STRATEGIES OF ENHANCEMENT OF PUBLIC PRIVATE PARTNERSHIP AND PERFORMANCE OF PUBLIC TECHNICAL VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS IN SOUTH RIFT REGION, KENYA

BY

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS OF EDUCATION DEGREE IN TECHNOLOGY EDUCATION, MECHANICAL ENGINEERING OPTION, DEPARTMENT OF TECHNOLOGY EDUCATION

MOI UNIVERSITY

2025

DECLARATION

Declaration by Candidate

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DEDICATION

I dedicate this work to my beloved wife and dear son Jamil and daughter Latifa for their love.

ACKNOWLEDGEMENT

I am grateful to all who through their direct and indirect contribution have made the completion of this thesis possible. I would like to thank my supervisors: Dr. Keter Julius & Dr. Murgor Titus for their continued support to see to it that I have a viable and researchable problem. My classmates have also been useful in sharing useful insights in relation to the research topic. In addition, they have been a source of support. Finally, my family who remain a source of encouragement in my life.

LIST OF ABBREVIATIONS AND ACRONYMS

EFA: Education For All

GDP: Gross Domestic Product

GTZ: German Technical Cooperation

MoE: Ministry of Education

NGO: Non-Governmental Organisation

PPE: Post-Primary Education

PPPs: Public Private Partnerships

SDGs: Sustainable Development Goals

SSACs: Sectors Skills Advisory Committees

TVET: Technical Vocational Education and Training

VET: Vocational Education and Training

ABSTRACT

Technical Vocational Educational Training (TVET) sector remains a cornerstone for social-economy development and a driver for the attainment of the Sustainable Development Goals (SDGs). Therefore, promoting the performance of TVET institutions through their partnership with industry to form learning partnerships is inevitable. In spite of this, companies across sectors are struggling to find suitable candidates for job vacancies because the TVET courses offered at various training institutions often do not meet the requirements of the private sector. However, there are limited studies in the Kenyan context focusing on the impact of public private partnership practices on the performance of TVET institutions. In this regard the current study has been designed to investigate the impact of strategies of enhancement of public private partnership on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya. In this regard, the specific objectives of the study were to; find out the impact of partnership in infrastructure provision on performance of public Technical Vocational Education and Training Institutions **,** assess the impact of partnership in curriculum development on performance of public Technical Vocational Education and Training Institutions, analyse the impact of partnership in financing on performance of public Technical Vocational Education and Training Institutions, determine the impact of partnership in training on performance of public Technical Vocational Education and Training Institutions and assess the impact of partnership in staff development on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya. This study relied on resource-based view and stake holders' theory. In a bid to effectively achieve this, the study adopted an Explanatory Sequential research *design* based on samples drawn from across the TVET institutions in South Rift Region which have public private partnership in their respective institutions. The target population was 470 trainers who included trainers of mechanical engineering departments, electrical engineering departments, building departments, management representative of TVET institutions in South rift region. Cluster, stratified random and sampling simple random technique was used. A sample size of 214 was drawn from a total population of 470 trainers. Data was collected by use of interview schedules and questionnaires from the respondents and analysed by use of both inferential statistics e.g., multiple regression, spearman's correlation and descriptive statistics e.g., frequencies, standard deviation, means using SPSS version 25. From the findings, all the four predictors (Infrastructure, Curriculum development, Practical training and Staff development) jointly explained 72.4 per cent variation on Performance of public Technical Vocational Education and Training Institutions From the regression coefficient β values for Infrastructure (0.206), Curriculum development (0.268), Practical training (0.151) and Staff development (0.178) were positive. The positive β values indicate the direction of relationship between predictors and outcome. In the qualitative analysis of interviews, the findings showed that the public TVET institutions adopted private public partnership to ensure performance of public TVET institutions. The study therefore concludes that all the PPPs approaches under study positively and significantly affect performance of public TVET institutions. The study therefore recommends Therefore, there is need for strengthening private public partnership approaches to improve the performance of public TVET institutions.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Globally, Technical Vocational Educational and Training (TVET) sector remains a cornerstone for social-economy development and a driver for the attainment of the Sustainable Development Goals (SDGs). Therefore, promoting the performance of TVET institutions through their Link with industry to form learning partnerships is inevitable. Remington (2018) notes that through public private partnership in TVET management, the incessant skills shortage of industry demand in national or regional labor market can be significantly addressed. Thus, to make vocational education more relevant for industry needs, both education providers and private businesses have to systematically exchange information on the development of local labour markets including future human resource and competency demands[CITATION www132 \l 1033]. In spite of this, companies across sectors are struggling to find suitable candidates for job vacancies because the TVET courses offered at various training institutions often do not meet the requirements of the private sector [CITATION Sam17 \l 1033]. This is occasionned by the inadequate public private partnership amongst TVET institutions which has resulted in TVET offering curriculum that is not relevant to labour market requirements [CITATION OEC19 \l 1033].

Performance of TVET institutions refers to the extent to which these institutions provide quality technical and vocational education that meets national skills development needs and industry demands[CITATION Jam232 \l 1033]. According to Okolie, Igbo, and Eze (2021) the performance of TVET institutions refers to the degree to which such institutions fulfill their mandate of producing skilled,

competent, and employable graduates through efficient management of resources and effective engagement with industry and community stakeholders. Thus, the improvement of performance of TVET institutions remains critical in any economy owing to their contribution to economic dynamism by tapping the resources of people as well as enterprises. Thus, the study focused on the extent to which the public TVET institutions are able to produce skilled, competent, and employable graduates. This is further justified by the growing need for a more competent and competitive workforce, as well as the costs connected with the provision of technical vocational education. Therefore decision-makers in TVET should continuously compare the success of newly devised curricula to older well-established TVET programs besides the emerging skill requirements by the private and private sector (Liu & Clayton, 2016). Performance metrics for TVET includes the alignment of high-quality TVET programs with labor market needs to equip students with 21st-century skills and prepare them employment in high-growth industry sectors, stronger collaborations private sector, improving academic outcomes among the performance metrics in TVET[CITATION Zia21 \l 1033]. A greater emphasis on innovation supported by systemic reform of state policies and practices to support TVET implementation of effective practices at the local level.

However, there is a gap between policy rhetoric and classroom reality (Atai & Mazlum, 2013). Thus, a hue and cry about the poor link between vocational, general education and labor market an index of poor performance. Poor performance of TVET is reflected in terms of Skills shortages occasioning recruitment difficulties and skills gaps among existing workers (Navy & Siem, 2017). The problem is further precipitated by the skills gap between TVET graduates and industry needs. Therefore, strengthening the partnership between TVET institutions and private sector is one of

the solutions to minimize the skills gap and reengineer the performance of TVET institutions. Many TVET institutions have established partnerships with the industry because TVET is too expensive for any Government to provide by itself (Widiastuti, Saputra, Noviansyah & Trianingsih, 2021). Thus, the key is to give industry incentives to become part of skills development, not just invest their own money but their time as well[CITATION Tom17 \l 1033].

Therefore, establishing public private partnerships especially enterprises with valuable financial and material resources and expertise can assist in expanding and improving the quality of TVET services hence meeting Education for All (EFA) and sustainable development goals (Keter, 2018). The public-private partnership (PPP) is known as the model of partnership between TVET institutions and industries. This helps in the acquisition of competences that are aligned to the requirements of today's and the future labour market and working environments. A public-private partnership (PPP) is a long-term agreement between a private party and a government agency to provide a public asset or service, with the private party assuming major risk and management responsibilities [CITATION Car20 \l 1033]. Both developing and wealthy countries use public-private partnerships (PPPs) in education as a means of increasing the quality, accessibility or cost-effectiveness of their educational systems.

Evidence demonstrates that public-private partnerships (PPPs) in education can improve program efficiency and transparency, improve service delivery, especially to underrepresented communities, allow for faster responses, and overcome public sector limits. This includes not just government-private sector partnerships, but also collaboration with non-governmental organizations to improve education service quality[CITATION www182 \l 1033]. *Public-Private Partnerships (PPP) are taking*

on a central role in TVET in many countries, supplying services which Government either cannot provide or is ineffective at providing itself (Tom & Mary, 2017). PPPs not only improves the building and equipment but also curriculum, learning materials, standards, teacher training and student assessment. Individual employers and educational institutions develop these collaborations through bilateral agreements. Employers may provide financial assistance, technical expertise, paid internships, mentors, machinery and equipment for students to utilize, and occasionally qualified experts to instruct [CITATION Amo16 \l 1033]. According to Manyonge and Kyalo (2020); Widiastuti, Saputra, Noviansyah and Trianingsih (2021) Public-Private Partnerships positively and significantly affects performance of TVET.

Therefore, enhancing the performance of TVET is globally recognized for its role in preparing people for dynamic engagement in occupations of functional value and as an effective source of skilled workforce [CITATION Man20 \l 1033]. In this regard, in many nations, the public private sector's patnership role in financing and providing education services has expanded and broadened in recent years. In Indonesian, GIZ is cooperating with the Indonesian Ministries of Education and Culture, of Industry, and of Manpower in incorporating modern occupational standards into vocational qualifications. Employers have also worked together directly with schools to help shape vocational training courses that more closely match their needs [CITATION Ste173 \l 1033]. Career academies in Brazil and the United States, as well as the dual TVET system in Germany, the Netherlands, and Hungary, are examples of programs that combine multi-sectoral initiatives to improve worker skill development procedures on a small scale[CITATION Amo16 \l 1033]. The shortage of skilled people in Thailand is a serious issue that has recently been addressed by businesses and government agencies through PPP initiatives[CITATION Nap21 \l 1033]. This

echoes the essence of demand driven orientation of TVET programs and training operations in consonance with the industrial needs. Thus, the place of public private partnership is a cornerstone for re-engineering TVET to bridge the gap between industrial demand and skill shortage.

According to Bonfim, Segatto and Goncalves (2018) a conceptual link between PPP and African economic progress by stating that in a knowledge economy, PPP can assist economies keep up with or catch up with more technologically sophisticated nations. Despite this TVET in Africa remains a seasoned victim of material and infrastructural inadequacies occasioned by low funding from governments compromising on their performance. In South Africa, the TVET college sector suffers from inadequate partnership with the labour market. Therefore, the lack of partnership between TVET institutions and the labour market, results in TVET offering curriculum that is not relevant to labour market requirements (OECD 2019). Besides, reports of poor infrastructure, high failure rates and incoherence in the qualifications of lecturers plaguing TVET college sector in South Africa[CITATION Ali22 \l 1033].

In Nigeria what students are learning in the present system are essentially theoretical due to lack of tools and equipment, workshops/laboratory buildings and motivated teachers invoking the urgency of public private partnership in the TVET sector (Saleh, Mahmoud & Azarema, 2020). The poor performance of TVET in Nigeria is further aggravated by the prevailing social values and negative perception of TVET by Society. A total students of secondary school programmes less than 5% have enrolled in TVET countries such as Mauritania (4%), Uganda (4%), Niger, Ethiopia, Ghana, Guinea-Bissau, Zambia, Chad, Eritrea, Gambia, Kenya, Lesotho, Sao-tome,

Senegal and Sudan, 1% each an index of poor performance of TVET[CITATION Ovi18 \l 1033].

Despite these, national governments are seeking for close alliances of collaboration with the private sector, on macro and micro level, where possible to scale up the performance of TVET institutions. At the same time, national and regional public financing for education, including TVET, is dropping on a macro level for policy and planning purposes and on a micro level for public VTC management and TVET programs[CITATION Zie18 \l 1033]. This effectively eulogizes the position of PPPs in enhancing the performance of TVET. However, the way TVET is organised and delivered, and its importance in the overall education system, varies substantially between countries.

Manyonge and Kyalo (2020) studied the effect of public-private partnerships on revamping Technical Vocational Education and Training in Kenya: a case of Kenya Association of Manufacturers (KAM) and Gesellschaft Fur Internationale Zusammenarbeit (GIZ) partnership. The study concluded that Public-Private Partnerships positively and significantly revamps TVET in Kenya. Muthee (2019) studied determinants of partnership practices and performance of selected Technical Vocational and Training Education institutions in Nairobi City County, Kenya. However, there are limited studies in the Kenyan context focusing on the impact of public private partnership practices on the performance of TVET institutions in South Rift Kenya which provided a gap for the current study.

1.2 Statement of the Problem

TVET remains the cornerstone of overcoming extreme poverty related to employment and self-employment by matching the demands of a dynamically changing economy.

This affirms that TVET not only provide simply technical and occupational skills but broadly defined competencies that serve as the foundation for rewarding careers and social esteem. In this regard there is need for devoting more attention to upgrading the quality and effectiveness of vocational education and training[CITATION Rem18 \l 1033]. However, Manyonge and Kyalo (2020) notes that any attempt by the Kenya Government to increase budgetary allocations towards the education sector would generate greater imbalance in the development of the country's social economy. Thus, policymakers have eulogized the need for public private partnership in TVET training to provide expected skills for integration into the labor market. This intends to gear TVET from a supply-driven orientation to a demand-driven orientation through adopting a PPP approach[CITATION Ram201 \l 1033].

In this regard the Kenyan government and the private sector are collaborating to ensure that the curriculum developed by Sectors Skills Advisory Committees (SSACs) is aligned to the competencies required for national development[CITATION www183 \l 1033].

Despite the many changes introduced, TVET continues to face a myriad of challenges compromising on its performance. The education sector in Kenya faces many challenges financial, physical and human resources. Besides, the present TVET system doesn't effectively prepare graduates to respond to employers' expectations by adopting to the radically changing needs of the labour market[CITATION www206 \l 1033]. Despite these challenges the government has not fully embraced Public-Private Partnership (PPP) in education[CITATION Man20 \l 1033]. If this trend is allowed to continue then the realization of Africa We Want Agenda 2063 aspirations through technical and vocational education and training (TVET) would be a mirage.

Therefore, ensuring commitment from the public and private sector in investing in TVET remains Key. However, there are limited studies in the Kenyan context focusing on the impact of public private partnership practices on the performance of TVET institutions in South Rift Kenya providing a gap for the current study.

1.3 Purpose of the Study

The purpose of this study is to examine strategies for enhancing public–private partnerships (PPPs) and how such strategies impact on the performance of public Technical and Vocational Education and Training (TVET) institutions in the South Rift Region of Kenya. Specifically, the study seeks to identify effective collaboration mechanisms between public TVET institutions and private sector actors that can strengthen institutional capacity, improve training relevance, and increase graduate employability heightened performance of TVET institutions in the South Rift Region of Kenya.

1.3.1 Specific Objectives of the study

The study was guided by the following specific objectives

- **i.** To determine the impact of partnership in infrastructure provision on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya
- **ii.** To assess the impact of partnership in curriculum development on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya.
- **iii.** To determine the impact of partnership in practical training on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya

iv. To assess the impact of partnership in staff development on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya.

1.3.2 Research Questions

The following research questions guided the study.

1. How does partnership in infrastructure provision impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?
2. How does partnership in curriculum development impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?
3. How does partnership in practical training impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?
4. How does partnership in staff development impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?

1.4 Significance of Study

The findings of this investigation result in a number of advantages. First and foremost, the Ministry of Education (MOE) and, specifically, the Directorate of Technical Education (DTE), may make use of the findings to create policies that support public private partnership to enhance the performance of TVET institutions. In addition, the data may be used by the DTE to create policies that improve the quality and relevance of education to meet the needs of the private sector. Besides, the

study's findings are expected to inspire further research in the areas of public private partnership aspects and performance TVET institution which is crucial in meeting the growing demand for high-quality post-secondary education and training. Finally, due to the paucity of studies on this subject, the findings of the study would provide literature for scholars and practitioners in TVET on the conceptual link between public private partnership and performance of public TVET.

1.5 Scope of the Study

The study focused on the impact of public private partnership on performance of public Technical Vocational Education and Training Institutions in in South Rift Region, Kenya. The study specifically focused on infrastructure, practical training, staff development and curriculum development as independent variables and performance of TVET institutions as dependent variable. The study used a descriptive survey design and quantitative data. The main reason for this choice is that public TVET institutions in South Rift Region is because it portrays the typical characteristics of TVET institutions in Kenya, which consist of National polytechnic, Institute of technology and technical training institutions and thus the findings of the study can be generalized to all TVET institutions. The study was undertaken in six months amongst 10 public TVET institutions that have public private partnership in in South Rift Region. The study was be conducted between Jan 2023-December 2023.

1.6 Assumptions of the study

This study was guided by several assumptions. It was assumed that all public Technical and Vocational Education and Training (TVET) institutions in the South Rift Region have established operational frameworks for collaboration with private sector partners and that such partnerships influence key areas including infrastructure

development, practical training, staff capacity building, and curriculum design. The study further assumed that both public and private actors understand their respective roles and share a common goal of enhancing institutional performance through effective partnership initiatives.

It was also assumed that government policies regulating TVET operations and public–private collaboration are supportive, consistent, and actively enforced, thereby providing an enabling environment for the success of partnership strategies. Additionally, it was presumed that institutional leaders are committed to implementing PPP-related programs and that trainers and administrators are knowledgeable about how collaborative initiatives contribute to improved institutional efficiency, training relevance, and graduate employability. Finally, the study assumed that government policy, as an intervening variable, positively moderates the relationship between PPP enhancement strategies—namely infrastructure, practical training, staff development, and curriculum development—and the overall performance of public TVET institutions in the South Rift Region of Kenya

1.7 Limitations of the Study

This study faced a number of limitations which are likely to generate implications for future study in the field. *The limitations of the study are those characteristics of design or methodology that impact or influence the application or interpretation of the results of your study* (Dong, Chang, Wang & Yan, 2017). *They are constraints to external validity, practical applications and usefulness of the findings as applicable to initial design and methodology preferences.*

The respondents may be busy because of workload in their respective institution, and this may slow the collection of data and in part its accuracy. However, the researcher gave out a structured questionnaire to the respondents while at the same time add

more time for the respondents to fill up the questionnaires and then collect them at a later date. Some of the respondents may be new employees in the organization and may not be aware of public private partnership in public TVET institutions. To overcome this, the researcher took time to explain the concept Vis a vis the honest responses expected from them. The study also faced the limitation of research generalizability. The study focused only on public TVET institutions thus if the study was conducted in private TVET institutions, the magnitude and direction of the relationship between the study variables might be different. Thus, future research should include the private TVET institutions.

1.8 Theoretical Framework

A theoretical framework is a model of how one theorizes or makes logical sense of the relationships among the several factors that have been identified as important to the problem [CITATION Kiv18 \l 1033]. The study was underpinned by stakeholders theory.

1.8.1 Stake holders' theory

Edward Freeman proposed the stake holder's theory in 1984. (Horisch, Freeman & Schaltegger, 2014). Stakeholders' theory stresses the interconnections that exist between an organization and its different partners (Hitesh, 2020). As per the theory, an organization ought to create value for all partners not simply investors. The management of TVET should adjust the interests of different partners by involving the stakeholders who include the private and the public sector in delivery of the mandate of TVET institutions. The reason of stake holders' theory is that partnerships help the TVET institutions in creating value to its stakeholders. There is need for involvement of stakeholders particularly when it comes to curriculum implementation

to enhance performance of TVET institutions (Msibi, 2021). Thus, partnership of TVET with multiple stakeholders should be geared towards enhancing the performance of TVET. The stakeholder's theory holds that organizations must be considered on the strength of its benefits to its stakeholders (Wright, 2021).

The inclusive stakeholder perspective underscores that when public TVET institutions engage multiple actors such as industry partners contributing facilities and expertise, government bodies enabling policy and resources, and institutional management facilitating staff capacity the synergy produced from these engagements enhances the relevance, efficiency and outcomes of training and hence institutional performance. Empirical studies reveal that stakeholder involvement is strongly and positively correlated with project or institutional performance (Chepkorir & Odhiambo, 2023;Athmani & Muchelule, 2023). Consequently, by applying stakeholder theory to this study, it is assumed that effective stakeholder collaboration via PPP strategies will lead to improved performance of public TVET institutions in the South Rift Region of Kenya—and that government policy acts as an intervening variable which strengthens the stakeholder-engagement ↔ performance link. Notwithstanding, stakeholder's hypothesis has been criticized for *being vacuous and offers an unrealistic view of how organizations operate. Therefore, the TVET institutions should adopt the public private partnership to the interest of their stakeholders which is an index of their performance.*

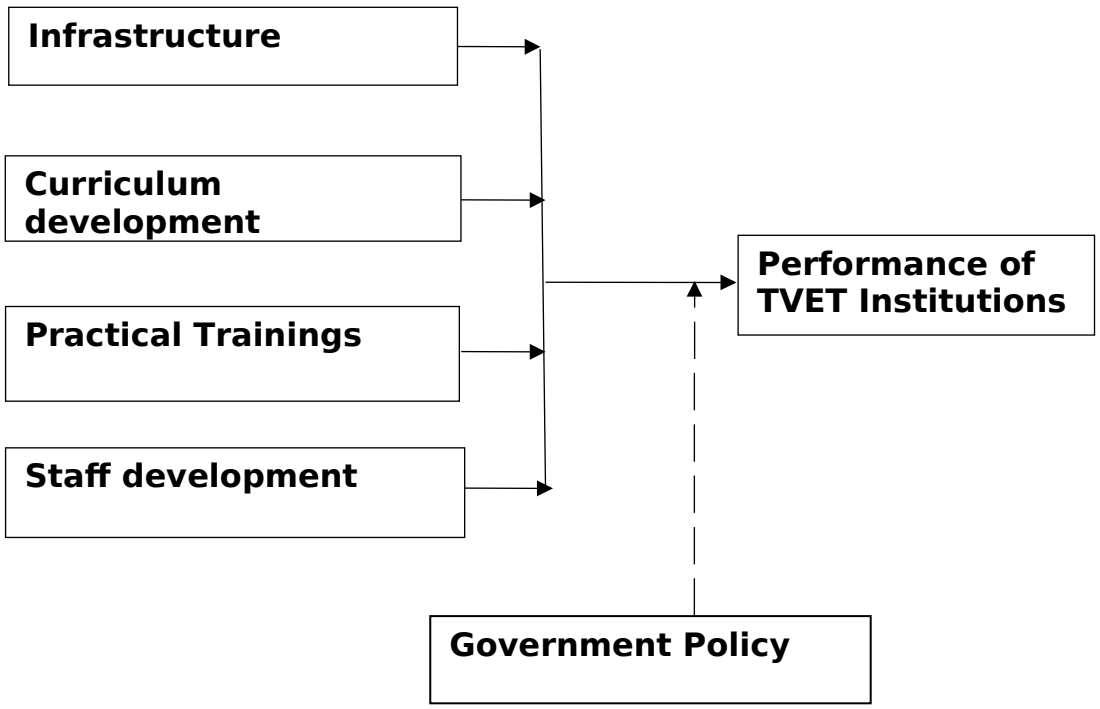
1.9 Conceptual Frame Work

A conceptual framework is a visual representation that helps to illustrate the expected relationship between cause and effect amongst variables (Bravo, Buil, de Chernatony & Martínez, 2017). The study conceptualized the impact of Public Private Partnership practices on the performance of public TVET institutions. The study

focused on the public private partnership as the independent variable and performance of TVET as the dependent variable. The public private practices understudy included infrastructure, practical training, staff development and curriculum development. The provision of infrastructure through public private partnership was studied through relevance and adequacy adopted from Wanjala, Chepkoech, and Khatete, (2020). Curriculum development through private public partnership was measured in terms of Curriculum internal consistency and curriculum external consistency[CITATION Kes99 \l 1033]. Curriculum internal consistency can be achieved through successful application of a systematic approach, whereas curriculum external consistency can be realized by the adoption of a relational approach (Kessels, 1999; Kessels & Plomp, 1999). Both types of consistency form an integral part of the curriculum quality and greatly contribute to effective curriculum implementation as noted above. Practical training through public private partnership was studied in terms of industrial attachment, industrial visits and practicals. The study assessed staff development based on dimension of teachers' professional development the outcomes as pedagogical competence, diadic competence and professional competence according to [CITATION Dan18 \l 1033]. Performance of TVET was assessed interms of enrolment Rates, completion rates, relevance of skills and research and Innovation Output.

Public Private Partnership **Performance of TVET**

INDEPENDENT VARIABLES **DEPENDENT VARIABLE**



INTERVENING VARIABLE

Figure 1.1: Conceptual Framework

1.10 Operational Definition of Terms

Curriculum development: a multi-step process for developing and upgrading a course offered by TVET institutions

Financing: provision of money or credit for facilitating TVET activities

Infrastructure: basic physical and organizational structures and facilities needed for the operation of TVET activities

Performance of TVET institutions: ability of the TVET institutions to improve academic outcomes in line with the labour market demands.

Public private partnership: long term agreement between public TVET institutions and industries within a policy framework which helps in the acquisition of competences that are aligned to the requirements of today's and the future labour market and working environments

Staff development: improvement of staff knowledge, skills, and competencies in order to improve individual and TVET institutions effectiveness and efficiency

Practical Training: the process of imparting any skills, knowledge, or fitness that relate to useful abilities to improve the trainees capability, capacity, productivity, and performance *in a real working environment*.

1.11 Chapter summary

This chapter gives background of the study, the statement of the problem the purpose of the study, the objectives of the study, research hypothesis, significance of the study, scope of the study, limitations. The assumptions were also indicated followed by the theoretical framework that guides the study. The conceptual framework and operational definition of terms.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter begins by focusing at some TVET systems across the world that have different public private partnership and focuses on findings from research on how public private partnership is done globally. Empirical literature review on the objectives of the study and research gap.

2.2 Public Private Partnership in TVET

Public-private partnerships involve collaboration between a government agency and a private-sector company that can be used to finance, build, and operate projects, such as public transportation networks, parks, and convention centers[CITATION Lam20 \l 1033]. *With the assistance of the private sector's resources and knowledge, the government can purchase and develop public services and/or infrastructure through public-private partnerships (PPPs).* The public-private partnership (PPP) is known as the model of partnership between TVET institutions and industries. Where governments are facing ageing or lack of infrastructure and require more efficient services, a partnership with the private sector can help foster new solutions and bring finance. The private partner participates in designing, completing, implementing, and funding the project, while the public partner focuses on defining and monitoring compliance with the objectives[CITATION Rad19 \l 1033]. Risks are distributed between the public and private partners through a process of negotiation, ideally though not always according to the ability of each to assess, control, and cope with them.

Despite their advantages, public-private partnerships are often criticized for blurring the lines between legitimate public purposes and private for-profit activity, and for perceived exploitation of the public due to self-dealing and rent-seeking that may occur[CITATION Pol18 \l 1033]**.** Nevertheless, establishing Public-Private partnerships with the private sector especially corporations who possess valuable financial and material resources and expertise can assist governments to expand and improve the quality of education services hence meet goals of education for all (EFA) (Agrawal, 2012). Lee (2009) suggests of several ways to strengthen the partnership between TVET institutions and industry: partnerships should be regarded as a supplementary for advanced TVET systems, should focus on a demand-oriented approach, be flexible enough to meet the changing skills demands of the industry and the technological environment, allow the industry to participate in the development and management of TVET to reduce mismatches of skilled workforces, focus on increasing the quality of training, supported by the regulatory and systemic framework and partnerships should go along with a strategic transition from a short-term to a long-term objective.

The TVET partnerships approach should be developed in the condition where TVET institutions and industry work together and undertake joint initiatives based on mutual commitment and shared responsibility to promote formal and non-formal TVET in line with labor market needs and technological changes (Siddiky & Uh, 2020). With the support of ILO prospects, vocational training centres are being equipped with the latest machinery and infrastructure facilities, while staff are being trained to deliver industry-relevant competency-based curricula[CITATION ILO23 \l 1033]. The private sector and general business community's involvement in education is usually limited and associated with philanthropy (Makworo et al. 2013).

2.3 Empirical Review

The empirical review covered the conceptualized relationship of variables under study which included public private partnership approaches as the independent variable performance of public Technical Vocational Education and Training Institutions as the dependent variable. The study focused on public private partnership approaches such as infrastructure, training, staff development and curriculum development and performance of public Technical Vocational Education and Training Institutions

2.3.1 Partnership in infrastructure provision and performance of public Technical Vocational Education and Training Institutions

Getting quality education needs to have well equipped learning institution with sufficient facilities so as to improve education productivity[CITATION Jay21 \l 1033]. Buildings, classrooms, laboratories, and equipment- education infrastructure are crucial elements of learning environments in schools and universities. Ogunsaju and Oyedeji (2012), defined school infrastructures as the school buildings which embrace permanent structures that includes laboratories, classrooms and libraries. There is strong evidence that high-quality infrastructure facilitates better instruction, improves student outcomes, and reduces dropout rates, among other benefits[CITATION Jan17 \l 1033]. The school infrastructures play a significant role in the development of both school performance and students' academic performance. The school physical infrastructures like classrooms, libraries laboratories and staff houses enhance physical learning environment that leads to the provision of technical skills and to develop qualitative and adequacy aspects that are needed in the school setting [CITATION Oje18 \l 1033]. According to Mashala, (2019), school infrastructure makes it possible for learners to study comfortably and improve academic

performance and engagement of students and teachers in the teaching and learning process. However, there are times when, regardless of the infrastructure, students do not perform well (Mgimba & Mwila, 2022).

School facilities require careful planning in its provision, utilization, and maintenance to meet the increasing demand for education and enhance the maximum realization of the target set in the National Policy on Education [CITATION Oje18 \l 1033]. Quality of recent engineering graduates have been declining due mainly, to obsolete and inadequate infrastructure[CITATION Sri13 \l 1033]. Therefore, there is need to continuously revamp the infrastructure in the learning institutions in tune with dynamics of the industry so that the student get knowledge which is in demand and not obsolete. Education funding is required for new capital works, infrastructure development, and payment of salaries to support education activities.

Paul (2015) cited in Assoumpta and Andala., (2020) carried out research which took place in Latin America where his study was to investigate the school infrastructures and education outcomes. The found that school infrastructures like libraries promote learning and enrollment rate but the study didn’t show the impact of school infrastructures on students’ academic performance in classroom setting and competition done at national level. Besides the study didn’t focus on the effect of public private partnership in the provision of infrastructure on the performance of TVET.

Suliah & Arafat, (2019) assessed headmasters ‘strategies to maximize using infrastructure, and teachers' role in improving the quality of learning in elementary schools in Pakistan. The researcher used pure qualitative (descriptive) method. Interviews, observation and document analyses were used as instruments of data collection. The study findings indicated that headmasters used their effort to

maximize the teaching and learning processes in the classrooms, but did not achieve their objective due to an insufficient number of the classrooms; where classes are split by dividing study hours so that some come in the morning and others come in the evening. However, the study was not conducted in TVET institutions in the Kenyan context providing gap for the current study.

Ojeje and Adodo, (2018) investigated school building facility provision in secondary schools in Delta State, Nigeria. It examined the crucial issue in the implementation of educational policies and programs and placed emphasis on the school buildings and the equipment used in the process of teaching and learning. As part of the study, an effort was made to examine the state of available school buildings. A survey of 30 secondary schools selected through stratified and simple random sampling technique was carried out. Data were analyzed using frequency counts and percentages. The findings revealed that most of the schools did not have adequate school buildings to support the educational programme projected. However, the study was not conducted in the Kenyan context but points to the need of public private partnership for the provision of infrastructure.

Assoumpta and Andala, (2020) investigated the relationship between school infrastructure and students' academic performance in twelve years' basic education in Rwanda. The study employed correlation research design and the sample size of 200 people. In this study, school infrastructure was used as independent variable while students' academic performance was used as dependent variable. The study used questionnaire and guided interview as the research instruments. The quantitative findings that were collected from questionnaire, were analyzed by using SPSS software vision 21 and the data collected from guided interview was analyzed by using thematic method. The study also found, that there is a significant low positive

correlation between school infrastructures and students' academic performance in 12YBE in Rwanda as it was proved by Karl Pearson coefficient of correlation (r) was +0.408. The qualitative findings revealed that school infrastructures to be available in 12YBE are like completed classrooms, well equipped libraries and laboratories, adequate playgrounds and school sanitation. However, these infrastructures were experienced to be inadequate in 12YBE in Rwanda. Nevertheless, the studies were not conducted in the context of TVET in Kenya. This is because 12YBE focuses primarily on general basic education, whereas TVET institutions emphasize competency-based, hands-on training that requires specialized workshops, modern equipment, and industrial-standard facilities. The infrastructural needs, funding mechanisms, and operational frameworks of TVET institutions are therefore distinct from those of basic education programs. Moreover, the socio-economic environment, policy orientation, and public–private partnership structures in Kenya differ significantly from those in Rwanda.

Mgimba and Mwila (2022) investigated how infrastructural challenges influence students' academic performance in Tanzania. Specifically, to describe the challenges encountered by school heads on improving school infrastructure for academic performance in rural public secondary schools in Iringa District. The research used a mixed approach and convergent parallel research design. The data was collected through questionnaires, interviews and observation. The analysis for quantitative data was done using descriptive statistics, with the aid of Statistical Package for Social Science (SPSS) version 21, while qualitative data was coded and categories through thematic analysis. The findings of the study revealed that students' performance in rural public secondary schools in Iringa District was unsatisfactory due to inadequate school infrastructures like libraries, laboratories, classes, dormitories, and

instructional materials. This study concluded that school infrastructure is very essential to develop and provide quality education, which leads to growth and excellence. Inadequate infrastructure negatively influences academic performance. However, the study was not conducted in the context of TVET institutions in Kenya. its context and scope differ fundamentally from that of Technical and Vocational Education and Training (TVET) institutions in Kenya. The Iringa study focused on general academic secondary education, whose infrastructural and pedagogical requirements are primarily classroom-based and theory-oriented. In contrast, Kenyan public TVET institutions operate within a competency-based framework that emphasizes hands-on, technical, and industrial skills development, requiring specialized workshops, tools, machinery, and ICT facilities

Wanjala, Chepkoech, and Khatete, (2020) established the state of infrastructures at TVET institutions and how it has impacted on their capacity to produce quality graduates/manpower in line with Kenya's development aspirations. The study was carried out in 10 public TVET institutions. The study examined various infrastructures in terms of their availability and adequacy. The findings on this two were used in correlating with Trainees academic achievement. Correlation research design was used for the study. Ten principals, 100 heads of departments and 800 Trainees were involved in the study. Questionnaires, interview schedule and observation schedule guide were principle instruments for data collection. The findings of the study established that correlation between infrastructure and academic achievement was very significant at 0.725. However, over 80 percent of the institutions lacked ICT infrastructures; workshops, libraries and modern classrooms. From the findings of the study it is concluded that the state of infrastructures at the TVET institutions are negatively impacting on manpower development, and

country's' ability to meet her development aspirations in the Kenya Vision 2030 and the Sustainable Development Goal number four. However the study was not conducted in the South Rift Region.

2.3.2 Partnership in curriculum development and performance of public Technical Vocational Education and Training Institutions

Inadequate collaboration between TVET institutions and industry result in TVET curricula of low quality and relevance to the needs of stakeholders[CITATION Nab15 \l 1033]. However, there are changes in the workplace for the employees, employers and educational institutions, thus the required competences of the workforce are changing increasingly rapidly. Dynamic work-integrated curriculum has the potential for productive outcomes by allowing learners to quickly contextualize the study content within the functional environment of the workplace, and develop field-specific and self-regulated learning competences through work-integrated learning study process[CITATION Kus181 \l 1033]. Besides partnering to create programs, cooperation is needed to establish new teaching paradigms for developing employees' competences for manufacturing environments or future skills that don't exist yet, as traditional teaching methods only have limited effects [CITATION Abe15 \l 1033]. There is a need to improve the quality and relevance of education and making education and training more attractive by strengthening work-based learning in collaboration with industry partners. Widiastuti, et al, (2021) partnership in curriculum development enables TVET providers to learn what skills are in demand and to train for jobs that change regularly and allows employers to have input into the curriculum of TVET and often gives them a recruiting tool to attract skilled workers. Thus partnership in curriculum development affects performance of TVET institutions

According to UNESCO., (2020) Modern and effective TVET systems deliver and operate their courses and programs according to occupational standards (OS). Occupational standards specify what a person should know and be able to do in order to effectively carry out the functions of a particular job at the workplace. They are in general defined by private sector stakeholders, who know the skills requirements and conditions in the industry. According to Power (2014), there is pressure for TVET institutions to work within collaborative partnerships to develop appropriate curriculum in line with government priorities for change. Studies on the nature of collaboration and partnership in curriculum development have found that the critical success factors include a clear articulation of the aims of each of the stakeholders taking part in the project and convergence of those aims towards a common purpose (Clegg & McNulty, 2002; Foskett, 2005). An essential part of the curriculum development process when working in collaborative partnerships is the development of trust and openness in the working relationship. Samson, (2019) adds that participatory collaboration involving multi-stakeholder engagement generates opportunities for creativity and innovation in curriculum planning, building partnerships between students, teachers, institutions, and communities. Konings, Seidel and van Merrienboer, (2013) suggested that integrating the diverse expertise of multiple stakeholders in the education process can improve the quality of the curricular design process and the learning spaces they generate.

Competency based education and training provides particular challenges due to the nature of collaboration and partnership. Voogt, Pieters, and Handelzalts, (2016) explored what empirical evidence is available about processes that take place when teachers co-design and how these contribute to professional development and curriculum change. Results showed that effects of curriculum design teams, in terms

of learning outcomes for teachers in areas such as (pedagogical) content knowledge and design knowledge and skills, became manifest in the outcomes of the curriculum design process, and in the appreciation by the stakeholders.

According to Nyerere (2009) TVET system in Kenya is characterized by weak curriculum that is not flexible enough to meet the technological changes and diverse needs of different clients, poor instructional methods, outmoded/inadequate training equipment and lack of meaningful work experience and supervision during attachment. As a result, the quality of TVET graduates has continued to decline in recent years to an extent where graduates of TVET experience technology shock when they finally enter the job market partnership between TVET and industry players is beneficial to both parties.

2.3.3 Partnership in practical training and performance of public Technical Vocational Education and Training Institutions

Gaining practical experience makes a huge contribution to the skills development of TVET students[CITATION www184 \l 1033]. *PPPs create opportunities for the students to gain hands on experience at the enterprises and can also provide a pathway to full-time employment after graduation. TVET institutes also benefit as they can make use of the facilities at enterprises for teaching purposes while the enterprises may also provide raw materials with which students can use to fine tune their skills*[CITATION Sid20 \l 1033]. *The outputs of the TVET institutions are the input of the industries. Therefore technical institutions should have closed linkages with the world of work to facilitate support of industry for the enhancement of practical training through placement of trainees on work experience attachment and exchange programs for the instructional staff*[CITATION Sin193 \l 1033].

Therefore, to expedite economic growth, skills should be allocated analogously by the TVET institutions throughout the economy [CITATION McG15 \l 1033]. *Skills are only of value when they are in use, be that in the labor market, academia, self-employment or other leisure activities; skills that are utilized improperly go to waste* (OECD., 2012). Oviawe, (2018) highlighted that repositioning and subsequently improvement of TVET targeted at development of technology and scientific innovations cannot be achieved by government alone but it has to be in collaboration or partnership with private enterprises that have the technical expertise, vocational competencies and financial capability.

Linking TVET with Industries in Bangladesh: Need for Supportive Policies and an Approach to TVET was investigated by [CITATION Sid20 \l 1033]. The study has indicated that the collaboration between TVET institutions and industries, and supportive public policy are necessary in order to link TVET with industries. Supportive public policy involves ensuring industries' participation in designing curriculum and training, updating curriculum and training in response to market needs and changing technology, introducing dual system with strong focus on workplace learning, and public employment service, implementing National Skills Development Policy-2011 and National Skills Data System, and so on. The study has argued that the collaboration between TVET institutions and industries, and supportive public policy to create an enabling environment that would link TVET with industries in Bangladesh. Manyonge and Kyalo, (2020) notes that there should be collaboration between TVET institutions and the workplace during curriculum development to address the needs of the industries.

Singh and Tolessa (2019) established the extent of linkage between TVET and industry for improving employability skill. From the findings the gap is widening

between knowledge generated through training systems of TVET, and the skills demanded by employers in Ethiopia. Thus, the research paper recommends that the industry should provide contemporary skills by training and establish networks with TVET institutions for minimizing the gaps. Oviawe, (2018) adds that sharing of tools and equipment between TVET institutions and industries-aimed at ensuring that learners are abreast with developments in the world of work-is also recommended. However, equipment is installed as part of the loan or grant that financed the original construction of the Technical Institute and the hardware ages without being replaced or updated until it does not represent current industrial practice. The performance standards should enable accurate and straightforward measurement of school quality and efficiency. Particular emphasis should be given not only to quantitative measures such as standardized tests, but also to qualitative ones, such as parent surveys and school inspections (PatrinosH. & Barrera-Osorio, 2009).

2.3.4 Partnership in staff development and performance of public Technical Vocational Education and Training Institutions

The growing demand for an increasingly skilled competitive workforce and the associated demand for change and responsiveness in the provision of technical vocational education and training (TVET) (Liu & Clayton, 2016). Therefore there is need for the TVET institutions to develope there staff continously to be in line with the changes in the industry interms of skills requirement. Chepkoech, (2021) stated that the Trainers abilities, expertise and knowledge must be carefully evaluated, stated and communicated so that their role may be more rightly understood and appreciated in the industry. Robertson (2008) identifies qualities that TVET trainers are required to have; firstly they are supposed to be experts in their professions and their discipline and secondly they are expected to have been practitioners in the field of expertise for

a reasonable duration as a way of gaining of industrial exposure before gaining status of Trainers.

However, Changilwa, Akala and Wambua (2016) in their study titled The Challenges Facing Effective Implementation of Artisan and Craft Courses in Catholic Sponsored Community Colleges in 173 Nairobi, Kenya found out that inadequacy of teaching staff and the teaching and learning resources needed for carrying out practical sessions during teaching of skills was a major obstacle in skill development. This underpins the need for continuous staff development in TVET institutions. In addition, Loveder (2005) noted that a criticism often levelled at technical education teachers and practitioners, especially by employers, is that they lack up-to-date and relevant industry experience or knowledge and that they are sometimes unfamiliar with the range of technological advances and ways of working occurring in modern workplaces

Teachers from public vocational education institutions worldwide have been threatened by a lack of funding, privatization and deregulation, while at the same time being blamed for economic underperformance, shortages of skills and mismatches between skills in vocational education and the labor market [CITATION Sha183 \l 1033]. In this regard Onsomu, Wambugu, and Wamalwa (2009) notes that there is need for involving relevant stakeholders and private sector in the development of a comprehensive national skills training strategy by providing scholarships and other merit awards for staff and students to promote excellence in creativity and innovation in science and technology. Sharipova and Wesseler, (2018) adds that the development of mechanisms for recruitment, and staff development, the promotion of qualified selection mechanisms to assure the selection of suitable candidates, and effective career development

Makinde and Bamiro (2022) assessed the student's experience of service quality of TVET in the Federal Polytechnic Ilaro, Nigeria. From the findings Lecturer's good knowledge, lecturer's is highly ranked in assurance of TVET and support staff fairness, lecturers sincere interest on student and lecturer's teaching capability are highly ranked reliability of TVET. Also, lecturer's adequate capacity, treatment of complaints by student and support staff availability are highly ranked responsiveness of TVET and, polytechnic fair treatment, support staff attention to students and lecturer's support to individual students are highly ranked empathy of TVET in the Federal Polytechnic, Ilaro, Ogun State Nigeria.

In Kenya Njenga (2022) despite TVET teachers perceiving themselves as highly competent, they were found to express a relatively high need for CPD. The need was most strongly expressed by teachers who had received Initial Teacher Education (ITE), which suggested that ITE has a positive influence in sensitising teachers on the need for CPD. New teachers were however found to have a lower perception of competence. Mentorship for new teachers is thus recommended. Accordingly Egessa, (2021) investigated talent Engagement Drivers And Employee Productivity In Technical Vocational Education Training Institutions In Kenya. From the results, the correlation between talent engagement drivers and employee productivity was positive. This implied that there was a statistically significant positive relationship between talent engagement drivers and employee productivity. In this regard development of talent amongst staff in TVET institutions is key for their performance.

2.4 Research Gap

Despite these, national governments are seeking for close alliances of collaboration with the private sector, on macro and micro level, where possible to scale up the performance of TVET institutions. At the same time, national and regional public

financing for education, including TVET, is dropping on a macro level for policy and planning purposes and on a micro level for public VTC management and TVET programs[CITATION Zie18 \l 1033]. This effectively eulogizes the position of PPPs in enhancing the performance of TVET. However, the way TVET is organized and delivered, and its importance in the overall education system, varies substantially between countries. Manyonge and Kyalo (2020) studied the effect of public-private partnerships on revamping Technical Vocational Education and Training in Kenya: a case of Kenya Association of Manufacturers (KAM) and Gesellschaft Fur Internationale Zusammenarbeit (GIZ) partnership. The study concluded that Public-Private Partnerships positively and significantly revamps TVET in Kenya. Muthee (2019) studied determinants of partnership practices and performance of selected Technical Vocational and Training Education institutions in Nairobi City County, Kenya. However there are limited studies in the Kenyan context focusing on the impact of public private partnership practices on the performance of TVET institutions in South Rift Kenya providing a gap for the current study.

While previous studies in Kenya (e.g., Manyonge & Kyalo, 2020; Muthee, 2019) have demonstrated that public–private partnerships contribute positively to the revitalization and performance of TVET institutions, their focus has largely been confined to urban contexts such as Nairobi and specific national-level collaborations. Limited empirical evidence exists on how PPP enhancement strategies—particularly those related to infrastructure, practical training, staff development, and curriculum design—affect the performance of public TVET institutions within the South Rift Region. Moreover, the moderating influence of government policy on the relationship between PPP strategies and institutional performance remains underexplored, creating a contextual and theoretical gap that the current study seeks to address.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This section presents the methodology and modalities in data collection. The chapter includes research design, determination and identification of population sample size, sampling design as well as procedure, tools of data collection, validity and reliability of research tools, sources of data and strategies of analyzing data.

3.2 Research Paradigm

Paradigm has been defined as a set of assumptions about how things work [CITATION Kha205 \l 1033]. Philosophical paradigm is viewed as a cluster of beliefs which dictates for science in a particular discipline what should be studied, how it should be done and how results should be interpreted [CITATION Bry16 \l 1033]. It is the general orientation about the world and the nature of research that the researcher holds, which leads to the researcher embracing either qualitative, quantitative or mixed methods approaches. They consist of philosophical assumptions that guide and direct the thinking and action [CITATION Cre15 \l 1033]. There are four different world views: Post positivism, Constructivism, Advocacy, and Pragmatism.

This study adopted a pragmatic paradigm. According to da Silva, de Oliveira, Araújo, and Dornelas (2018), Pragmatism can be defined as a doctrine that considers things from a practical point of view. Pragmatism preaches that action and practical relevance should be the key points of scientific research. Pragmatism disrupts the assumptions of older approaches based on the philosophy of knowledge, while providing promising new directions for understanding the nature of social research

[CITATION Mor13 \l 1033]. Pragmatism was adopted because it is deterministic of mixed research methods approach and focuses on providing answers to the study's research question. Pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis.

Pragmatism can serve as a philosophical program for social research, regardless of whether that research uses quantitative, qualitative, or mixed methods. As a new paradigm, it replaces the older philosophy of knowledge approach which understands social research in terms of ontology, epistemology, and methodology (Morgan, 2014). Pragmatic research focuses on 'what' and a 'how' of the research problem[CITATION Cre15 \l 1033]. Since the research used quantitative and qualitative approach, this paradigm is deemed appropriate for the study [CITATION Tas10 \l 1033].

3.3 Research Design

A research design is a framework or blueprint for conducting a research. It details the procedures necessary for obtaining the information needed to structure or solve the research problems [CITATION rel15 \l 1033]. According to Kothari and Garg (2014) research design is a plan outlining collection, measurement and analysis that effectively and efficiently enables research operations to be done with ease. The current study employed an explanatory research design. According to Casula, Rangarajan, and Shields, (2021) explanatory sequential research focuses on 'why' questions. In answering the `why' questions, the study would develop explanations. The explanations argue that phenomenon Y (public private partnership) is affected by variable X (performance of public Technical Vocational Education and Training Institutions) and even showed the extent of the effect. Explanatory Sequential Design

is a **t**wo-phase mixed-methods research design where the study begins with quantitative data collection and analysis, followed by qualitative data collection to further explain or expand on the quantitative findings. This design was chosen because it applies closely to the research objectives of the study and is practical in answering the research questions.

3.4 Study area

The study was conducted in selected TVET institutions in South Rift region of Kenya. South Rift region covers the six counties namely: *Samburu, Baringo, Nakuru, Kericho, Bomet and Narok*[CITATION Rec19 \l 1033]. The study focused on TVET institutions in South rift region which have public private partnership in their respective institutions. The main reason for this choice is that public TVET institutions in South Rift region portray typical characteristics of TVET institutions in Kenya, which consist of National polytechnic, Institute of technology and technical training institutions and thus the findings of the study can be generalized to all TVET institutions in Kenya. The region hosts a diverse range of public TVET institutions that serve both urban and rural populations, providing an ideal setting for examining how public–private partnership (PPP) strategies influence institutional performance (Recha, 2019). Additionally, South Rift has experienced rapid socio-economic transformation and industrial expansion, increasing the demand for skilled labor and making collaboration between TVET institutions and industry actors crucial [CITATION Waw211 \l 1033]

3.5 Population of the Study

Population is defined as group from which information is sought. Target population is the entire group a researcher is interested in [CITATION Bra12 \l 1033]. In this study

the target population comprised of trainers of mechanical engineering departments, electrical engineering departments, building departments, management representative of selected TVET institutions in South rift region. The target population was 470 trainers of mechanical electrical building and civil engineering departments and management representatives of all the TVET institutions in South Rift Region, as indicated in Appendix III. In determining the target population, the researcher took into account participants who can best share experiences and thoughts to address research objectives [CITATION Asi173 \l 1033].

3.6 Sample and the sampling techniques

3.6.1 Sample frame

A sampling frame is the source material or device from which a sample is drawn[CITATION Fri16 \l 1033]. It is a list of all those within a population who can be sampled, and may include individuals, households or institutions. *A sampling frame is the set of source materials from which the sample is selected.* For this investigation the sample frame incorporated all trainers of mechanical electrical building and civil engineering departments and management representatives of all the TVET institutions in South Rift Region.

3.6.2 Sampling Techniques

Sampling is the process of selecting units (for example people, organizations) from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen [CITATION Hib12 \l 1033]. Instead of collecting data from the total elements of the population, the study zeroed in on sampling due to its proven cost, efficiency and ability to yield results quicker with high precision [CITATION Gup221 \l 1033]. Study purposively

samples the principles and deputy principles for interviews. This is because these individuals possess strategic and managerial insights into the implementation of Public–Private Partnerships (PPPs) and institutional performance. According to Etikan and Bala (2017), purposive sampling allows the researcher to intentionally target participants who are most knowledgeable about the phenomenon under study.

A multistage sampling technique was used to narrow down to trainers and Heads of departments from each and every TVET institution. A multi-stage sample is one in which sampling is done sequentially across two or more hierarchical levels. Multistage sampling is the probability sampling technique wherein the sampling is carried out in several stages such that the sample size gets reduced at each stage (Sharma, 2023). In the multistage sampling technique, the first level is cluster sampling, where the clusters are formed out of the population, but further, these clusters are sub-divided into smaller targeting groups, i.e. sub-clusters and then the subject from each sub-clusters are chosen randomly.

Cluster random sampling technique was used to select the TVET institutions. Cluster sampling refers to a type of sampling method in which the researcher divides the population into separate groups, called clusters (Sharma., 2017). Cluster sampling is a sampling plan used when mutually homogeneous yet internally heterogeneous groupings are evident in a statistical population [CITATION Cam15 \l 1033]. The population within a cluster should ideally be as homogeneous as possible, but there should be heterogeneity between clusters. Individual TVET institutions represented clusters such that each TVET institutions were proportionately represented depending on the size of its trainers. As noted by Miller and Cameron (2015), cluster sampling is efficient when populations are naturally divided into groups that are internally heterogeneous but externally homogeneous. This ensured that each selected institution

adequately represented the characteristics of the region’s TVET institutions while reducing travel and logistical costs.

Stratified random sampling was used to sample the engineering departments. Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata [CITATION Den171 \l 1033]. In stratified random sampling or stratification, stratas are formed based on members' shared attributes or characteristics. Denscombe (2017) emphasizes that stratified sampling improves the accuracy and precision of results by ensuring that key subgroups (strata) are proportionately represented. Hence, dividing departments into strata based on their training areas ensured that findings reflected the diversity of technical fields across institutions.

Simple random sampling was used to select the respondents to participate in the research study, but after it has been determined how many trainers from each of the TVET institutions participated. Simple random sampling (SRS) is a method of selection of a sample comprising of n number of sampling units out of the population having N number of sampling units such that every sampling unit has an equal chance of being chosen [CITATION Sin13 \l 1033]. The object of this sampling technique is to select groups that display variation on a particular phenomenon. This method ensured that every trainer had an equal and independent chance of being included in the study, minimizing bias and enhancing the generalizability of findings [CITATION Man13 \l 1033]. The approach was appropriate because, after stratification, the population within each stratum was homogeneous, allowing the researcher to randomly select respondents for fair representation.

In summary, the combination of purposive, cluster, stratified, and simple random sampling techniques was justified as it provided both depth and breadth of data, reduced sampling bias, enhanced representativeness, and ensured that information was drawn from all relevant stakeholder categories across the public TVET institutions in the South Rift Region.

3.6.3 Sample size

Sample size determination involves a decision on the elements in each sampling frame that participate in the study while the sample size selection involves strategies used in selecting individual elements from the population. Sample size determination is about establishing the right sample size, which is a function of purpose of the study, population size, level of precision, the level of confidence or risk, and the degree of variability in the attributes being measured [CITATION Gue202 \l 1033]. In this study selection of TVET institutions in South Rift Region was done purposively.

A sample size of 214 was drawn from a total population of 470 trainers to represent the whole population. From the target population of 470 Krejcie and morgan table 1970 in Appendix IV was used to arrive at the sample size. The sample size was distributed proportionally according to Neyman's allocation formula [CITATION Kha192 \l 1033]. The purpose of the method was to maximize survey precision, given a fixed sample size. With Neyman's allocation, the best sample size for cluster h was:

$$n_h = \left(\frac{N_h}{N} \right) n$$

Where,

n_h- The sample size for cluster h,

n - Total sample size,

N_h -The population size for cluster h,

N - The total population

Hence, distribution was as follows; the respondents were selected using simple random sampling.

3.7. Data Collection Instruments

Both questionnaires and interviews schedules were used to collect the primary data. Interviews were used to get qualitative data from the principles and deputy principles while questionnaires were administered to the heads of departments and trainers as the main instrument for collecting quantitative data.

3.7.1.1 Questionnaires

A questionnaire is a research instrument consisting of a series of questions for the purpose of gathering information from respondents (Singh., 2017). A questionnaire is an instrument for collecting quantitative data, which almost always involves asking a given subject to respond to a set of oral or written questions. This study used self-administered questionnaires in data collection because it offers a way of gathering vast amounts of data on any subject. The questionnaires had closed ended questions designed by use of 5-point Likert scale. A 5-point Likert scale *is used to allow the individual to express how much they agree or disagree with a particular statement* [CITATION Dör22 \l 1033]. The questionaire had two sections as indicated in Appendix II. Section A contained inquiries identifying with the demographic information of the respondent. Section B had five sections with items identifying with infrastructure, training, staff development financing and curriculum development and performance of TVET institutions. The items adopted a 5-point Likert Scale of (5 =

Strongly Agree(SA) 4 = Agree (A) 3 = Undecided (UD) 2 = Disagree (D) 1 = Strongly Disagree (SD).

3.7.1.2 Interviews

Interviews are a qualitative research technique which involves asking open-ended questions to converse with respondents and collect elicit data about a subject[CITATION Jac12 \l 1033]. Interviews offered the researcher with a platform to prompt the participants and obtain data in the desired detail. The researcher used unstructured interview prompting the participants responses on infrastructure, practical training, staff development and curriculum development and performance of TVET institutions. The interviews took 15 and 20 minutes with each participant. The interviews helped in collecting qualitative data.

3.7.2 Data Collection Procedure

Data Collection Procedure shows the outline to be followed when administering the research instrument, which in this case are questionnaire and interview schedules. Before data collection, the researcher sought permission from the National Commission for Science, Technology and Innovation (NACOSTI) through the school of Graduate Studies, Moi University as required by law on research undertaken in Kenya. The respective TVET institutions were notified of the intention and purpose of the study. The researcher administered the questionnaires to the respondents for easier clarification and consistency of information obtained. The questionnaire was introduced to the respondents to explain the researcher’s purpose for the survey. There were instructions on how to respond to the questions on the questionnaire. The instructions required the respondents to indicate the extent to which they agree,

disagree, or undecided about the statements of constructs that were used to describe research variables. Undecided was the midpoint.

The questionnaires were administered through “drop and pick later“ method. Follow-ups and reminders were made through telephone calls and personal visits by research assistants. This improved the response rate and increase reliability. This study adopted extrapolation methods, which were based on the assumption that subjects who respond less readily (answering later or as requiring more prodding to answer) are more like non-respondents. The most common type of extrapolation is carried over successive waves of a questionnaire, where “wave” refers to the response generated by a stimulus, e.g., a follow-up postcard.

To ensure data quality and reliability, several quality control measures were implemented during the data collection process. The research instruments were first pre-tested to ascertain clarity, consistency, and validity before the main study [CITATION Kum214 \l 1033]. Comprehensive training sessions were conducted for two research assistants on ethical procedures, accurate administration of questionnaires, and interview etiquette to minimize interviewer bias and enhance uniformity in data gathering [CITATION Cre235 \l 1033]. During fieldwork, continuous supervision and spot checks were conducted to verify completeness and accuracy of responses. Collected data were systematically organized and coded immediately after collection, ensuring proper labeling, sequencing, and secure storage of both hard and soft copies to prevent data loss or tampering [CITATION Lea22 \l 1033]. These quality control procedures ensured that the data were accurate, consistent, and ethically managed throughout the research process, thereby

strengthening the credibility and trustworthiness of the study findings (Bryman, 2021).

3.8 Pilot Study

Pilot testing is a necessary requirement for testing validity and reliability of research instruments using test-re-test method [CITATION Mug12 \l 1033]. The pilot study was done with the aim of detecting possible flaws in measurement procedures and in the operationalization of independent variables, identifying unclear or ambiguous items in the questionnaire and to weed out/restructure unclear statements, determine time limits and clarify instructions. Besides, the pilot study aided in establishing practical problems of the research procedures and to reveal whether the proposed methods/instruments were inappropriate or complicated. Lucas and Donnellan, (2012) reported that a pre-test sample should be between 1% and 10% depending on the sample size. The study used a sample of 214 trainers and HODs for the study which is approximately 10% of the sample size 21 respondents. The pilot testing was done at Eldoret National Polytechnic.

The pilot testing of the research instruments was conducted at Eldoret National Polytechnic because it shares similar characteristics with the target public Technical and Vocational Education and Training (TVET) institutions in the South Rift Region in terms of governance structure, curriculum design, training environment, and student demographics. Furthermore, the institution has well-established public–private partnership initiatives with various industries, reflecting comparable institutional dynamics to those under study. Conducting the pilot test at Eldoret National Polytechnic thus ensured that the instruments were practical, contextually

relevant, and capable of capturing the intended data before full-scale administration in the South Rift Region.

3.8.1 Validity of Instruments

Validity is a degree to which an instrument measures what it is supposed to measure Souza, Alexandre, and Guirardello (2017) while Ralph and Tempero, (2018) defined it as the accuracy and meaningfulness of inferences or the degree to which data analysis results explain the study phenomenon. The study determined three main types of validity of the instruments, that is, face, content and construct validity. The researcher determined face validity of the instruments by ensuring that questionnaires are prepared in line with the conceptual framework in Figure 1.1 so as to capture all the study variables. This ensured that the items in the instruments are meaningful and appropriate for the respondents.

Content validity measures the magnitude to which the data collection instrument yields reasonably expected statistical outcomes of the study [CITATION Olu12 \l 1033]. The researcher reviewed the literature in order to identify the items that require to measure the constructs, for example, infrastructure, training, staff development financing and curriculum development and performance of TVET institutions. Besides the researcher consulted with the supervisor for expert advice on the content validity of the study instruments. Their views and advice was used to improve the relevance, clarity, and wording of the items or questions in the study instrument. Construct validity was used to establish the extent to which the research instrument could be interpreted as a meaningful measure of some characteristic or quality. Construct validity is an assessment of how well the theories or ideas have

been translated into actual measures. The researcher established construct validity of the instruments by review of theoretical and empirical literature.

3.8.2 Reliability of Instruments

Ralph and Tempero, (2018) defined reliability as the degree to which a given test is capable of consistently yielding the same results or scores each time the test is administered to the same individuals. For research to be internally coherent, estimates of reliability are based on the mean inter- correlations among all the single items within a study [CITATION Ahm212 \l 1033]. After piloting, the Cronbach's Alpha of the items or questions in the questionnaires was computed by the aid of SPSS version 25 software. Cronbach's Alpha was used to establish the reliability coefficient for a set of research variables by determining how items in the questionnaires correlate among themselves. The threshold for Cronbach's Alpha coefficient 0.7 or above indicating a high level of internal consistency in the study questionnaire [CITATION Tab181 \l 1033].

The overall reliability co-efficient of the improved instrument after the pilot survey yielded the following results: partnership in infrastructure had five items whose Cronbach's alpha was 0.714, partnership in curriculum development had five items which the Cronbach's alpha was 0.748, partnership in practical training had five items whose Cronbach's alpha was 0.700, Partnership in staff development had five items whose alpha was 0.701 and performance of public Technical Vocational Education and Training Institutions had five items with a Cronbach's alpha of 0.784. These are higher than the minimum acceptable value of Cronbach's alpha should be at least 0.70 or above (Taber, 2018). Therefore, the items were considered reliable.

3.9 Data Analysis Procedure

Once adequate number of questionnaires is collected, each questionnaire was assigned a unique identification to avoid double entry and to facilitate coding of variables. All the data collected was coded and entered into an SPSS sheet version 25.0 package, organized and cleaned for any inconsistencies. Quantitative data was analyzed using descriptive (mean, standard deviation, frequencies, skewness and kurtosis) and inferential statistical techniques. Under inferential statistics, multiple regressions was used to determine the effect of a set of independent variable (Public Private Partnership) on dependent variable (performance of TVET institutions), coefficient of correlation using the Statistical Package for Social Sciences (SPSS) version 25.0 package. As a prerequisite of conducting multiple regressions, the researcher tested for normality, linearity, multi-collinearity and homoscedasticity (Hlatywayo, Marange & Chinyamurindi, 2017).

The regression model was as follows:

$$y = \beta 0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \quad \text{Equation 3.1}$$

Where y represented performance of TVET institutions which was the dependent variable x represents the public private partnership dimensions β is the standardized regression coefficient.

X_1 represent partnership in infrastructure provision

X_2 represent partnership in curriculum development

X_3 represent partnership in staff development

X_4 represent partnership in training

Quantitative data was extracted from the questionnaires by use of tables, graphs and figures and qualitative data analyses was based on themes. Integration of the two data sets was conducted during the data analysis and interpretation phase through triangulation, where findings from one method were compared and cross-validated with the other to enhance validity and reliability (Creswell & Plano Clark, 2022).

3.10 Ethical considerations

Ethical considerations in research are fundamental in distinguishing acceptable from unacceptable conduct and in ensuring the credibility and integrity of scholarly inquiry. They safeguard participants, promote the pursuit of truth, and prevent the fabrication or falsification of data, thereby upholding the core values of academic research (Bell, 2014). Prior to data collection, research authorization was sought from the National Commission for Science, Technology and Innovation (NACOSTI) after obtaining clearance from the County Commissioner and the County Director of Education in the respective counties. Participants were adequately informed about the purpose, procedures, and significance of the study, and their informed consent was obtained before participation. Participation was voluntary, and respondents were made aware of their right to withdraw from the study at any stage without penalty. The principle of autonomy was upheld by respecting participants' individual decisions and ensuring they participated out of free will. Confidentiality and anonymity were maintained by omitting personal identifiers such as names on research instruments, while all data were coded to protect respondents' identities. Sensitivity to cultural and gender differences was also observed throughout the data collection process to ensure inclusivity and respect. Furthermore, data were securely stored in password-protected digital files and locked cabinets accessible only to the researcher and academic supervisors. The collected data will be retained for five years after publication for

verification purposes and then permanently destroyed to ensure participant privacy. Collectively, these ethical safeguards ensured that the study adhered to national and institutional research ethics and international best practices in educational research (Creswell & Creswell, 2023).

3.11 Summary of the Chapter

This chapter has described the methodology which was used to achieve the objectives of the study. The specific techniques that was adopted in research process to collect, assemble and evaluate data. The chapter therefore discussed different techniques such as the research design, area of study, the population of the study, sampling techniques and sample size calculation, data collection techniques for qualitative and quantitative data, methods of data analysis which were used, and finally ethical considerations for the study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents results of data analysis. As part of the descriptive statistics, the demographic variables analyzed included respondents' Age bracket, Level of education, period of employment. The purpose of the study was investigating the impact of public private partnership on performance of public TVET institutions in South Rift Region, Kenya. Public private partnership was analyzed and discussed in terms of partnership in infrastructure, partnership in curriculum development, partnership in practical training, partnership in staff development (independent variables) and while the dependent variable was performance of public TVET in South Rift Region, Kenya. The findings of the study were presented in tables.

4.2 Response Rate

Out of a target population of 470 trainers, a sample of 214 was sampled use of Krejcie and Morgan table. Subsequently, 241questionnaires were distributed. A total of 195 questionnaires were returned from which, 15 questionnaires were discarded for either lack of response, being improperly filled, or being incomplete. The researcher ended up with 180 usable questionnaires, which represented a response rate of 74.7%. This response rate was deemed adequate for external validity. According to Babbie, (2002) any response of 50% and above is adequate for analysis thus 74.7 % is even better. This reasonable response rate was made a reality after the research assistants made personal calls and visits to remind the respondent to fill-in and return the questionnaires.

4.3 Demographic Characteristics

Respondents were asked to provide information regarding their demographic profile that included; Age bracket, level of education and period of work. This information was deemed relevant in the assessment of impact of public private partnership on performance of public TVET Institutions in South Rift Region, Kenya.

Table 4.1: Respondents Demographic Characteristics

Variables	Cases	Frequency	Percentage
Age	21-30	84	46.7
	31-40	60	33.3
	41-50	12	6.7
	51-60	24	13.3
Level of education	Diploma	36	20.0
	Undergraduate	132	73.3
	Postgraduate	12	6.7
Period of work	Less than 5yrs	72	40
	Between 6-10 years	60	33.3
	Over 20yrs	48	26.7

Results presented in Table 4.1, depicts that age bracket was 21-30 (46.7%), 31-40 (33.3%), 41-50 (6.7%), over 51years (13.3%). This implies that majority of trainers were above 40yrs and low who are presumed to be update with technology and can help advancement of technological skills in TVET institutions. Advancements are made in technology every day, shaping the future of how we work. McCarthy, (2018) avers that the younger generation are of vast importance for the future of businesses and technology, as they themselves were be part of the working generation. While Muscat (2023) notes that age is not always an indicator of the stage of career of a TVET teacher, since many may have worked in industry before transitioning to a

teacher role, there might be observable patterns in the career stage of TVET teachers and trainers. It was also found that all the trainers had diploma level of education and above (100%), this implies that they could understand what was sought by this study and even interpret questionnaire well. Besides, the fact that majority of TVET trainers having first degree level of education denotes *the importance given to the level of qualification of trainers during recruitment which is key for synergizing the public private partnership approaches for performance* of public TVET Institutions. highly competent, qualified and motivated trainers have been identified as a critical component in the success of technical and vocational education and training[CITATION Won20 \l 1033]. Majority of employees had served for more than five years at 60%. The implication of this is that they have adequate experience to give information that the researcher can rely on.

4.4 Descriptive Statistics

The findings from the study were presented using descriptive statistics, which included Skewness and Kurtosis, means and standard deviations. Means and standard deviations for the independent and dependent variables were computed from the respondents' responses. The purpose of means and standard deviations was to provide a general picture of how the respondents perceive the *public private partnership approaches for performance* of public TVET institutions. Skewness and Kurtosis was used to test for the assumption of normality.

4.4.1 Partnering in Infrastructure Provision in Public Technical Vocational Education and Training Institutions

Adequate collaboration between (TVET) institutions and industries would lead to provision of relevant infrastructure. Providing appropriate equipment and laboratory/

workshop arrangements is key in supporting the specific knowledge and skills required by the curriculum. The study focused on aspects of partnering in infrastructure provision and findings presented below in table 4.2.

Table 4.2 Descriptive Results on Partnering in Infrastructure Provision *in Public TVET Institutions*

Statement	N	MIN	MAX	SKEW	KURT	M	SD
The institution has adequate classrooms through enterprise support	180	1	5	-1.431	-1.061	4.28	.928
Our library has had relevant resources through partnership	180	1	5	-1.234	-.988	4.06	1.017
Based on our attachment to the private partners the workshop has adequate equipment	180	1	5	-.095	-1.499	3.13	1.412
Partnering has enabled the institution to have equipment relevant to the current technology	180	1	5	-.096	-1.503	3.27	1.486
The adequacy of office space has been enhanced through partnering	180	1	5	-.860	-.826	3.74	.813
Average						3.69	.741

Source: Research Data, (2023)

From the findings in table 4.2 majority of respondents were in agreement that their institutions have adequate classrooms through enterprise support with a mean of 4.28 while some of the respondents were in disagreement with SD of .928 (Min=1 Max=5). The responses were symmetrically distributed with Skewness of -1.431 and Kurtosis of 1.877. This implies that the public TVET institutions in South Rift Region, Kenya has benefited from enterprise support to increase their classrooms to meet the demand of the institutions. Besides, majority of respondents were in agreement that their libraries have had relevant resources through partnership with a mean of 4.06 while some were in disagreement with a SD of 1.017 (Min=1 Max=5). However, the responses were normally distributed with Skewness of -1.234 and Kurtosis of -.988. This implies that the public TVET institutions in South Rift Region, Kenya ensures they continuously improve on their library resources through partnership. Additionally, majority of respondents were in agreement with a mean of 3.15 that based on their attachment to the private partners their workshop has adequate equipment while some respondents were in disagreement with a SD of 1.412 (Min=1 Max=5). However, the responses were normally distributed with Skewness of -.095 and Kurtosis of -1.499. This implies that the private partners have been very instrumental in helping the TVET institutions in provision of their adequate equipment to their workshops. Additionally with sustained public private partnerships the public TVET institutions are bound to have industry relevant equipment. Majority of respondents were in agreement with a mean of 3.27 that partnering has enabled their institution to have equipment relevant to the current technology while some in disagreement with SD of 1.486 (Min=1 Max=5). The responses were symmetrically distributed with Skewness of -.096 and Kurtosis of -1.503. Besides, majority of respondents were in agreement with a mean of 3.74 that the adequacy of their office

space has been enhanced through partnering while some were in disagreement and SD of .813 (Min=1 Max=5). The responses were symmetrically distributed with Skewness of -.860 and Kurtosis of -.826. Finally, *the statements on* partnering in infrastructure provision *in public TVET institutions in South Rift* had a mean of 3.69 and SD of .741. This implies that majority of the *public TVET institutions in South Rift* have embraced partnering in infrastructure as a strategy of ensuring the quality of training given to the learners is improved. Besides the private sector is also inclined towards partnering with public TVET institutions to provide infrastructure to help connect the theoretical and practical training required by the industry. However, Yeap, Suhaimi, and Nasir (2021) decries the inadequacies of infrastructure resources compromising on the quality of trainings TVET. KISE., (2020) poor infrastructure created a barrier to learning especially hands on practical skills and impacted on the choice of course of specialization. These has been the driving force behind the witnessed public private partnership in the provision of infrastructure to create a workforce that suits the demands of the rapidly changing labour needs, now and into the future.

4.4.2 Partnering in Curriculum Development in Public Technical Vocational Education and Training Institutions

The study focused on aspects of partnering in curriculum development and findings presented below in table 4.3.

Table 4.3 Descriptive Results on Curriculum Development *in Public TVET Institutions*

Statement	N	MIN	MAX	SKEW	KURT	M	SD
I participate in forming a shared vision about managing curriculum development activities	180	1	5	-.849	-.074	3.78	1.125
Through partnership the engineering curriculum reflects private sector technology and standards	180	1	5	-.692	-.939	3.80	1.330
The demands of the community are effectively met by the curriculum through partnership	180	1	5	-.800	-.256	4.00	1.083
The learning environment is conducive in the realization of the demands of the curriculum	180	2	5	-.451	-.591	3.73	.931
The curriculum developed through partnership help students to successfully enter the world of work	180	1	5	-1.093	.374	3.93	1.185
Average						3.85	.621

Source: Research Data, (2023)

From the findings in table 4.3 majority of respondents were in agreement that they participate in forming a shared vision about managing curriculum development activities with a mean of 3.78 while some of the respondents were in disagreement with SD of 1.125 (Min=1 Max=5). The responses were symmetrically distributed with Skewness of -.849 and Kurtosis of 1.125. This implies that the curriculum taught in TVET institutions is product of trainers involvement in its development. Besides, majority of respondents were in agreement that through partnership the engineering curriculum reflects private sector technology and standards with a mean of 3.80 while some were in disagreement with a SD of 1.330 (Min=1 Max=5). However, the responses were normally distributed with Skewness of -.692 and Kurtosis of -.939. This implies that what the engineering students are taught in TVET institutions is in line with the industrial demands. Thus, the TVET institutions are partnering with the industry in ensuring that the trainings keep pace with the dynamics of the industry. From the interviews on *Which strategies does TVET use in involving the private sector in curriculum development?* the respondents had this to say:

"……TVET institutions involve industry experts in conducting regular reviews of curriculum content and course offerings. Industry representatives provide feedback on the relevance of existing programs, identify areas for improvement, and suggest updates to ensure alignment with industry standards and practices".

Additionally, majority of respondents were in agreement with a mean of 4.00 that the demands of the community are effectively met by the curriculum through partnership while some respondents were in disagreement with a SD of 1.083 (Min=1 Max=5). However, the responses were normally distributed with Skewness of -.800 and Kurtosis of -.256. This implies that the community is taken into consideration during

curriculum development so that the knowledge and skills acquired through training are in demand by the community. Majority of respondents were in agreement with a mean of 3.73 that the learning environment is conducive in the realization of the demands of the curriculum while some in disagreement with SD of .931 (Min=1 Max=5). The responses were symmetrically distributed with Skewness of -.451 and Kurtosis of -.591.

Besides, majority of respondents were in agreement with a mean of 3.93 that the curriculum developed through partnership help students to successfully enter the world of work while some were in disagreement and SD of 1.185 (Min=1 Max=5). The responses were symmetrically distributed with Skewness of -1.093 and Kurtosis of -.374. Finally, *the statements on* partnering in curriculum development *in public TVET institutions in South Rift* had a mean of 3.85 and SD of .621. This implies that the *public TVET institutions* have embraced partnering in curriculum development for industry driven knowledge and skills. From the interviewees the response on *How is the private sector important in curriculum development?*

"…..The private sector's involvement in TVET curriculum development is essential for creating relevant, high-quality educational programs that align with industry requirements and prepare students for successful careers"

However, Likisa, (2018) laments that most industry experts who participated in the curriculum development did not have the expertise in models and philosophies of curriculum development.

4.4.3 Partnering in Practical Training in Public Technical Vocational Education and Training Institutions

Partnering with industry stakeholders allows TVET institutions to develop practical training programs that align with current industry needs and standards. This ensures that students receive training that is relevant to their future careers and increases their employability (Keevy, et al, 2021). The study focused on aspects of partnering in practical training in public TVET institutions and findings presented below in table 4.4

Table 4.4 Descriptive Results on Practical Training in Public Technical Vocational Education and Training Institutions

Statement	N	MIN	MAX	SKEW	KURT	M	SD
The assessment of industrial attachment by industry and institution has meaning	180	1	5	-1.290	1.047	3.93	1.127
Industry involvement in designing curriculum for training has made training easy	180	2	5	-.350	-.109	3.76	.774
The industrial visits during the course promotes professional exposure and practice	180	2	5	-.248	-.832	3.67	.950
The materials and equipment provided by stakeholders are instrumental in conducting practicals	180	2	5	-1.192	.953	4.27	.856
Feedback from industrial attachments helps review	180	2	5	-.190	-1.434	3.80	1.111

curriculum to meet the stakeholders needs		
Average	3.89	.705

Source: Research Data, (2023)

From the findings in table 4.4 majority of the respondents were in agreement that assessment of industrial attachment by industry and institution has meaning with a mean of 3.93 while some were in disagreement with a SD of 1.127 (Min=1 and Max=5). The responses were normally distributed with Skewness of -1.290 and Kurtosis of -1.047. This implies that the public TVET institutions have a blended training approach between theory and practicals from the industry. *This is underscored by the fact that TVET institutions are accused of preferring covering theoretical over practical contents of the TVET subject areas* [CITATION Goo191 \l 1033]. *Besides majority of the respondents were in agreement that* industry involvement in designing curriculum for training has made training easy with a mean of 3.76 while some were in disagreement with a deviation from the mean with a SD of .774 (Min=2 and Max=5) but responses normally distributed with Skewness of -.350 and Kurtosis of -.109. This implies that for the training outcomes to be more closely aligned to industrial competences and proficiency the development of the curriculum in partnership with the industry is inevitable. *A comprehensive manner to address and eliminate the skill gaps require the alignment of the curricula with the needs of the workplace to give TVET trainees a continuous pathway toward achieving their career paths* [CITATION Rat23 \l 1033]. *Besides majority of the respondents were in agreement that* the industrial visits during the course work promotes professional exposure and practice had a mean of 3.67 with a deviation from the mean of .950

(Min=2 Max=5). This was further explained by an interviewee who was asked what is the role of the private sector in the training of students who said:

"…….The private sector plays a significant role in the training of students by providing valuable opportunities for hands-on learning, skill development, and practical experience"

Additionally, majority of respondents agree with a mean of 4.27 that the materials and equipment provided by stakeholders are instrumental in conducting practicals with some respondents in disagreement with a SD of .856 (Min=2 Max=5). The responses were symmetrically distributed with Skewness of -1.192 and Kurtosis of .953. This implies that *practical training knowledge is an inevitable outcome of the use of relevant materials and equipment which calls for the collaboration between private and public TVET institutions.* Additionally, majority of the respondents were in agreement with a mean of 3.80 that feedback from industrial attachments helps review curriculum to meet the stakeholders needs while some were in disagreement with a standard deviation of 1.111. (Min=2 Max=5). *Where TVET institutions can get* on-time information on dynamics of labour market and *react faster to market changes through curriculum review guarantees the relevance of their training. In general, the statements on partnership in practical training in public TVET in institutions had a mean of* 3.89 and SD of .705. This implies that the public TVET institutions should partner with the private sector to strengthen on practical trainings. This is justified by the fact that industry partners can provide access to state-of-the-art equipment, facilities, and technologies that may be otherwise inaccessible to TVET institutions[CITATION Sim22 \l 1033]. This allows students to gain hands-on experience with the tools and techniques used in their chosen fields.

4.4.4 Partnering in Staff Development in Public Technical Vocational Education and Training Institutions

Public-private partnerships play a crucial role in building the capacity of TVET trainers by leveraging the strengths of both sectors to improve the quality, relevance, and sustainability of vocational education and training programs (Keter, 2018). The study focused on aspects of staff development in public TVET and findings presented below in table 4.5.

Table 4.5 Descriptive Results on Partnering in Staff Development in Public Technical Vocational Education and Training Institutions

Statement	N	MIN	MAX	SKEW	KURT	M	SD
After workshops my class room management has been much better	180	1	5	-.424	-1.214	3.65	1.271
The private partners offer training which improve on the knowledge of the subject	180	1	5	-.399	-1.083	3.74	1.164
The industry provide room for internship to the trainers help in improving on their knowledge	180	2	5	-.443	-1.292	3.84	1.159
Through regular seminars i am able to cultivate a supportive learning environment	180	2	5	-.111	-.713	3.54	.893
The staff development policy ensures competency and efficiency	180	2	5	-.277	-1.180	3.67	1.078

amongst trainers		
Average	3.69	.638

Source: Research Data, (2023)

From the findings in table 4.5 majority of the respondents were in agreement that after workshops their class room management has been much better with a mean of 3.65 while some were in disagreement with a SD of 1.271 (Min=1 and Max=5). The responses were normally distributed with Skewness of -.424 and Kurtosis of -1.214. This implies that the public TVET institutions should regularly organize for workshops to be attended by the trainers to enhance their capabilities in market-oriented productivity. *Besides majority of the respondents were in agreement that* the private partners offer training which improve on the knowledge of the subject with a mean of 3.74 while some were in disagreement with a deviation from the mean with a SD of 1.164 (Min=1 and Max=5) but responses normally distributed with Skewness of -.399 and Kurtosis of -1.083. This implies that for more engaging and practical training experiences for students the public TVET institutions should partner with private sector in the capacity building of the trainers.

This is because the private sector partnership in capacity building can bring innovative teaching methods and approaches to TVET institutions, helping trainers develop new skills and techniques for effective instruction. *Besides majority of the respondents were in agreement that* the industry provide room for internship to the trainers help in improving on their knowledge with a mean of 3.84 with a deviation from the mean of 1.159 (Min=2 Max=5). Additionally, majority of respondents agree with a mean of 3.54 that through regular seminars they are able to cultivate a supportive learning environment with a SD of .893 (Min=2 Max=5). The responses were symmetrically distributed with Skewness of -.111 and Kurtosis of -.713. Besides, majority of the respondents were in agreement with a mean of 3.67 that the staff development policy ensures competency and efficiency amongst trainers while some were in disagreement with a standard deviation of 1.078. (Min=2 Max=5). *In*

general, the statements on partnership in capacity building in public TVET in institutions had a mean of 3.69 and SD of .638. This implies that the private sector public TVET institution partnership should be strengthened for maximal productivity of the trainers. Private sector involvement in TVET trainer capacity building ensures that training programs are aligned with industry needs and standards (Wahungu, Wawire, & Kirimi, 2023). This helps to bridge the gap between classroom learning and real-world application, enhancing the employability of graduates. Besides, private sector entities often have access to resources such as advanced equipment, technology, and industry expertise that can enhance the quality of training provided by TVET institutions. By partnering with the private sector, TVET trainers can access these resources to stay updated with industry trends and practices. From the interviews majority had this to say on what makes it necessary for the private sector to be involved in staff development.

"……..the involvement of the private sector in TVET staff development is crucial for ensuring the relevance, quality, and effectiveness of vocational education programs. By collaborating with the private sector, TVET institutions can better prepare students for successful careers"

4.4.5 Performance of Public Technical Vocational Education and Training Institutions in South Rift Region

The study focused on aspects of performance of public TVET Institutions and findings presented below in table 4.6.

Table 4.6 Descriptive Results on Performance of Public Technical Vocational Education and Training Institutions in South Rift Region.

Statement	N	MIN	MAX	SKEW	KURT	M	SD
Student have complains concerning the quality of training	180	1	5	-.572	.440	3.69	.741
Trainers have adequate training Materials	180	2	5	-.701	.412	3.82	.640
The completion rates of engineering students have been on the rise	180	1	5	-1.204	1.425	3.78	.811
The skills acquired by the students are on demand by the labour market	180	1	5	-1.093	2.085	3.58	.757
There has been an increase on the enrollment of students in engineering courses in the institution	180	1	5	-1.837	4.804	4.09	.843
Average						3.79	.444

Source: Research Data, (2023)

From the findings in table 4.6 majority of the respondents were in agreement that student have complains concerning the quality of training with a mean of 3.69 while some were in disagreement with a SD of .741 (Min=1 and Max=5). The responses were normally distributed with Skewness of -.572 and Kurtosis of .440. This implies that the public TVET institutions should continuously address the complains which students raise in terms of quality for them to effectively meet their mandate. *Besides*

majority of the respondents were in agreement that trainers have adequate training materials with a mean of 3.82 while some were in disagreement with a deviation from the mean with a SD of .640 (Min=2 and Max=5) but responses normally distributed with Skewness of -.7109 and Kurtosis of .412. This implies that TVET institutions have progressively improved on the provision of materials for trainers so that they can effectively impart requisite knowledge and skills. *Besides majority of the respondents were in agreement that* the completion rates of engineering students have been on the rise with a mean of 3.78 with a deviation from the mean of .811 (Min=1 Max=5). Additionally, majority of respondents agree with a mean of 3.58 that the skills acquired by the students are on demand by the labour market with a SD of .757 (Min=1 Max=5). The responses were symmetrically distributed with Skewness of -1.093 and Kurtosis of 2.085. From the interviews on what are the inputs of the public-private partnership in promoting the performance of the public TVET institutions?

"…….Private sector input helps ensure that TVET programs align with current industry needs, trends, and standards. This alignment enhances the employability of graduates and addresses skills gaps in the labor market"

Another respondents noted that

"……..PPPs encourage collaboration between public TVET institutions and private sector partners in research and innovation initiatives. Joint research projects, technology transfer programs, and innovation hubs promote knowledge exchange, technology adoption, and entrepreneurship"

Besides, majority of the respondents were in agreement with a mean of 4.09 that there has been an increase on the enrolment of students in engineering courses in the institutions while some were in disagreement with a standard deviation of .843. (Min=1 Max=5). *In general, the statements on performance public TVET in institutions had a mean of* 3.79 and SD of .444. This implies that the private sector public TVET institution partnership should be strengthened for maximal performance. The government should encourage the private sector's participation in the delivery of Technical Vocational Education and Training[CITATION Kor19 \l 1033].

4.5 Predictive Analysis

To determine which among the public private partnership approaches which affect performance of public TVET institutions in South Rift Region, Kenya, multiple regression analysis was used. However, before multiple regression analysis was conducted, assumptions of regression analysis were first tested.

4.5.1 Assumption of Normality

Normality of data was assessed using Skewness and Kurtosis statistics [CITATION Rao21 \l 1033].

Table 4.7: Test for Normality

Variable	Skewness Statistic	Kurtosis Statistic
Infrastructure	-.572 .	.440
Curriculum development	-.582	.240
Practical training	-.667	-.517
Staff development	-.315	-.240
Performance	-.307	-.017

Skewness measures the deviation of distribution from symmetry while kurtosis measures peakedness of the distribution [CITATION Bon195 \l 1033]. Skewness values should fall within the range of +1 and -1 and kurtosis values within the range of +3 and -3[CITATION Jam213 \l 1033]. Results presented in Table 4.7 reveal that normality assumption was supported. None of the Skewness and Kurtosis values fell outside the stated range.

4.5.2 Assumption of Linearity

Pearson's product moment correlation coefficients were used to test linearity assumption. The purpose of using correlation was to identify factors that provide best predictions for conducting regression analysis. The inter-correlations among the variables are shown in Table 4.8.

	Infras	Curric	Training	Staff dev	Performance
Infrastructure	1				
Curriculum development	.319**	1			
Practical training	.148*	.492**	1		
Staff development	.173*	.319**	.451**	1	
Performance	.544**	.684**	.591**	.543**	1

Table 4.8: Test for Linearity

****. Correlation is significant at the 0.01 level (2-tailed).**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the results, it can be seen that correlations among the factors were significant. Correlations between Infrastructure, Curriculum development, Practical training and Staff development, where r=.544**, r= 0.684**, r= 0.591**, r= 0.543** respectively were also positively and significantly related to Performance of public TVET institutions where P<0.01. Linearity assumption was therefore satisfied. This implies that all the public private partnership approaches under study jointly have a positive and significant impact on performance of public TVET institutions in south rift region as such it behooves the management and other stakeholders to pay high premiums on these public private partnership approaches among others to secure high performance of public TVET institutions.

4.5.3 Multicollinearity

Correlation matrix was obtained and scrutinized for chances of multicollinearity. Correlation matrix gives the correlation coefficients between a single factor and every other factor in the investigation.

Table 4.9: Test for Multicollinearity

Independent Variables	Tolerance	VIF
Infrastructure	.891	1.122
Curriculum development	.690	1.450
Practical training	.660	1.515
Staff development	.778	1.286

Dependent Variable : Performance of TVET institutions

The correlation coefficient between a factor and itself is always 1; hence the principal diagonal of the correlation matrix in Table 4.8 contains 1s. This therefore means it is an identity matrix therefore there was no multicollinearity (Johnston, Jones, & Manley, 2018). The Variance Inflation Factor (VIF) measures the impact of co linearity among the variables in a regression model. Values of VIF that exceed 10 are often regarded as indicating Multicollinearity [CITATION Tab01 \l 1033]. All variables involved in the linear relationship had a small tolerance. Some suggest that a tolerance value less than or equal to 1**.** According to table 4.9 Variance Inflation Factor (VIF), Tolerance is within the threshold ranges hence no multicollinearity.

4.5.4 Homoscedasticity

Homoscedasticity, or homogeneity of variances, is an assumption of equal or similar variances in different groups being compared. This is an important assumption of parametric statistical tests because they are sensitive to any dissimilarities [CITATION Placeholder1 \l 1033]. A scatter plot reveals the relationships or associations between two variables. From the scatter plots in fig 4.6 to figure 4.9 in appendix VI reveals an approximate linear relationship between the employee performance and the predictors, it reveals a statistical condition of heteroscedasticity. For a heteroscedastic data set, the variation in the dependent variable differs depending on the values of predictors. The use of heteroscedastic data still provides an unbiased estimate for the relationship between the predictor and the dependent variable [CITATION Gin17 \l 1033].

4.6. Regression Analysis

Regression analysis is a powerful tool for answering research questions [CITATION Pan2110 \l 1033]. *Regression analysis establishes the connection between the dependent and independent variables*. This study used multiple regression as presented in table

4.10 to answer the research questions.

Table 4.10: Impact of public private partnership on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya

	Standardized Coefficients		Standardized Coefficients		
	B	**Error**	**Beta**	**t**	**Sig.**
(Constant)	.756	.144		5.265	.000
Infrastructure	.206	.025	.344	8.186	.000
Curriculum dev	.268	.034	.375	7.837	.000
Practical training	.151	.031	.240	4.912	.000
Staff development	.178	.031	.255	5.671	.000
Model Summary statistics					
R	.851[a]				
R Square	.724				
Adjusted R Square	.718				
Std. Error of the Estimate	.236				
R Square Change	.724				
Good of fit statistics					
ANOVA (F stat)	114.758				
df1	4				
df2	175				
ANOAV (F prob)	0.000				

a **Dependent Variable**: Performance of public Technical Vocational Education and Training Institutions

Source: Research Data, (2023)

From the model summary of multiple regression model, the results showed that all the four predictors (Infrastructure, Curriculum development, Practical training and Staff development) jointly explained 72.4 per cent variation on Performance of public TVET institutions. This showed that considering the four study independent variables, there is a probability of 72.4% (R^2=0.724) in predicting performance of public TVET institutions. The F-value of 114.758 and a p-value of 0.00 significant at 5% level of confidence indicate that the overall regression model is significant; hence, the joint contribution of the independent variables was significant in predicting performance of public TVET institutions is likely to improve. Therefore, public private partnership approaches significantly impacts on performance of public TVET institutions.

These findings are supported by Manyonge and Kyalo (2020) Muthee (2019) Widiastuti, Saputra, Noviansyah and Trianingsih (2021) who also found a significant impact of public private partnership on performance of TVET institutions. This implies that when public TVET institutions embrace public private partnership approaches their performance is likely to improve by producing graduates with occupational competencies in demand by the labour market. Private Public partnership comes as a panacea to underinvestment and support which adversely affects TVET delivery against the interest of the stakeholders. Yegon (2016) alluded that training quality in Kenya an index of performance of TVET is directly linked to the achievement of learning outcomes such as; knowledge, skills and competencies acquired at the end of the learning process and meeting the expectations of the main

stakeholders. These findings are in line with stakeholders' theory. As per the theory, an organization ought to create value for all partners not simply investors. The management of TVET should adjust the interests of different partners by involving the stakeholders who include the private and the public sector in delivery of the mandate of TVET institutions.

Based on the coefficients Partnership in curriculum development had the greatest contribution followed by partnership in provision of infrastructure, staff development and finally practical training. In the absence of private public partnership, the performance of public TVET institutions would be at .756 units. However, there is a need for synergizing the public private partnership approaches for maximal output.

$Y = .756 + .206X_1 + .268X_2 + .151X_3 + .178X_4 + \varepsilon$, ……...**Equation 4.1**

Where:

X_1= Infrastructure

X_2= Curriculum dev

X_3= Practical training

X_4= Staff development

Following is the testing of each research question:

How does partnership in infrastructure provision impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?

From the findings in Table 4.10 showed that partnership in infrastructure provision had coefficients of estimate which were significant basing on $\beta_1 = 0.206$ ($t = 8.186$; p-value = 0.000 which is less than $\alpha = 0.05$). Thus, the research question was answered that partnership in infrastructure provision has a positive and statistically significant

impact on performance of public TVET institutions in South Rift Region, Kenya. This suggests that there is up to 0.206 unit increase on performance of public TVET institutions for each unit increase in partnership in infrastructure provision. Therefore, with effective partnership in infrastructure provision, the performance of public TVET institutions can be enhanced.

These findings are supported by Mgimba and Mwila, 2022, Ojeje and Adodo, (2018) Mashala, (2019) who also found the availability of quality infrustructure affecting the performance of learning institutions. Wanjala, Chepkoech, and Khatete, (2020) found a significant influence of partnership in infrastructure provision on performance of public TVET institutions.

The findings are based on stakeholders' theory. In this regard any partnership in infrastructure provision adopted by public TVET institutions should focus well-functioning and appropriate to enhance quality and effectiveness of the training and in line with the objectives of knowledge and skills required by the labour market to help public TVET institutions realize heightened performance. However, many TVET institutions suffer from a lack of proper facilities, including classrooms, workshops, laboratories, and equipment. Without adequate infrastructure, students may not have access to hands-on learning experiences essential for acquiring practical skills. Besides, TVET institutions often struggle to keep up with technological advancements, leading to outdated equipment and technology. This can hinder students' ability to learn modern techniques and skills relevant to the current job market. UNESCO-UNEVOC., (2018) affirms that poor and inadequate equipment and infrastructure in TVET institutions affects the quality of the education and training provided. As students train with substandard equipment, their absorption in the labour

market becomes more difficult and reinforces the mismatch between the supply and demand of skills.

This implies that the public TVET institutions should strengthen their private public partnership for the provision of infrastructure so that the trainners can deliver high-quality instruction. By improving infrastructure quality, TVET institutions can better fulfill their role in preparing individuals for employment and supporting economic development. This would enhance hands-on experience and proficiency required by employers, reducing their employability. Therefore, there should be concerted efforts from governments, educational authorities, donors, and other stakeholders to prioritize investment in TVET infrastructure.

How does partnership in curriculum development impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?

From the findings in Table 4.10 showed that partnership in curriculum development had coefficients of estimate which were significant basing on $\beta_1 = 0.268$ ($t = 7.837$; p-value = 0.000 which is less than $\alpha = 0.05$). Thus, the research question was answered that partnership curriculum development has a positive and statistically significant impact on performance of public TVET institutions in South Rift Region, Kenya. This suggests that there is up to 0.268 unit increase on performance of public TVET institutions for each unit increase in partnership in curriculum development. Therefore, with effective partnership in curriculum development, the performance of public TVET institutions can be enhanced.

These findings are supported by Widiastuti, et al, (2021), Manyonge and Kyalo, (2020) UNESCO., (2020) who also found that the collaboration between TVET institutions and the workplace during curriculum development to address the needs of the industries enhances their performance. The findings are based on stakeholders' theory. In this regard any there is need of involvement of stakeholders during curriculum development so that their interests are effectively catered for. Involving stakeholders ensures that the curriculum is relevant to the real world and applicable to students' lives beyond the classroom. Industry professionals can provide insights into current trends, skills, and knowledge required in the workforce, while parents and community members can offer insights into local needs and priorities.

Different stakeholders bring different expertise and perspectives, which helps identify potential flaws or areas for improvement in the curriculum. Samson, (2019) Kusmin, Tammets, and Ley (2018) affirms that participatory collaboration involving multi-stakeholder engagement generates opportunities for creativity and innovation in curriculum planning, building partnerships private sector. Industries are part of the immediate environment and therefore with a curriculum that does not borrow much from it, there is a likelihood that graduates from such a training arrangement would struggle to fit into the immediate labour market. The industry should provide contemporary skills by training and establish networks with TVET institutions for minimizing the gaps.

These findings carries substantial managerial and policy implications. From a managerial perspective, this underscores the need for institutional leaders and administrators in TVETs to actively strengthen collaborative mechanisms with private sector stakeholders, industry associations, and professional bodies in designing and reviewing curricula. Such partnerships ensure that training programs are aligned with

evolving labor market demands, technological changes, and industry standards, thereby improving graduate employability and institutional competitiveness [CITATION Mut221 \l 1033].

From a policy standpoint, the results call for the Ministry of Education, TVETA, and other regulatory bodies to develop frameworks that incentivize and formalize public–private collaboration in curriculum design. Policy interventions could include guidelines that require industry involvement in competency-based curriculum development, funding schemes to support joint curriculum innovation, and monitoring systems to ensure implementation fidelity [CITATION Ach242 \l 1033]. Strengthening these collaborations aligns with Kenya's Vision 2030 and the TVET Policy Framework (2018), which emphasize skills-oriented education responsive to industrial growth. Overall, promoting curriculum partnership as a structured policy priority can bridge the skill mismatch between training institutions and industry needs, ultimately enhancing the performance, relevance, and sustainability of TVET institutions in Kenya

How does partnership in practical training impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?

From the findings in Table 4.10 showed that partnership in practical training had coefficients of estimate which were significant basing on $\beta_1 = 0.151$ ($t = 4.912$; p-value = 0.000 which is less than $\alpha = 0.05$). Thus, the research question was answered that partnership practical training has a positive and statistically significant impact on performance of public TVET institutions in South Rift Region, Kenya. This suggests that there is up to 0.151 unit increase on performance of public TVET institutions for

each unit increase in partnership in practical training. Therefore, with effective partnership in practical training, the performance of public TVET institutions can be enhanced.

These findings are supported by Singh and Tolessa (2019) Muyaka and Kitainge, (2019) Patrinos and Barrera-Osorio, (2009) who also found that private and public partnership in practical training impact on performance of TVET institutions. Oviawe, (2018) highlighted that repositioning and subsequently improvement of TVET targeted at development of technology and scientific innovations cannot be achieved by government alone but it has to be in collaboration or partnership with private enterprises that have the technical expertise, vocational competencies and financial capability. The findings are based on stakeholders' theory.

Therefore, with continued partnership of private and private sectors in TVET in practical training the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life is strengthened thus performance of TVET institutions enhanced. In this regard the study concludes that for TVET system to deliver knowledge and skills that are updated at all times in the dynamic, global economy with continuous changes in technologies and markets private public partnership remains Key. This is justified by the fact that the Private sector has access to relevant information about development and skills needs, and to updated equipment and specialized staff with updated qualifications. The public partnership in practical training should focus on shifting TVET training from a supply-driven to a demand- and supply-driven approach that is needed to address unemployment. Feedback from industrial attachments helps review curriculum to meet the stakeholders needs.

These findings hold important managerial and policy implications. From a managerial standpoint, it emphasizes the critical role of industry-linked practical training in enhancing institutional effectiveness, student competence, and employability. TVET managers and departmental heads should therefore prioritize the establishment and maintenance of structured partnerships with industries, businesses, and professional associations to facilitate regular student attachments, industrial visits, mentorship programs, and dual training systems. Strengthening these linkages ensures that learners gain hands-on experience with modern technologies and real-world practices, thereby aligning training outcomes with industry expectations (Muthiani & Ndung'u, 2022).

From a policy perspective, the results underscore the need for the Ministry of Education, TVETA, and County Governments to institutionalize frameworks that promote and regulate industry participation in practical training. Policies should incentivize industries that partner with TVET institutions through tax rebates, recognition programs, or cost-sharing schemes for training facilities and equipment (Achieng & Njeru, 2024). Moreover, national and county governments should establish sector-based training clusters to ensure equitable access to industry attachment opportunities across regions.

How does partnership in staff development impact on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya?

From the findings in Table 4.10 showed that partnership in staff development had coefficients of estimate which were significant basing on $\beta_1 = 0.\ 178$ ($t = 5.671$; p-value = 0.000 which is less than $\alpha = 0.05$). Thus, the research question was answered

that partnership staff development has a positive and statistically significant impact on performance of public TVET institutions in South Rift Region, Kenya. This suggests that there is up to 0.178 unit increase on performance of public Technical Vocational Education and Training institutions for each unit increase in partnership in staff development. Therefore, with effective partnership in staff development, the performance of public TVET institutions can be enhanced.

These findings are supported by Njenga (2022) Chepkoech, (2021) Sharipova and Wesseler, (2018) Onsomu, Wambugu, and Wamalwa (2009) who also found that private and public partnership in staff development impact on performance of TVET institutions. The dynamic labour market demands regular in-service or short courses for trainers engaged as tutors at TVET institutions[CITATION UNE20 \l 1033]. This would ensure the institutions keep responding to the requirements of the industry and avoid the reported mismatch between the training institutions and the labour market. Collaboration with industry partners benefits TVET trainers by providing them with opportunities for professional development and training. This ensures that trainers stay up-to-date with the latest industry trends and practices, enhancing the quality of instruction they provide to students. When trainers are equipped with relevant industry skills and knowledge, they can better prepare students for successful entry into the workforce, ultimately benefiting both individuals and businesses. Therefore, there is need for strengthening private public partnership approaches to improve the performance of public TVET institutions.

The findings had managerial and policy implications. From a managerial perspective, the result highlights the necessity for TVET administrators to strengthen collaborations with private sector organizations, development partners, and industry associations to promote continuous professional development (CPD) of trainers.

Managers should prioritize initiatives such as industrial attachments for trainers, joint training programs, seminars, and mentorship opportunities that expose staff to current technologies, pedagogical innovations, and industry best practices (Koech & Wanyama, 2023). Strengthening such partnerships ensures that trainers remain competent, adaptable, and aligned with the dynamic skill demands of the labor market, which directly enhances institutional performance and training quality. From a policy standpoint, the findings call for the Ministry of Education, TVETA, and the Public Service Commission to formulate and implement policies that institutionalize staff development through PPP frameworks. National and county governments should provide incentives for private firms that invest in staff upskilling programs within TVETs, such as cost-sharing arrangements, tax rebates, or grants (Achieng & Njeru, 2024).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The main objective of this study was to investigate the impact of public private partnership on performance of public TVET institutions in South Rift Region, Kenya. The study investigated the impacts of infrastructure, practical training, staff development and curriculum development on performance of public TVET institutions in South Rift Region, Kenya. From the findings of this study, there is a significant impact of public private partnership on performance of public TVET institutions in South Rift Region, Kenya as summarized.

5.1.1 Partnership in infrastructure provision and performance of public Technical Vocational Education and Training Institutions

Performance of public TVET institutions in South Rift Region was found to be significantly and positively impacted on by private public partnership in infrastructure provision. Therefore, with effective private public partnership in infrastructure provision the performance public TVET institutions can be enhanced. The findings are based on stakeholder theory.

5.1.2 Partnership in curriculum development and performance of public Technical Vocational Education and Training Institutions

The descriptive analysis there is partnership in curriculum development. Based on the standard deviation there was no unanimous agreement to the elements of partnership in curriculum development. However, there is a statistically significant impact of private public partnership in curriculum development and performance of public TVET institutions. This implies that with continued partnership of private and private

sectors in TVET curriculum development then sustained improvement in performance of TVET institutions to exceed the expectation of the stake holders will be realized. The findings are based on the stakeholder's theory.

5.1.3 Partnership in practical training and performance of public Technical Vocational Education and Training Institutions

The descriptive analysis there is partnership in practical training in public TVET institutions. Based on the standard deviation there was no unanimous agreement to the elements of partnership in practical training. However, there is a statistically significant impact of private public partnership in practical training and performance of public TVET institutions. This implies that with continued partnership of private and private sectors in TVET practical training the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life is strengthened thus performance of TVET institutions enhanced. The findings are based on the stakeholder's theory.

5.1.4 Partnership in staff development and performance of public Technical Vocational Education and Training Institutions

Performance of public TVET institutions in South Rift Region was found to be significantly and positively impacted on by private public partnership in staff development. Therefore, with effective private public partnership in staff development the performance public TVET institutions can be enhanced. The findings are based on stakeholder theory.

5.2 Conclusion

From the findings, this study makes a number of conclusions. The study explored the impact of private-public partnerships on performance of public TVET institutions in South Rift Region, Kenya. The study concludes that private-public partnerships in terms of, infrastructure, curriculum development, practical training and staff development are key in enhancing performance of public TVET institutions in South Rift Region Kenya. This is evidenced by the fact that these constructs jointly and independently affect to some magnitude the performance of public TVET institutions. From the findings it can be noted that the effect of all the factors would positively and significantly affect the performance of public TVET institutions. It therefore calls for the public TVET institutions to focus on strengthening the variables under study to enhance their performance. With effective partnership in infrastructure provision, the performance of public TVET institutions can be enhanced. majority of the *public TVET institutions in South Rift* have embraced partnering in infrastructure as a strategy of ensuring the quality of training given to the learners is improved. Besides the private sector is also inclined towards partnering with public TVET institutions to provide infrastructure to help connect the theoretical and practical training required by the industry.

With continued partnership of private and private sectors in TVET in practical training the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life is strengthened thus performance of TVET institutions enhanced. In this regard the study concludes that for TVET system to deliver knowledge and skills that are updated at all times in the dynamic, global economy with continuous changes in technologies and markets

private public partnership remains Key. This is justified by the fact that the Private sector has access to relevant information about development and skills needs, and to updated equipment and specialized staff with updated qualifications.

Collaboration with industry partners benefits TVET trainers by providing them with opportunities for professional development and training. This ensures that trainers stay up-to-date with the latest industry trends and practices, enhancing the quality of instruction they provide to students. When trainers are equipped with relevant industry skills and knowledge, they can better prepare students for successful entry into the workforce, ultimately benefiting both individuals and businesses. Therefore, there is need for strengthening private public partnership approaches to improve the performance of public TVET institutions.

5.3 Recommendations

In view of the findings of the study and the guidance from the literature review, it is apparent that the performance of public TVET institutions should be enhanced through private-public partnerships. While there are other factors crucial for the performance of public TVET institutions; from the results in this regard, the current study makes the following recommendations.

Any partnership in infrastructure provision adopted by public TVET institutions should focus well-functioning and appropriate infrastructure. This should be capable of enhancing quality and effectiveness of the training and in line with the objectives of knowledge and skills required by the labour market to help public TVET institutions realize heightened performance. Therefore, there should be concerted efforts from governments, educational authorities, donors, and other stakeholders to

prioritize investment in TVET infrastructure in terms of advancement and adequacy of TVET infrastructure, equipment, books and integration of ICT.

Based on the dynamics of the labour market there should be continuous Collaboration between the government, TVET institutions, and industry stakeholders to align the curriculum with industry demands and promote seamless transitions from education to employment through a dual training system where students learn more at the industry. The trainers should participate in forming a shared vision about managing curriculum development activities. The public partnership in practical training should focus on shifting TVET training from a supply-driven to a demand- and supply-driven approach that is needed to address unemployment. Feedback from industrial attachments helps review curriculum to meet the stakeholders needs. In terms of private public partnership in staff development, there is need for identification of industry needs and co-design training programs that are tailored to the specific requirements of industries. Incorporate input from both educators and industry experts to ensure that the curriculum is relevant, up-to-date, and aligned with industry standards and practices. Collaboration with industry partners to offer professional development opportunities for TVET trainers.

5.4 Areas for further Research

Further studies should be undertaken to gain a more comprehensive understanding on this theme in other contexts, focusing on other private public partnership approaches as Research and Development (R&D) Collaborations, Financial and Resource Mobilization Partnerships, technology Transfer among others and Innovation Partnerships and their effect on performance of public TVET institutions in other regions.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Dear Sir/Madam,

RE: COLLECTION OF DATA

I am a Masters of Education Degree in Technology Education, Mechanical Engineering Option candidate at Moi University. I am carrying out research on the impact of public private partnership on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya**.** I am therefore seeking for your assistance to fill the questionnaires attached which will take the shortest time possible. Kindly respond to all the Questions using your best estimates. The research results will be used for academic purposes only and will be completely confidential. Should you have any comments or questions regarding the study kindly contact iddfarajmail@gmail.com or call 0721961331.

Thank you for your support and cooperation.

Yours sincerely,

Jaafar Idd Faraj

REG NO: EDU/PGT/1001/15

APPENDIX II QUESTIONNAIRE

SECTION A : DEMOGRAPHIC DATA

This study focuses on the impact of public private partnership on performance of public Technical Vocational Education and Training Institutions in South Rift Region, Kenya. Please note that your responses are confidential and anonymous as you are not required to indicate your name. The questionnaire is purely for academic purposes. Kindly answer all questions to the best of your knowledge.

QUESTIONNAIRE NUMBER

Kindly put a tick (√) against the correct choice.

1. What is your age bracket

20 -30 years	[ ]	31 -40 years	[ ]
41 -50 years	[ ]	51 -60 years	[ ]
Above 60 years	[ ]		

2. **What is your** level of education?

Certificate	[ ]	Diploma	[ ]
Bachelors	[ ]	Masters	[ ]
PHD	[ ]		

3 How long have you worked in the TVET ?

Below 5 years	[ ]	6- 10 years	[ ]
11-15years	[ ]	16-20years	[ ]
Above 20 years	[ ]		

Section B: Instructions

Please indicate the extent to which you agree or disagree with each statement by placing a tick where appropriate using the following 5-Point Likert scale: Part I and II

5 = Strongly Agree (SA) 4 = Agree (A) 3 = Undecided (UD) 2 = Disagree (D) 1 = Strongly Disagree (SD)

PART I: PUBLIC PRIVATE PARTNERSHIP STRATEGIES

This part has parts 1a, b, c and d

PART I a: Partnership in infrastructure provision

Please, indicate to what extent you agree with the following statements on partnership in infrastructure provision

RESPONSE ITEM	**1 Strongly Disagree**	**2 Disagree**	**3 Undecided**	**4 Agree**	**5 Strongly Agree**
The institution has adequate classrooms through enterprise support					
Our library has had relevant resources through partnership					
Based on our attachment to the private partners the workshop has adequate equipment					
Partnering has enabled the institution to have equipment relevant to the current technology					
The adequacy of office space has been enhanced through partnering					

PART I b: Partnership in curriculum development

Please, indicate to what extent you agree with the following statements on curriculum development

RESPONSE ITEM	**1** **Strongly Disagree**	**2** **Disagree**	**3** **Undecided**	**4** **Agree**	**5** **Strongly Agree**
I participate in forming a shared vision about managing curriculum development activities					
Through partnership the engineering curriculum reflects private sector technology and standards					
The demands of the community are effectively met by the curriculum through partnership					
The learning environment is conducive in the realization of the demands of the curriculum					
The curriculum developed through partnership help students to successfully enter the world of work					

PART I c: Partnership in practical training

Please, indicate to what extent you agree with the following statements on practical training

RESPONSE ITEM	**1 Strongly Disagree**	**2 Disagree**	**3 Undecided**	**4 Agree**	**5 Strongly Agree**
The assessment of industrial attachment by industry and institution has meaning					
Industry involvement in designing curriculum for training has made training easy					
The industrial visits during the course promotes professional exposure and practice					
The materials and equipment provided by stakeholders are instrumental in conducting practicals					
Feedback from industrial attachments helps review curricullum to meet tha stakeholders needs					

PART I d: Partnership in staff development

Please, indicate to what extent you agree with the following statements on staff development

RESPONSE ITEM	1 Strongly Disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly Agree
After workshops my class room management has been much better					
The private partners offer training which improve on the knowledge of the subject					
The industry provide room for internship to the trainers help in improving on their knowledge					
Through regular seminars I am able to cultivate a supportive learning environment					
The staff development policy ensures competency and efficiency amongst trainers					

PART II: Performance of TVET

Please, indicate to what extent you agree with the following statements on performance of TVET

RESPONSE ITEM	1	2	3	4	5

	Strongly Disagree	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
Student have complains concerning the quality of training					
Trainers have adequate training Materials					
The completion rates of engineering students have been on the rise					
The skills acquired by the students are on demand by the labour market					
There has been an increase on the enrollment of students in engineering courses in the institution					

APPENDIX III INTERVIEW SCHEDULE

1. How is the private sector important in curriculum development?

……

……

……

2. Which strategies does TVET use in involving the private sector in curriculum development?

……

……

……

3. What is the role of the private sector in the training of students?

……

……

……

4. What makes it necessary for the private sector to be involved in staff development?

……

……

……

5. What are the inputs of the public-private partnership in promoting the performance of the public TVET institutions?

……

……

APPENDIX IV KREJCIE AND MORGAN TABLE 1970

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

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

APPENDIX V TVET INSTITUTIONS IN THE SOUTH-RIFT REGION

NO	INSTITUTION	DEPARTMENTS	TARGET POPULATION	SAMPLE SIZE
1.	RVIST	ADMINISTRATION	7	2
		ELECTRICAL	15	5
		BUILDING	13	4
		AUTOMOTIVE	16	5
		MECHANICAL	8	3
		TOTAL	**60**	**20**
2.	*Samburu Technical and Vocational College*	ADMINISTRATION	7	2
		ELECTRICAL	18	6
		BUILDING	13	4
		AUTOMOTIVE	15	5
		MECHANICAL	9	3
		TOTAL	**52**	**20**
3.	***Maralal Vocational Training Centre***	ADMINISTRATION	7	2
		ELECTRICAL	16	5
		BUILDING	17	6
		AUTOMOTIVE	11	4
		MECHANICAL	8	3
		TOTAL	**59**	**20**

4.	BURETI T.T.I.	ADMINISTRATION	6	2
		ELECTRICAL	7	2
		BUILDING	9	3
		AUTOMOTIVE	8	3
		MECHANICAL	5	2
		TOTAL	**35**	**12**
5.	KONOIN T.T.I.	ADMINISTRATION	6	2
		ELECTRICAL	11	4
		BUILDING	9	3
		AUTOMOTIVE	6	2
		MECHANICAL	5	2
		TOTAL	**37**	**13**
6.	SOT T.T.I.	ADMINISTRATION	6	2
		ELECTRICAL	17	6
		BUILDING	12	4
		AUTOMOTIVE	14	4
		MECHANICAL	9	3
		TOTAL	**58**	**19**
7.	Baringo North Technical and Vocational College-Kapchepkor	ADMINISTRATION	6	2
		ELECTRICAL	20	7
		BUILDING	15	5
		AUTOMOTIVE	12	4
		MECHANICAL	14	4
		TOTAL	**67**	**22**

8.	SOTIK T.T.I.	ADMINISTRATION	6	2
		ELECTRICAL	15	5
		BUILDING	11	4
		AUTOMOTIVE	9	3
		MECHANICAL	7	2
		TOTAL	48	16
9.	MAASAI MARA TVC	ADMINISTRATION	4	1
		ELECTRICAL	4	1
		BUILDING	3	1
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**17**	**5**
10	EMURUA DIKIR TVC	ADMINISTRATION	4	1
		ELECTRICAL	8	3
		BUILDING	6	2
		AUTOMOTIVE	4	1
		MECHANICAL	4	1
		TOTAL	**26**	**8**
11.	KIMASIAN TVC	ADMINISTRATION	5	2
		ELECTRICAL	8	3
		BUILDING	6	2

		AUTOMOTIVE	5	2
		MECHANICAL	4	1
		TOTAL	**28**	**11**
12.	KIPSINENDE T.T.I.	ADMINISTRATION	5	2
		ELECTRICAL	6	2
		BUILDING	5	2
		AUTOMOTIVE	4	1
		MECHANICAL	4	1
		TOTAL	**24**	**8**
13.	TINDERET TVC	ADMINISTRATION	5	2
		ELECTRICAL	9	3
		BUILDING	8	3
		AUTOMOTIVE	5	2
		MECHANICAL	4	1
		TOTAL	**31**	**11**
14.	EMSOS TVC	ADMINISTRATION	4	1
		ELECTRICAL	4	1
		BUILDING	4	1
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**18**	**7**

15.	KIPTARAGON TVC	ADMINISTRATION	5	2
		ELECTRICAL	6	2
		BUILDING	5	2
		AUTOMOTIVE	5	2
		MECHANICAL	4	1
		TOTAL	**25**	**9**
16.	EMGWEN TVC	ADMINISTRATION	4	1
		ELECTRICAL	3	1
		BUILDING	3	1
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**16**	**5**
17.	NAIVASHA TVC	ADMINISTRATION	4	1
		ELECTRICAL	4	1
		BUILDING	4	1
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**18**	**5**
18.	ELBURGON TVC	ADMINISTRATION	5	2
		ELECTRICAL	4	1
		BUILDING	3	1

		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**18**	**6**
19.	BOMET CENTRAL TVC	ADMINISTRATION	4	1
		ELECTRICAL	4	1
		BUILDING	5	2
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**19**	**6**
20.	BELGUT TVC	ADMINISTRATION	5	2
		ELECTRICAL	5	2
		BUILDING	6	2
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**22**	**8**
21.	KERICHO TOWNSHIP TVC	ADMINISTRATION	5	2
		ELECTRICAL	5	2
		BUILDING	4	1
		AUTOMOTIVE	4	1
		MECHANICAL	4	1
		TOTAL	**22**	**7**

22.	NAROK WEST TVC	ADMINISTRATION	4	1
		ELECTRICAL	5	2
		BUILDING	4	1
		AUTOMOTIVE	4	1
		MECHANICAL	4	1
		TOTAL	**21**	**6**
23.	CHEPALUNGU TVC	ADMINISTRATION	4	1
		ELECTRICAL	4	1
		BUILDING	3	1
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**17**	**5**
24.	TOTAL TVC	ADMINISTRATION	4	1
		ELECTRICAL	6	2
		BUILDING	5	2
		AUTOMOTIVE	4	1
		MECHANICAL	4	1
		TOTAL	**23**	**7**
25.	HEROES TVC	ADMINISTRATION	4	1
		ELECTRICAL	4	1
		BUILDING	3	1

		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**17**	**5**
26.	NAROK EAST TVC	ADMINISTRATION	4	1
		ELECTRICAL	5	2
		BUILDING	4	1
		AUTOMOTIVE	4	1
		MECHANICAL	3	1
		TOTAL	**20**	**6**
27.	BAHATI TVC	ADMINISTRATION	4	1
		ELECTRICAL	4	1
		BUILDING	3	1
		AUTOMOTIVE	3	1
		MECHANICAL	3	1
		TOTAL	**17**	**5**
28.	GILGIL TVC	ADMINISTRATION	4	1
		ELECTRICAL	5	1
		BUILDING	4	1
		AUTOMOTIVE	4	1
		MECHANICAL	4	1
		TOTAL	**21**	**5**
	GRAND TOTAL		**806**	**265**

APPENDIX VI: SCATTER PLOTS FOR TESTING *HOMOSCEDASTICITY*

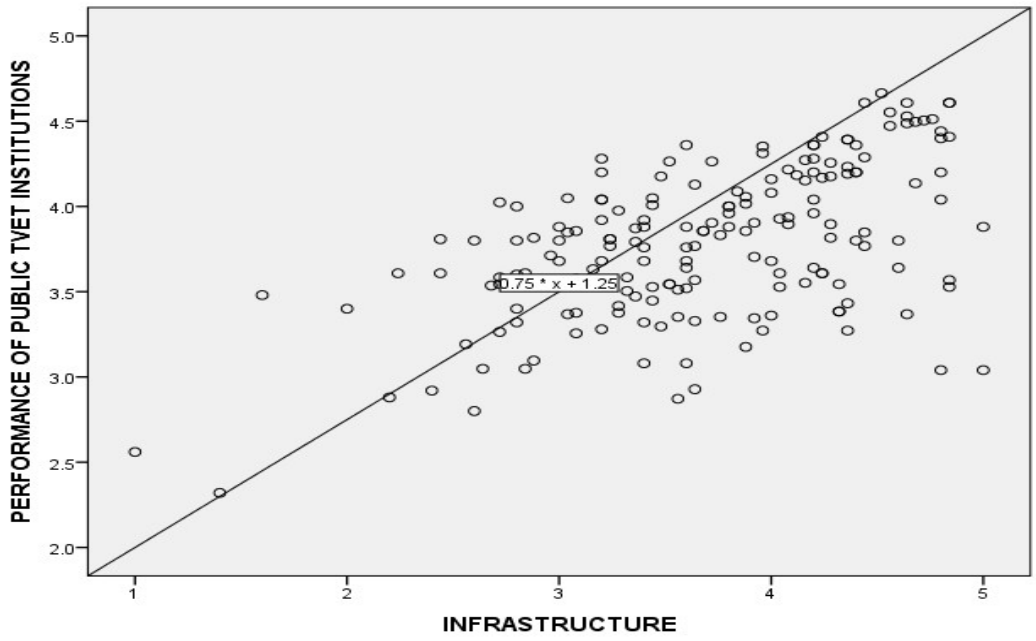

Figure 4.1 Scatter Plot of Infrastructure and Performance of Public TVET

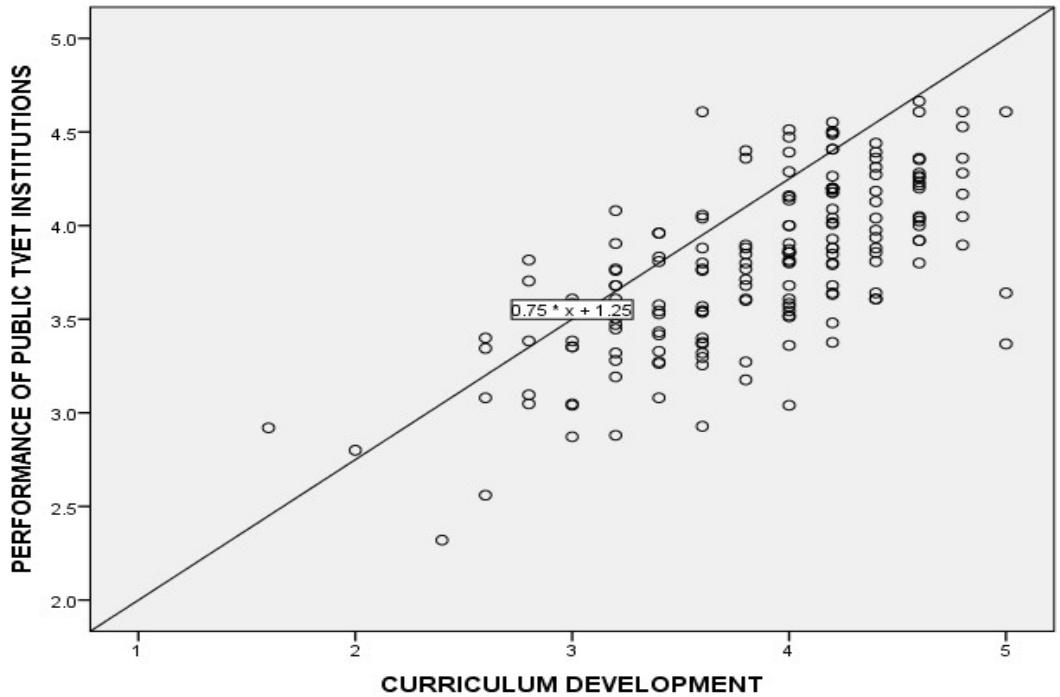

Figure 4.2 Scatter Plot of Curriculum Development and Performance of Public TVET

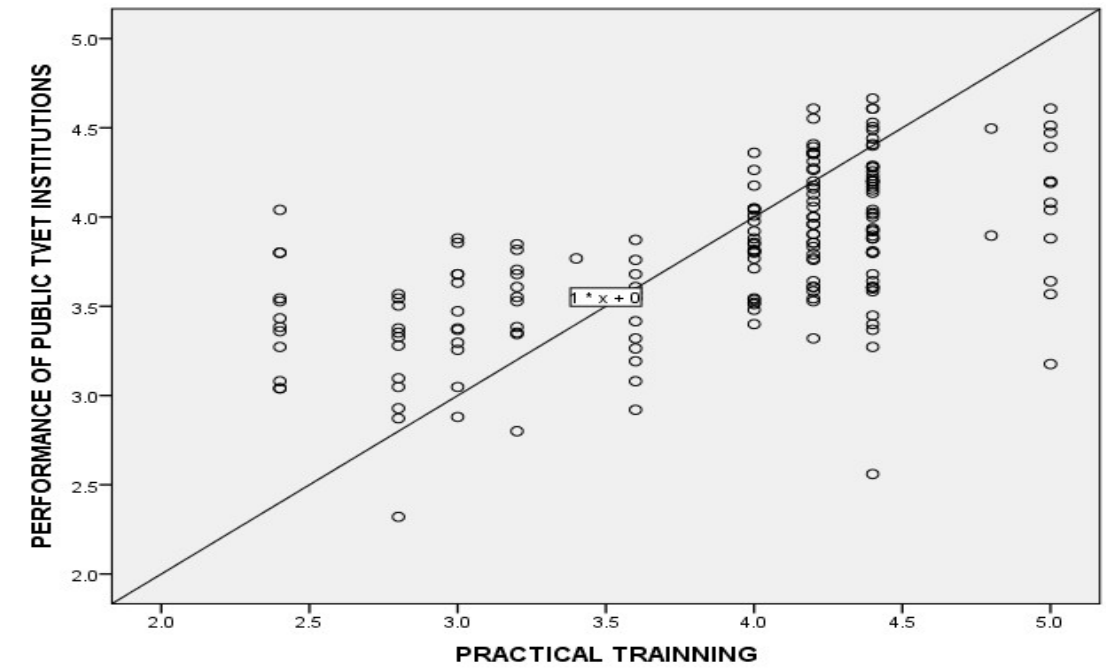

Figure 4.3 Scatter Plot of Practical Training and Performance of Public TVET

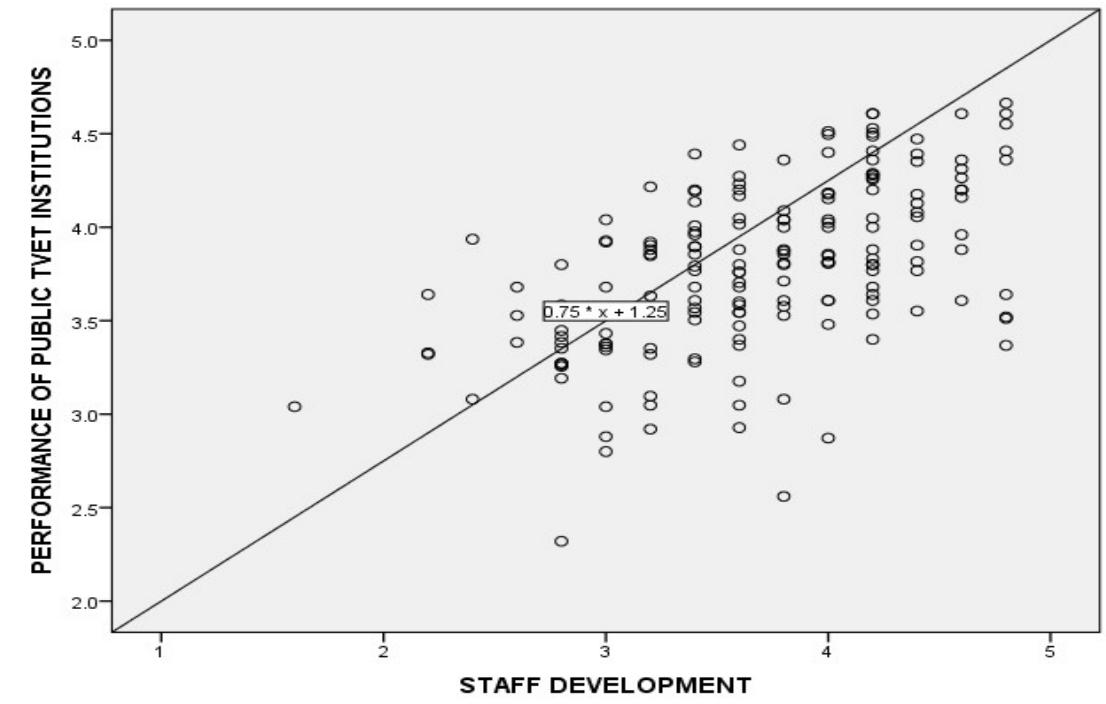

Figure 4.3 Scatter Plot of Staff Development and Performance of Public TVET

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