

Strengthening Skills Development for Industry Relevance and Sustainable Employment

Review Article | Volume 1 | Issue 5 | 2026 | Article Number: 064

Accepted: 25 September 2026 | Published: 10 October 2026 | ISSN: 2979-8582 (Online)



Crossref : <https://doi.org/10.67693/BJCR-86DULFCG>



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Abstract

Technical and Vocational Education and Training (TVET) plays a critical role in industrial development and economic transformation in Kenya. Recent reforms, including Competency-Based Education and Training (CBET), modularized curricula, dual training systems, Recognition of Prior Learning (RPL) and industry-linked internship programs, have strengthened practical skills acquisition and workplace readiness among trainees. Despite these initiatives, graduate unemployment and underemployment remain significant challenges, raising concerns about the effectiveness of TVET–industry partnerships in promoting sustainable employment. This study examined factors influencing employable skills development and industry relevance within Kenya's TVET sector. The study adopted a qualitative desk review and policy analysis design. Data were obtained from Technical and Vocational Education and Training Authority (TVETA) reports, government policy documents, labour market reports, industry publications, peer-reviewed journal articles, and international TVET literature. The collected information was analyzed thematically to identify key trends, challenges, opportunities, and policy gaps affecting skills development and graduate employability. The review revealed that although TVET reforms have enhanced technical competence and practical skills acquisition, significant challenges persist. Key issues identified include limited integration of emerging technologies, inadequate industry participation in curriculum development and training delivery, skills mismatches between graduates and labour market requirements, limited internship and apprenticeship opportunities, and weak international recognition of local qualifications. The findings further indicate that labour market absorption has not expanded at the same pace as the increasing number of TVET graduates, contributing to persistent unemployment and underemployment. The study concludes that strengthening TVET–industry partnerships requires a more integrated approach involving government, training institutions, employers, and development partners. Greater investment in technology integration, industry-led skills development, labour market intelligence, and internationally recognized certification frameworks is necessary to enhance graduate employability and workforce competitiveness. Strengthening these areas will contribute to sustainable employment and support Kenya's industrial transformation agenda.

Keywords: TVET, Employability, Industry Partnerships, Competency-Based Education and Training (CBET), Skills Development, Sustainable Employment

1. INTRODUCTION

1.1 Background to the Study

Technical and Vocational Education and Training (TVET) has increasingly become a critical component of economic development, industrialization, and workforce transformation across the world. As economies continue to experience rapid technological advancement, globalization and changing labour market demands, there is growing recognition of the need for education and training systems that equip individuals with practical skills and competencies required for productive employment (UNESCO-UNEVOC, 2023). Consequently, governments and development partners have prioritized TVET as a strategic mechanism for enhancing employability, reducing unemployment, and promoting sustainable economic growth.

Globally, TVET systems have undergone significant reforms aimed at improving the relevance and quality of skills development. International organizations such as UNESCO, the International Labour Organization (ILO) and the World Bank emphasize the importance of aligning training programmes with labour market needs to ensure that graduates possess competencies demanded by employers (ILO, 2023; UNESCO-UNEVOC, 2023; World Bank, 2022). Modern TVET systems increasingly focus on competency-based training, entrepreneurship, digital literacy, innovation and lifelong learning to prepare graduates for a rapidly evolving world of work.

In Africa, youth unemployment and underemployment remain among the most pressing socio-economic challenges despite substantial investments in education and training. According to the African Union (2022), many African countries continue to experience a mismatch between the skills acquired through education and the competencies required by employers. This mismatch has contributed to persistent unemployment, low labour productivity, and limited economic opportunities for young people. Consequently, many African governments have prioritized TVET reforms as a means of strengthening workforce development and improving labour market outcomes.

In Kenya, TVET is recognized as a key driver of industrial development and economic transformation. The Government of Kenya has identified skills development as a critical pillar in achieving the objectives of Vision 2030 and the Bottom-Up Economic Transformation Agenda (Government of Kenya, 2013). To strengthen the sector, the government has implemented several reforms, including the introduction of Competency-Based Education and Training (CBET), Recognition of Prior Learning (RPL), modularized curricula, and industry-linked internship programmes. These reforms seek to improve the quality, relevance, and accessibility of technical and vocational training while enhancing graduate employability (TVETA, 2024).

The implementation of CBET has shifted training from a content-based approach to a competency-based model that emphasizes practical skills acquisition and workplace performance. Similarly, RPL provides opportunities for individuals who have acquired skills through informal learning pathways to obtain formal certification and improve their employment

prospects (TVETA, 2024). These reforms are intended to strengthen workforce readiness and ensure that training outcomes align with labour market requirements.

Despite these efforts, concerns remain regarding the employability of TVET graduates. Labour market reports and employer surveys indicate that many graduates continue to experience difficulties securing sustainable employment due to skills mismatches, inadequate workplace exposure, and limited proficiency in emerging technologies (KNBS, 2024; ILO, 2023).

Employers frequently report shortages in digital literacy, communication skills, critical thinking,

problem-solving abilities, and adaptability, which are increasingly important in modern workplaces (World Bank, 2022).

The emergence of the Fourth Industrial Revolution (4IR) has further transformed workforce requirements globally. Technologies such as artificial intelligence, robotics, automation, cloud computing, and data analytics are reshaping production processes and creating demand for new skill sets (World Economic Forum, 2023). As industries continue to adopt these technologies, TVET institutions are expected to integrate digital competencies and future-oriented skills into training programmes to ensure that graduates remain competitive in both local and international labour markets.

Industry partnerships have been identified as an essential mechanism for improving the relevance of TVET programmes and enhancing graduate employability. Effective collaboration between training institutions and employers facilitates curriculum development, industrial attachments, apprenticeships, technology transfer, and labour market intelligence sharing (OECD, 2023). Such partnerships help ensure that training programmes reflect current industry practices and emerging workforce needs.

Sustainable employment has become an important policy objective in many countries. Sustainable employment refers to productive and decent work that provides economic security, opportunities for career progression, and resilience to labour market changes (ILO, 2023).

Achieving sustainable employment requires strong alignment between education systems, labour market demands, technological innovation, and industrial development strategies. Therefore, strengthening employable skills development and industry relevance within the TVET sector remains essential for promoting workforce competitiveness and supporting Kenya's long-term economic transformation.

This study examines factors influencing employable skills development and industry relevance within Kenya's TVET sector. Specifically, the study explores the effectiveness of current TVET reforms, the contribution of TVET-industry partnerships to graduate employability, challenges affecting skills development, and strategies for strengthening sustainable employment outcomes. The findings are expected to contribute to policy discussions and provide recommendations for enhancing workforce development and employment opportunities in Kenya.

1.2 Statement of the Problem

The Government of Kenya has undertaken significant reforms to strengthen the TVET sector and improve graduate employability through initiatives such as Competency-Based Education and

Training (CBET), Recognition of Prior Learning (RPL), industry-linked internship programmes, and enhanced collaboration between training institutions and employers (Government of Kenya, 2013; TVETA, 2024). Despite these interventions, graduate unemployment and underemployment remain persistent challenges.

Evidence from labour market reports suggests that many employers continue to report skills gaps among graduates entering the workforce. Although technical competencies have improved, concerns remain regarding curriculum relevance, integration of emerging technologies, industry participation in training, and workplace readiness (ILO, 2023; World Bank, 2022). Furthermore, rapid technological advancements associated with the Fourth Industrial Revolution have created new workforce requirements that many training institutions struggle to address effectively.

The persistence of these challenges suggests that gaps may exist between TVET training outcomes and labour market expectations. Without stronger alignment between skills development systems and industry needs, graduates may continue to face difficulties securing sustainable employment. There is therefore a

need to examine factors influencing employable skills development and industry relevance within Kenya's TVET sector and identify strategies that can strengthen TVET-industry partnerships and improve employment outcomes.

1.3 Purpose of the Study

The purpose of this study is to examine factors influencing employable skills development and industry relevance within Kenya's TVET sector and to identify strategies for strengthening TVET-industry partnerships in support of sustainable employment.

1.4 Objectives of the Study

1.4.1 General Objective

To assess the role of TVET-industry partnerships in strengthening employable skills development and promoting sustainable employment in Kenya.

1.4.2 Specific Objectives

1. To examine the effectiveness of TVET reforms in promoting industry-relevant skills and emerging technologies in Kenya.
2. To analyze challenges affecting employable skills development within Kenya's TVET sector.
3. To evaluate the contribution of TVET-industry partnerships to graduate employability and sustainable employment outcomes.

1.4.3 Research Questions

1. How effective are TVET reforms in promoting industry-relevant skills and emerging technologies in Kenya?
2. What challenges affect employable skills development within Kenya's TVET sector?
3. How do TVET-industry partnerships contribute to graduate employability and sustainable employment outcomes?

2. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Human Capital Theory

Human Capital Theory was pioneered by Schultz (1961) and later advanced by Becker (1964). The theory argues that investments in education, training, skills acquisition, and health improve the productivity and economic value of individuals. According to Becker (1964), education and training should be viewed as investments that generate returns through increased earnings, enhanced productivity, and improved employability.

The theory has been widely applied in education and labour market studies to explain the relationship between skills development and economic growth. Human Capital Theory assumes that individuals who acquire relevant skills and competencies are more productive and therefore more likely to secure employment and contribute positively to economic development (Psacharopoulos & Patrinos, 2018).

In the context of TVET, Human Capital Theory supports investments in practical skills training, modern training facilities, industry partnerships, and curriculum reforms. Through initiatives such as Competency-Based Education and Training (CBET), TVET institutions aim to develop graduates with competencies that match labour market requirements. Such investments are expected to increase employability and workforce competitiveness.

Despite its strengths, the theory has been criticized for assuming that education automatically leads to employment. Critics argue that labour market outcomes are also influenced by economic conditions, technological changes, and job availability (Marginson, 2019). Nevertheless, Human Capital Theory remains relevant in explaining the role of TVET in enhancing employable skills and sustainable employment.

2.1.2 Skills Mismatch Theory

Skills Mismatch Theory explains the disconnect between the skills possessed by graduates and those required by employers. According to McGuinness et al. (2018), skills mismatch occurs when workers are unable to utilize their qualifications effectively because their competencies do not align with labour market demands.

The theory identifies three major forms of mismatch: qualification mismatch, field-of-study mismatch, and competency mismatch. Qualification mismatch occurs when individuals possess educational qualifications that are either above or below job requirements. Field-of-study mismatch occurs when graduates work in occupations unrelated to their training. Competency mismatch arises when workers lack specific skills demanded by employers (ILO, 2023).

Several studies indicate that skills mismatch contributes significantly to unemployment and underemployment among young people. Employers increasingly demand digital skills, communication abilities, teamwork, adaptability, and problem-solving competencies in addition

to technical expertise (World Bank, 2022). However, many education and training systems struggle to respond quickly to changing labour market needs.

In Kenya, skills mismatch remains a major concern despite reforms in the TVET sector. Employers continue to report gaps in practical skills, digital competencies, and workplace readiness among graduates (TVETA, 2024). The theory therefore provides a useful framework for understanding the challenges affecting employability and industry relevance within the TVET sector.

2.2 Conceptual Review

2.2.1 Technical and Vocational Education and Training (TVET)

Technical and Vocational Education and Training refers to education and training programmes designed to equip learners with practical skills, technical knowledge, and occupational competencies required for employment and entrepreneurship (UNESCO-UNEVOC, 2023).

Globally, TVET has evolved from traditional vocational training to a broader system that incorporates innovation, entrepreneurship, digital literacy, and lifelong learning. Modern TVET systems are expected to respond rapidly to labour market changes and technological advancements while supporting economic competitiveness and social inclusion (OECD, 2023).

In Kenya, TVET plays a central role in achieving national development objectives outlined in Vision 2030 and the Bottom-Up Economic Transformation Agenda. The enactment of the Technical and Vocational Education and Training Act of 2013 established a regulatory framework aimed at improving quality, access, and relevance within the sector (Government of Kenya, 2013).

Recent reforms include Competency-Based Education and Training (CBET), Recognition of Prior Learning (RPL), modularized curricula, and industry-linked apprenticeship programmes. These reforms seek to improve practical skills acquisition and enhance employability outcomes among graduates (TVETA, 2024).

2.2.2 Employability

Employability refers to an individual's ability to obtain, maintain, and progress in employment through possession of relevant knowledge, skills, attitudes, and competencies (Yorke, 2006). Employability encompasses not only technical skills but also soft skills and personal attributes that enable individuals to succeed in the workplace.

Research indicates that employers increasingly prioritize competencies such as communication, teamwork, problem-solving, critical thinking, adaptability, and digital literacy (ILO, 2023).

These competencies are essential for navigating rapidly changing work environments influenced by technological advancement and globalization.

According to the World Bank (2022), employability is enhanced when training institutions align curricula with labour market demands and provide opportunities for practical workplace

exposure. Therefore, TVET institutions play a critical role in equipping learners with both technical and transferable skills necessary for sustainable employment.

2.2.3 Sustainable Employment

Sustainable employment refers to productive and decent work that can be maintained over time while providing economic security, opportunities for career growth, and resilience against labour market changes (ILO, 2023). Sustainable employment extends beyond job placement and emphasizes long-term employability, adaptability, and career progression.

The concept has gained importance due to rapid technological change, economic uncertainty, and evolving workforce requirements. Workers are increasingly expected to continuously upgrade their skills throughout their careers to remain competitive in the labour market (OECD, 2023).

TVET institutions contribute to sustainable employment by developing technical competencies, entrepreneurial skills, and lifelong learning capacities that enable graduates to adapt to changing labour market conditions.

2.2.4 TVET-Industry Partnerships

TVET-industry partnerships refer to collaborative relationships between training institutions and employers aimed at improving the relevance and quality of skills development programmes.

Such partnerships facilitate curriculum development, industrial attachments, apprenticeships, mentorship programmes, technology transfer, and labour market intelligence sharing (World Bank, 2022).

Studies have shown that strong partnerships between education institutions and employers improve graduate employability by ensuring that training programmes reflect workplace realities and emerging industry requirements (UNESCO-UNEVOC, 2023).

Countries such as Germany, Switzerland, and Singapore have demonstrated the effectiveness of industry-led apprenticeship systems in enhancing workforce readiness and reducing youth unemployment. These experiences highlight the importance of employer participation throughout the training process (OECD, 2023).

2.2.5 Emerging Technologies and Skills Development

The Fourth Industrial Revolution (4IR) is transforming the nature of work and skills requirements globally. Technologies such as artificial intelligence, robotics, automation, cloud computing, data analytics, and the Internet of Things are reshaping industries and creating demand for new competencies (World Economic

Forum, 2023).

As technology adoption accelerates, TVET institutions are expected to integrate digital skills and emerging technologies into training programmes. UNESCO-UNEVOC (2023) emphasizes that future-oriented TVET systems must prepare learners for technology-driven workplaces by promoting innovation, digital literacy, and adaptability.

However, many institutions in developing countries face challenges such as inadequate infrastructure, limited trainer capacity, and insufficient funding for technology integration.

Addressing these challenges is critical for ensuring workforce competitiveness in the digital economy.

2.3 Empirical Literature Review

Studies conducted globally indicate that TVET contributes positively to employability when training programmes are aligned with labour market needs. According to UNESCO-UNEVOC (2023), graduates who receive practical workplace training demonstrate higher employment rates and improved workforce readiness compared to those who receive predominantly theoretical instruction.

The World Bank (2022) found that employer participation in curriculum development and apprenticeship programmes enhances graduate employability and reduces skills mismatch. Similarly, OECD (2023) reports that countries with strong TVET-industry partnerships experience smoother school-to-work transitions and lower youth unemployment rates.

In Africa, several studies have identified persistent challenges related to inadequate training infrastructure, weak industry participation, and limited integration of emerging technologies (African Union, 2022). These challenges contribute to skills gaps and reduce the ability of graduates to compete effectively in labour markets.

In Kenya, TVETA (2024) reports that recent reforms have improved practical skills acquisition and training quality. However, employers continue to express concerns regarding digital competencies, workplace readiness, and soft skills among graduates. Labour market reports further indicate that unemployment and underemployment remain significant challenges despite increased enrolment in TVET institutions (KNBS, 2024).

2.3.1 Research Gap

Existing literature demonstrates the importance of TVET reforms, industry partnerships, and skills development in promoting employability. However, much of the available research focuses on individual institutions, specific programmes, or isolated labour market outcomes. Limited studies have comprehensively examined how TVET reforms, industry partnerships, technology integration, and labour market dynamics collectively influence sustainable employment in Kenya.

Furthermore, the rapid emergence of new technologies and changing workforce requirements necessitates continuous assessment of the relevance of TVET systems. This study seeks to address this gap by examining factors influencing employable skills development and industry relevance within Kenya's TVET sector and identifying strategies for strengthening TVET-industry partnerships in support of sustainable employment.

2.3.2 Conceptual Framework

The study is guided by the assumption that effective TVET reforms, industry partnerships, technology integration, and labour market responsiveness influence employable skills development and ultimately enhance sustainable employment outcomes.

2.3.3 Variables

Independent Variables:

- TVET reforms (CBET, RPL, modularized curricula)
- Industry partnerships
- Technology integration
- Labour market intelligence

Intervening Variables:

- Government policies
- Institutional capacity
- Funding
- Economic conditions

Dependent Variable:

- Sustainable employment and graduate employability

3. RESEARCH METHODOLOGY

3.1 Research Design

The study adopted a qualitative desk review and policy analysis design. A desk review involves the systematic collection, review, and synthesis of information from existing documents, reports, policy papers, academic literature, and institutional publications relevant to the research topic (Bowen, 2009). The approach was considered appropriate because it enabled the researcher to examine a broad range of evidence relating to TVET reforms, employability, industry partnerships, and sustainable employment without undertaking primary data collection.

The qualitative approach was suitable because the study sought to understand patterns, themes, challenges, opportunities, and policy implications rather than generate statistical estimates.

According to Creswell and Creswell (2018), qualitative research is appropriate when the objective is to gain in-depth understanding of social phenomena through analysis of textual information and documentary evidence.

3.2 Study Area

The study focused on Kenya's TVET sector from a national perspective. The review examined policies, programmes, institutional frameworks, and labour market initiatives implemented across the country to strengthen skills development and employment outcomes.

Particular attention was given to reforms introduced under the TVET Act 2013, Competency-Based Education and Training (CBET), Recognition of Prior Learning (RPL), industry-linked internship programmes, apprenticeship initiatives and technology integration strategies within the TVET system.

3.3. Data Sources

Multiple data sources enhanced the comprehensiveness of the review and enabled triangulation of evidence from different perspectives

Data source category	Examples	Purpose
Government policy documents	TVET Act (2013), Vision 2030, Ministry of Education policy	Policy and regulatory analysis

	papers	
TVETA Reports	TVET Status Reports, Quality Assurance Reports	Assessment of reforms and sector performance
Labour Market Reports	KNBS Economic Surveys, Labour Market Assessments	Employment and skills demand analysis
International Reports	UNESCO, ILO, World Bank, OECD publications	Global and regional perspectives
Industry Reports	Employer surveys and sector reports	Industry expectations and workforce needs
Peer-Reviewed Journal Articles	Academic studies on TVET and employability	Empirical evidence and theoretical insights

Source: Researcher (2026).

3.4 Document Selection Criteria

Documents included in the study were selected based on their relevance, credibility, timeliness, and contribution to the research objectives. Priority was given to documents published between 2018 and 2025 to ensure that the findings reflected recent developments in the TVET sector and labour market.

The following criteria guided document selection:

1. Relevance to TVET reforms, employability, industry partnerships, or sustainable employment.
2. Publication by credible institutions such as government agencies, international organizations, academic journals, and recognized industry bodies.
3. Availability of evidence relating to Kenya or comparable international contexts.
4. Currency of information and policy relevance.

3.5 Data Collection Procedure

It involved a systematic review of selected documents. Relevant publications were identified through institutional repositories, government websites, academic databases, organizational reports, and policy archives. The process involved:

1. Identification of relevant documents.
2. Screening and selection based on inclusion criteria.
3. Extraction of information relevant to the study objectives.
4. Categorization of information according to major themes.
5. Synthesis of evidence from multiple sources.

3.6 Data Analysis

The collected data were analyzed using thematic analysis. Thematic analysis is a qualitative method used to identify, analyze, and interpret recurring patterns or themes within textual data (Braun & Clarke, 2006). The analysis process involved:

1. Familiarization with the reviewed documents.

2. Identification of recurring concepts and themes.
3. Coding and categorization of information.
4. Comparison of findings across different sources.
5. Synthesis and interpretation of emerging patterns.

The major themes generated included:

- TVET reforms and policy implementation.
- Employable skills development.
- Industry partnerships and collaboration.
- Skills mismatch and labour market responsiveness.
- Technology integration in TVET.
- Sustainable employment outcomes.

The findings were organized and discussed according to these thematic areas.

3.7 Limitations of the Study

The study relied on secondary data and was therefore dependent on the availability, quality, and accuracy of existing documents.

Some reviewed reports may have been produced using different methodologies, making direct comparisons difficult. Additionally, the study could not capture current stakeholder perceptions that might have emerged through primary data collection.

4. FINDINGS AND DISCUSSION

4.1 Effectiveness of TVET Reforms in Promoting Industry-Relevant Skills Development

The review established that reforms such as Competency-Based Education and Training (CBET), Recognition of Prior Learning (RPL), modularized curricula, and industrial attachment programmes have contributed to improved practical skills acquisition and workplace readiness among trainees (TVETA, 2024; UNESCO-UNEVOC, 2023). These reforms have strengthened the relevance of training to labour market requirements, although implementation challenges remain across institutions. Challenges and its implications are addressed in the table:

Table 4.1: Challenges Affecting Employable Skills Development in Kenya's TVET Sector

Challenge	Impact
Skills mismatch	Reduced employability
Limited technology integration	Low digital competencies
Inadequate infrastructure	Reduced practical training effectiveness
Weak industry participation	Curriculum relevance challenges
Limited labour market intelligence	Delayed response to skills demand

Source: Author's synthesis based on ILO (2023), World Bank (2022), and TVETA (2024).

4.2 Contribution of TVET-Industry Partnerships to Graduate Employability

The findings indicate that effective TVET–industry partnerships play a critical role in improving graduate employability. Industry collaboration contributes to curriculum development, apprenticeship programmes, industrial attachments, technology transfer, and workplace learning opportunities (OECD, 2023).

The review shows that trainees who receive workplace exposure through industrial attachments and apprenticeship programmes acquire practical experience and workplace competencies that enhance employment prospects. Industry involvement also helps institutions align training programmes with labour market requirements.

Despite these benefits, employer participation in training and curriculum review remains inconsistent across sectors. This limits the effectiveness of partnerships in addressing skills gaps and employability challenges.

4.3 Skills Mismatch and Labour Market demands

Industry reports indicate that many employers consider additional workplace orientation and on-the-job training necessary before graduates can effectively perform assigned responsibilities.

This suggests that gaps remain between training outcomes and workplace expectations (ILO, 2023; OECD, 2023). The review further revealed that graduate unemployment cannot be attributed solely to training quality. Broader economic factors such as job creation rates,

industrial growth, investment levels, and labour market absorption capacity also influence employment outcomes.

4.3.1 Discussion

These findings align with Skills Mismatch Theory, which argues that unemployment may occur when educational outputs fail to correspond with labour market needs. Strengthening labour market intelligence systems and increasing employer involvement in curriculum review can help reduce mismatch and improve workforce relevance.

4.4 Integration of Emerging Technologies in TVET Training

The Fourth Industrial Revolution has significantly altered workforce requirements. Technologies such as artificial intelligence, automation, robotics, data analytics, and cloud computing are creating demand for new technical and digital competencies (World Economic Forum, 2023).

The review found that many TVET institutions have not fully integrated these emerging technologies into training programmes. As a result, graduates may face difficulties competing in increasingly technology-driven labour markets.

Future-oriented TVET systems require greater emphasis on digital literacy, innovation, critical thinking, entrepreneurship, and lifelong learning. These competencies are essential for workforce adaptability and long-term employability.

4.5 Challenges Affecting Employable Skills Development

- Limited International Recognition of Qualifications
- Limited Industry Participation
- Resource Constraints
- Trainer Capacity Gaps refresher and apprenticeships
- Skills Mismatch
- Weak Labour Market Intelligence

These challenges are interconnected and require coordinated responses involving government agencies, training institutions, employers, and development partners. Addressing these constraints is critical for improving workforce readiness and sustainable employment outcomes.

4.6 Sustainable Employment Outcomes

The review indicates that TVET contributes significantly to workforce participation, entrepreneurship, self-employment, and economic productivity. Graduates with relevant technical skills often demonstrate higher employment prospects compared to individuals without vocational training.

The literature suggests that countries with strong TVET systems, active industry engagement and responsive labour market policies tend to achieve better employment outcomes and higher workforce competitiveness.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The study sought to examine factors influencing employable skills development and industry relevance within Kenya's TVET sector and to identify strategies for strengthening TVET-industry partnerships in support of sustainable employment.

The review established that Kenya has made significant progress in strengthening the TVET sector through reforms such as Competency-Based Education and Training (CBET), Recognition of Prior Learning (RPL), modularized curricula and industry-linked training programmes. These reforms have improved practical skills acquisition and enhanced opportunities for workforce participation.

Despite these achievements, the study found that several challenges continue to hinder the realization of sustainable employment outcomes. These include limited industry participation in curriculum development and training delivery, inadequate integration of emerging technologies, persistent skills mismatches, insufficient labour market intelligence, resource constraints, and limited international recognition of local qualifications.

The study further concludes that strong partnerships between TVET institutions and industry are critical for improving the relevance of training programmes and enhancing graduate employability. Industry engagement facilitates curriculum alignment, workplace exposure, technology transfer, and access to employment opportunities. However, the effectiveness of these partnerships varies significantly across institutions and sectors.

The findings also indicate that the Fourth Industrial Revolution (4IR) is rapidly transforming labour market requirements. Consequently, TVET institutions must continuously adapt curricula, training methods, and learning environments to equip learners with future-oriented skills, including digital competencies, innovation skills, and adaptability.

Finally, the study concludes that sustainable employment cannot be achieved solely through skills development interventions. Effective employment outcomes require coordinated efforts involving government agencies, training institutions, employers, industry associations and development partners. Strong alignment between skills development systems and labour market demands remains essential for improving workforce competitiveness and supporting Kenya's industrial transformation agenda.

5.2 Recommendations

1. Strengthen Industry Participation in TVET

Align training with labor market needs by having local employers and trade experts directly participate in designing the curriculum and setting occupational standards.

2. Promote International Recognition of Qualifications

Efforts should be made to align TVET qualifications with regional and international competency

frameworks to improve graduate mobility and competitiveness in global labour markets.

3. Expand Apprenticeship and Internship Opportunities

The government should encourage industries to increase apprenticeship, industrial attachment and internship opportunities for trainees. Incentive mechanisms such as tax rebates, recognition awards and public-private partnerships should be explored to encourage employer participation.

4. Accelerate Technology Integration in TVET

TVET institutions should prioritize investment in modern training technologies and digital learning infrastructure. Training programmes should incorporate emerging technologies such as AI, robotics, automation and digital manufacturing.

5. Strengthen Trainer Capacity Development

Continuous professional development programmes should be established to enhance trainer competencies and expose instructors to current industry practices and technological innovations.

6. Improve Labour Market Intelligence Systems

Government agencies and industry stakeholders should strengthen labour market information systems to provide timely and reliable data on employment trends, emerging occupations, and skills demand.

7. Increase Investment in TVET Infrastructure

Government and development partners should continue investing in modern workshops, laboratories, training equipment, and digital infrastructure.

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to all individuals and institutions whose support contributed to the successful completion of this study. I am particularly grateful to the Technical and Vocational Education and Training (TVET) stakeholders, policymakers, researchers, and institutions whose published reports, policy documents, and scholarly works provided valuable insights for this research. I also appreciate my colleagues, mentors, and family members for their encouragement and support throughout the study process.

Above all, I thank Almighty God for granting me good health, wisdom, and strength to complete this work successfully.

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APPENDICES

Appendix I: Document Review Checklist

Document category	Source	Year	Relevance to study	Key information
KNBS	Labour Market Report	2025	high	Trends of employment and unemployment
TVETA Reports	TVETA	2025	high	Progress in CBET implementation and skills development
International Reports	UNESCO/ILO/OECD	2025	high	Global best practices in TVET reforms
Industry Reports	Various Industries	2025	high	Skills mismatch
Journal Articles, OECD Skills Outlook	Academic Sources, OECD	2025	high	Skills for competitiveness and employability
Skills development in Sub-Saharan Africa	World Bank	2024	high	Industry skills needs and workforce development

Appendix II: Documents Reviewed

1. The study reviewed documents from the following sources:
2. Technical and Vocational Education and Training Act (2013).
3. TVET Authority (TVETA) Status Reports.
4. Kenya National Bureau of Statistics (KNBS) Economic Surveys.

5. Ministry of Education Policy Frameworks.
6. International Labour Organization (ILO) Skills Reports.
7. UNESCO-UNEVOC Publications on TVET.
8. World Bank Reports on Skills Development.
9. OECD Skills Outlook Reports.
10. African Union TVET Strategy Documents.
11. Peer-reviewed journal articles on TVET, employability, and industry partnerships.

Appendix III: Conceptual Framework

Independent Variables:

- TVET Reforms (CBET, RPL, Modularized Curriculum)
- Industry Partnerships
- Technology Integration
- Labour Market Intelligence

Intervening Variables:

- Government Policies
- Institutional Capacity
- Funding
- Economic Conditions

Dependent Variable:

- Sustainable Employment and Graduate Employability

Appendix IV: List of Acronyms

CBET – Competency-Based Education and Training

ILO – International Labour Organization

KNBS – Kenya National Bureau of Statistics

OECD – Organization for Economic Co-operation and Development

RPL – Recognition of Prior Learning

TVET – Technical and Vocational Education and Training

TVETA – Technical and Vocational Education and Training Authority

UNESCO – United Nations Educational, Scientific and Cultural Organization



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