

From Classroom to Career: A Systematic Review of How Ugandan TVET Pathways Shape Youth Employability, Earnings, And Transition to Decent Work

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Abstract

This systematic review synthesises empirical evidence on how Technical and Vocational Education and Training (TVET) pathways in Uganda influence youth employability, earnings, and transitions to decent work, placing Ugandan findings within the wider context of Sub-Saharan Africa and low- and middle-income country (LMIC) evidence. Following PRISMA-style procedures, the review uses data from experimental and quasi-experimental impact evaluations, tracer studies, and qualitative research on TVET, internships, apprenticeships, and skills development. Global and regional systematic reviews indicate that TVET interventions tend to have small but positive average effects on overall paid employment, formal employment, and monthly earnings among young people, though these effects vary and are influenced by study quality and programme design. Evidence consistently shows stronger, more consistent impacts when classroom-based TVET is combined with work-based learning, such as internships and apprenticeships, along with additional support services, including career guidance, entrepreneurship training, and financial aid. Ugandan tracer and system studies report that most TVET diploma graduates find employment within one year and identify teaching quality, entrepreneurial training, and strong academic performance as key factors driving employability, while curriculum–labour market misalignment, weak digital skills, variable internship quality, and reliance on informal hiring networks limit outcomes. Research on informal-sector-focused TVET under the “Skilling Uganda” agenda suggests that skills development can improve informal work and increase incomes in urban areas, though issues such as deficits in decent work, precarious conditions, limited social protection, and limited career progression remain. Qualitative analyses across LMICs highlight that TVET participation affects not only economic outcomes but also young people’s cultural and social capital, aspirations, and well-being, with particularly strong benefits for disadvantaged youth. Overall, the review concludes that Ugandan TVET provides a meaningful pathway from education to employment and can improve job prospects and earnings, but it is not yet a guaranteed route to decent work, emphasising the need for more in-depth system reforms and more rigorous impact evaluations in Uganda.

Keywords: TVET; Youth Employability; Internships and Apprenticeships; Informal Sector; Sub-Saharan Africa; Uganda; Systematic Review

Background

Youth in low- and middle-income countries (LMICs) are nearly three times as likely as adults to be unemployed and are disproportionately engaged in low-quality informal work (Tripney & Hombrados, 2013; Tripney et al., 2013). This has sparked renewed global policy interest in Technical and Vocational Education and Training (TVET) to expand opportunities for marginalised youth and reduce poverty (Tripney & Hombrados, 2013; Tripney et al., 2013).

A Campbell systematic review and meta-analysis of TVET interventions for youth in LMICs shows that participation produces small but positive and statistically significant mean effects on paid employment, formal employment, and monthly earnings, although effects vary considerably and the overall evidence base remains limited (Tripney & Hombrados, 2013; Tripney et al., 2013). More recent qualitative synthesis across 31 LMIC studies finds that TVET participation has multidimensional impacts on young people's cultural capital, social capital, aspirations, and health, particularly benefiting disadvantaged youth (Shi & Bangpan, 2022).

In Sub-Saharan Africa, TVET systems are limited by underfunding, outdated curricula, infrastructural deficits, and shortages of qualified instructors, which weaken training quality and labour-market relevance (Mante et al., 2025; Hassler et al., 2020). Nevertheless, the sector remains central to youth employment agendas and informal-sector upgrading. In Uganda, the "Skilling Uganda" reform under the BTVET strategy explicitly aims to equip youth with market-driven skills for both formal and informal sectors (Moses & Liu, 2023; Kintu et al., 2019). A systematic review of Kampala's urban informal economy shows that the informal sector contributes over 50% of Uganda's GDP and 70% of non-farm employment, and that TVET-linked skills development is a key driver of its transformation (Moses & Liu, 2023).

Ugandan tracer and system studies further indicate that most National Diploma engineering graduates find employment within a year, with teaching quality, entrepreneurial skills, and solid academic performance being key predictors of employability. Conversely, weak digital skills, misalignment between curriculum and industry, inconsistent internship quality, and dependence on informal hiring networks hinder outcomes (Nakawala, 2025).

This review builds on global and regional evidence to examine how TVET pathways in Uganda influence youth employability, earnings, and transitions to decent work, including in the informal sector.

Methods

Review Design And Scope

A systematic review approach guided by **PRISMA** principles was adopted, drawing on: Systematic reviews and meta-analyses of TVET and youth employment in LMICs (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Tripney et al., 2013); Systematic and scoping reviews of TVET systems,

assessment, and apprenticeship in Sub-Saharan Africa (Mante et al., 2025; Hassler et al., 2020; Yusop et al., 2022; Appiah-Kubi et al., 2025); Uganda-specific work on TVET, internships, and “Skilling Uganda” (Mara et al., 2025; Moses & Liu, 2023; Nakawala, 2025; Kintu et al., 2019). The focus was on pathways connecting classroom-based TVET, work-based learning (such as internships and apprenticeships), and broader skills development with labour market outcomes for youth.

Eligibility Criteria

The included evidence fulfilled the following criteria:

- Population: Youth aged approximately 15–35 years, primarily focusing on Uganda and Sub-Saharan Africa, with global LMIC reviews for contextual comparison (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022; Appiah-Kubi et al., 2025; Moses & Liu, 2023; Nakawala, 2025; Kintu et al., 2019).
- Interventions: Formal and non-formal TVET, vocational training, internships, apprenticeships, and structured skills programmes (including informal-sector-oriented training) (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022; Appiah-Kubi et al., 2025; Moses & Liu, 2023).
- Outcomes: Employment and employability (employment status, employability skills), earnings or income, indicators related to decent work (job quality, formality, stability), and multidimensional participation experiences (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022; Appiah-Kubi et al., 2025; Moses & Liu, 2023; Nakawala, 2025; Kintu et al., 2019).
- Designs: Experimental and quasi-experimental impact evaluations (Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022), tracer studies (Nakawala, 2025), and systematic qualitative or mixed-methods research (Shi & Bangpan, 2022; Hassler et al., 2020; Appiah-Kubi et al., 2025; Moses & Liu, 2023; Kintu et al., 2019).
- Time frame: 2000–2025; language: English.

Search And Selection

The review relies on the search strategies reported in major systematic reviews of TVET and youth skills programmes, which employed comprehensive database and grey literature searches following PRISMA, including Campbell reviews and sectoral syntheses (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022; Appiah-Kubi et al., 2025; Moses & Liu, 2023). For Uganda-specific evidence, targeted searches using combinations of “Uganda,” “TVET,” “BTNET,” “Skilling Uganda,” “internships,” “apprenticeship,” and “employability” were conducted (Moses & Liu, 2023; Nakawala, 2025; Kintu et al., 2019).

Titles and abstracts were screened against inclusion criteria; full texts were subsequently reviewed to verify eligibility.

Data Extraction And Quality Appraisal

Key information was extracted on context, intervention type, study design, participant characteristics, and outcomes. For quantitative reviews and impact evaluations, summary effect sizes or effect directions on employment and earnings were reported (Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022). Qualitative evidence on skills acquisition, transition processes, and decent work was captured (Shi & Bangpan, 2022; Hassler et al., 2020; Appiah-Kubi et al., 2025; Moses & Liu, 2023; Kintu et al., 2019).

Quality appraisal followed criteria used in existing TVET systematic reviews, assigning greater interpretive weight to higher-quality experimental, quasi-experimental, and rigorously conducted qualitative syntheses (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022; Appiah-Kubi et al., 2025).

Synthesis

Given heterogeneity across interventions, contexts, and outcomes, a narrative synthesis was employed. Global and SSA-wide systematic reviews serve as a benchmark, while Uganda-specific evidence is utilised to interpret and localise the broader patterns (Shi & Bangpan, 2022; Mante et al., 2025; Tripney & Hombrados, 2013; Tripney et al., 2013; Hassler et al., 2020; Yusop et al., 2022; Appiah-Kubi et al., 2025; Moses & Liu, 2023; Nakawala, 2025; Kintu et al., 2019).

Results And Discussion

Employment And Employability

The Campbell meta-analysis of 26 TVET interventions in LMICs finds small but positive and significant mean effects on overall paid employment, formal employment, and monthly earnings, with considerable heterogeneity (Tripney & Hombrados, 2013; Tripney et al., 2013). For medium-quality studies, the effect size for paid employment is modest (Hedges $g \approx 0.06$) and slightly larger for formal employment ($g \approx 0.12$) (Tripney et al., 2013). No single TVET model clearly outperforms others (Tripney & Hombrados, 2013; Tripney et al., 2013).

A qualitative systematic review of 31 LMIC studies shows that TVET participation builds cultural capital (skills, credentials, socio-emotional competencies) and social capital (bonding, bridging, linking ties), shapes aspirations, and can influence health and well-being (Shi & Bangpan, 2022). Disadvantaged youth particularly benefit in terms of access and equity, although job-quality concerns and unmet expectations are common (Shi & Bangpan, 2022).

In Uganda, a national tracer and econometric study of National Diploma engineering graduates shows that 63% obtained employment within one year, with quality of teaching, entrepreneurial skills, and first-class awards significantly predicting employability (Nakawala, 2025). Employers express high satisfaction with graduates' practical competencies but identify serious deficits in digital literacy and adaptive problem-solving, linked to outdated curricula and limited exposure to new technologies (Nakawala, 2025).

Qualitative research on the transitions of Ugandan TVET graduates highlights strategies such as industrial attachments, institutional income-generating units, employment agencies, institutional–industrial linkages, and the provision of start-up tools and capital as important for bridging education and work (Kintu et al., 2019). However, persistent transition difficulties emphasise the need for stronger labour-market information systems and more systematic support within institutions (Kintu et al., 2019).

A systematic review of apprenticeships in Sub-Saharan Africa, encompassing 21 studies, finds that technical and vocational skills training components are effective at improving employment prospects, especially for youth under 25, while financial education and grants are more strongly associated with increased income (Yusop et al., 2022). This reinforces the value of combining skills training with complementary support services.

A recent systematic review of internships and vocational training in Uganda’s higher education and TVET sectors (48 studies) indicates that such exposure enhances technical and soft skills and improves employability, and is linked to higher employment rates and improved career advancement (Eseza, 2025).

Earnings And Informal Sector Upgrading

The Campbell meta-analysis reports a small, positive, significant effect of TVET on monthly earnings, again with substantial heterogeneity across interventions (Tripney & Hombrados, 2013; Tripney et al., 2013).

In Uganda, the “Skilling Uganda” initiative and BTVET reforms are explicitly described as responses to the country’s large informal sector. A systematic review of TVET-linked skill development in Kampala finds that the informal sector accounts for over 50% of GDP and more than 70% of non-farm employment; TVET and skills programmes are portrayed as vital for improving productivity and incomes among vulnerable urban residents (Moses & Liu, 2023). Although specific quantitative effect sizes are not provided, the review concludes that TVET-supported skill development is crucial for transforming informal work and increasing incomes, despite challenges related to curriculum relevance and outdated equipment (Moses & Liu, 2023).

Decent Work And Multidimensional Outcomes

Qualitative evidence from LMICs shows that TVET does not automatically ensure decent work: youth may enter jobs with long hours, poor conditions, or unstable wages despite improved earnings and employment chances (Shi & Bangpan, 2022). Participants in some interventions feel disillusioned when promised jobs do not materialise or when working conditions are exploitative (Shi & Bangpan, 2022).

In Uganda, similar tensions emerge. Although many TVET graduates find employment, underemployment and jobs below qualification level remain widespread, and a heavy reliance on informal hiring networks excludes a significant minority of graduates (Nakawala, 2025; Kintu et al., 2019). Evidence from Kampala’s informal sector shows that while skills development can boost incomes and livelihood security, many workers still lack social protection and face unstable conditions (Moses & Liu, 2023).

System And Programme Features

Systematic reviews of TVET systems in SSA highlight structural weaknesses, including funding shortages, misaligned and outdated curricula, infrastructure deficits, and shortages of qualified instructors (Mante et al., 2025; Hassler et al., 2020). These factors undermine TVET's ability to deliver market-relevant skills and constrain its impact on employability.

A systematic review of TVET assessment approaches indicates that competence-based assessment is increasingly employed to measure learning outcomes and promotes alignment between training and occupational standards (Appiah-Kubi et al., 2025). However, implementation demands ongoing investment in teacher training, assessment literacy, and industry engagement.

Comparative SSA research indicates that youth with TVET backgrounds generally have better employment prospects than those without TVET, but curriculum gaps and limited practical exposure reduce competitiveness relative to university graduates; curriculum reform and holistic skill development are recommended (Mujuri & Kathomi, 2025).

In Uganda, mixed-methods evidence shows that employer involvement in curriculum development, industrial attachments, and collaborative projects enhances the relevance of training and employability, yet actual employer participation remains inconsistent (Moses & Liu, 2023; Nakawala, 2025; Kintu et al., 2019).

Conclusion

Evidence from LMICs, SSA, and Uganda shows that TVET improves youth employability and earnings on average, with stronger effects when classroom training is combined with comprehensive work-based learning, entrepreneurial and financial education, and institutional support services (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022; Moses & Liu, 2023; Eseza, 2025; Nakawala, 2025; Kintu et al., 2019). Ugandan tracer and system studies confirm that most TVET diploma graduates find employment within a year, and that high-quality teaching, entrepreneurial training, and strong academic performance are key factors for employability.

However, TVET in Uganda is not yet a guaranteed pathway to decent work. Mismatch between curriculum and labour market demands, weak digital skills, inconsistent quality of internships and apprenticeships, and dependence on informal hiring channels limit outcomes and contribute to underemployment and insecure employment (Mante et al., 2025; Hassler et al., 2020; Moses & Liu, 2023; Nakawala, 2025; Kintu et al., 2019). Informal-sector-oriented TVET under “Skilling Uganda” can enhance employment and increase incomes, but fundamental issues regarding job quality and social protection still persist (Moses & Liu, 2023).

Qualitative evidence highlights that TVET offers multidimensional benefits—boosting cultural, social, and psychological capital and aspirations—particularly for disadvantaged youth, but also shows mixed experiences influenced by intervention quality and broader labour-market structures (Shi & Bangpan, 2022).

Overall, TVET in Uganda offers a worthwhile but limited pathway from classroom to career: it can boost employment and income opportunities but needs more comprehensive systemic reform to consistently provide decent, secure, and respectful work.

Recommendations

Policy And Practice

1. Strengthen Employer Engagement And Work-Based Learning

- i. Institutionalise employer participation in curriculum design, training delivery, assessment, and quality assurance to ensure programmes remain aligned with current industry needs (Mante et al., 2025; Hassler et al., 2020; Moses & Liu, 2023; Mujuri & Kathomi, 2025; Nakawala, 2025; Kintu et al., 2019).
- ii. Expand structured internships and apprenticeships with clear standards, supervision, and assessment; address findings that poorly implemented internships may not improve and can even reduce employability (Nakawala, 2025; Kintu et al., 2019).

2. Modernise Curricula And Incorporate Competence-Based Assessment.

- i. Regularly review and update TVET curricula to incorporate technological advancements, digital skills, and emerging occupational profiles, especially in engineering, ICT, and services (Mante et al., 2025; Hassler et al., 2020; Appiah-Kubi et al., 2025; Moses & Liu, 2023; Mujuri & Kathomi, 2025; Nakawala, 2025).
- ii. Expand competence-based assessment methods to ensure learning outcomes mirror workplace skills, backed by teacher training in assessment design and application (Appiah-Kubi et al., 2025).

3. Integrate Soft Skills, Digital Literacy, And Entrepreneurship

- i. Systematically integrate soft skills (communication, teamwork, problem-solving) and digital competencies alongside technical content, addressing employer-identified gaps (Shi & Bangpan, 2022; Mante et al., 2025; Appiah-Kubi et al., 2025; Eseza, 2025; Nakawala, 2025).
- ii. Enhance entrepreneurship and financial literacy components, building on evidence from apprenticeship and skills training that links these elements to higher income generation (Yusop et al., 2022; Moses & Liu, 2023; Nakawala, 2025).

4. Enhance Institutional Career And Transition Support

- i. Establish active labour market information systems in TVET institutions to monitor demand, identify skills shortages, and support graduate employment (Kintu et al., 2019).
- ii. Provide structured career guidance, job search training, and connections to employment services to facilitate smooth transitions into both formal and informal work (Shi & Bangpan, 2022; Yusop et al., 2022; Eseza, 2025; Kintu et al., 2019).

5. Target Informal-Sector Upgrading And Decent Work

- i. Design TVET interventions tailored to key informal sector niches (e.g., construction, services, artisan trades), combining technical training with business development and access to tools or finance (Yusop et al., 2022; Moses & Liu, 2023).
- ii. Align TVET reforms with broader labour-market and social-protection policies to gradually enhance job quality in both formal and informal sectors (Shi & Bangpan, 2022; Mante et al., 2025; Hassler et al., 2020; Moses & Liu, 2023; Wignall et al., 2023).

Areas For Future Studies

1. Rigorous Impact Evaluations Specific To Uganda

- i. Undertake experimental or rigorous quasi-experimental studies of major Ugandan TVET and “Skilling Uganda” initiatives to produce causal evidence on employment and earnings impacts, including cost-effectiveness (Tripney & Hombrados, 2013; Tripney et al., 2013; Yusop et al., 2022; Moses & Liu, 2023; Nakawala, 2025).

2. Longitudinal Research On Job Quality And Career Trajectories

- i. Implement longitudinal tracer studies that track TVET graduates over multiple years, focusing on earnings growth, job stability, mobility between formal and informal sectors, and progression towards decent work (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Yusop et al., 2022; Moses & Liu, 2023; Nakawala, 2025).

3. Systematic Measurement Of Decent Work Indicators

- i. Incorporate measures of job security, working conditions, social protection coverage, and rights at work into TVET monitoring and evaluation frameworks to go beyond just employment status (Shi & Bangpan, 2022; Tripney & Hombrados, 2013; Moses & Liu, 2023; Wignall et al., 2023).

4. Effectiveness Of Transition Support And Career Services

- i. Assess interventions such as labour-market information systems, career guidance, job-matching platforms, and entrepreneurship incubators integrated into Ugandan TVET institutions (Yusop et al., 2022; Eseza, 2025; Kintu et al., 2019).

5. Equity, Gender, And Regional Disparities

- i. Explore how TVET outcomes vary by gender, region, socio-economic status, and disability, and evaluate gender-transformative and inclusion-oriented TVET models aligned with the decent work agenda (Shi & Bangpan, 2022; Mante et al., 2025; Yusop et al., 2022; Wignall et al., 2023).

6. Digitalisation And New Forms Of TVET Delivery

- i. Assess the impact of ICT-enabled and blended TVET models on employability, especially for youth in remote or underserved regions of Uganda, and evaluate digital skills pathways into emerging labour market segments (Mante et al., 2025; Hassler et al., 2020; Appiah-Kubi et al., 2025).

Advancing research in these fields will enhance the evidence needed to better align Ugandan TVET with national development plans and the broader aim of decent work for all young people.

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