1	R	0.557	0.446	0.646	50% (0.5)	Ent = strong Staff = Weak Leaner = strong
2	R Square	0.311	0.199	0.418	50% (0.5)	All = Poor fit
3	Adjusted R Square	0.244	0.146	0.413	50% (0.5)	All = Poor fit
4	DW	1.560	2.513	1.868	1.45-2.44	Ent = no evidence of Autocorrelation Staff = evidence of Autocorrelation Leaner = no evidence of Autocorrelation
5	F	4.656	3.800	88.667	-	
6	Sig.	0.008	0.016	<0.001	0.05	All - Signiant
7	Tolerance	PD = 0.994 SE = 1.000 SF = 0.994	PD = 0.932 SE = 1.072 SF = 0.873	PD = 0.698 SE = 0.698	0.1	No multicollinearity
8	VIF	PD = 1.006 SE = 1.000 SF = 1.006	PD = 1.146 SE = 0.839 SF = 1.192	PD = 1.434 SE = 1.434	<10	No multicollinearity
9	b_0 (Constant)	2.439	2.247	1.793	-	
10	bx_1 (b_{PD})	0.009	0.063	0.391	-	
11	bx_2 (b_{SE})	0.412	0.462	0.223	-	
12	bx_3 (b_{SF})	-0.015	-.058	-	-	
13	Y (GE)	See Table: 6.2	See Table: 6.2	See Table: 6.2	-	

Table 4.23 indicates that the Enterprise and Learner respondents exhibit a strong and positive correlation, as their R-value exceeds 50%. In contrast, the TVET staff and Government official respondents demonstrate a weak and positive correlation, with an R-value below 50%. There is no autocorrelation or multicollinearity among the variables for Enterprise and Learner's respondents, as evidenced by a Durbin-Watson statistic (DW) ranging from 1.45 to 2.44 and a Variance Inflation Factor (VIF) of less than 10. However, there is multicollinearity among the variables for TVET staff and Government official respondents. The results from all three groups confirm that the overall regression model is significant, as indicated by the ANOVA analysis and its associated probability (sig-value) of less than 0.05, signifying that the model is significant at the 5% level.

Regression Model/Equation

Table 4.24 illustrates the regression models for each respondent group (Enterprise, TVET staffs and Government officials and Learners), providing insights into the research questions and objectives focused on determining the relationship between the independent variables (performance dimension, stakeholder engagement, and solid foundation) and the dependent variable (graduate employability) independently, as calculated in sections 4.3.3, 4.4.3, 4.5.3 and 4.6 of Chapter 4. Additionally, the table presents the combined regression model that assesses the overall impact of all three independent variables on graduate employability for each group. Based on these analyses, the best-fitting model is identified as **Graduate employability = 1.793 + 0.193Performance dimension + 0.223 stakeholder engagement** and it is explained below.

Table 4. 27: Regression Model Summary

Group No:	Respondents	Regression Equation
1	Enterprise	$Y = b + b_1x_1 + b_2x_2 + b_3x_3 + e$ $GE = 3.998 + 0.294PD_{Ent}$ = Model 1 $GE = 2.409 + 0.412SE_{Ent}$ = Model 2 $GE = 4.090 - 0.021SF_{Ent}$ = Model 3 $\boldsymbol{GE = 2.439 + 0.009PD_{Ent} + 0.412SE_{Ent} - 0.015SE_{Ent}}$ **= Combined model.**
2	TVET staffs & Government officials	$Y = b + b_1x_1 + b_2x_2 + b_3x_3 + e$ $GE = 3.294 + 0.128PD_{Sta}$ = Model 1 $GE = 2.297 + 0.45SE_{Sta}$ Model = 2 $GE = 3.324 - 0.509SF_{Sta}$ Model 3 $\boldsymbol{GE = 2.247 + 0.063PD_{Sta} + 0.463SE_{Sta} - 0.058PD_{Sta}}$ **= Combined model.**
3	Leaners	$Y = b + b_1x_1 + b_2x_2 + b_3x_3 + e$ $GE = 2.012 + 0.550PD_L$ = Model 1 $GE = 2.751 + 0.389SE_L$ = Model 2 $\boldsymbol{GE = 1.793 + 0.193PD_L + 0.223SE_L}$ **= Combined model.**

In this study, Table 4.24 present each regression model for the three respondent groups (Enterprise respondents (Ent), TVET staff and government officials (Sta), and Learners (L)) focusing on the relationships between independent variables (Performance Dimension (PD), Stakeholder Engagement (SE), Solid Foundation (SF)), and dependent variable (Graduate Employability (GE)). The best fit model is also provided from these equations.

Group 1. Enterprise Respondents (Ent)

Model 1 - Determined the relationship between performance dimension and graduate employability.

GE = 3.998 + 0.294 PD: A unit increase in the perceived performance dimension is associated with approximately 0.294 increase in graduate employability.

Model 2 - Determined the relationship between stakeholder engagement and graduate employability.

GE = 2.409 + 0.412SE: Stakeholder engagement has a stronger impact on employability; each unit increase in SE relates to about 0.412 increase in GE.

Model 3 - Determined the relationship between solid foundation and graduate employability.

GE = 4.090 - 0.021SF: Surprisingly, a higher solid foundation score slightly correlates with a negligible or negative impact on employability, indicating that perhaps perceptions of solid foundation are less influential or more complex in this context.

Combined Model: Determined the relationship between performance dimension, stakeholder engagement, solid foundation and graduate employability.

GE = 2.439 + 0.009PD + 0.412SE - 0.015SF: When considering all three factors simultaneously, stakeholder engagement remains the most influential predictor, with a significant positive coefficient, while performance dimension has minimal impact, and solid foundation has negative impacts.

Group 2. TVET Staff & Government Officials (Sta)

Model 1 - Determined the relationship between performance dimension and graduate.

GE = 3.294 + 0.128PD: The performance dimension has a small positive effect on graduate employability.

Model 2 - Determined the relationship between stakeholder engagement and graduate employability.

GE = 2.297 + 0.45 SE: Stakeholder engagement strongly influences employability; each unit increase results in approximately 0.45 increase in GE.

Model 3 - Determined the relationship between solid foundation and graduate employability.

GE = 3.324 - 0.509SF: Solid foundation has a notable negative association with employability, suggesting that higher perceptions of solid foundation may not correspond with higher employability from these respondent's perspectives.

Combined Model: Determined the relationship between performance dimension, stakeholder engagement, solid foundation and graduate employability.

GE = 2.247 + 0.063PD + 0.463SE - 0.058SF: Again, stakeholder engagement emerges as the strongest positive predictor; performance dimension and solid foundation have minimal or negative contributions.

Group 3. Learners (L)

Model 1 - Determined the relationship between performance dimension and graduate.
GE = 2.012 + 0.550PD: Performance dimension has a strong positive relationship with employability among learners; a one-unit increase in PD corresponds to about 0.55 increase in GE.

Model 2 - Determined the relationship between stakeholder engagement and graduate employability.
GE = 2.751 + 0.389SE: Stakeholder engagement has a significant positive effect, but slightly less than PD among learners.

Combined Model: Determined the relationship between performance dimension, stakeholder engagement and graduate employability.
GE = 1.793 + 0.193PD + 0.223SE: When combined, both performance dimension and stakeholder engagement positively influence employability, with PD still having a slightly higher coefficient.

Note: The solid foundation variable was not included for the learner group, as learners may have little or no knowledge about the vision and strategic framework, governance arrangements, and funding mechanisms of the TVET institutions.

Determining the Best Fit Model:

Learners group show a stronger and more significant relationship with the combined predictors (higher R-values = 0.646, Significant value <0.001 in table 4.23) and a combined model with both factors improving explanatory power. The learner model is more predictive and better fitted, as it integrates both factors, indicating a more comprehensive understanding of influences on employability in this group. The enterprise and staff/government models show similarities, stakeholder engagement remains a strong

predictor, but some relationships (like solid foundation and performance dimension) are negatively associated or minimal, suggesting less clarity or complexity in these groups' perceptions.

Best fitting model

$$\boldsymbol{Graduate\ Employability} = \mathbf{1.793} + \mathbf{0.193}\ \boldsymbol{Performance\ dimesion} + \mathbf{0.223}\ \boldsymbol{Stakeholder\ Enggagement}$$

Among all, the learner model incorporating both PD and SE provides the best fit, reflecting the combined influence of performance and stakeholder engagement on graduate's employability.

4.7 Chapter summary

In this Chapter, the influence of the three TVET factors on graduate employability from TVET institutes was assessed. The study findings from the simple linear regression models indicated that stakeholder engagements in order were the most impactful on the graduate employability of TVET institutes with a beta coefficient of 0.223 in which it accounts for 22.3% variability in graduate employability. From the multiple regression the study established that the three TVET factors significantly contributes to the graduate employability from TVET institutes. However, challenges may arise due to limited educational opportunities and quality, inadequate infrastructure and resources, economic instability, insufficient networking and connections, language and cultural barriers, and issues with certification and recognition for TVET graduates.

The coefficient for PD, which is 0.193, indicates that for each unit increase in PD, GE increases by an average of 0.193 units. This reflects a direct relationship between PD and GE. Similarly, the SE coefficient, found to be 0.223, suggests that a one-unit increase in SE results in an average increase of 0.223 units in GE, further confirming the direct relationship between SE and GE. However, the model reveals that there is an insignificant relationship between SF and GE, as evidenced by the responses from enterprise, TVET

staff, and government officials. Furthermore, it indicates an inverse relationship between SF and GE.

Stakeholder engagement consistently shows a positive and strong influence across all groups. Performance dimension significantly influences learners and enterprise respondents but less so for staff/government officials. Solid foundation has a complex or negative relationship, indicating it might need further investigation to understand its nuanced effect. This study suggests that improving stakeholder engagement and performance dimensions within TVET could substantially enhance graduate employability, especially as perceived by learners.

CHAPTER FIVE

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, discussion of the findings, conclusions and recommendations for further research.

5.2 Summary of findings

The research study aimed to assess the influence of various TVET factors on the employability of graduates from TVET institutes in South Sudan. The focus was on three key factors: TVET performance dimension, stakeholder engagement, and solid foundation. The study was based on the UNESCO framework, the Education–Employment linkage theory, and Human Capital Theory. The research involved three groups of respondents, targeting a population of 461 individuals, and achieved a response rate of 72.67% with 335 participants. Findings indicated that performance dimension had the most significant impact on graduate employability from TVET institutes, exhibiting a beta coefficient of 0.55, which accounts for 35.1% of the variation in graduate employability.

In examining the factors that influence graduate employability in enterprises, it was found that employers prioritize several key skills in prospective employees. Technical skills, soft skills, lifelong learning skills, and entrepreneurship skills are highly sought after. A study on graduate employability identified several critical skills that employers prioritize in the construction sector. Key among these are technical skills, which encompass proficiency in various construction tools and technologies. Additionally, soft skills such as negotiation, teamwork, and communication are essential for effective collaboration and successful project delivery. Furthermore, graduates are expected to be adaptable and open to innovation, as the industry continues to evolve. A strong work ethic and professionalism significantly contribute to both individual reputation and team performance. Other important skills include time management for prioritizing tasks and meeting deadlines, safety awareness to prevent workplace accidents, and leadership abilities that encourage initiative and accountability, even in entry-level positions.

Regarding the impact of TVET factors on employability, the model summary revealed that TVET factors significantly influence graduate employability, with an R square value of 0.646. This indicates that 64.6% of the variation in graduate employability (the dependent variable) can be explained by the TVET factors, which include performance dimensions and stakeholder engagement (the independent variables). Such a high variation suggests a strong relationship between these factors and employability. Moreover, the significance values associated with the predictors were all below 0.05, demonstrating that the coefficients are statistically significant at the 95% confidence level. The study found that a unit increase in the TVET factors specifically in performance dimensions and stakeholder engagement corresponded to increases of 0.193 and 0.223 in graduate employability, respectively. These findings align with research conducted by the (Rageth & Renold, 2019).

5.3 Discussion of Findings

5.3.1 TVET Performance Dimension and Graduate Employability

The UNESCO Strategy emphasizes the importance of developing skills accessible to all individuals, promoting inclusion, equity, and lifelong learning pathways (UNESCO, 2021). The low ratings for access to facilities, resources, and support services, as well as curriculum relevance, highlight significant barriers to achieving equitable access and quality education which are the core principles of UNESCO's framework. These barriers suggest that current TVET initiatives are falling short of fostering inclusive environments where all learners can acquire the necessary skills for employment, which UNESCO advocates as essential for social and economic development.

Furthermore, UNESCO promotes the development of skills that enable individuals to learn, work, and live productively, supporting the creation of a skilled, adaptable, and inclusive workforce (UNESCO, 2021). The study's findings that industry-relevant curricula are inadequately updated and that trainer qualifications are low align with UNESCO's call for continuous innovation and quality assurance in TVET systems. This underscores the urgent need for policies that enhance training relevance and quality,

ensuring that TVET programs effectively prepare learners for current and future labor markets.

From the perspective of Human Capital Theory, these findings reinforce the notion that investments in education and skill development directly influence employability and economic productivity (Alex van der Merwe, 2010). The theory posits that enhancing individuals' skills increases their productivity, which benefits both the worker and the economy at large. The low levels of infrastructure, curriculum relevance, and trainer qualifications diminish the value of human capital created by TVET, leading to reduced employability outcomes. The weak links between educational inputs and labor market demands such as outdated curriculum and insufficient resources represent underinvestment in human capital development.

Additionally, the regression analysis showing that performance dimensions (access, equity, quality, and relevance) account for a substantial portion of the variation in employability further supports the Human Capital Theory's assertion that improvements in training quality and relevance directly boost individuals' productivity and employability (Alex van der Merwe, 2010). The emphasis on collaboration between enterprises and TVET institutions to improve internship opportunities also aligns with both UNESCO's strategy of fostering industry-education linkages and Human Capital Theory's advocacy for practical, industry-relevant skills development to maximize the returns on education investments.

The study's findings emphasize that addressing the deficiencies in access, quality, and industry relevance in TVET core elements highlighted by UNESCO are crucial for enhancing human capital and, consequently, employability. Both frameworks underscore the importance of holistic, inclusive, and quality-focused approaches to TVET, which are vital for fostering sustainable economic growth and social development.

5.3.2 TVET Stakeholder Engagement and Graduate Employability

The data showing that TVET programs partnered with companies to provide internship and apprenticeship opportunities reflects the core of the Education–Employment Linkage Theory (Rageth & Renold, 2019). This theory advocates that practical, work-based learning experiences serve as essential mechanisms for bridging skills gaps and preparing graduates for the workforce. The significant role of internships underscores the importance of integrating real-world contexts within TVET to facilitate transitions from education to employment. The moderate supportiveness of government policies highlights the role of institutional and policy frameworks in fostering these linkages, as suggested by the theory. Effective policies can incentivize industry engagement and support collaborative curriculum development, which the data indicates is somewhat lacking, especially regarding local enterprise involvement. The low level of participation from local businesses in curriculum shaping signals gaps in the linkage, emphasizing that policy and institutional mechanisms need strengthening to promote more active industry participation, a central tenet of the theory.

The identified skills gaps, both technical and soft skills are a direct consequence of weak linkages between TVET institutions and industry needs. The high prominence of stakeholder engagement (internships, industry partnerships) in influencing employment outcomes supports the theory's assertion that stakeholder involvement is crucial for aligning training with labor market demands (Rageth & Renold, 2019). The regression findings reinforce this, showing stakeholder engagement explains substantial portion of the variance in employability, illustrating its significant impact.

Furthermore, challenges faced by graduates (networking barriers, discrimination, industry demand gaps) and the need for stronger industry collaboration echo the theory's emphasis on establishing continuous, reciprocal relations between education providers and employers, ensuring curricula remain relevant and graduates acquire in-demand skills. The findings demonstrate that fostering robust linkages through internships, industry participation in curriculum development, feedback mechanisms, and advisory boards is essential for improving employability. This directly supports the Education–Employment Linkage Theory's premise that effective connections between educational systems and

actors in the labor market enhance the relevance and quality of training (Rageth & Renold, 2019), thereby improving employment outcomes for graduates. Addressing gaps in these linkages can lead to more responsive, industry-aligned TVET programs that produce graduates equipped with the skills demanded by the labor market.

5.3.3 TVET Solid Foundation and Graduate Employability

The UNESCO Strategy's emphasis on developing skills for all individuals through strategic frameworks and policy coherence is reflected in the observed disparity between the high mean score for the clarity of TVET's vision and the low scores for communication and funding sufficiency. According to the (UNESCO, 2021) framework, a clear, integrated vision must be complemented by effective communication and adequate resource allocation to translate strategic goals into tangible outcomes. The gap identified in funding and communication underscores that without sufficient resources and stakeholder dissemination, the strategic vision remains underrealized, impeding the system's ability to meet labor market demands.

The weak correlation found in the regression analysis where "solid foundation" explains only small fraction of employability variation and is statistically insignificant, illustrates a disconnect with the UNESCO's assertion that well-coordinated governance, funding, and strategic frameworks are vital for a successful TVET system (The World Bank, UNESCO and ILO, 2023). This weak relationship signifies that simply having a vision is insufficient unless it is backed by robust governance and resource mechanisms, a core message of UNESCO's priorities.

These findings dovetail with the Human Capital Theory, which posits that investment in education and training (including infrastructure, resources, and professional development) enhances individual productivity and workforce quality. The inadequate funding for resources and infrastructure undermines human capital accumulation by limiting the quality and relevance of training, thereby impairing graduates' employability. The study emphasizes that strategic planning must be accompanied by sufficient investment to develop relevant skills, which aligns with the core tenet of human capital theory: that

investments in education are crucial for individual and national economic growth (Eleyae, 2021).

Moreover, the findings reinforce that sustainable human capital development depends on a coordinated approach, as the UNESCO strategy advocates integrating vision, governance, stakeholder engagement, and resource mobilization. The discrepancy between the high perception of vision clarity and the low scores in communication and funding indicates that without operationalizing these strategies through adequate resource allocation and information dissemination, the system cannot effectively enhance the skills and employability of graduates.

Therefore, the study illustrates that achieving a solid foundation for effective TVET systems as underscored by UNESCO and human capital principles requires not only a clear vision but also effective governance, stakeholder involvement, and sufficient funding. These elements collectively underpin the development of a skilled workforce aligned with labor market needs, thereby fostering sustainable economic growth and social equity, which are central aspirations of both UNESCO's framework and human capital theory.

5.4 Conclusions

The findings of this study highlight that multiple factors within the TVET system significantly influence graduate employability, with performance dimensions and stakeholder engagement emerging as the most impactful. Effective performance, including curriculum relevance, training quality, and industry alignment, plays a crucial role in enhancing employment prospects for graduates. Additionally, active engagement with stakeholders such as industries, employers, and educational institutions further contributes to better employment outcomes, emphasizing the importance of collaborative efforts in the TVET sector.

However, the study also reveals that a solid foundation comprising vision, strategic frameworks, governance, and funding has limited or even negative influence on employability when not supported adequately. This suggests that without strategic improvements in governance, resource allocation, and policy frameworks, the potential of

TVET to improve employment outcomes may remain unrealized. To realize the full benefits of TVET, concerted efforts are needed to strengthen the performance dimensions and stakeholder partnerships, ensuring that foundational mechanisms are aligned to support sustainable and effective skills development.

5.5 Recommendations

The study has offered recommendations designed to establish a more efficient and adaptive TVET system, which has the potential to substantially enhance the employability of graduates in South Sudan.

i **Enhance curriculum relevance:** Develop and regularly update the TVET curriculum to align with the current labor market needs. This includes incorporating practical skills and emerging technologies in various industries to ensure graduates are equipped with the necessary competencies that employers seek.

ii **Strengthen stakeholder engagement:** Foster deeper collaboration between TVET institutions and local industries. Establish partnerships for internships, apprenticeships, and mentorship programs that facilitate real-world experience and help students develop professional networks.

iii **Promote awareness of TVET advantages:** Implement a robust awareness campaign highlighting the benefits of TVET, such as employment opportunities, skill development, and entrepreneurship potential. Use various media platforms, community events, and school outreach programs to reach youth and inform them of the value and career prospects that TVET can offer.

iv **Improve governance and strategic frameworks:** Establish clear governance structures within TVET institutions to ensure effective management and oversight of programs. Create strategic frameworks that include measurable goals for enhancing graduate employability and regularly assess progress against these goals.

v **Increase funding and resource allocation:** Advocate for increased government and private sector investment in TVET programs. Secure funding aimed specifically at upgrading facilities, acquiring modern equipment, and training instructors, which will significantly enhance the quality of education and training provided.

vi **Implement career services and support programs:** Develop robust career support services within TVET institutions that offer guidance on job searching, resume writing, and interview preparation. Additionally, establish graduate tracking mechanisms to measure employment outcomes and continuously gather feedback for program improvement.

5.5 Suggested Areas for Further Research

i Explore how government policies shape the effectiveness of TVET systems in enhancing graduate employability.

ii Examine the impact of curriculum design on skill development, particularly the integration of soft skills and technical experts

iii Investigate how partnerships between TVET institutions and industries affect the employability of graduates, focusing on internships, apprenticeships, and curriculum relevance.

5.6 Limitation of the Study

Below are the challenges faced during the study which and data collection.

Due to sun heat in South Sudan, the schools were closed which made it difficult to access both students and teachers. This challenged was overcome by collaborating with the head teachers and principals to call students to school and questionnaires were distributed to them and were given a period of two weeks to answer questions and return the questionnaires to the schools. Some institutions got the questionnaires just two days before the schools were closed.

There were challenges in accessing the graduates since most of them left the town and some went for internship. Thankfully through the collaborations of the teachers, some of the graduates were called to the school and picked up questionnaires and return within a week.

Political instability in the country instilled fear in respondents of certain construction companies even though both ethical approvals were provided which made them to hastate in answering the questionnaires. The ethical approval from both Strathmore University

and from the Ministry of Education of South Sudan helped build trust and most companies that were approached responded to answering the questionnaires positively.

There was limited internet or no internet at all in most of the institution, which made me to print out 461 hardcopies of questionnaires and deliver them manually to the various locations to ensure that all different groups access the questionnaires. For Yei and Aweil, i sent hard copies using the airline, and were returned using airline. I hard to train data collections assistance through the phone calls and give instruction though phone calls.

There was a challenge of hierarchy, where I must first meet the school's principle faces to face before am assigned a teacher to work with, for the construction company, I was to meet HR to permit me talk to staffs and distribute my questionnaires, for ministry of education and consultants I must look for them one by one. All these made be to bounce back because I couldn't find them in the office, however, I was persistent, I kept calling and visiting and making appointments until I met all the authorized personnels and gave me their blessings to proceed with the data collection.

There was insecurity tension within the country where most company's closed or were operating half day. By this time, I had completed my data collections, and I started analyzing my data.

There was a challenge of balancing work, studies (coursework's and classes) and writing of my chapter four and five. I managed this by creating a timetable to manage all these three priorities. As for my family, I negotiated for peace and support from them which I got.

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APPENDICES

APPENDIX 1: INTRODUCTION LETTER

Dear Participant,

RE: Technical and Vocational Education and Training (TVET) Factors influencing graduate Employability

I hope this message finds you in good health. I am currently a student at Strathmore University in Kenya, pursuing a Master of Business Administration degree. As part of my academic journey, I am required to conduct research on a topic of interest. I kindly request your assistance in completing the attached questionnaire and participating in interviews aimed at exploring how elements of Technical and Vocational Education and Training (TVET) influence employability in South Sudan.

Please be assured that the data collected will be used solely for this academic purpose, and your anonymity will be maintained throughout the research process. I greatly appreciate your support in providing responses for this study.

Thank you for considering my request. I look forward to your positive response and the opportunity to collaborate with you. If you require any further information, please do not hesitate to contact me.

Kind Regards,

Ayiba Minga
+2119124646170

PARTICIPANT INFORMATION AND CONSENT FORM

TECHNICAL VOCATIONAL TRAINING AND EDUCATION (TVET) INFLUENCING GRADUATE EMPLOYABILITY IN SOUTH SUDAN.

SECTION 1: INFORMATION SHEET

Researcher: AYIBA MINGA

Institutional affiliation: Strathmore Business School (SBS)

SECTION 2: INFORMATION SHEET–THE STUDY

2.1: Why is this study being carried out?

This study on Technical and Vocational Education and Training (TVET) influencing graduate employability in South Sudan is conducted in fulfillment of a graduate degree. It aims to enhance graduate's employability by providing relevant skills and knowledge that meet labor market demands. The research also seeks to contribute to economic development, reduce poverty, and improve living standards by creating a more skilled and competitive workforce. Furthermore, it promotes gender equality in education and employment, engages the private sector to align training programs with industry needs, and supports sustainable development goals. Generally, this research is crucial for fostering a productive and resilient workforce in South Sudan.

2.2: Do I have to take part?

No. Taking part in this study is entirely optional and the decision rests only with you. If you decide to take part, you will be asked to complete a questionnaire to get information on TVET factors influencing employability. If you are not able to answer all the questions successfully the first time, you may be asked to sit through another informational session after which you may be asked to answer the questions a second time. You are free to decline to take part in the study from this study at any time without giving any reasons.

2.3: Who is eligible to take part in this study?

- ☐ Any one above 16 years old
- ☐ Current Students, Graduates, TVET institutional staffs, industry employers/employee's Ministry of education.

2.4: Who is not eligible to take part in this study?

- ☐ Any one below 16 years old.
- ☐ Non-Consenters, Non-TVET Graduates, Non-Resident Graduates, Non TVET Students.

2.5: What will taking part in this study involve for me?

You will be approached by the researcher and requested to take part in the study. If you are satisfied that you fully understand the goals behind this study, you will be asked to sign the informed consent form (this form) and then taken through a questionnaire to complete.

2.6: Are there any risks or dangers in taking part in this study?

There are no risks in taking part in this study. All the information you provide will be treated as confidential and will not be used in any way without your express permission.

2.7: Are there any benefits of taking part in this study?

Your participation helps generate valuable insights into the effectiveness of TVET programs and their impact on employability, which can inform policy decisions and improve educational practices.

Taking part in this study on TVET influencing graduate employability in South Sudan offers several benefits, including contributing to valuable insights that can inform policy decisions and improve educational practices. It can lead to enhancements in TVET curriculum, teaching methods, and support services, benefiting future students. Participants can gain personal insights from reflecting on their educational and employment experiences, potentially expand their professional network, and receive recognition or incentives for their participation. Your involvement is crucial in making a meaningful impact on the quality and relevance of TVET programs in South Sudan.

2.8: What will happen to me if I refuse to take part in this study?

Participation in this study is entirely voluntary. Even if you decide to take part at first but later change your mind, you are free to withdraw at any time without explanation.

2.9: Who will have access to my information during this research?

All research records will be stored in securely locked cabinets. That information may be transcribed into our database, but this will be sufficiently encrypted, and password protected. Only the people who are closely concerned with this study will have access to your information. All your information will be kept confidential.

2.10: Who can I contact in case I have further questions?

You can contact me, Ayiba Minga at SBS, or by e-mail Ayiba.joseph@strathmore.edu or by phone +211-912-464-6170. You can also contact my supervisor, Dr. Mahanu Evenly at the Strathmore Business School, Nairobi, or by e-mail (emakhanu@strathmore.edu) or by phone +256-722-672-473

If you want to ask someone independent anything about this research, please contact:

The Secretary–Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi, email ethicsreview@strathmore.edu Tel number: +254 703 034 375

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you.

Participation in the research study

☐ I AGREE to take part in this research.

☐ I DO NDON'T AGREE to take part in this research.

Storage of information on the completed questionnaire

☐ I AGREE to have my completed questionnaire stored for future data analysis.

☐ I DO NDON'T AGREE to have my completed questionnaire stored for future data analysis.

Participant's Signature: **Date:** _____/_____/_____

_____ ***DD / MM / YEAR***

Participant's Name: **Time:** _____/_____

_____ ***HR / MN***

(Please print name)

I, _____ (Name of person taking consent) certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that she/he has understood the nature and the purpose of the study and consents to the participation in the study. She/he has been given opportunity to ask questions which have been answered satisfactorily.

Investigator's Signature: _____ **Date:** _____/_____/_____

DD / MM / YEAR

_____

Investigator's Name: _ **Time:** _____/_____

Ayiba Minga_____ ***HR / MN***

This study on Technical and Vocational Education and Training (TVET) influencing graduate employability in South Sudan is being conducted to enhance graduates' employability by providing them with relevant skills and knowledge that meet labor market demands. It aims to contribute to economic development, reduce poverty, and improve living standards by creating a more skilled and competitive workforce. Additionally, the study seeks to promote gender equality in education and employment, engage the private sector to align training programs with industry needs, and support sustainable development goals. Overall, this research is crucial for fostering a productive and resilient workforce in South Sudan

7th February 2025

Mrs Minga Ayiba,
ayiba.joseph@strathmore.edu

Dear Mrs Minga,

RE: Technical, Vocational Education and Training (TVET) Factors Influencing Graduate Employability in South Sudan

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2524/24.** The approval period is from **7th February 2025 to 6th February 2026.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

The Republic of South Sudan
Ministry of General Education and Instruction
Directorate of Technical and Vocational Education and Training

Date: 20/02/2025

Research License

TO WHOM IT MAY CONCERN.

This is to Certify that Mrs. Ayiba Israeline Joseph Minga of Strathmore University - Kenya has been licensed to conduct research on TVET institutions in **Central Equatoria State**; Juba Technical, Don Bosco VTC, St. Vincent VTC, Multi Service MTC, St. Joseph VTC/ DMI (Daughters of Mary Immaculate) and Construction Companies, **Yei River County**; Yei VTC/SSDO and Episcopal Diocese of Yei VTC and in **Northern Bahr el Ghazal State**, Aweil Central VTC.

As per this provision of the Ministry of General Education and Instruction (MoGEI), Directorate of Technical and Vocational Education and Training, the Chair of National TVET Ad-hoc Coordination Committee (NTACC) established by act of parliament to govern TVET body in South Sudan.

The Ministry of General Education and Instruction avails this opportunity to renew to you the assurance of its highest consideration.

Regards

21/02/2025

Dr. Gibson Frances Waru
Director General,
Directorate of Technical and Vocational Education and Training
MoGEI/ RSS – Juba `

Ministries Complex, P.O. Box 567 Juba, South Sudan
Tel: +211-929-642-006 / +211-917-095-094

APPENDIX 2: ENTERPRISE'S RESEARCH QUESSIONNAIRE

Introduction: The questionnaire titled "Technical and Vocational Education and Training (TVET) influences employability in South Sudan" Your responses will significantly contribute to the academic research on employability in the region. Ther are Three sections. The **symbol** ○ indicates that you may select only **ONE option**. This survey uses a Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), to gauge your opinions on various statements. Please indicate your level of agreement with each statement by ticking the appropriate box on a scale from (**SD = Strongly Disagree, Disagree, Undecided, Agree and SA = Strongly Agree**). The symbol ○ indicates that you may select only ONE option. **For open ended question,** please answer each question as fully and as thoughtfully as you can.

SECTION ONE: DEMOGRAPHICS INFORMATION

1. **Gender**
   - Male
   - Female
2. **Position of Respondents**
   - Project manager
   - Project Engineer
   - Technician
3. **Level Education**
   - Completed secondary school
   - Completed TVET program
   - Completed University Degree
   - Completed Primary
   - Certificates
4. **Years of Experience in TVET:**
   - Less than 30
   - 30-40
   - 40-50
   - Above 50
5. **Location**
   - Juba
   - Yei
   - Aweil

SECTION TWO A: LIKERT SCALE

Likert Scale Questionnaire for Enterprise								
QN	Varriables	Codes	Descriptions	Agreement Scale				
				SD	D	U	A	SA
				1	2	3	4	5
A	**Performances Dimensions (PD)**							
1	Access	PDA1	Internship programs are easily accessible to potential TVET learners in your organization.					
2		PDA2	The infrastructure and resources available for TVET training meet the needs of learners					
3	Equity	PDE1	There is equal opportunity for all learners, regardless of their backgrounds, in your organization.					
4		PDE2	Support structures are in place to assist disadvantaged learners in the TVET system					
5	Quality	PDQ1	The quality of training provided in TVET programs meets the industry standards required by your company.					
6		PDQ2	Instructors in TVET programs are sufficiently trained and experienced to deliver quality education.					
7	Relevance	PDR1	The skills taught in TVET programs align well with the needs of your industry					
8		PDR2	TVET courses are updated regularly to incorporate current industry trends and requirements					
B	**Stakeholder Engagement (SE)**							
9	Learners	SEL1	TVET programs actively seek feedback from learners to enhance their training offerings					
10		SEL2	Learners have adequate representation in decisions that affect their training experience					
11	Enterprise	SEE1	Your company collaborates with TVET institutions to influence curriculum and training standards.					

SECTION TWO B: LIKERT SCALE

Likert Scale Questionnaire for Enterprise								
QN	Varriables	Codes	Descriptions	Agreement Scale				
				SD	D	U	A	SA
				1	2	3	4	5
B	**Stakeholder Engagement (SE)**							
12	Enterprise	SEE2	There are internship or apprenticeship opportunities provided by TVET programs in partnership with your company					
13	Public and Private Institution	SEI1	Public and private institutions contribute effectively to the development of TVET frameworks.					
14		SEI2	The partnership between TVET programs and the private sector helps to improve training quality					
15	Government Agency	SEGA1	Government policies support the effectiveness of TVET programs in meeting employment needs					
16		SEGA2	Government assessments ensure that TVET programs maintain high educational standards					
C	**Solid Foundations (SF)**							
17	Vision and Strategic Framework	SFVS1	TVET programs have a clear vision that aligns with workforce demands.					
18		SFVF2	The strategic framework of TVET institutions is communicated effectively to stakeholders, including employers.					
19	Governance Arrangements	SFGA1	The governance of TVET institutions promotes transparency and accountability in operations.					
20		SFGA2	Stakeholders (including companies) are involved in governance decisions affecting TVET programs.					
21	Funding and Expenditures	SFFE1	Funding provided to TVET programs is adequate to support quality training and resources.					
22		SFFE2	Resources allocated to TVET programs are utilized efficiently to enhance training outcomes.					

SECTION TWO C: LIKERT SCALE

Likert Scale Questionnaire for Enterprise								
QN	Varriables	Codes	Descriptions	Agreement Scale				
				SD	D	U	A	SA
				1	2	3	4	5
D	Graduate Employability. (GE)							
23	Technical Skill	GET1	The youth hired from TVET institutions possess the technical skills required for their roles.					
24		GET2	The technical training provided by TVET institutions is relevant to the current industry. needs:					
25		GET3	I believe that technical skills are crucial for the employability of youth in my industry					
26	Soft Skill	GES1	The youth I employ demonstrate strong soft skills (e.g., communication, teamwork, problem-solving).					
27		GES2	Soft skills training is adequately emphasized in TVET programs.					
28		GES3	The presence of soft skills in youth positively impacts their performance in our company.					
29	Life Learning Skills	GEL1	Youth from TVET institutions are adaptable and can learn new skills quickly					
30		GEL2	TVET programs adequately prepare youth to handle workplace challenges and changes					
31		GEL3	Life learning skills contribute significantly to the employability of youth in our industry					
32	Entrepreneurship Skills	GEE1	Youth from TVET institutions demonstrate entrepreneurial thinking and initiative					
33		GEE2	The entrepreneurship training provided in TVET programs aligns with industry needs					
34		GEE3	Supporting entrepreneurial skills among youth can enhance their employability and contribute to our industry's growth					

SECTION TWO D: LIKERT SCALE

Likert Scale Questionnaire for Enterprise									
QN	**Varriables**	**Codes**	**Descriptions**	**Agreement Scale**					
				SD	**D**	**U**	**A**	**SA**
				1	**2**	**3**	**4**	**5**
35	Entrepreneurship Skills	GEE4	The combined impact of technical skills, soft skills, life learning skills, and entrepreneurship skills significantly influences youth employability in your industry					
SECTION THREE: OPENDED QUESTIONS									
Please answer each question as fully and as thoughtfully as you can.									
1	What specific technical skills do you feel are lacking in youth graduates from TVET institutions?								
2	Please provide specific examples of how soft skills have affected the performance of your youth employees.								
3	What specific improvements do you believe are necessary within the TVET framework to enhance employability outcomes?								
4	In your experience, what life learning skills are most valuable for youth in the workplace?								
5	What types of entrepreneurial skills do you believe are essential for success in your industry?								

APPENDIX 3: TVET STAFF AND GOVERNMENT OFFICIAL'S RESEARCH QUESSIONNAIRE

Instructions

The questionnaire titled "Technical and Vocational Education and Training (TVET) influences employability in South Sudan" Your responses will significantly contribute to the academic research on employability in the region. Ther are Three sections. The **symbol** ○ indicates that you may select only **ONE option.** This survey uses a Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), to gauge your opinions on various statements. Please indicate your level of agreement with each statement by ticking the appropriate box on a scale from **(SD = Strongly Disagree, Disagree, Undecided, Agree and SA = Strongly Agree).** For **open ended question**, please answer each question as fully and as thoughtfully as you can.

SECTION ONE: DEMOGRAPHICS INFORMATION

1. **Gender**
   - Male
   - Female
2. **Position of Respondents**
   - Government official
   - TVET Consultant
   - TVET Tutors/Principals
3. **Level Education**
   - Completed secondary school
   - Completed TVET program
   - Completed University Degree
   - Completed Primary
   - Certificates
4. **Years of Experience in TVET:**
   - Less than 30
   - 30-40
   - 40-50
   - Above 50
5. **Location**
   - Juba
   - Yei
   - Aweil

SECTION TWO A: LIKERT SCALE

Likert Scale Questionnaire for Government official, Principle and TVET staffs								
QN	Varriables	Codes	Descriptions	Agreement Scale				
				SD	D	U	A	SA
				1	2	3	4	5
A	**Performances Dimensions (PD)**							
1	Access	PDA1	The TVET program is easily accessible to all prospective learners in the Country.					
2		PDA2	There are sufficient facilities and resources for students to access the necessary training.					
3		PDA3	The current student enrollment rate meets the institution's expectation or capacity.					
4		PDA4	The student's graduation rate meets the institution's objectives.					
5	Equity	PDE1	The TVET program ensures equal opportunities for all demographics (e.g., gender, age, socio-economic status).					
6		PDE2	Support services are available for underrepresented groups to succeed in the TVET program					
7	Quality	PDQ1	The curriculum provided in the TVET program meets industry standards and needs					
8		PDQ2	Trainers and instructors in the TVET program are highly qualified and experienced					
9	Relevance	PDR1	The skills and knowledge gained from the TVET program are relevant to current labor market demands.					
10		PDR2	The TVET program incorporates feedback from industries to stay relevant in its offerings					
B	**Stakeholder Engagement (SE)**							
11	Learners	SEL1	Learner feedback is actively sought and integrated into the TVET program development.					
12		SEL2	There are platforms for learners to voice their concerns and suggest improvements.					
13	Enterprise	SEE1	Industry partnerships exist to provide internship and job placement opportunities for TVET graduates.					

SECTION TWO B: LIKERT SCALE

Likert Scale Questionnaire for Government official, Principle and TVET staffs								
QN	**Varriables**	**Codes**	**Descriptions**	**Agreement Scale**				
				SD	**D**	**U**	**A**	**SA**
				1	**2**	**3**	**4**	**5**
B	**Stakeholder Engagement (SE)**							
14	Enterprise	SEE2	Local enterprises are actively involved in shaping the curriculum of the TVET programs.					
15	Public and Private Institution	SEI1	There is effective collaboration between public and private institutions to enhance TVET offerings.					
16		SEI2	Private institutions are adequately supported in their contributions to the TVET sector.					
17	Government Agency	SEGA1	Government policies effectively support TVET programs and initiatives for better employability outcomes.					
18		SEGA2	Regular assessments from government agencies ensure the relevance and effectiveness of TVET programs.					
C	**Solid Foundations (SF)**							
19	Vision and Strategic Framework	SFVS1	The TVET program has a clear vision that aligns with national employment strategies.					
20		SFVF2	The strategic framework of the TVET institution is effectively communicated to all stakeholders.					
21	Governance Arrangements	SFGA1	The governing body overseeing the TVET program is transparent and accountable in its operations.					
22		SFGA2	Stakeholders are adequately represented in the governance of the TVET program.					
23	Funding and Expenditures	SFFE1	The TVET program receives sufficient funding to support its objectives and initiatives.					
24		SFFE2	Funding is allocated effectively to key areas that enhance employability outcomes.					

SECTION TWO C: LIKERT SCALE

Likert Scale Questionnaire for Government official, Principle and TVET staffs								
QN	Varriables	Codes	Descriptions	Agreement Scale				
				SD	D	U	A	SA
				1	2	3	4	5
D	Graduate Employability (GE)							
25	Technical Skill	GET1	The technical skills taught in our TVET programs align with current industry standards					
26		GET2	Our TVET curriculum is updated regularly to include emerging technologies and practices:					
27		GET3	Graduates from our TVET programs possess the technical skills necessary for entry-level positions					
28	Soft Skill	GES1	Our programs emphasize the development of soft skills (such as communication, teamwork, and problem-solving) effectively					
29		GES2	Soft skills training is integrated into our technical curriculum					
30		GES3	The development of soft skills significantly enhances the employability of our graduates					
31	Life Learning Skills	GEL1	Our TVET programs effectively prepare students for lifelong learning and adaptability in the workplace					
32		GEL2	Graduates demonstrate the ability to learn new skills independently after leaving our programs:					
33		GEL3	Life learning skills acquired through our programs are important for long-term career success					
34	Entrepreneurship Skills	GEE1	Our TVET programs include training on entrepreneurship and business management skills:					
35		GEE2	The entrepreneurship skills taught in our programs encourage students to pursue self-employment and innovation					

SECTION TWO D: LIKERT SCALE

Likert Scale Questionnaire for Government official, Principle and TVET staffs								
QN	**Varriables**	**Codes**	**Descriptions**	**Agreement Scale**				
				SD	**D**	**U**	**A**	**SA**
				1	**2**	**3**	**4**	**5**
D	**Graduate Employability (GE)**							
36	Entrepreneurship Skills	GEE3	Graduates often express interest in starting their own businesses after completing our programs					
37		GEE4	Do you believe that the integration of technical skills, soft skills, life learning skills, and entrepreneurship skills significantly influences the employability of youth trained in TVET?					

SECTION THREE: OPENDED QUESTIONS	
Please answer each question as fully and as thoughtfully as you can	
1	What additional factors do you believe are important for improving TVET programs and youth employability?
2	Provide an example of how stakeholder engagement has impacted your experience in the TVET program?
3	What challenges do you perceive in the current TVET framework that hinder employability?

APPENDIX 4: LEARNER'S RESEARCH QUESSIONNAIRE

Instructions

The questionnaire titled "Technical and Vocational Education and Training (TVET) influences employability in South Sudan" Your responses will significantly contribute to the academic research on employability in the region. Ther are Three sections. The symbol ○ indicates that you may select only ONE option. This survey uses a Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), to gauge your opinions on various statements. Please indicate your level of agreement with each statement by ticking the appropriate box on a scale from (SD = Strongly Disagree, Disagree, Undecided, Agree and SA = Strongly Agree). For open ended question, please answer each question as fully and as thoughtfully as you can.

SECTION ONE: DEMOGRAPHICS INFORMATION

1. **Gender**
   - Male
   - Female
2. **Role of Respondents**
   - TVET Graduates
   - TVET Current Students
3. **Age (Years)**
   - 15-20
   - 20-30
   - 30-40
   - Above 40
4. **Location**
   - Juba
   - Yei
   - Aweil

SECTION TWO A: LIKERT SCALE

Likert Scale Questionnaire for Learners								
QN	**Varriables**	**Codes**	**Descriptions**	**Agreement Scale**				
				SD	**D**	**U**	**A**	**SA**
				1	**2**	**3**	**4**	**5**
Performances Dimensions (PD)								
1	Access	PDA1	I have easy access to the TVET Institute (School).					
2		PDA2	I have easy access to the study materials for he TVET Programs					
3	Equity	PDE1	Everyone can access TVET programs equally, no matter their gender, socioeconomic status or background.					
4		PDE2	The enrollment process of TVET programs is free from discrimination or bias.					
5	Quality	PDQ1	The facilities and surrounding of my TVET school are well-maintained and secure.					
6		PDQ2	I receive hands on training (practical) for at least 50% of my courses.					
7		PDQ3	My TVET school is well-equipped with ample facilities, computers and resources to support effective learning					
8	Relevance	PDR1	I can intern in my fields of study with a company.					
9		PDR2	The skills and knowledge I gained from TVET program are relevant to the current job market					
Stakeholder Engagement (SE)								
10	Learners	SEL1	The TVET Institution/school invite industry professionals to engage with us					
11		SEL2	Occasionally, we go on trips to industry sites to learn directly from professionals.					
12		SEL3	The school regularly seek our feedback.					

SECTION TWO B: LIKERT SCALE

Likert Scale Questionnaire for Learners								
QN	Varriables	Codes	Descriptions	Agreement Scale				
				SD	D	U	A	SA
				1	2	3	4	5
Stakeholder Engagement (SE)								
13	Enterprise	SEE1	During my internship, the company staffs help me learn from them.					
14	Public and Private Institution	SEI1	We collaborate with other students from other Institutes/schools in various curriculum activities.					
15	Government Agency	SEGA1	We have motivational speakers from the Ministry of Education and universities visit us (students)					
Graduate Employability. (GE)								
16	Technical Skill	GET1	I have received adequate hands-on training in my field of study					
17		GET2	I am proficient in using tools and technology relevant to my profession.					
18		GET3	I can apply my technical skills effectively in real-world scenarios					
19		GET4	I regularly update my technical skills through workshops or training sessions.					
20	Soft Skill	GES1	1. I communicate effectively with others (both verbally and in writing).					
21		GES2	I work well in team settings and collaborate with peers.					
22		GES3	I can manage my time efficiently to meet deadlines.					
23		GES4	I am adaptable and can handle change in the workplace.					

SECTION TWO C: LIKERT SCALE

Likert Scale Questionnaire for Learners								
QN	**Varriables**	**Codes**	**Descriptions**	**Agreement Scale**				
				SD	**D**	**U**	**A**	**SA**
				1	**2**	**3**	**4**	**5**
Graduate Employability. (GE)								
24	Life Learning Skills	GEL1	I continuously seek knowledge and personal growth opportunities.					
25		GEL2	I can reflect on my experiences to learn and improve.					
26		GEL3	I can set personal and professional goals and work towards achieving them.					
27		GEL4	I am proactive in seeking feedback from others to enhance my skills.					
28	Entrepreneurship Skills	GEE1	I have a clear understanding of how to start and run a business.					
29		GEE2	I can identify business opportunities within my community.					
30		GEE3	I am comfortable taking calculated risks in a business context.					
31		GEE4	I possess financial management skills relevant to entrepreneurship					
SECTION THREE: OPENDED QUESTIONS								
Please answer each question as fully and as thoughtfully as you can								
1	Please provide an example of how the skills acquired from your TVET training have impacted your job search or employment opportunities?							
2	What barriers/challenges, if any, have you faced during your studies?							