

Influence of TVET Institutions' Collaboration with the Industries on the Employment of TVET Graduates in Uasin Gishu County, Kenya

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ABSTRACT

Technical and Vocational Education and Training (TVET) institutions play a critical role in equipping trainees with practical competencies required in industries. However, increasing unemployment among TVET graduates in Kenya has raised concerns regarding the adequacy of collaboration between TVET institutions and industries in preparing graduates for employment. This study investigated the influence of TVET institutions' collaboration with industries on the employment of TVET graduates in Uasin Gishu County, Kenya. The study adopted a mixed-method approach and descriptive survey design guided by Human Capital Theory. The target population was 512, comprising 42 TVET institutions, 360 graduates, and 110 industry experts. A planned sample of 285 comprised 13 institutions, 186 graduates, and 86 industry experts. Stratified, simple random, and purposive sampling techniques were used. Data were collected between February and April 2018 using questionnaires, interview schedules, and document analysis. A total of 168 graduate questionnaires and 71 industry-expert questionnaires were returned ($N = 239$), representing response rates of 90.8% and 91.0%, respectively; 69 industry experts also completed interviews. Quantitative data were analyzed using descriptive statistics and regression analysis in SPSS, while qualitative data were analyzed thematically. The coefficient estimates showed that on-the-job training and industry liaison on practical skills training significantly predicted graduate employment, whereas industry commitment to providing apprentice services was not statistically significant. Weak industrial partnerships, limited attachment opportunities, inadequate stakeholder involvement, and poor feedback mechanisms further constrained employability. The study concludes that structured collaboration enhances industrial exposure and practical competencies and recommends stronger industry participation in curriculum review, assessment, and supervised workplace learning.

Keywords: TVET, Industry Collaboration, Employability, Industrial Attachment, Employment, Practical Skills, Uasin Gishu County, Kenya

INTRODUCTION

Technical and Vocational Education and Training (TVET) has increasingly become an essential strategy for producing skilled human resource capable of driving industrialization, economic growth, and sustainable development. TVET institutions are expected to equip trainees with relevant practical competencies, technical knowledge, and employability skills required in industries. However, the effectiveness of TVET depends largely on the extent of collaboration between TVET institutions and industries.

Globally, governments and stakeholders have emphasized the need for close collaboration between training institutions and industries to bridge the gap between training and employment. Industries provide practical exposure, industrial experience, and updated technological knowledge that enable trainees to acquire relevant competencies required in the labour market.

Collaboration between TVET institutions and industries involves partnerships in curriculum development, industrial attachment, apprenticeship programs, internships, competency assessment, research, and training support. Such collaboration ensures that training remains responsive to industrial needs and labour market demands.

Despite the recognized importance of industrial collaboration, many developing countries continue to experience weak partnerships between TVET institutions and industries. As a result, many graduates complete training without adequate industrial exposure and practical experience. This mismatch contributes to increasing unemployment among TVET graduates.

Studies conducted in different countries indicate that collaboration between industries and TVET institutions positively contributes to acquisition of employability skills. John and Yusri (2021) noted that confidence in technical training is achieved through quality collaboration between industries and TVET institutions. Similarly, Gasmelseed (2021) established that collaboration between industries and TVET institutions equips trainees with practical competencies needed for employment.

In Kenya, TVET institutions are expected to work closely with industries to ensure trainees acquire relevant competencies aligned with labour market requirements. The government has promoted Competency-Based Education and Training (CBET) and encouraged partnerships between industries and technical institutions through agencies such as the Curriculum Development Assessment and Certification Council (CDACC) and Technical and Vocational Education and Training Authority (TVETA).

However, concerns have emerged regarding inadequate collaboration between TVET institutions and industries in Kenya. Many industries rarely participate in curriculum development, industrial assessment, and training support. Additionally, limited industrial attachment opportunities and inadequate feedback mechanisms have negatively affected the quality of TVET graduates.

In Uasin Gishu County, industries require competent graduates capable of handling modern industrial technologies and workplace demands. However, unemployment among TVET graduates remains high, raising concerns about the adequacy of collaboration between TVET institutions and industries. This study therefore sought to investigate the influence of TVET institutions' collaboration with the industries on the employment of TVET graduates in Uasin Gishu County, Kenya.

Statement of the Problem

Employment is a key determinant of economic growth, poverty reduction, and social development. TVET institutions were established to equip trainees with practical competencies and employability skills required in industries. However, despite increased investment in TVET institutions in Kenya, unemployment among TVET graduates remains high.

Many employers have expressed dissatisfaction with the competencies possessed by TVET graduates. Graduates are often perceived to lack adequate practical skills, industrial exposure, communication abilities, and workplace experience required by industries. One of the major factors contributing to this challenge is inadequate collaboration between TVET institutions and industries.

Weak partnerships between industries and TVET institutions have resulted in limited industrial attachment opportunities, poor curriculum implementation, insufficient practical exposure, and lack of feedback regarding labour market needs. Consequently, many graduates complete training without acquiring the competencies expected by employers.

Previous studies in Kenya focused mainly on practical skills acquisition and curriculum relevance, leaving limited information regarding the influence of collaboration between TVET institutions and industries on employment of graduates in Uasin Gishu County. Therefore, this study sought to establish how collaboration between TVET institutions and industries influences employment among TVET graduates in Uasin Gishu County, Kenya.

Purpose of the Study

The purpose of the study was to investigate the influence of TVET institutions' collaboration with the industries on the employment of TVET graduates in Uasin Gishu County, Kenya.

Objective of the Study

To determine the influence of TVET institutions' collaboration with the industries on the employment of TVET graduates in Uasin Gishu County, Kenya.

Research Question

Does TVET institutions' collaboration with the industries influence the employment of TVET graduates in Uasin Gishu County, Kenya?

LITERATURE REVIEW

TVET Institutions' Collaboration with Industries and Employment

Collaboration between TVET institutions and industries is essential in equipping trainees with practical competencies required in the labour market. Industries provide practical exposure, modern technological experience, and opportunities for trainees to apply classroom knowledge in real workplace environments.

John and Yusri (2021) established that confidence in technical training is achieved through collaboration between industries and TVET institutions. The study emphasized the need for joint efforts between governments, industries, and technical institutions in financing and supporting TVET training programs.

Bajracharya and Paudel (2021) observed that collaboration between TVET institutions and industries plays a significant role in promoting skills development and economic growth. However, the study established that most partnerships remain weak and often fail to extend beyond industrial attachment programs.

Mitiku et al. (2021) noted that TVET institutions need to collaborate adequately with industries to ensure trainees acquire employability skills. The study identified several challenges hindering collaboration including inadequate curriculum review, poor institutional innovation, insufficient policy support, and weak feedback mechanisms from industries.

Gasmelseed (2021) established that collaboration between industries and TVET institutions equips trainees with practical competencies required for employment. The study further noted that collaboration helps bridge the gap between training and employment by exposing trainees to modern technologies and workplace practices.

Sumbodo et al. (2020) emphasized the importance of involving industry experts in curriculum development and implementation. The study established that trainees who learn under industry-oriented programs acquire relevant competencies and transition smoothly into employment.

In Kenya, TVET institutions are expected to collaborate with industries through industrial attachment, curriculum development, apprenticeship, competency assessment, and research partnerships. However, studies indicate that many industries rarely participate meaningfully in curriculum design and implementation.

Mordi (2020) established that collaboration between industries and TVET institutions positively contributes to acquisition of employability skills among trainees. The study emphasized the need for industries to support TVET institutions through practical training opportunities and provision of modern industrial technologies.

Industrial revolutions and technological advancements continue to transform industries globally. Vinayan et al. (2020) observed that industries increasingly require highly skilled workers capable of adapting to technological changes. Therefore, TVET institutions need strong collaboration with industries to ensure training remains relevant and responsive to labour market demands.

Despite the recognized importance of collaboration, many TVET institutions continue to face challenges such as inadequate industrial partnerships, insufficient industrial placement opportunities, poor stakeholder engagement, and limited government support. These challenges contribute significantly to unemployment among TVET graduates.

Human Capital Theory

The study was guided by the Human Capital Theory. The theory argues that investment in education and training improves the productivity, competence, and employability of individuals. TVET institutions are expected to equip trainees with practical competencies and industrial exposure required in the labour market.

Human Capital Theory emphasizes that collaboration between TVET institutions and industries enhances acquisition of relevant competencies and practical experience needed for employment. When trainees acquire industrial exposure and practical competencies, they become more productive and employable.

RESEARCH METHODOLOGY

The study adopted a mixed-method research approach and descriptive survey research design. The design enabled the researcher to collect, analyze, and interpret information regarding the influence of TVET institutions' collaboration with industries on employment of TVET graduates.

The study was conducted in Uasin Gishu County, Kenya. The target population comprised 512 units: 42 accredited TVET institutions, 360 TVET graduates who completed training between 2014 and 2016, and 110 industry experts. The planned sample was 285, comprising 13 TVET institutions, 186 graduates, and 86 industry experts. Stratified sampling was used to select public and private institutions, simple random sampling was used to select graduates, and purposive sampling was used to select industry experts.

Data were collected between February and April 2018. During fieldwork, 185 questionnaires were distributed to TVET graduates and 168 were returned, giving a 90.8% response rate. Of 78 questionnaires distributed to industry experts, 71 were returned, giving a 91.0% response rate. The final quantitative sample was therefore $N = 239$. In addition, 69 of the 78 industry experts approached completed interviews, representing an 88.5% interview response rate. The difference between the planned sample and the instruments administered reflects field access and respondent availability during data collection.

Data collection instruments included questionnaires, interview schedules, and document analysis. Questionnaires generated quantitative data from graduates and industry experts, while interviews provided qualitative insights into industrial collaboration and graduate employability. Instrument validity was established through expert review, and reliability was assessed through pilot testing. Quantitative data were analyzed using frequencies, percentages, means, and regression analysis in SPSS, while qualitative data were analyzed thematically.

FINDINGS AND DISCUSSION

Collaboration Between TVET Institutions and Industries

The findings established that collaboration between TVET institutions and industries was inadequate in many institutions. Most respondents indicated that industries rarely participated in curriculum development, practical assessment, and training support. TVET graduates were asked whether the collaboration of TVET institutions with industries affects employment, and their responses were recorded in Table 1. The majority of the respondents (39.9%) strongly agreed that industries provide on-the-job training before hiring graduates, while 33.3% strongly disagreed. In addition, 41.7% of the respondents disagreed that industries liaise with TVET institutions on practical skills training, while 30.4% agreed. When respondents were asked whether the industry is committed to providing apprentice services to graduates, 46.4% strongly agreed, 29.2% strongly disagreed, 12.5% disagreed, 11.3% agreed, while only 0.6% were undecided, as shown in Table 1.

Table 1: TVET Graduates' Responses on TVET Institutions' Collaboration with the Industries

Item	SA	A	N	D	SD
Industries offer on-the-job training	67 (39.9%)	31 (18.5%)	0 (0.0%)	14 (8.3%)	56 (33.3%)

Industries liaise with TVET institutions	51 (30.4%)	46 (27.4%)	1 (0.6%)	70 (41.7%)	0 (0.0%)
Industries provide apprentice services	78 (46.4%)	19 (11.3%)	1 (0.6%)	21 (12.5%)	49 (29.2%)

Key: SA – Strongly Agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly Disagree

Source: Field survey data (2026)

The study further established that industrial attachment opportunities were insufficient and poorly coordinated. Many trainees experienced difficulties securing industrial placements, while others were attached to industries unrelated to their areas of specialization.

Industry experts indicated that TVET institutions rarely sought feedback regarding graduates' competencies and labour market requirements. Consequently, many graduates lacked adequate industrial exposure, workplace communication skills, teamwork abilities, and practical competencies expected by employers.

Most industry experts (59.2%) strongly agreed that industries employ graduates who have undergone proper industrial training, while 12.7% strongly disagreed. In addition, 62.0% strongly agreed that industries employ graduates who have completed industrial internships; 18.2% agreed, 4.2% were neutral, 5.6% disagreed, and 9.9% strongly disagreed, as shown in Table 2.

Table 2: Industry Experts' Responses on TVET Institutions' Collaboration with the Industries

Item	SA	A	N	D	SD
Industries employ graduates with proper industrial training	42 (59.2%)	15 (21.1%)	3 (4.2%)	2 (2.8%)	9 (12.7%)
Industries employ graduates who have undergone industrial internships	44 (62.0%)	13 (18.2%)	3 (4.2%)	4 (5.6%)	7 (9.9%)
Industrial attachment for lecturers increases trainees' employment rate	47 (66.2%)	11 (15.5%)	2 (2.8%)	3 (4.2%)	8 (11.3%)
Traineeship programmes increase graduate employability	42 (59.2%)	14 (19.7%)	3 (4.2%)	4 (5.6%)	8 (11.3%)
Sharing workshop and laboratory facilities with TVET institutions promotes employment	46 (64.8%)	12 (16.9%)	2 (2.8%)	4 (5.6%)	7 (9.9%)

Key: SA – Strongly Agree, A – Agree, N – Neutral, D – Disagree, SD - Strongly Disagree

Source: Field survey data (2026)

Regarding industrial attachment for lecturers, 66.2% strongly agreed and 15.5% agreed that it increases the employment rate of trainees; 11.3% strongly disagreed, 4.2% disagreed, and 2.8% were neutral. Similarly, 59.2% strongly agreed and 19.7% agreed that traineeship programmes increase graduate employability, while 11.3% strongly disagreed, 5.6% disagreed, and 4.2% were neutral.

The qualitative findings revealed that weak collaboration between TVET institutions and industries negatively affected acquisition of employability skills. Many graduates reported that industrial attachment periods were too short and lacked proper supervision.

The study also established that industries were rarely involved in curriculum review and implementation. As a result, some training programmes remained outdated and did not respond adequately to current technological trends and industrial needs. Interview participants argued that industry should take a more active role in TVET curriculum and training, while some emphasized that lifelong learning should prioritize practical competence rather than certificate acquisition.

Kenya's CBET framework assigns TVET CDACC responsibility for developing competency-based curricula and occupational standards in collaboration with industry, including through Sector Skills Advisory Committees (SSACs). It also requires curricula and assessment to remain responsive to changing labour-market needs (TVET CDACC, 2023). The present study did not establish that local industries formally refused to participate in SSACs. Rather, limited curriculum involvement, weak employer feedback, and insufficient attachment opportunities indicate an implementation gap between the national CBET architecture and routine institution-industry collaboration in Uasin Gishu County.

The breakdown was especially evident in industrial attachment. National standards require TVET institutions to identify relevant employers, supervise trainees, obtain employer feedback, and monitor attachment quality. Industries are expected to appoint mentors, provide meaningful work-based learning, issue progress reports, and commit appropriate facilities and resources (TVETA, 2023). The reported short attachments, unrelated placements, weak supervision, and limited feedback therefore point to inconsistent fulfilment of these operational responsibilities rather than the absence of a national policy framework.

Influence on Employment of TVET Graduates

Coefficient-level regression results indicated that specific dimensions of collaboration between TVET institutions and industries predicted the employment of TVET graduates. Graduates who received structured workplace training and benefited from active liaison on practical skills were more likely to demonstrate stronger employment outcomes than graduates with limited industrial interaction.

Table 3: Regression Analysis on the TVET Institutions' Collaboration with the Industries and Employment of TVET Graduates

	B	Sig.	Partial correlation
On-the-job training is provided to graduates in industries	0.126	0.0144**	0.114
Industries liaise with TVET institutions on practical skills training	0.075	0.0331**	0.762
Industry is committed to providing apprentice services to graduates	0.105	0.194	0.101

Note. ** $p < .05$.

Source: Field survey data (2026)

Model summary: $R^2 = 0.42$; adjusted $R^2 = 0.39$; $F = 18.76$; $p < 0.001$.

The coefficient estimates showed that on-the-job training ($B = 0.126$, $p = .0144$) and industry liaison with TVET institutions on practical skills training ($B = 0.075$, $p = .0331$) were statistically significant positive predictors of graduate employment at the $p < .05$ level. Conversely, industry commitment to providing apprentice services was not a statistically significant predictor ($B = 0.105$, $p = .194$). These findings support structured workplace training and active institution-industry liaison, but they do not show an independent employment effect for the reported apprenticeship commitment measure.

TVET institutions' collaboration with the industries enables trainees to feel the work environment and thus gain 'hands-on' experiences. The hands-on training transfers appropriate skills, knowledge, and work ethics to the

trainees in different trades. Also, suitable production methods and technology are transferred to the industries by the TVET graduates.

The partnership between the TVET institutions and the industries helps the trainees prepare for the ever-changing technologies in the workplace. TVET needs to be adaptable, acceptable, and applicable to the industries.

One of the things worrying the employers nowadays is the ability to find competent employees and train them. In most cases, the practical skills expected in the industries and those trainees have do not match, thus creating a skill gap. There is a genuine concern to industries experts who need to employ competent TVET graduates. Industry experts need TVET graduates who are consistent in their work. Problem-solving skills, social skills, and positive attitudes are essential values for one to be successful in the industry. Being creative is an attribute that industry experts should not overlook. TVET institutions should empower and create high-performance graduates needed for competitiveness in the industries. TVET graduates possessing practical techniques are highly needed in the industries. Foundation competencies are essential for trainees to be successful in their career pathways.

Industries preferred graduates who possessed workplace experience, practical competencies, communication skills, adaptability, and understanding of industrial operations. Collaboration between industries and TVET institutions enabled trainees to acquire these competencies.

The findings agree with Human Capital Theory, which proposes that investment in practical training and industrial exposure improves productivity and employability. They also show that policy design alone is insufficient: the benefits of CBET depend on active employer participation, relevant placements, joint supervision, and documented feedback that translates workplace needs into curriculum and assessment practice.

CONCLUSION

The study concluded that collaboration between TVET institutions and industries influences the employment of TVET graduates in Uasin Gishu County, Kenya. In particular, on-the-job training and industry liaison on practical skills were statistically significant predictors of employment, while the reported measure of industry commitment to apprentice services was not significant.

However, the study established that many TVET institutions experience weak partnerships with industries, limited industrial attachment opportunities, inadequate stakeholder involvement, and poor feedback mechanisms. These challenges negatively affect acquisition of practical competencies and employment outcomes among graduates.

The study further concluded that strengthening partnerships between TVET institutions and industries would improve curriculum relevance, industrial exposure, practical training, and employability of graduates.

RECOMMENDATIONS

The study made the following recommendations:

1. TVET institutions should strengthen collaboration with industries through partnerships in curriculum development, industrial attachment, apprenticeship, and competency assessment.
2. Industries should participate actively in curriculum review, occupational-standard development, and assessment through formal institutional liaison mechanisms and relevant TVET CDACC Sector Skills Advisory Committee processes.
3. TVET CDACC, TVETA, county stakeholders, and training institutions should monitor and document local industry participation in CBET implementation, curriculum feedback, workplace assessment, and graduate-skills reviews.

4. TVET institutions and employers should implement the national industrial attachment standard through relevant placements, designated supervisors and mentors, joint assessment, progress reporting, and documented feedback.
5. Industries should provide trainees with opportunities to interact with modern technologies and workplace practices.
6. TVET institutions should establish regular feedback mechanisms with industries regarding graduates' competencies and labour market expectations.
7. Trainers should receive industrial exposure and continuous professional development to remain updated on current industrial trends and technologies.

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