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Original Article

### Tracer Study of Graduates of National Diploma in Water, Civil, Electrical, and Mechanical Engineering Programmes 2016-2019

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The Uganda Business and Technical Examinations Board (UBTEB) has been assessing Technical Vocational Education and Training (TVET) students at certificate and diploma levels since 2011. Over the past decade, nearly 69,821 TVET graduates from technical institutions have entered the workforce across various engineering disciplines. Despite this, little is known about how these graduates transition into employment. To address this gap, UBTEB conducted a Tracer Study of National Diploma Engineering Graduates (2016–2019), focusing on employment timelines, programme relevance, employability factors, employer satisfaction, and curriculum alignment with industry needs. The study employed a structured approach with a sample size of 249 graduates and 39 employers, beginning with graduate survey preparation that included data collection, verification, and strategies to enhance response rates. Data analysis was performed using Excel and STATA, with a logistic econometric model applied to assess employability determinants. The findings revealed that while most graduates secure employment within a year, systemic challenges persist in curriculum relevance (particularly digital skills gaps), ineffective internships, and unequal job access. Employers highly value graduates' practical skills, but misalignments exist between training and industry needs. Teaching quality, entrepreneurial training, and academic performance emerged as critical employability drivers, though informal hiring networks create uneven opportunities. While employers praise technical competencies, they increasingly demand stronger soft skills. Addressing these issues requires comprehensive reforms to modernise curricula, strengthen work-based learning, and expand career support services to better align Uganda's TVET system with evolving labour market requirements and technological advancements. Recommendations emphasise improving education quality, teaching methods, and entrepreneurial training to enhance graduate employability and align skills with labour market demands. The study provides valuable insights for policymakers, educators, and industry stakeholders to strengthen Uganda's TVET system.

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## INTRODUCTION

The Uganda Business and Technical Examinations Board (UBTEB) has played a pivotal role in assessing and certifying Technical Vocational Education and Training (TVET) graduates since its inception in 2011. Over the past decade, nearly 69,821 diploma and certificate holders have entered the workforce, particularly in critical engineering fields such as Water, Civil, Electrical, and Mechanical Engineering. While these programmes are designed to address Uganda's growing infrastructure and industrial needs, there remains a lack of systematic data on how graduates transition into the labour market. Existing statistics on graduate absorption rates, employment timelines, and the alignment of skills with industry demands are either fragmented or outdated. This gap underscores the urgent need for a comprehensive tracer study to evaluate the effectiveness of these engineering programmes and their contribution to Uganda's socio-economic development.

Despite the global recognition of tracer studies as essential tools for improving TVET systems (Schomburg, 2014), Uganda's implementation of such studies has been inconsistent. Prior

assessments have primarily focused on university graduates, leaving TVET diploma holders, who form the backbone of the country's technical workforce, largely unexamined. Key questions remain unanswered: How long does it take graduates to secure employment? Are their skills relevant to employer needs? Does the curriculum reflect current technological advancements? This study specifically targets National Diploma graduates (2016–2019) in Water, Civil, Electrical, and Mechanical Engineering to bridge these gaps. By analysing employability trends, employer satisfaction, and curriculum relevance, the findings will provide actionable insights to refine TVET policies, enhance curriculum design, and ultimately improve graduate outcomes in Uganda's competitive labour market.

## Problem Statement

Since its inception in 2011, the Uganda Business and Technical Examinations Board (UBTEB) has assessed candidates in Technical Vocational Education and Training (TVET) programs at both the National Certificate and Diploma levels, including key engineering disciplines such as the National Diploma in Civil Engineering (NDCE),

Electrical Engineering (NDEE), Water Engineering (NDWE), and Mechanical Engineering (NDME). The curricula for these programs integrate theoretical knowledge with practical skills, preparing graduates to enter the workforce in their respective technical fields. Upon completing their studies, TVET graduates are expected to join the workforce in their respective trades of training. Over the past decade, these TVET graduates have been absorbed into various industries across Uganda. However, there remains a critical lack of systematic data on their employment outcomes, including whether graduates are working in their fields of study, how long it takes them to secure employment, and whether their acquired skills meet employer expectations.

This absence of reliable tracking mechanisms has made it difficult to evaluate the effectiveness of TVET programs in aligning graduate competencies with labour market demands. Without such data, policymakers and educators cannot identify gaps in curricula, teaching methodologies, or industry relevance that may hinder graduate employability. Furthermore, while tracer studies have proven effective globally in assessing graduate transitions into the workforce (Schomburg, 2014), their application within Uganda's TVET sector, particularly for engineering diploma holders, has been limited. Against this backdrop, the study sought to investigate the Tracer Study of National Diploma Graduates in Water, Civil, Electrical, and Mechanical Engineering Programmes (2016–2019), aiming to provide empirical evidence on employment trends, skills relevance, and employer satisfaction to inform future improvements in TVET education.

### Objectives of the Study

The main objective of the study is to track the employability of TVET graduates from 2016 to 2019.

The specific objectives include:

- To determine the lag time between graduation and employment.
- To assess the relevance of diploma engineering programmes.
- To investigate factors affecting graduate employability.
- To evaluate employer satisfaction with TVET graduates' skills.

### LITERATURE REVIEW

Graduate tracer studies have emerged as critical instruments for assessing the alignment between higher education and labour market demands across various countries. These studies provide retrospective evaluations of how educational programs translate into employment outcomes, examining factors such as job placement rates, skills relevance, and career progression (Pentang *et al.*, 2022). While institutions like Makerere University and Uganda's National Council for Higher Education (NCHE) have conducted tracer studies, their focus has predominantly been on university graduates, leaving a significant gap in understanding the trajectories of TVET diploma holders, particularly in engineering fields (NCHE, 2015; Vincent, 2019). This omission is problematic given TVET's role in supplying mid-level technical skills essential for national development. Existing studies also rarely explore employer perspectives or systemic barriers to employability, limiting their utility for curriculum reform.

The transition from education to employment remains a key concern in tracer study literature. Research by Schomburg & Teichler (2007) highlights global trends, while localised studies, such as those by Ssembatia (2015) and NCHE (2015), reveal disparities in graduate absorption rates and skills mismatches in Uganda. For instance, while 85% of computer science graduates in the Philippines secured employment (Macatangay,

2013), similar studies in Uganda's TVET sector are scarce, particularly for engineering disciplines. This gap obscures insights into how long graduates take to find jobs, whether their skills meet industry needs, and how curricula might be adapted. Notably, studies like Ssekamatte's (2022) emphasise the importance of interdisciplinary competencies (e.g., teamwork, problem-solving), yet such dimensions are rarely examined in Uganda's TVET context. Without this data, policymakers cannot address critical inefficiencies in training delivery or labour market integration.

A recurring theme in the literature is the mismatch between TVET curricula and evolving industry requirements. Employers frequently report investing additional resources to retrain graduates, citing outdated technical skills and inadequate soft skills like communication and leadership (Susan, 2015). For example, agricultural TVET programs in Kenya were found to lack entrepreneurial and management training, while Uganda's industrial internships are criticised for their brevity and lack of standardisation (Eichhorst *et al.*, 2015). Comparative studies reveal that dual apprenticeship systems combining school and firm-based training yield better outcomes than purely institutional models, yet Uganda's approach remains underdeveloped (CEDEFOP, 2010). These findings underscore a pressing need to modernise TVET curricula, integrate employer feedback, and extend practical training durations to bridge the skills gap. However, empirical evidence specific to Uganda's engineering diploma programs is lacking, leaving unanswered questions about their responsiveness to technological advancements.

Finally, methodological limitations in existing tracer studies constrain their impact. Many focus narrowly on descriptive employment statistics rather than analysing systemic linkages between education quality and labour market outcomes (Schomburg, 2016). Few incorporate employer surveys or longitudinal designs to track career

progression, as seen in Philippine studies (Gines, 2014; Dela Cruz, 2022). In Uganda, where informal employment dominates, conventional tracer methodologies may overlook alternative pathways like self-employment, despite their growing relevance. This study addresses these gaps by examining Uganda's TVET engineering graduates (2016–2019) through a multidimensional lens, evaluating employability determinants, employer satisfaction, and curricular relevance to propose actionable reforms.

## METHODOLOGY

The study employed a rigorous mixed-methods approach to examine the employability of TVET graduates from Uganda's National Diploma programmes in Water, Civil, Electrical, and Mechanical Engineering (2016–2019 cohorts). The sample frame comprised 286 randomly selected graduates identified through UBTEB's Examinations Information Management System (EIMS), with data collection ultimately achieving an 87% response rate (n=249) through persistent follow-up protocols.

Methodological rigour was established through capacity-building training for UBTEB staff in tracer study design and implementation, informed by established frameworks (Schomburg & Teichler, 2007). Researchers developed comprehensive survey instruments and contact databases, employing systematic verification procedures and iterative questionnaire pretesting to ensure data quality. The study combined quantitative methods (STATA and Excel-based analyses of survey data) with qualitative approaches (focus group discussions and interviews with 39 purposively selected respondents) to enable robust triangulation of findings (Frey, 2018; Putra, 2022).

Data collection strategies addressed known challenges in graduate tracking studies through multiple contact attempts and mixed-mode

administration (online surveys, telephone interviews), drawing on best practices demonstrated in comparable research (Fenta et al., 2019; Caingcoy, 2021). This dual-phase approach balanced methodological rigour with practical implementation considerations (Sousa, 2006), while the strategic combination of random and purposive sampling ensured both representativeness and depth of perspective across Uganda's five regions. Analytical procedures included logistic regression modelling of employability determinants alongside thematic analysis of qualitative responses, providing comprehensive insights into graduate outcomes.

### Analytical Model

The study employed a logistic regression model to analyse determinants of employability, treating employment status as a binary outcome (1 = employed, 0 = unemployed). The model, specified as

$$\text{Log} \left\{ \frac{P(\text{employment})}{1-P(\text{employment})} \right\} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + u_i$$

The study employed logistic regression modeling (Gujarati, 2002; Wooldridge, 2010) to estimate employment probabilities based on key explanatory variables, including acquired skills, diploma classification, and entrepreneurial training. Using STATA 12 with a 5% significance threshold, this approach overcame linear probability model

limitations by bounding predictions within the (0, 1) interval, enhancing result interpretability (Cameron & Trivedi, 2005). The analysis revealed curriculum relevance and teaching quality as significant determinants of employability, with detailed results presented in the results section.

A mixed-methods analytical framework combined descriptive statistics (frequency distributions, percentage analyses) with inferential techniques to examine relationships between program characteristics and employment outcomes. Thematic analysis of qualitative data from employers and graduates provided critical context for quantitative findings, particularly regarding skill gaps and curriculum deficiencies. Rigorous data quality protocols, including iterative cleaning and cross-software validation between Excel and STATA, ensured analytical integrity.

The reporting strategy emphasized actionable insights for UBTEB, adopting Pentang et al.'s (2022) stakeholder-centered dissemination framework. By systematically integrating employer evaluations with graduate experiences, the methodology delivered a comprehensive assessment of TVET program effectiveness within Uganda's dynamic labor market context, while maintaining robust statistical standards and practical applicability for policymakers.

## RESULTS

### Demographic Findings

**Table 1: Graduate Demographics (n=249)**

Characteristic	Category	Frequency	Percentage
Gender	Female	25	10%
	Male	224	90%
Institution Type	Government	184	74%
	Private	65	26%
Field of Study	NDME	106	43%
	NDWE	52	21%
	NDEE	50	20%
	NDCE	41	17%
Mean Age (years)	29.9 (SD=3.67)	Range: 21-47	-

**Source:** Authors' computations

Graduate Profile revealed significant gender disparity (90% male) and field concentration (43% Mechanical Engineering). Most graduated recently (41% in 2019) from government institutions (74%), with a mean age of 29.9 years, prime working age.

**Table 2: Employer Demographics (n=39)**

Characteristic	Category	Frequency	Percentage
Gender	Female	7	18%
	Male	32	82%
Sector	Private	27	69%
	Government	12	31%
Highest Qualification	Bachelor's	26	67%
	Diploma	8	20%
	Master's	5	13%

**Source:** Authors' computations

Employer Profile showed male dominance (82%) in leadership roles, with most working in the private sector (69%). Educational qualifications were predominantly bachelor's degrees (67%), suggesting mid-level management respondents.

Private sector's dual role as educator (26% graduates) and employer (69%), and (c) Typical career progression where diploma graduates (20% employers) advance to supervise degree holders. The data provides context for analysing employment outcomes in subsequent sections.

Structural Patterns emerged: (a) Persistent STEM gender gaps from education to employment, (b)

**Table 3: Time Lag between Graduation and Employment (n=249)**

Duration	Frequency	Percentage
Less than 1 month	50	20.10%
1 to <3 months	37	14.90%
3 to <6 months	38	15.20%
6 to <9 months	11	4.40%
9 to <12 months	21	8.40%
More than one Year	92	37.00%
<b>Total</b>	<b>249</b>	<b>100%</b>

**Source:** Authors' computations

The employment timeline revealed that while 63% of graduates secured jobs within one year (including a promising 20% employed within a month), a concerning 37% remained unemployed beyond one year. This significant gap suggests systemic issues in job matching, potentially reflecting skill mismatches, limited entry-level positions, or geographic imbalances in Uganda's labour market. The data shows particular vulnerability during the

6–9-month period (only 4.4% employment rate), indicating a critical window where graduates may benefit from targeted support services. Furthermore, the prolonged unemployment for over a third of graduates raises questions about the adequacy of career services and the alignment between training programs and actual industry needs. These findings underscore the urgent need for enhanced graduate

tracking systems and proactive employment bridging programs.

**Table 4: Job Acquisition Methods (n=249)**

Method of Job Acquisition	Frequency	Percentage
Advertisements (digital/print media)	79	32%
Personal contacts (friends/peers)	64	26%
Family connections	30	12%
Internship conversions	28	11%
Direct employer contact	19	8%
Former institution referrals	13	5%
Side jobs during/after studies	13	5%
Private recruitment agencies	3	1%
Total	249	100%

**Source:** Authors' computations

While digital advertisements (32%) and personal networks (26%) dominate successful job placements, the heavy reliance on informal methods exposes significant systemic weaknesses. The minimal use of formal channels like recruitment agencies (1%) and institutional referrals (5%) suggests an underdeveloped career infrastructure in TVET institutions. Particularly troubling is the low internship conversion rate (11%), indicating missed opportunities in work-based learning programs. The data reveals a worrisome inequality in job access, where graduates without strong networks (comprising 38% of placements) face distinct disadvantages. Furthermore, the 5% relying on side

jobs suggests underemployment issues. These gaps highlight the need for more structured career pathways, improved industry partnerships, and equitable access to employment opportunities regardless of candidates' personal connections or socioeconomic backgrounds. The findings call for a comprehensive overhaul of graduate employment support systems within Uganda's TVET framework.

### Graduate Employability Determinants

The study employed a logistic regression model to analyse determinants of employability.

**Table 5: Determinants of TVET Graduate Employability (Logistic Regression Results)**

Model Component	Value/Parameter		
Model Specification	$\Pr(\text{Employment}=1) = 1/(1+e^{-(\beta X)})$		
Model Fit Statistics			
Likelihood Ratio $\chi^2$	73.90 (p=0.000)		
Pseudo R <sup>2</sup>	0.314		
Predicted Employment Probability	88.90%		
Significant Determinants	Coefficient (β)	p-value	Interpretation
<b>Positive Determinants</b>			
Quality teaching	0.371	0.028	Strong positive influence
Entrepreneurial skills	0.126	0.044	Moderate positive effect
First-class diploma	0.087	0	Significant advantage
<b>Negative Determinants</b>			
UBTEB-monitored internships	-0.128	0	Counterproductive effect
Personal work attitude	-0.121	0.003	Negative association

The logistic regression model demonstrates a good fit (LR  $\chi^2=73.90$ ,  $p=0.000$ ; Pseudo  $R^2=0.314$ ) and strong predictive power (88.9% employment probability), confirming the robustness of these employability determinants. Three key factors significantly enhance graduate outcomes: quality teaching ( $\beta=0.371$ ,  $p=0.028$ ), entrepreneurial skills ( $\beta=0.126$ ,  $p=0.044$ ), and first-class diplomas ( $\beta=0.087$ ,  $p=0.000$ ), validating Pitan & Atiku's (2017) findings on human capital development. These results underscore that employers value both academic excellence (Pinto & Ramalheira, 2017) and practical competencies, suggesting UBTEB should simultaneously strengthen pedagogical quality and expand entrepreneurship training.

However, the counterproductive impact of monitored internships ( $\beta=-0.128$ ,  $p=0.000$ ) and negative work attitude association ( $\beta=-0.121$ ,  $p=0.003$ ) reveal critical implementation gaps. This aligns with student reports of inadequate skill transfer during brief industrial attachments, indicating systemic failures in work-based learning design. While the model explains 31.4% of employment variance, these paradoxical findings demand immediate attention, particularly the need to reform internship structures without compromising their theoretical benefits. UBTEB must therefore pursue twin priorities: enhancing confirmed success factors while fundamentally redesigning practical training components to better serve graduate employability.

### **Employers' Satisfaction with TVET Graduates' Skills**

The study demonstrates strong employer endorsement of TVET graduates, with 95% of surveyed organisations requiring diploma qualifications for technical positions and 69% rating these credentials as critically important for job performance. Workforce data reveals exceptionally positive assessments of graduate readiness, with 64% of employers describing graduates as "very well" prepared for employment and 92% indicating

they would rehire TVET graduates. Comparative analysis shows 90% of employers perceive TVET graduates as demonstrating superior practical competencies relative to university-educated counterparts, particularly noting their hands-on technical skills, workplace adaptability, and capacity for autonomous operation.

These findings validate the effectiveness of Uganda's TVET system in developing industry-relevant technical capabilities. However, the persistent credential-based barriers evident in hiring practices, where formal qualifications remain a prerequisite despite demonstrated competencies, suggest structural barriers in the labour market valuation of skills. This creates a paradoxical situation where graduates possess the practical abilities employers demand, yet remain constrained by qualification-based hiring filters that may exclude otherwise competent candidates. The results underscore the need for competency-based hiring frameworks that better recognise demonstrated skills alongside formal credentials in Uganda's technical labour market.

### **Assessment of the TVET Curriculum by Specialists**

Stakeholder consultations with curriculum specialists and graduates revealed systemic deficiencies in Uganda's TVET curriculum framework. Three critical gaps emerged: (1) outdated technical content lagging behind current industry technological standards, (2) disproportionate emphasis on theoretical knowledge at the expense of hands-on application, and (3) inadequate exposure to authentic workplace projects - evidenced by mechanical engineering students practising only basic welding skills rather than comprehensive equipment training. The curriculum particularly lacks integration of essential 21st-century competencies, including digital literacy, entrepreneurial thinking, and cross-disciplinary applications that modern engineering workplaces increasingly demand.

Compounding these deficiencies, the study identified structural weaknesses in industrial training programs, which were both too brief and insufficiently aligned with actual job requirements. This mismatch creates a risky paradox: while Uganda's TVET system continues producing technically trained graduates, their skills risk becoming progressively obsolete in a rapidly transforming industrial landscape. The findings suggest that without immediate, coordinated action to modernise curriculum content and deepen industry partnerships, the system will perpetuate a cycle of underprepared graduates entering the workforce, with negative consequences for both individual employability and the nation's industrial competitiveness. Current trajectories may widen rather than bridge the skills gap, as technological advancement outpaces curriculum renewal cycles and workplace integration remains superficial. These insights underscore the urgent need for curriculum reforms that not only update technical content but also rebalance the theory-practice ratio while embedding critical future-oriented competencies throughout all engineering programs.

## DISCUSSION

This study examined critical aspects of Uganda's TVET system through four key dimensions: employment transition timelines, programme relevance, employability factors, and employer satisfaction. The findings reveal both strengths and systemic challenges in preparing engineering graduates for the workforce, while offering insights into how education systems can better align with labour market needs.

The analysis of graduates' transition from education to employment shows significant variation in job acquisition timelines, reflecting broader structural challenges in Uganda's labour market. While many graduates secure positions relatively quickly, others face prolonged unemployment, echoing global patterns where TVET systems struggle with

equitable workforce integration (Schomburg & Teichler, 2007). The finding that entrepreneurial skills accelerate employment aligns with international evidence emphasising entrepreneurship education as a buffer against youth unemployment (Purba, 2019). However, the persistent long-term unemployment among a substantial minority suggests institutional support systems remain inadequate, consistent with Cuadra *et al.*'s (2019) findings about mismatches between education systems and labour market signalling.

Assessment of diploma programme relevance presents a paradox between employer satisfaction and curriculum gaps. Employers consistently value TVET graduates' practical orientation, affirming the success of hands-on training approaches. Yet the identified deficiencies in digital skills and interdisciplinary training mirror global concerns about TVET systems' slow adaptation to technological change (Badillo-Amodor & Villa, 2013). This tension between foundational strength and adaptive weakness reflects Little's (2002) observation that vocational education often maintains traditional competencies while struggling to incorporate emerging skills demands. The curriculum's lag behind industry needs particularly manifests in areas like computer-aided design, where manual methods persist despite workplace digitalisation.

The investigation of employability factors reveals a complex interplay between individual attributes and structural conditions. While academic achievement matters, soft skills and adaptability prove equally critical, supporting Ojonugwa *et al.*'s (2015) framework of employability assets. The counterintuitive finding about internships' limited effectiveness challenges conventional wisdom about work-based learning, suggesting Uganda's programs may lack the quality and employer engagement characterising successful models in countries like Germany (Eichhorst *et al.*, 2015). The strong performance of entrepreneurial graduates

reinforces global evidence that these skills enhance both self-employment and organisational employability (McQuaid, 2006).

Employer feedback presents a nuanced skills landscape, confirming TVET's success in developing technical competencies while highlighting growing demand for complementary skills. The preference for TVET over university graduates in technical roles validates the hands-on training model, yet desired improvements in problem-solving and innovation management reflect worldwide trends in engineering education (Akinyemi & Abiddin, 2013). Employers' emphasis on communication and teamwork aligns with the United Nations' (2013) findings about 21st-century skills becoming crucial across all technical fields. The variability in graduate quality across institutions echoes quality assurance challenges observed in other developing TVET systems (CEDEFOP, 2010).

## CONCLUSION

This tracer study of Uganda's National Diploma Engineering graduates (2016–2019) provides critical insights into the transition from education to employment, revealing both strengths and challenges in the TVET system. The findings demonstrate that while a majority of graduates secure employment within a year, persistent gaps in curriculum relevance, internship effectiveness, and equitable job access hinder optimal workforce integration. The study confirmed the value of diploma programmes in developing practical skills highly regarded by employers, yet highlighted mismatches between training content and evolving industry needs, particularly in digital competencies and interdisciplinary applications. Key determinants of employability, including teaching quality, entrepreneurial skills, and academic performance, were identified, alongside structural barriers such as reliance on informal hiring networks and uneven regional opportunities.

Employers expressed strong satisfaction with graduates' technical abilities but emphasised the growing importance of soft skills and adaptability in the workplace. Moving forward, addressing these challenges requires coordinated reforms in curriculum development, work-based learning models, and career support systems to ensure Uganda's TVET system remains responsive to both current labour market demands and future technological advancements, ultimately fostering inclusive economic growth and reducing youth unemployment.

## Recommendations

Despite strong employer satisfaction with TVET graduates' practical skills, several systemic gaps require targeted interventions. A critical challenge is the mismatch between curriculum content and industry needs, particularly in digital competencies and emerging technologies. To address this, UBTEB should spearhead biannual curriculum reviews involving industry partners, training institutions, and graduates to ensure alignment with evolving workplace demands. The reviews should prioritise integrating digital tools, interdisciplinary applications, and project-based learning modules that reflect real-world engineering challenges.

The study identified ineffective internship programs as a paradoxical barrier to employability, despite their theoretical importance. UBTEB should reform industrial training by developing standardised monitoring frameworks in collaboration with employers, ensuring placements provide meaningful skill application. This includes extending internship durations, providing stipends to incentivise employer participation, and establishing feedback mechanisms between companies and training institutions. The government could support this through tax incentives for firms offering quality placements and by formalising an apprenticeship policy.

To reduce prolonged unemployment periods, TVET institutions need to strengthen career transition support systems. UBTEB should establish graduate placement units that offer personalised job search assistance, including digital literacy training for online recruitment platforms and networking workshops to complement informal job search methods. These units could partner with industry associations to create centralised job portals for technical roles and organise sector-specific career fairs.

The findings reveal persistent inequities in job access tied to social networks. To level the playing field, the Ministry of Education should mandate all TVET institutions to implement merit-based internship allocation systems and collaborate with private sector partners to create industry-sponsored scholarships for disadvantaged students. Additionally, entrepreneurship training should be expanded beyond theoretical modules to include incubator programs, where graduates with viable business ideas receive seed funding and mentorship.

For systemic sustainability, the government should institutionalise annual tracer studies with dedicated funding to monitor graduate outcomes. These studies should specifically track long-term unemployed graduates to identify structural barriers. The Ministry of Finance could allocate a percentage of TVET levies to create a skills development fund, financing curriculum modernisation, instructor retooling, and infrastructure upgrades in priority technical areas. This fund should be managed through a multi-stakeholder board, including private sector representatives, to ensure market relevance.

### Authors' Biography



**Lilian Nakawala** is currently a Senior Research Officer at the Uganda Business and Technical Examinations Board. She formerly worked at the Federation of Uganda Employers (FUE) as a policy and research Officer. While at FUE, she was the Employer of the Year Awards (EYA) Survey Project Coordinator 2015-2016. She obtained a Post Graduate Diploma in Monitoring and Evaluation from Uganda Management Institute in 2020 and a Diploma in Law from the Law Development Centre in 2012. She completed her Masters of Arts in Economic Policy Management in 2014 and a Bachelor's Degree in Development Economics in 2009, respectively, from Makerere University. Lilian has several publications in reputable journals and has attended and presented several papers at international conferences.



**Abel Mukakanya Muwumba** is a seasoned researcher, educationist, scholar, and ICT professional. He has over twenty years of practical experience in tertiary educational research and quality assurance matters. This expertise has been attained through working with tertiary education institutions, public examination boards, and central and local governments. He is currently a Principal Officer, Research and Quality Assurance at Uganda Business and Technical Examinations Board, Research, Quality Assurance and Awards Department. He formerly worked as ICT Manager

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