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KENYA NATIONAL QUALIFICATIONS AUTHORITY

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Evaluation of Industry Readiness in Enhancing Quality of Qualifications Through Competency-Based Education and Training in TVET, Kenya



July 2025

FOREWORD

The development of a skilled, competitive, and adaptable workforce is central to Kenya's socio-economic transformation agenda. As the country embraces Competency-Based Education and Training across its Technical and Vocational Education and Training (TVET) system, the role of industry in upholding the quality of qualifications cannot be overstated. Industry-readiness reflected in the capacity and commitment of employers and sector stakeholders to embrace competency-based systems is essential in ensuring that qualifications are credible, relevant, and aligned with labor market needs.

This research, "Evaluating Industry Readiness in Ensuring Quality of Qualifications through CBET in TVET," was undertaken by the Kenya National Qualifications Authority (KNQA) in line with its statutory mandate to promote quality assurance and implementation of a credible national qualifications framework. Under Section 8(k) of the Kenya National Qualifications Framework (KNQF) Act, Cap 214, KNQA is tasked with establishing quality standards and systems for qualifications. Section 8 (m) also mandates the Authority to conduct research on the comparability and recognition of qualifications, including the roles of different actors within the ecosystem.

This work is part of a broader commitment to building an inclusive, agile qualifications landscape that reflects real labor market demands. Importantly, this study was made possible through KNQA's collaboration with Colleges and Institutes Canada (CICan) under the Young Africa Works–Kenya: Youth Employability through TVET Project. Through this partnership, CICan has supported KNQA in advancing reforms aimed at improving the quality and recognition of skills acquired through both formal and non-formal learning pathways. The findings and recommendations contained in this report will inform policy, guide implementation practices, and strengthen mechanisms for industry-led quality assurance. Ultimately, this work contributes to the national goals of enhanced employability, improved labor productivity, and inclusive economic growth.

KNQA remains committed to working with all stakeholders to ensure that every qualification issued in Kenya is not only credible and quality-assured, but also reflective of the skills and competencies required in a dynamic labor market.

Hon. Stanley Kiptis, EBS
Council Chairperson
Kenya National Qualifications Authority

ACKNOWLEDGEMENT

The Kenya National Qualifications Authority extends its sincere gratitude to the technical team that contributed to the successful completion of this research study, “Evaluation of Industry Readiness in Enhancing Quality of Qualifications through Competency-Based Training in TVET, Kenya.”

The Authority expresses its deepest appreciation to CICan for its financial and technical support, which enabled the Authority to conduct this research and gather valuable insights that will enhance the quality of qualifications through CBET programs in Kenya. We are grateful to the Young Africa Works in Kenya TVET program for establishing industrial linkages across 26 institutions. I extend my sincere appreciation to the Qualifications Awarding Bodies (QABs) and Industrial Advisory Committee members (IAC) for sharing their experiences and providing crucial data that formed the foundation of our findings.

Special recognition goes to the KNQA Research team and technical experts from CICan who worked tirelessly to design, implement, and analyze this comprehensive study. This collaborative effort has been crucial in contributing to the overall progress and prosperity of Kenya’s citizens. We look forward to the positive changes that will result from the implementation of the study’s recommendations.

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ACRONYMS AND ABBREVIATIONS

Abbreviation	Full Form
AQF	Australian Qualifications Framework
CBET	Competency-Based Education and Training
CICan	Colleges and Institutes Canada
COEs	Centers of Excellence
FKE	Federation of Kenya Employers
HOD	Head of Department
IAC	Industry Advisory Committee
ICT	Information and Communication Technology
ILO	Industry Liaison Officer
KAM	Kenya Association of Manufacturers
KEPSA	Kenya Private Sector Alliance
KNBS	Kenya National Bureau of Statistics
KNQA	Kenya National Qualifications Authority
KNQF	Kenya National Qualifications Framework
LMA	Labor Market Assessment
MEDA	Mennonite Economic Development Associates
MoU	Memorandum of Understanding
OECD	Organization for Economic Co-operation and Development
OS	Occupational Standards
PWDs	Persons with Disabilities
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
TORs	Terms of Reference
TVET	Technical and Vocational Education and Training
TVETA	Technical and Vocational Education and Training Authority
TVC	Technical and Vocational College
TTI	Technical Training Institute
UNESCO-UNEVOC	United Nations Educational, Scientific and Cultural Organization - International Centre for Technical and Vocational Education and Training
VTC	Vocational Training Centre

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EXECUTIVE SUMMARY

This study evaluates industry readiness in enhancing the quality of Technical and Vocational Education and Training qualifications through Competency-Based Education and Training in Kenya. Focused on 25 TVET Centers of Excellence (COEs), the research reveals that while industry engagement through Industry Advisory Committees (IACs) has made progress in shaping curriculum development with 53.7% of IAC members reporting active involvement and 86.6% of institutions implementing their recommendations critical gaps remain.

A significant 35.8% of IAC members expressed neutral or passive engagement, highlighting inconsistencies in participation. Despite these efforts, systemic challenges hinder optimal collaboration. Financial constraints (26.8%), miscommunication between academia and industry (65%), and skills mismatches (45%) persist, particularly in rapidly evolving sectors such as digital technology and electrical engineering. While 83.2% of respondents affirmed that the curriculum aligns with industry needs, 16.8% identified discrepancies, underscoring the need for curriculum agility.

The study identifies three major barriers: outdated training infrastructure, weak institutional ownership (with only 5.3% rating IAC partnerships as highly effective), and inadequate graduate tracking systems (43.2% of institutions lack mechanisms to monitor employability outcomes).

To address these gaps, the study recommends institutionalizing IAC governance through formalized Terms of Reference and structured reporting, scaling work-integrated learning models, and prioritizing investments in digital infrastructure and faculty training. These reforms, aligned with Kenya National Qualifications Framework standards, are essential to bridge the skills gap, enhance graduate employability, and support Kenya's Vision 2030 economic goals through stronger industry-TVET collaboration.

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Technical and Vocational Education and Training (TVET) systems are increasingly recognized globally as critical drivers of economic growth, innovation, and youth employability. In Kenya, TVET institutions play a central role in equipping learners with practical, industry-relevant skills that align with national development goals and the evolving demands of the labour market. The shift toward Competency-Based Education and Training (CBET) is a key national reform aimed at enhancing the quality and relevance of qualifications to support the country's Vision 2030 and the Sustainable Development Goals. According to the Kenya National Bureau of Statistics (KNBS) Facts & Figures Report 2024, 227,786 learners were enrolled in TVET institutions, underscoring growing demand for competency-based, market-responsive training. This trend highlights the urgency of evaluating industry readiness to support CBET implementation and ensure seamless integration between training and workforce needs.

The Kenya National Qualifications Authority has been instrumental in operationalizing the Kenya National Qualifications Framework, which aims to ensure that qualifications acquired through TVET programs are standardized, quality-assured, and relevant to both local and global labor market needs. Central to this reform agenda is the involvement of industry through Industry Advisory Committees, platforms that connect educators and employers to co-create curriculum, enhance learning experiences, and improve graduate employability.

This study examined the readiness of industries to engage meaningfully in CBET implementation within Kenya's TVET institutions, focusing on the extent and quality of such collaborations, the challenges encountered, and pathways for improvement.

1.1.1 Global Transition to Competency-Based Education and Training

Across the globe, there is a significant shift from traditional, time-based educational models often criticized for their theoretical focus and limited alignment with labor market demands towards Competency-Based Education and Training. This model prioritizes the development and demonstration of practical competencies that are directly applicable in real-world settings, making learners more employable and adaptable in rapidly changing economic environments. Canada adopted CBET through its apprenticeship programs, college curricula, and initiatives like the Red Seal and Essential Skills frameworks, emphasizing industry-aligned competencies and outcome-based education across provinces (Colleges and Institutes Canada, 2021). Germany, Australia, and Singapore are global leaders in integrating industry collaboration into education through models like Germany's dual vocational training, Australia's Australian Qualifications Framework (AQF), and Singapore's SkillsFuture initiative. These systems involve employers in curriculum design, assessment, and work-based training to align learning outcomes with labor market needs (OECD, 2010; Australian Government, 2020; SkillsFuture Singapore, 2021). Many countries are increasingly adopting or adapting Competency-Based Education and Training to better align education with labor market needs. Finland has integrated competency-based assessments into its vocational education and training (VET) system, emphasizing individualized learning and employer collaboration (Finnish National Agency for Education, 2020). Switzerland and New Zealand have structured their education

systems around clear occupational standards and portable, outcome-based qualifications (Swiss Coordination Centre for Research in Education, 2018; New Zealand Qualifications Authority, 2019). In regions such as the United Arab Emirates and Saudi Arabia, CBET is being implemented to support economic diversification and nationalization strategies within frameworks like Vision 2030. Meanwhile, South Africa's National Qualifications Framework embeds CBET to reduce skills mismatches and enhance employability (UNESCO-UNEVOC, 2021; South African Qualifications Authority, 2020).

This paradigm shift aligns closely with the demands of 21st-century labor markets, characterized by technological disruption, digitization, automation, and evolving job profiles. By focusing on learner-centric, performance-based education, CBET not only improves employability but also promotes lifelong learning, adaptability, and cross-sector mobility—critical attributes in a world where skills requirements are in constant flux.

1.1.2 Policy Context and Stakeholder Engagement in Kenya

Kenya's transition to CBET has been underpinned by strategic policy frameworks developed by the Ministry of Education, the Technical and Vocational Education and Training Authority (TVETA), and KNQA. These frameworks have been implemented in collaboration with key stakeholders, including industry bodies, private sector associations, development agencies, and civil society organizations. A notable example of this collaborative approach is the partnership between CICan and the Mastercard Foundation's Young Africa Works in Kenya – TVET program. This initiative has empowered 25 COEs by facilitating industry linkages, equipping institutions with modern infrastructure, and embedding CBET principles in training delivery.

Stakeholder-driven reforms have been further strengthened through structured Memorandums of Understanding (MoUs) between TVET institutions and industry players. These agreements have laid a foundation for sustained collaboration in curriculum design, internships, competency assessment, and policy advocacy. For instance, the Kenya Private Sector Alliance (KEPSA) has partnered with the State Department of TVET to enhance industry-academia linkages, focusing on aligning curricula with industry needs and providing practical training opportunities for students.

Despite these advancements, challenges persist in fully aligning TVET programs with industry requirements. A skills gap survey by the Federation of Kenya Employers (FKE) revealed significant demand for TVET skills in areas such as transport and logistics, electrical expertise, and building and construction. However, there remains a discrepancy between the skills taught in TVET institutions and those sought by employers. This gap underscores the need for continuous evaluation of industry readiness to enhance the quality of qualifications through CBET. The study on the evaluation of industry readiness in enhancing the quality of qualifications through CBET in Kenya is crucial to address these challenges and ensure that training programs effectively meet the evolving demands of the labor market.

1.1.3 The Young Africa Works in Kenya - TVET Program

Young Africa Works-Kenya: Youth Employability through TVET (Young Africa Works in Kenya-TVET) is a 5-year initiative (2020-2025) that will strengthen the quality and relevance of TVET institutions and systems in Kenya. The program is based on a partnership between CICan, the Kenyan Ministry of Education, the private sector, and the Mastercard Foundation, through its Young Africa Works initiative. Its objective is to help young Kenyans, particularly women, find dignified and fulfilling work through formal training and a focus on the Recognition of Prior Learning (RPL). This initiative targeted the key economic growth sectors of manufacturing, universal healthcare, food security, and affordable housing as well as the digital sector.

The intervention involves a partner-driven participatory approach in 26 TVET Institutions: 17 national polytechnics, 9 other TVET institutions, and 72 more TVET institutions were involved through an institutional mentorship structure to provide a significant scale-up to training of TVET trainers. The program covered integrated thematic areas with three main objectives: TVET institutions to deliver high quality CBET courses linked to labour market demands; Technically competent TVET trainers' using CBET methods to deliver up to date curricula; and creation of pathways from unemployment through training for employment and self-employment.

The Young Africa Works in Kenya-TVET model recognizes the need to involve industry as a key partner in the achievement of all project objectives. The focus of the project was to strengthen the quality and relevance of TVET institutions and systems in Kenya, and its overarching objective is to help young Kenyans, particularly women, find dignified and fulfilling work. In the context of industry linkages, the following initiatives have an industry component: Mennonite Economic Development Associates (MEDA) (TVET-04) in conducting labour market assessment scans, CAP-Youth Empowerment Institute (CAP YEI) (TVET-05) in life skills training/employability curricula, Thematic Partnership in Pre-service and In-Service Training (TVET-01), Thematic Partnership in RPL (TVET-02), Thematic Partnership for a Curricula Gap Audit (TVET-03) Thematic Partnership in Labor Market Information (LMI) Gathering Processes (TVET-11), Thematic Partnership in Career Guidance and Mentorship Services (TVET-12), Thematic Partnership in Applied Research (TVET-13), Thematic Partnership in Gender Equality Policies and Training (TVET-14), and Institutional Partnerships TVET-16-25 for CBET course development, implementation of work placements for trainees, and monitoring and evaluation all geared towards gender and industry-responsive CBET.

1.1.4 Kenya National Qualifications Framework (KNQF)

The Kenya National Qualifications Framework promotes industry-driven education and training by embedding mechanisms that require the active participation of industry stakeholders at every stage of curriculum development, implementation, and assessment. This ensures that qualifications are relevant, demand-driven, and aligned with the real needs of the labor market. The KNQF mandates the development of occupational standards that describe the skills, knowledge, and attitudes required to perform specific job roles. These standards are developed in consultation with industry experts, employer associations, and sector skills councils, making industry input a prerequisite for curriculum design. Under the KNQF, no curriculum can be registered unless it has been reviewed and endorsed by industry stakeholders through the IAC mechanism.

The qualifications framework links curriculum development to Labor Market Assessments (LMAs), which are often conducted with participation from employers, industry associations, and chambers of commerce. This ensures that training programs are evidence-based, reflecting current and emerging skills needs in various sectors.

By requiring industry participation as an integral part of the qualifications development process, the KNQF ensures that CBET programs are fit-for-purpose, practical, and valued by employers. This systematic collaboration between TVET institutions and industry guarantees that graduates are work-ready and qualifications are of high and consistent quality, nationally and internationally.

1.1.5 Strengthening Industry Linkages through Industry Advisory Committees

The Industry Advisory Committees serve as a structured and formal platform for ongoing collaboration between TVET institutions and the public and private sectors. They are essential in ensuring that TVET curricula remain aligned with current and emerging industry needs, thereby strengthening the relevance, responsiveness, and quality of technical training.

The IACs provide direct industry input into the design and review of CBET curricula, ensuring that the training content reflects real-world workplace requirements. They help validate occupational standards, job profiles, and competency units before they are integrated into the curriculum. The IAC members, drawn from various industry sectors, offer insights into labor market trends, technological advancements, and evolving occupational roles. This allows institutions to update or revise curricula proactively to meet current and future skills demands. Also, IACs help TVET institutions design work-based learning components, including internships, apprenticeships, and industry exposure visits. They also advise on practical assessment criteria and may participate in evaluating learners' skills in real or simulated work environments.

Key recommendation by the Presidential Working Party on Education Reforms was establishment of Sector-Specific Industry Advisory Committees and emphasized that each relevant technical and vocational institution should establish its own IAC to provide ongoing input and alignment with industrial needs. This will establish long-term partnerships with employers, which can lead to joint initiatives such as donation of equipment, co-development of training programs, or industry-sponsored innovation hubs. This builds a culture of shared ownership in workforce development.

In conclusion, IACs are a vital bridge between training and employment. They ensure that TVET programs are not designed in isolation but are guided by the voices of employers and industry experts. By actively engaging in curriculum planning, training delivery, and graduate evaluation, IACs significantly enhance the quality, relevance, and impact of TVET in Kenya

1.2 Problem Statement

Despite Kenya's progressive adoption of Competency-Based Education and Training and the establishment of supportive structures such as the Kenya National Qualifications Framework and Industry Advisory Committees, a significant mismatch persists between the skills imparted by TVET institutions and those required by the labor market (Federation of Kenya Employers [FKE], 2022). This skills gap continues to undermine the employability of TVET graduates, with employers consistently reporting deficiencies in job-readiness, hands-on competencies, and adaptability among new recruits (KEPSA, 2023). The disconnect suggests that while policy frameworks exist, their effective translation into industry-aligned training outcomes remains a challenge. Consequently, Kenya risks underutilizing its human capital potential at a time when demand for skilled labour is rising. Addressing this misalignment is critical to unlocking the full value of CBET and improving employment outcomes for TVET graduates.

While policy frameworks emphasize industry engagement in curriculum design, work-based learning, and graduate assessment, evidence suggests that actual industry involvement remains fragmented, inconsistent, and in many cases, superficial (TVETA, 2022). Many industry engagement activities lack operational capacity, clarity of roles, and sustained participation from key private sector actors, which limits their ability to effectively influence training programs (CICan, 2023). Moreover, challenges such as inadequate communication channels, limited incentives for industry participation, and weak institutional follow-through further constrain meaningful collaboration.

These gaps contribute to the continued production of graduates with theoretical knowledge but insufficient practical skills aligned to evolving labor market needs, especially in high-demand sectors such as digital technology, electrical engineering, construction, and logistics (FKE, 2022; MEDA, 2021). Without a systematic evaluation of the readiness, capacity, and commitment of industries to support CBET implementation, Kenya risks undermining the goals of its TVET reform agenda and broader development aspirations under Vision 2030 and the Sustainable Development Goals.

This study, therefore, sought to critically assess the readiness of industry to engage in and support CBET implementation, identify systemic barriers to effective collaboration, and propose actionable recommendations to bridge the skills gap and enhance the quality and relevance of TVET qualifications in Kenya

1.3 Goal and Objectives

The main goal of this study was to evaluate the readiness of industries to effectively participate in the implementation of Competency-Based Education and Training within Kenya's TVET institutions, with the aim of enhancing the quality, relevance, and employability outcomes of TVET qualifications.

The objectives were:

i To evaluate the extent of industry involvement in developing, delivering, and assessing CBET curricula;
ii To identify barriers hindering effective industry participation in CBET implementation;
iii To assess the alignment between industry needs and CBET learning outcomes; and
iv To document and analyze emerging best practices in industry-TVET collaboration for potential replication and scaling.

1.4 Scope of the Study

The study focused on 26 TVET-Centers of Excellence (COEs) supported by CICan under the Young Africa Works in Kenya – TVET program and their associated industry partners. Data was collected from TVET Heads of Department (HODs) implementing IAC's strategy, Industry Advisory Committees (IACs), Industry Liaison Officers)ILOs) from 26 COEs, and officer from State Department of TVET (SDTVET) responsible for Industry liaison.

CHAPTER TWO

RESEARCH METHODOLOGY

2.1 Methodology

This study adopted a descriptive cross-sectional survey design to evaluate the involvement of Industry Advisory Committee members in curriculum development within Kenya's TVET sector. The design is suitable for capturing current practices, perceptions, and gaps in industry-academia collaboration at a specific point in time.

2.2 Population and Sampling

TVET institutions with established Industry Advisory Committees were systematically selected. The research targeted three primary groups from these institutions: IAC members, TVET Heads of Departments, and Industry Liaison Officers. This work was situated within the context of the Young Africa Works in Kenya-TVET Program, a five-year program (2020-2025) aimed at enhancing the quality and relevance of TVET institutions and systems nationwide.

Sector	IAC members	TVET institutions
Agribusiness	239	Nyeri National Polytechnic, Kaimosi Friends National Polytechnic, Meru National Polytechnic, Nyandarua National Polytechnic, Konoin Technical Training Institute, Rift Valley National Polytechnic, Kitale National Polytechnic, Eldoret National Polytechnic, Northeastern National Polytechnic
Building & Construction	196	Keroka Technical Training Institute, Bondo Technical Training Institute, Mathenge Technical Training Institute, Nyandarua National Polytechnic, Sigalagala National Polytechnic, Kitale National Polytechnic, Maasai Mara Technical and Vocational College, Kenya Coast National Polytechnic, Eldoret National Polytechnic, Baringo National Polytechnic, Lodwar Vocational Training Center
Manufacturing	91	Keroka Technical Training Institute, Kisii National Polytechnic, Taita Taveta National Polytechnic, Weru Technical and Vocational College, Kabete National Polytechnic
Hospitality	97	Bungoma National Polytechnic, Taita Taveta National Polytechnic, Kenya Coast National Polytechnic, Baringo National Polytechnic, North Eastern National Polytechnic

Sector	IAC members	TVET institutions
Digital Sector	6	Bondo Technical Training Institute, Kabete National Polytechnic
Blue Economy	17	Mawego National Polytechnic
Tourism	7	Maasai Mara Technical and Vocational College

Table 2.1: IAC Member's Sectorial Representation

To ensure the research findings accurately reflect the diverse needs of Kenya's workforce, a stratified sampling strategy was used. This method ensured representation. By capturing input from a wide range of sectors, the study provides a comprehensive overview of how industry engagement is shaping TVET curricula to meet the evolving demands of the labor market.

Sector	IAC Members Population (N)	IAC Members Sample Size (n)	TVET Heads of Department (HODs) and ILO Population (N)	TVET Heads of Department (HODs) and ILO Sample Size (n)
Agribusiness	239	110	240	138
Building & Construction	196	90	180	114
Manufacturing	91	42	123	53
Hospitality	97	45	55	57
Digital Sector	6	3	13	4
Blue Economy	17	8	18	10
Tourism	7	3	13	4
Total	**653**	**301**	**642**	**380**

Table 2.2: Sampling Frame (Stratified by Sector)

2.3 Data Collection Methods

2.3.1 Data Collection Methods

Structured online questionnaires were distributed TVET HODs and ILOs, while face to face interviews were conducted with IAC members to gather comprehensive data for this study. The questionnaires incorporated a mix of closed-ended questions and Likert-scale items, enabling the research team to quantitatively assess key variables such as sectoral representation, specific roles within the committees, duration of service, frequency and depth of engagement, and the various forms of industry support provided to TVET institutions. This structured approach allowed for the systematic collection of comparable data across diverse respondents and sectors.

To enrich the quantitative findings and capture more insights, the questionnaires also included open-ended questions. These qualitative items invited participants to elaborate on their experiences and perspectives regarding curriculum alignment with industry needs, inclusive practices, and suggestions for improving industry-academia collaboration.

Sector	Questionnaires for IAC Members	Questionnaires for TVET Heads of Department and ILOs
Agribusiness	80	130
Building & Construction	72	106
Manufacturing	32	47
Hospitality	35	52
Digital Sector	3	3
Blue Economy	8	9
Tourism	3	3
Total	**233**	**350**

Table 2.3 : Respondent Questionnaire Distribution

Additionally, interviews were conducted. This allowed for follow-up with selected respondents to clarify questionnaire responses and explore complex issues in greater depth. The combination of structured surveys and targeted interviews ensured a robust, multi-faceted understanding of IAC engagement and its impact on TVET curriculum development in Kenya.

2.4 Data Analysis

Quantitative data were analyzed using descriptive statistical techniques, including frequencies, percentages, means, medians, and measures of distribution such as skewness, to summarize patterns of engagement, roles, and forms of industry support across the sampled TVET institutions. Cross-tabulations were conducted to compare responses among different stakeholder groups namely, IAC members, HODs, and ILOs in order to identify variations in perceptions and practices.

Qualitative data derived from open-ended questionnaire items and follow-up interviews were analyzed using thematic coding. Responses were systematically reviewed to identify recurring themes, concerns, and suggestions related to curriculum alignment, inclusivity, and industry-academia collaboration. The resulting themes provided contextual depth to the quantitative findings and informed the development of actionable recommendations for enhancing IAC involvement in curriculum development within Kenya's TVET sector.

Sector	Interviews for IAC Members	Interviews for TVET Heads of Department and ILO
Agribusiness	30	8
Building & Construction	18	8
Manufacturing	10	6
Hospitality	10	5
Digital Sector	0	1
Blue Economy	2	1
Tourism	3	1
Total	**68**	**30**

Table 2. 4 Respondent Interview Distribution

2.5 Ethical Considerations

The study complied with relevant ethical research standards and observed the provisions of the Data Protection Act, Cap 411C regarding the collection, processing, and storage of personal data. Participation was voluntary and confidential. Data were anonymized to protect respondent identities, and findings were reported in aggregate to ensure impartiality and integrity

CHAPTER THREE

FINDINGS

3.1 Introduction

The Industry Advisory Committee plays a pivotal role in aligning academic curricula with industry needs, ensuring graduates possess relevant skills for sustainable economic growth. This survey evaluates IAC members' involvement in curriculum development, focusing on the Kenya National Qualifications Framework level descriptors, industry demands, and areas for improvement. The findings highlight sectoral representation and engagement, providing insights for enhancing collaboration between academia and industry.

The study achieved a 68% response rate from TVET institutions, with 238 Heads of Department and Industry Liaison Officers participating out of 350 targeted. From Industry Advisory Committees, 95 members (41% of the 233 target) completed online questionnaires. While TVET institutional participation was strong, IAC member engagement was moderate, potentially reflecting capacity constraints among industry partners. These response rates provide substantial data for analyzing industry-TVET collaboration in Kenya's CBET system, though the lower IAC participation suggests findings may underrepresent some industry perspectives. The dataset remains robust for assessing curriculum alignment, implementation challenges, and partnership effectiveness across the skills development ecosystem.

The research achieved strong stakeholder participation rates, with qualitative interviews conducted with 80% of the targeted IAC members and 60% of the intended TVET HODs and ILOs across Kenya's priority economic sectors,

> *"Agriculture needs more practical exposure- there's too much theory. We want students on farms, not just in classrooms"*
> *Industry Liaison Officer, Agribusiness Sector, Western Kenya.*

These robust response rates provide a statistically significant and representative dataset for analyzing industry-TVET partnerships within the CBET system. The balanced participation from both industry representatives and TVET institutional leaders ensures comprehensive insights into curriculum development, implementation challenges, and sector-specific workforce needs. The high engagement levels (80% for industry representatives and 60% for TVET administrators) validate the study's methodological rigor and enhance the reliability of findings. This strong participation across multiple economic sectors enables meaningful comparisons of collaboration patterns and challenges between different industries. The data collected significantly contributed to understanding how effectively Kenya's TVET system aligns with current labor market demands through the CBET framework.

These interview results form a crucial evidence base for developing targeted recommendations to strengthen industry involvement in TVET curriculum design, delivery, and assessment. The comprehensive participation ensures the findings reflect the diverse perspectives of key stakeholders in Kenya's skills development ecosystem.

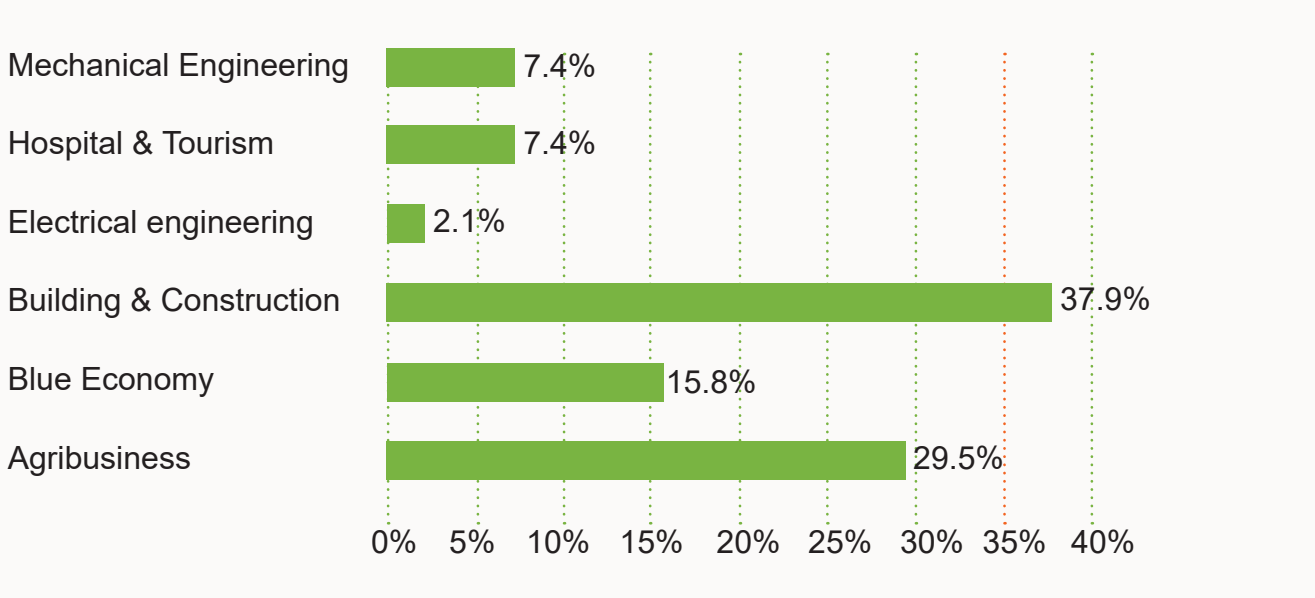

Figure 3.1 Sector of the Economy Represented

3.2 The Sector Represented

A survey of 95 Industry Advisory Committee members revealed significant sectoral disparities in representation in Figure 3.1, with Building and Construction dominating at 37.9% (36 members), followed by Agribusiness at 29.5% (28 members), reflecting their centrality to Kenya's infrastructure and food security agendas. The emerging Blue Economy accounted for 15.8% (15 members), while Hospitality and Tourism and Mechanical Engineering each represented 7.4% (7 members). Electrical Engineering had minimal participation (2.1%, 2 members), indicating a critical gap in technical sector engagement.

Parallel data from 238 TVET Heads of Department and Industry Liaison Officers in figure 3.2 show similar trends, with Housing (76.7%), Agriculture (70%), and Construction & Infrastructure (65%) as the most covered sectors in curricula, aligning with IAC representation. Energy (56.7%), Blue Economy (55%), Manufacturing (53.3%), and ICT (51.7%) also featured prominently, underscoring a dual focus on traditional and emerging industries. However, Textile Technology (48.3%), Food Security (42.5%), and Mining (39.2%) had moderate coverage, suggesting regional or niche prioritization. Notably underrepresented sectors included Digital Economy (35%), Healthcare (31.7%), Transport & Logistics (10%), and Other (3.3%), revealing gaps in adapting to technological advancements and logistics-driven economic needs.

The findings highlight a mismatch between sectoral economic importance and TVET institutional focus. While high-representation sectors like Construction and Agribusiness benefit from robust curriculum integration, critical fields like Electrical Engineering and Digital Economy risk being overlooked, and potentially undermining Kenya's technical and digital transformation goals. The Blue Economy's growing presence signals alignment with national priorities but requires sustained support.

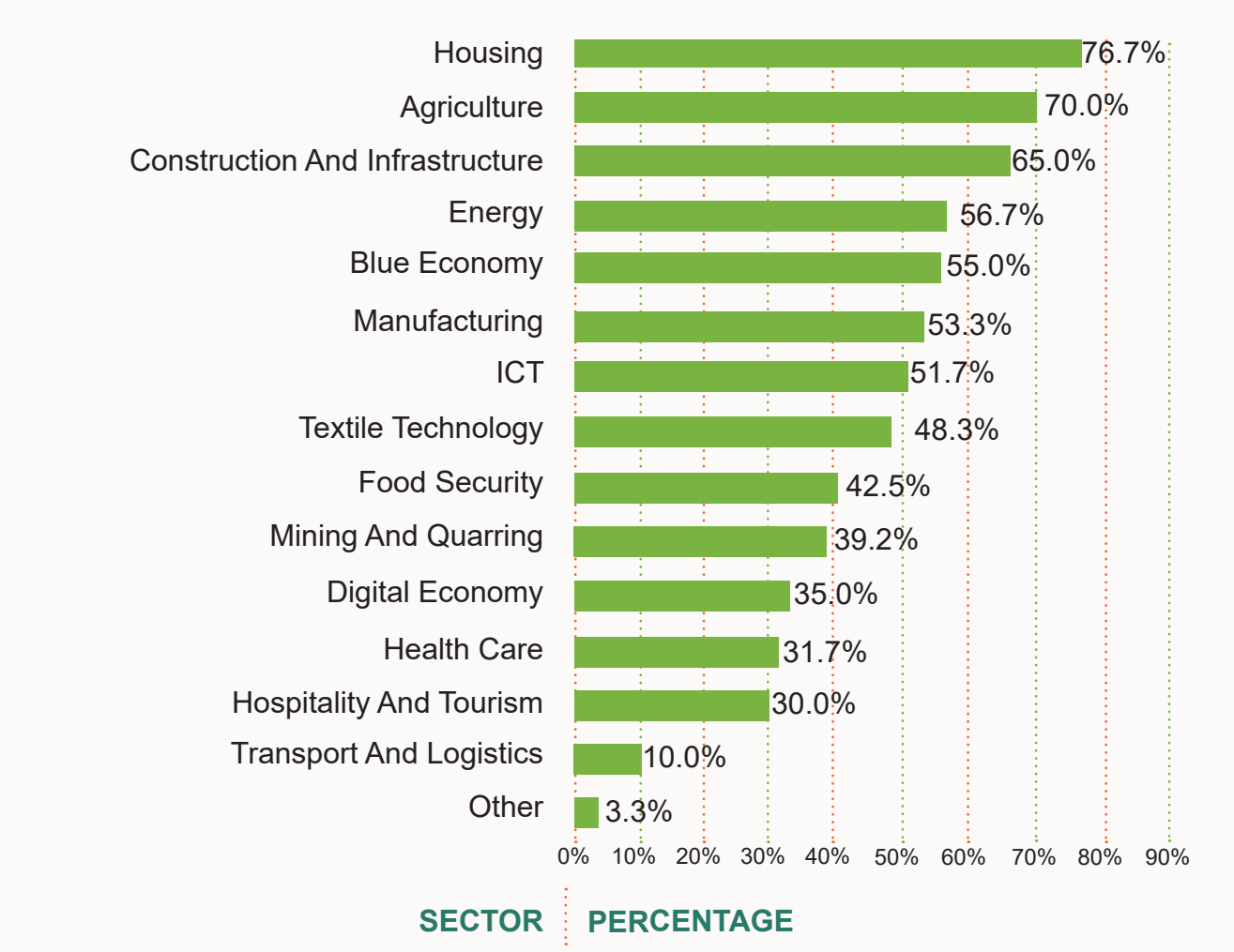

Figure 3.2 Key Economic Sectors in TVET Industry Linkages

3.3 Role played by IAC Members

The survey assessed the roles of Industry Advisory Committee members to understand their engagement in curriculum development. Out of 95 respondents, the majority identified as industry experts (44.2%, 42 members) or general members (44.2%, 42 members), indicating strong industry participation in curriculum alignment. A smaller proportion held leadership positions, with 5.3% (5 members) serving as Chairpersons and another 5.3% (5 members) as training liaisons, bridging academia and industry. Only 1.1% (1 member) reported a role categorized as “Other.”

Role	Frequency	Percent
Trainings Liaison	5	5.3
Chairperson	5	5.3
Industry Expert	42	44.2
Member	42	44.2
Other	1	1.1
Total	**95**	**100**

Table 3.1 The role played by IAC members in the committee

The findings suggest that while industry professionals dominate the IAC, training representation remains limited, which may impact the integration of curriculum with educational frameworks. The near-equal distribution between industry experts and general members highlight active involvement but may also indicate a need for clearer role differentiation. The minimal presence of chairpersons and training liaisons suggests opportunities to strengthen leadership and academic-industry collaboration

> *"We provide feedback on skill gaps, but often there's no one from the training side to explain how that translates into curriculum changes. We need better coordination"*
>
> *IAC Member, Hospitality Sector.*

These insights emphasize the importance of balanced representation to ensure curricula meet both industry demands and KNQF standards. Enhancing academic participation and defining distinct roles could further improve the IAC's effectiveness in shaping workforce-ready graduates.

3.4 Duration of service for IAC members

The survey examined how long IAC members have been engaged in the committee. Out of 95 respondents, the majority (41.1%, 39 members) reported being members for 1-2 years, while 40.0% (38 members) served for 3-5 years, indicating a stable core of experienced participants. A smaller proportion (13.7%, 13 members) joined less than a year ago, reflecting recent growth in membership. Additionally, 4.2% (4 members) were unsure of their tenure.

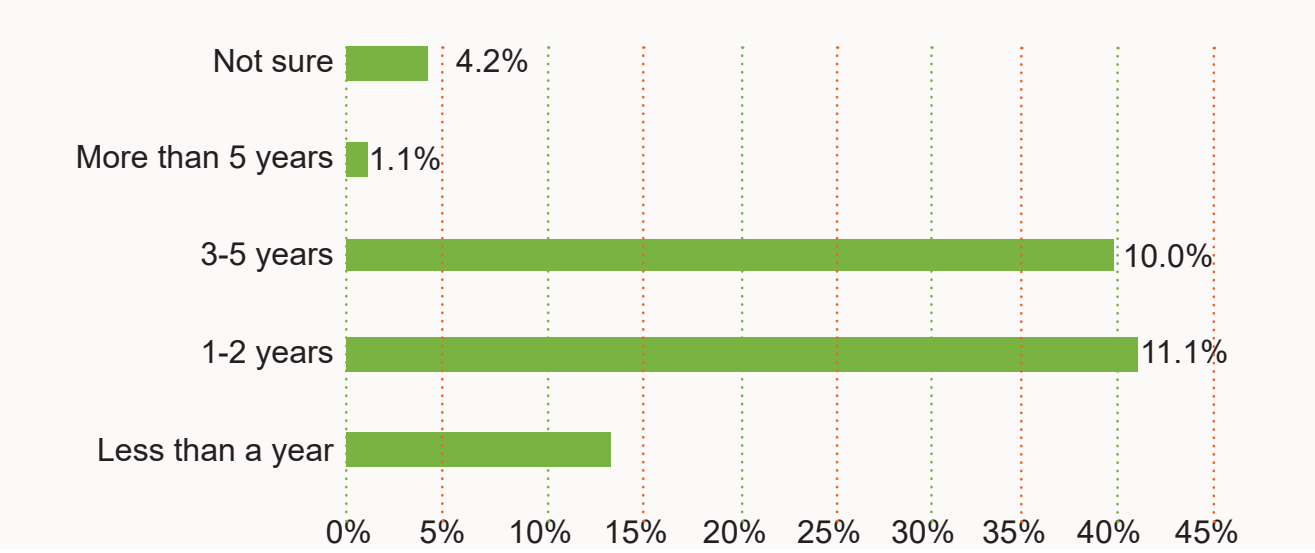

Figure 3.3 Duration of service for IAC members

The findings highlight that most IAC members are relatively new (1-5 years), which may bring fresh perspectives but could also indicate a need for strategies to retain long-term participants. As one interviewee observed:

> *"Every year we get new people, which brings energy, but sometimes it feels like we're starting over. We need continuity to build on what's already working"*
> *IAC Member, Manufacturing Sector*

Further, this points to the adoption and possible sustainability of this model with majority of the IAC members having served between the 1 - 5 years aligning with the duration the program has been implemented. This points to the meaningful engagement and collaboration between the industry partners and TVET institutions. The minimal representation of members with over five years of experience suggests an opportunity to leverage institutional knowledge by encouraging sustained engagement. Strengthening continuity within the IAC could enhance its effectiveness in curriculum development, student support services, mentorship, internships and industry aligned curriculum delivery and assessment.

3.5 Frequency of Industry Engagement in Curriculum Development

A survey of 95 IAC members assessed how often they participate in meetings to contribute to curriculum development and industry alignment. The findings reveal varying levels of engagement, with 52.6% (50 members) participating occasionally (once or twice a year), indicating that most interactions occur on a semi-regular basis. A smaller but significant portion, 24.2% (23 members), engage regularly (at least quarterly), reflecting a committed subgroup that maintains consistent involvement. However, 18.9% (18 members) attend rarely (less than

Role	Frequency	Percent
Regularly (at least quarterly)	23	24.2
Occasionally (once or twice a year)	50	52.6
Rarely (less than once a year)	18	18.9
Never participated	4	4.2
Total	**95**	**100**

Table 3.2 : The frequency of meetings for IAC members

In a related survey of 238 Heads of Department and ILOs in Figure 3.4, 38.7% reported collaborating with industry partners quarterly, demonstrating a strong emphasis on regular curriculum updates. Another 35.3% engage annually, while 14.7% do so biannually, suggesting a structured but less frequent approach. However, 11.3% rarely or never seek industry input, risking misalignment with workforce demands and corroborating the trends identified by the industry respondents

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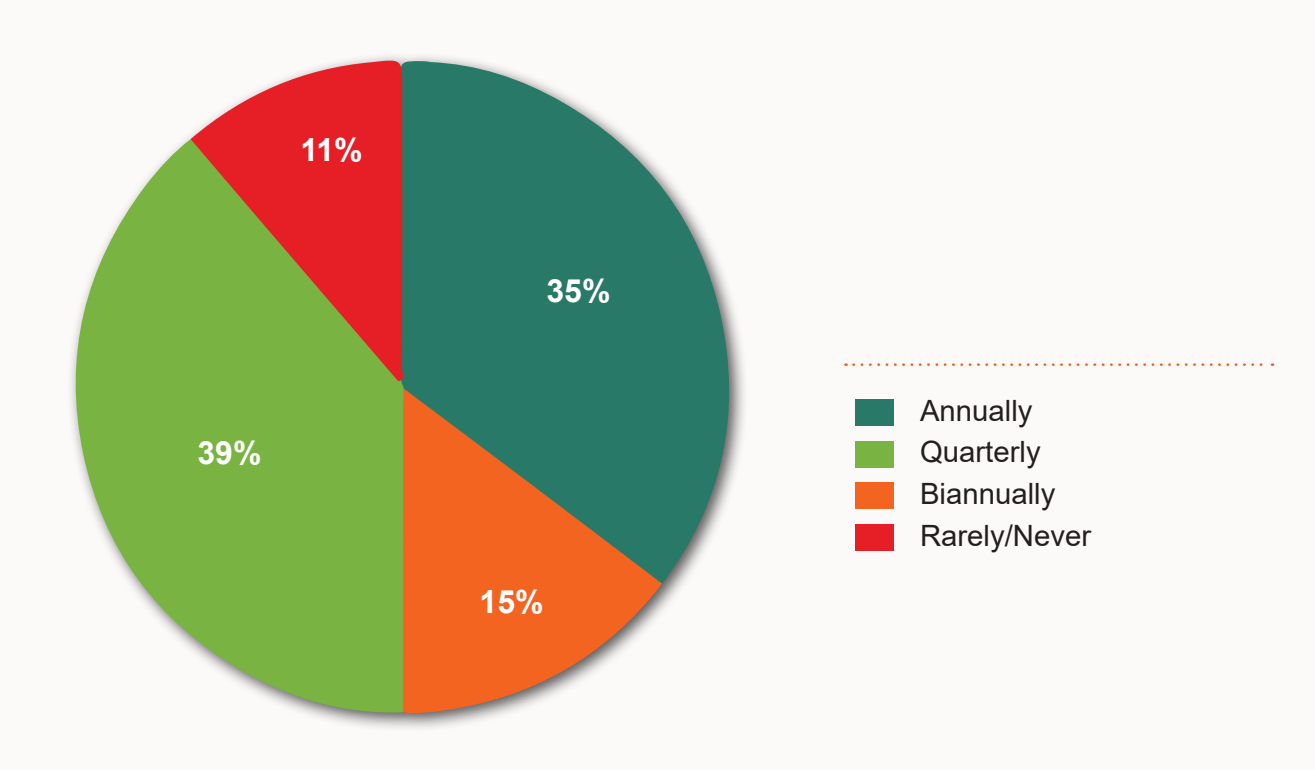

Figure 3.4 Frequency of Industry Engagement in Curriculum Development

The disparity in IAC participation highlights challenges in sustaining consistent engagement. While quarterly meetings indicate active involvement from some members, the majority engage only radically, which may limit the committee's effectiveness. The small but notable fraction of members who never attend further underscores gaps in participation.

These findings emphasize the need for structured engagement strategies to enhance collaboration. Institutions with infrequent industry interactions should adopt more regular meeting schedules or alternative engagement methods (e.g., virtual consultations, surveys) to ensure curricula remain industry-relevant. Strengthening participation among less-engaged IAC members could also improve alignment between education and workforce needs. Overall, while many institutions and IAC members prioritize industry input, greater consistency in engagement is necessary to maximize curriculum relevance and graduate employability. A transcript excerpt from one industry respondent illustrates this concern:

> *"We are often listed as committee members, but engagement is irregular. Sometimes we get invited when changes are already decided. If industry input is only symbolic, it defeats the purpose"*
> *IAC Member, Construction Sector*

3.6 Level of Involvement in Curriculum Development

The survey assessed Industry Advisory Committee members' level of involvement in curriculum development using a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). Analysis of the responses revealed a strong positive engagement pattern, with a mean score of 3.55 and a median of 4, indicating that most participants perceive themselves as reasonably involved in curriculum-related activities.

Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.55	4	4.2%	6.3%	35.8%	37.9%	15.8%

Table 3.3 Rating of involvement in curriculum development or review

Breaking down the responses, the study found that 4.2% strongly disagreed and 6.3% simply disagreed with statements about their involvement, representing a small minority who feel minimally engaged. A more substantial 35.8% adopted a neutral stance, potentially indicating either limited participation or uncertainty about their role in curriculum processes. On the positive side, 37.9% agreed and 15.8% strongly agreed with statements about their involvement, meaning that a combined 53.7% of respondents feel actively engaged in curriculum development work.

The survey reveals robust industry engagement in TVET curriculum development, with 86.6% of HODs and ILOs respondents confirming their institutions revise programs based on IAC input. This strong consensus is reflected in the high mean score of 4.13/5 (median: 4), demonstrating effective industry-TVET collaboration. Only 3.7% expressed disagreement, indicating widespread adoption of industry feedback mechanisms. These findings highlight the critical role of structured industry partnerships in maintaining curriculum relevance to labor market demands. The active participation of industry stakeholders ensures that TVET programs remain responsive to evolving workforce requirements, effectively bridging the gap between education and employment needs.
The interview with IAC members regarding industry involvement in CBET curricula revealed structured but inconsistent engagement. One IAC member noted:

> *"We provide feedback during the curriculum review process, but it's not always clear how much of it is actually taken into account. In some cases, our input ends up in the minutes but not in the final program"*
>
> *IAC Member, Hospitality Sector.*

While the IAC demonstrates active participation through regular curriculum review meetings with documented recommendations (meeting minutes), institutional follow-through remains partial. Industry input is valued in principle, yet practical implementation-such as involving industry experts in student assessments-faces execution gaps. This aligns with the broader survey findings, which show moderate IAC effectiveness (mean rating: 3.34/5), with only 5.3% of stakeholders rating collaboration as "very strong."

3.6.1 Types of Industry Support Provided to Institutions

The collaboration between industry partners and TVET institutions play a critical role in ensuring curriculum relevance and graduate employability. Two key stakeholder groups; TVET heads of department and industry liaison officers, and industry advisory committee members provided insights into the types of support offered by industry partners. While there is significant overlap in their responses, notable differences highlight varying perspectives on industry engagement.

Figure 3.5 Types of Industry Support Provided to Institutions

The most frequently reported form of industry involvement, as indicated by TVET HODs and ILOs, is participation in curriculum development (64.7%), underscoring the emphasis on aligning educational content with workforce needs. This is closely followed by research and innovation collaborations (55.8%), structured internship programs (54.7%), and guest lectures or industry instruction (50.5%). These findings suggest that industry partners are most actively engaged in shaping curriculum design, providing hands-on learning opportunities, and sharing expert knowledge with students.

IAC members, however, reported slightly different priorities. While they also acknowledged work placement opportunities (38%) and mentorship/coaching programs (32%), their responses placed greater emphasis on equipment donations or loans (42%) and technical capacity building for trainers (35%). This discrepancy may reflect IAC members' focus on tangible resources and skills development for educators, whereas TVET administrators prioritize curriculum alignment and student-facing initiatives. This contrast in perceptions was reflected in one interviewee's statement:

> *"We support the institution mostly through equipment and helping lecturers upgrade their skills. Our role is more on the supply side - not necessarily mentoring students directly"*
> *IAC Member, Manufacturing Sector*

Both groups reported moderate engagement in areas such as joint certification programs (40.0% - HODs/ILOs) and scholarship/funding support (40.5% - HODs/ILOs vs. 12% - IAC members). The stark difference in reported financial support may stem from varying definitions- TVET leaders might include sponsorships and grants, while IAC members may interpret "financial support" more narrowly.

Other forms of assistance, such as job shadowing experiences (32.6%), access to industry-standard facilities (37.9%), and provision of training materials (30.0%), were mentioned less frequently by HODs/ILOs. Meanwhile, IAC members highlighted workshops/seminars (22%) and assessment verification (20%) as notable contributions, suggesting that industry experts play a role in refining institutional assessment practices.

A small percentage of respondents (3.2% - HODs/ILOs) reported no current industry support, indicating room for improvement in fostering partnerships. Additionally, while career fair participation (50.5%) was a key activity for TVET leaders, it was not explicitly mentioned by IAC members, pointing to potential misalignment in engagement strategies.

The “Other” category (2.1% - HODs/ILOs vs. 8% - IAC members) suggests that some forms of support-such as consultancy services or collaborative projects-may not fit neatly into pre-defined options but still contribute meaningfully to TVET delivery. An IAC member shared:

> *“Besides donating tools, we also advise on which international standards the institution should aim to meet. Sometimes we help them link up with other companies or provide consultancy”*
> *IAC Member, Energy Sector.*

The data reveals that industry partners are actively involved in TVET curriculum delivery, though their contributions vary depending on stakeholder perspective. TVET leaders emphasize curriculum development, internships, and research collaborations, while IAC members focus more on resource provision (equipment, training) and capacity building.

3.6.2 Assessment of Curriculum Alignment with Industry Demands

The survey findings in Figure 3.6 present a generally positive outlook on curriculum effectiveness, with 83.2% of Industry Advisory Committee members affirming that current programs prepare graduates for industry demands, against 16.8% who expressed reservations.

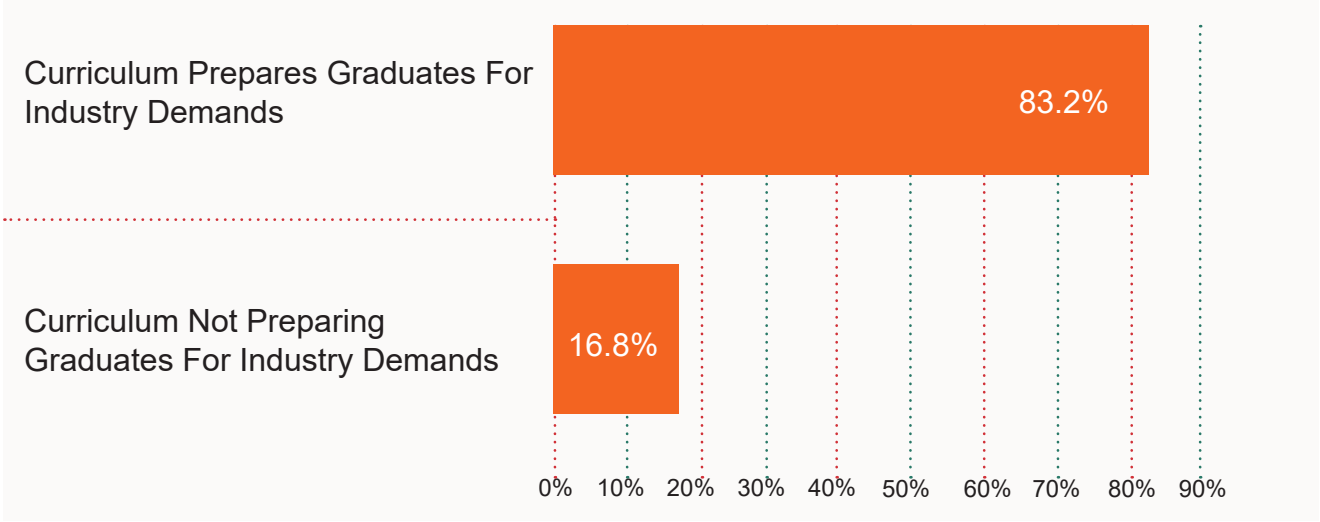

Figure 3.6: Assessment of Curriculum Alignment with Industry Demands.

The survey reveals strong industry alignment in Kenya’s TVET system, with 90.4% of HODs and ILOs respondents agreeing that industry partnerships effectively shape curriculum to meet labor market demands (Mean: 4.21/5). This success stems from structured employer engagement through occupational standards, CBET adoption, and robust practical training components like internships and dual training programs. These mechanisms have significantly enhanced curriculum relevance, particularly in technical fields where hands-on competency development takes precedence over theoretical instruction. An IAC interviewee noted:

> *“The curriculum is now much better aligned with what we require. We’ve helped design modules for automation and machine safety that didn’t exist before”*
> *- IAC Member, Automotive Manufacturing Sector.*

Another HOD shared:

> *"Our programs now include mandatory internship components and competency assessments co-verified by industry-this is a big shift from five years ago"*
> *HOD, Technical Training Institute.*

Respondents proposed targeted interventions to strengthen the system: establishing structured, frequent curriculum review mechanisms with industry; expanding experiential learning through extended placements and simulation training; and developing dedicated soft skills modules for workplace competencies. There's particular emphasis on creating more agile curriculum development processes that can rapidly incorporate technological and methodological innovations.

3.7 Gender Sensitivity and Inclusivity in CBET Implementation

The survey of HODs and ILOs reveals significant progress in implementing gender-sensitive and inclusive CBET programs, with 77.3% agreeing or strongly agreeing that their institutions accommodate gender diversity and Persons with Disabilities (PWDs). This positive assessment, reflected in a mean score of 3.97 and a median of 4, indicates that most TVET institutions have incorporated inclusivity measures into their competency-based training frameworks. However, the 5.5% disagreement rate and 17.2% neutral responses from these key institutional leaders highlight areas where inclusivity in CBET implementation remains uneven. To bridge these gaps, targeted capacity-building initiatives, inclusive policy reinforcement, and continuous sensitization on gender and disability mainstreaming are recommended to ensure full and consistent adoption across all institutions

As primary implementers of CBET policies, HODs and ILOs particularly noted challenges in three areas: institutional infrastructure often lacks adequate facilities for PWDs, teaching materials frequently fail to address gender biases, and many trainers require additional professional development on inclusive pedagogy. Their responses highlight that while policy frameworks for inclusivity exist, practical application remains inconsistent across institutions. A HOD from a technical training institute in western Kenya noted:

> *"Our classrooms and labs are not yet fully accessible. We try to accommodate students with disabilities informally, but it's not standardized or sufficient"*
> *An ILO explained*

> *"Some training materials still portray technical work as male-centric. This discourages female students from joining or fully engaging"*

> *"Some training materials still portray technical work as male-centric. This discourages female students from joining or fully engaging"*

The findings underscore the need for targeted interventions, including: upgrading physical and learning infrastructure to be fully accessible; developing gender-responsive teaching resources; and implementing mandatory inclusivity training for all TVET trainers. As Kenya advances its inclusive education agenda, strengthening these aspects of CBET delivery will be crucial for ensuring equitable skills development opportunities that meet both national policy objectives and labor market demands.

3.8 Summary of the extent of industry involvement in developing, delivering, and assessing Competency-Based Education and Training curricula

The study's primary objective was to evaluate the extent of industry involvement in developing, delivering, and assessing Competency-Based Education and Training curricula in Kenya's TVET sector. Based on the findings, the objective was largely achieved, as the research comprehensively assessed industry engagement across curriculum development, delivery, and alignment with labor market needs. Below is a detailed analysis:

3.8.1.1 Industry Involvement in Curriculum Development

The data indicates active, though uneven, participation of industry stakeholders in the curriculum development process. While 53.7% of Industry Advisory Committee (IAC) members agreed or strongly agreed that they were actively engaged (mean score: 3.55/5), a significant 35.8% expressed neutrality, pointing to inconsistencies in sustained collaboration across sectors. Conversely, 86.6% of TVET Heads of Departments (HODs) affirmed that curriculum revisions were made based on IAC feedback (mean score: 4.13/5), reflecting strong institutional mechanisms for incorporating industry input. Interviews further supported these trends. One IAC member noted:

"We attend curriculum review meetings, but it's not always clear how our input is used. There's goodwill, but sometimes the process feels bureaucratic." A TVET HOD shared: "We revise curricula with input from IACs regularly. But engagement varies. Some sectors are very involved; others just send a rep who never returns."

This juxtaposition reveals a dual reality: while institutional structures for industry engagement are functional and responsive, the level of industry participation varies, with some firms demonstrating limited involvement.

3.8.1.2 Industry Role in Curriculum Delivery

The study highlighted a broad spectrum of industry involvement in curriculum delivery, affirming the research objective. Notably, 64.7% of HODs reported active industry participation in curriculum development. In terms of practical exposure, 54.7% of respondents identified structured internships as a key form of support, while 50.5% cited the value of guest lectures. IAC members also contributed by providing resources, with 42% noting equipment donations and 35% emphasizing efforts toward trainer capacity building. These findings underscore the multifaceted role of industry in enhancing the relevance and quality of training programs. To strengthen this partnership, strategies such as structured engagement frameworks, capacity building for IAC members, and incentivization of industry participation should be adopted.

This would ensure a more consistent and impactful contribution from industry stakeholders, aligning curricula more closely with evolving labor market needs.
However, the study also revealed notable misalignments in priorities between education institutions and industry stakeholders. While TVET leaders placed greater emphasis on internships and hands-on learning experiences, industry partners tended to focus more on material support and staff development. This divergence highlights a critical gap in mutual understanding and coordination, suggesting the need for more strategic dialogue and alignment. A revealing excerpt from an IAC interview illustrates this disparity:

> *“We’re supplying labs with equipment and helping lecturers learn new tech, but sometimes institutions just expect us to speak in class- we need roles that fully match our contribution”*
> *IAC Member, Manufacturing Sector.*

By uncovering these variations in perception and priority, the study successfully met its objective and offers valuable insights for strengthening collaborative efforts in curriculum delivery

3.8.1.3 Curriculum Alignment with Industry Demands

The study demonstrated a strong alignment between training curricula and industry needs, with 90.4% of Heads of Departments and 83.2% of Industry Advisory Committee members affirming that current programs adequately reflect sectoral demands (mean score: 4.21 out of 5). Key enablers of this alignment included the implementation of occupational standards and Competency-Based Education and Training frameworks, alongside work-integrated learning models such as internships and dual training programs. These elements have enhanced the relevance and responsiveness of curricula to labor market expectations.
Despite this overall positive assessment, 16.8% of IAC members expressed concerns, indicating the need for continuous improvement. Specific areas identified included the need for more frequent curriculum reviews and the integration of emerging technologies to keep pace with evolving industry trends,

> *“By the time the curriculum changes, the machines we use have already evolved. We need agile updates, not five-year cycles”*
> *IAC Member, Automotive Manufacturing.*

By quantifying the extent of alignment and identifying critical gaps, the study effectively met its objective and provided actionable insights for refining curriculum development processes

3.8.1.4 Inclusivity in CBET Implementation

While not a primary focus, the study assessed inclusivity in the implementation of Competency-Based Education and Training, particularly regarding gender and disability. Findings revealed that 77.3% of institutions reported efforts to accommodate diverse learners, indicating a moderate level of inclusivity across the system. These efforts reflect growing awareness of the importance of equitable access in vocational education and training.

However, several challenges were identified that hinder full inclusion. Common issues included inaccessible infrastructure, such as lack of ramps or adapted facilities, and a shortage of trainers equipped to support learners with special needs. These gaps highlight the need for stronger policy enforcement, targeted training for staff, and investment in inclusive infrastructure. Addressing these barriers is essential to ensuring that CBET programs are truly accessible to all learners

3.9 Analysis of Challenges in Curriculum Alignment with Industry Needs and KNQF Descriptors

The survey findings demonstrate strong adherence to the KNQF among TVET institutions, with 83.2% of respondents agreeing or strongly agreeing that their curriculum aligns well with

KNQF level descriptors. This positive response, reflected in a mean score of 4.05 and median of 4, indicates that most institutions have successfully integrated the national standards into their programs. The KNQF's role in ensuring quality and standardization appears to be effectively implemented across the majority of surveyed institutions.
However, the 6.3% disagreement rate suggests that a small but significant portion of institutions may require additional support to fully comply with the framework. These gaps could stem from various factors, including challenges in interpreting KNQF requirements, resource limitations, or the need for more comprehensive training on implementing the framework.

The generally high alignment scores validate the effectiveness of current efforts to harmonize TVET curricula with national standards. This alignment is crucial for maintaining program quality, facilitating credit transfer, and ensuring graduates meet nationally recognized competency levels. For the minority of institutions facing challenges, targeted interventions such as specialized training workshops, enhanced guidance documents, or mentorship programs with high-performing institutions could help bridge the remaining gaps in KNQF implementation. Continued monitoring and support will be essential to maintain and improve these alignment levels across all TVET institutions.

3.9.1 Challenges in Curriculum Alignment with Industry Needs and KNQF Descriptors

Despite notable progress in aligning TVET curricula with industry demands and the KNQF, several persistent challenges continue to hinder full and effective implementation. As outlined in Table 8, the most frequently cited challenge was the lack of communication between academia and industry, reported by 65% of respondents. This significant disconnect limits the integration of real-time labor market intelligence into curriculum development and reduces the relevance of training programs. Limited resources and funding for curriculum updates (55%) further exacerbate the problem, restricting institutions' ability to revise or modernize their offerings in response to industry shifts

Challenge	Percentage
Lack of communication between academia and industry	65
Limited resources/funding for curriculum updates	55
Insufficient industry involvement in curriculum review	50
Misalignment between KNQF descriptors and real-world skills	45
Lack of practical training opportunities	45
Outdated teaching methods	40
Slow adaptation to labor market trends	35
Resistance to change from academic staff	30
Insufficient focus on emerging technologies	25
Limited collaboration between stakeholders	20

Half of the respondents also reported insufficient industry involvement in curriculum review, suggesting that employer perspectives are not being adequately incorporated into program design. This is compounded by challenges such as misalignment between KNQF descriptors and actual job market competencies (45%) and a lack of practical training opportunities (45%), both of which directly impact graduate readiness for employment. Outdated teaching methods (40%) and slow institutional adaptation to labor market changes (35%) were also flagged as significant barriers. Furthermore, 30% noted resistance to change among academic staff, while 25% and 20% respectively identified inadequate focus on emerging technologies and limited stakeholder collaboration as pressing concerns.

These findings paint a picture of systemic rather than isolated challenges. Most institutions reported facing multiple, interrelated barriers, indicating the need for coordinated, multi-level interventions. The top three challenges-poor communication with industry, insufficient funding, and low employer engagement-are structural in nature, calling for reforms in policy, resource allocation, and partnership models.

To address these issues, several actionable strategies are recommended. First, structured and regular dialogue between academia and industry stakeholders should be institutionalized to ensure curricula remain current and responsive to labor market dynamics. Second, increased funding-mobilized through both public and private partnerships-is essential to support curriculum development, faculty upskilling, and infrastructure upgrades. Expanding practical training opportunities, such as industry attachments, simulations, and dual training models, will help bridge the gap between theory and practice. In this regard, interview feedback praised the CBET curriculum's theoretical foundation but emphasized the need for more hands-on training. A proposed hybrid model-classroom learning in the first year followed by alternating industry placements-aligns closely with survey findings, particularly the 45% who cited insufficient practical training.

A comprehensive review of KNQF level descriptors is essential to ensure that qualifications awarded through TVET programs accurately reflect the competencies required in today's dynamic labor market. KNQF descriptors define the expected knowledge, skills, and attitudes learners should possess at each qualification level. While they provide a standardized reference point for curriculum development, there is growing concern-reflected in both survey and interview data-that these descriptors may not always align closely with the realities of workplace demands, particularly in fast-evolving technical fields such as green technology, artificial intelligence, and digital manufacturing. In conclusion, the most significant hurdles to curriculum alignment are rooted in communication breakdowns, inadequate funding, and limited industry participation, all of which are compounded by slow adaptation to evolving labor market requirements. By systematically addressing these challenges, educational institutions can better align their programs with KNQF standards and the needs of the workforce, ultimately enhancing graduate employability and national competitiveness.

3.9.2 Analysis of Opportunities for Curriculum Improvement

The survey identified several key opportunities to enhance the alignment of TVET curricula with industry needs and KNQF level descriptors, as summarized in Table 9. The most frequently cited opportunity was more frequent consultation with industry stakeholders (73%), emphasizing the critical role of continuous dialogue in maintaining curriculum relevance.

This was closely followed by collaboration with industry experts in course design (67%) and updating learning outcomes to reflect current industry standards (62%), both underscoring the importance of direct industry input in shaping educational programs. Additionally, 56% of respondents advocated for incorporating more practical, hands-on learning experiences, highlighting a strong recognition of the value of experiential learning in preparing job-ready graduates. While only 36% emphasized professional development for academic staff, this still reflects a notable interest in equipping educators with up-to-date knowledge and teaching strategies. A small proportion (6%) suggested other improvements, indicating some openness to alternative or innovative approaches. These insights were reinforced by comments from interviewed participants:

> *"There should be standing committees with industry specialists helping us revise programs annually, not just at accreditation"*
> *HOD, Engineering Department, Western Kenya.*

> *"We're training for yesterday's jobs because updates to learning outcomes lag behind industry practices. We need real-time industry feedback loops"*
> *ILO, Hospitality & Tourism Sector.*

> *"Our instructors need retraining-some have never used the equipment found in today's workplaces. Without upskilling, we teach in theory only"*
> *IAC Member, Manufacturing Sector.*

These statements confirm the quantitative findings, pointing to a strong consensus on the urgency of practical, continuous collaboration with industry actors-not just during curriculum review cycles but as a routine part of program delivery and improvement.
Overall, the findings point to a clear consensus on the need for deeper industry-academia collaboration and curriculum modernization to better meet labor market demands and KNQF standards.

Opportunity	Percentage
More frequent consultation with industry stakeholders	65
Incorporating more practical, hands-on learning experiences	55
Updating learning outcomes to reflect industry standards	50
Offering professional development for academic staff	45
Collaboration with industry experts to design new courses	45
Other	40
Slow adaptation to labor market trends	35
Resistance to change from academic staff	30
Insufficient focus on emerging technologies	25
Limited collaboration between stakeholders	20

3.9.3 Summary of Findings on Challenges and Opportunities in Curriculum Alignment

The study evaluated challenges and opportunities in aligning TVET curricula with industry needs and KNQF. While 83.2% of institutions reported strong alignment with KNQF (mean score: 4.05/5), key challenges persist:

Challenges

- Stakeholder Communication Gaps (65%): Poor academia-industry collaboration hinders curriculum relevance.
- Funding Constraints (55%): Limited resources delay curriculum updates.
- Insufficient Industry Involvement (50%): Employers are inadequately engaged in curriculum reviews.
- Skills Mismatch (45%): Training sometimes misalign with real-world job requirements.
- Outdated Teaching Methods (40%): Slow adoption of modern pedagogies and emerging technologies (25%).

These systemic barriers highlight the need for structured industry engagement, increased funding, and faculty training to enhance responsiveness to labor market trends.

Opportunities for Improvement

- Enhanced Industry Consultations (73%): Regular stakeholder dialogues to refine curricula.
- Curriculum Modernization (62%): Updating learning outcomes to match industry standards.
- Industry-Led Course Design (67%): Collaborative development of new programs.
- Practical Training Expansion (56%): More hands-on learning through labs, simulations, and internships.
- Faculty Development (36%): Training educators on industry trends and innovative teaching methods.

Conclusion

Despite strong KNQF compliance, communication gaps, funding shortages, and slow adaptation remain critical hurdles. Prioritizing industry partnerships, practical training, and curriculum agility will strengthen alignment, ensuring TVET graduates meet workforce demands.

3.10 Satisfaction with IAC Collaboration and Its Role in Curriculum Alignment

The survey reveals a generally neutral to slightly positive perception of the current collaboration between the IAC and educational institutions regarding curriculum development, with a mean satisfaction score of 3.25 out of 5 and a median of 3. While 33.7% of respondents agree that the collaboration is effective, 44.2% remain neutral, and a combined 15.8% express dissatisfaction. This mixed sentiment highlights room for improvement in strengthening the partnership between industry and academia.

Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.25	3	5.3%	10.5%	44.2%	33.7%	6.3%

Table 3.6: IAC Collaboration and Its Role in Curriculum Alignment

Respondents provided rich suggestions to enhance this collaboration. A recurring theme is the need for more frequent and structured communication, including regular meetings, forums, and feedback loops that foster continuous engagement. Clear terms of reference and formal frameworks for collaboration were emphasized to ensure transparency, accountability, and sustained involvement from both parties,

> *"We're willing to support curriculum reforms, but there's often no clear plan or follow-up after meetings"*
> *IAC Member, Automotive Industry.*

Many advocated for establishing formal agreements, such as memoranda of understanding (MOUs), to solidify commitments and clarify roles. Increasing industry participation was also highlighted, with calls to engage key industry groups like the Kenya Association of Manufacturers (KAM) and to involve industry experts throughout the curriculum development cycle, from design and piloting to assessment and review.

Practical suggestions include enhancing work-based learning opportunities through internships, attachments, and joint projects, supported by improved infrastructure and adequate funding for modern equipment and materials. Upskilling both academic staff and industry trainers was identified as critical to bridging knowledge gaps and ensuring curricula reflect current technologies and labor market trends. Respondents also recommended benchmarking visits, joint task forces, and capacity-building workshops to deepen collaboration and mutual understanding.

Regarding the role of the IAC, there is strong consensus that it should act as a vital bridge between industry and education providers. The IAC is expected to guide curriculum development by providing expert insights on emerging industry needs, validating alignment with KNQF level descriptors, and ensuring that programs remain relevant, practical, and competency-based. Its functions include advising on occupational standards, facilitating internships and job placements, mentoring students and faculty, and supporting quality assurance processes. The council should also advocate for timely curriculum reforms and foster partnerships with regulatory bodies such as the Kenya National Qualifications Authority.

In summary, while collaboration between the IAC and institutions exists, enhancing its effectiveness requires structured, frequent engagement, clear roles, and stronger industry involvement. By promoting continuous dialogue, joint planning, and resource sharing, the IAC can play a pivotal role in ensuring curricula are both industry-relevant and aligned with national qualification frameworks, ultimately improving graduate employability and meeting evolving labor market demands.

3.11 Effectiveness of Industry-TVET Partnerships

The survey results present a nuanced picture of industry perceptions regarding their partnerships with TVET institutions. With an average effectiveness rating of 3.36 on a 5-point scale and a median score of 3, the data suggests moderately positive but not overwhelmingly strong evaluations of these collaborations. The response distribution reveals several important patterns: a substantial 42.1% of respondents adopted a neutral stance, indicating either limited direct experience with partnership outcomes or perceptions that the collaborations are merely adequate. While 35.8% expressed agreement about the partnerships' effectiveness and 8.4% strongly agreed, these positive assessments are tempered by the 13.7% who registered some level of disagreement.

Mean	Median	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.36	3	0.898	3.2%	10.5%	42.1%	35.8%	8.4%

Table 3.7 Descriptive statistics on Effectiveness of Industry-TVET Partnerships

The relatively high proportion of neutral responses is particularly noteworthy, as it suggests many industry partners may lack sufficient information or clear benchmarks to form strong opinions about partnership effectiveness. This interpretation is supported by the moderate standard deviation of 0.898, which indicates reasonable but not complete consensus among respondents.

These findings collectively suggest that while industry-TVET partnerships are generally functioning and viewed somewhat positively, there remains significant room for improvement. The substantial neutral segment represents an opportunity to enhance engagement and communication strategies. The absence of extreme dissatisfaction (with no "strongly disagree" responses) is encouraging; however, the limited strong agreement indicates that these partnerships have yet to reach their full potential. To strengthen these collaborations, institutions might focus on developing more structured engagement models, improving communication channels, and establishing clearer metrics for evaluating partnership success. By addressing these areas, TVET institutions could potentially convert neutral perceptions into more positive assessments and further solidify these important industry connections.

CHAPTER FOUR

CHALLENGES AND RECOMMENDATIONS

4.1 Introduction

The partnership between Technical and Vocational Education and Training (TVET) institutions and industry stakeholders remains central to developing a skilled workforce aligned with labor market demands. However, several systemic, institutional, and operational challenges continue to impede the full realization of Competency-Based Education and Training (CBET) in Kenya. This chapter presents a detailed analysis of these challenges, based on stakeholder input, highlighting their frequency and impact as illustrated in Figure 4.1. Financial constraints (26.8%) emerged as the most critical barrier, followed by inadequate resources and facilities (11.3%), and

4.2 Key Challenges and Strategic Recommendations

Each challenge is examined alongside strategic policy-level solutions that incorporate the National Qualifications Framework to ensure alignment, standardization, and recognition of qualifications across sectors.

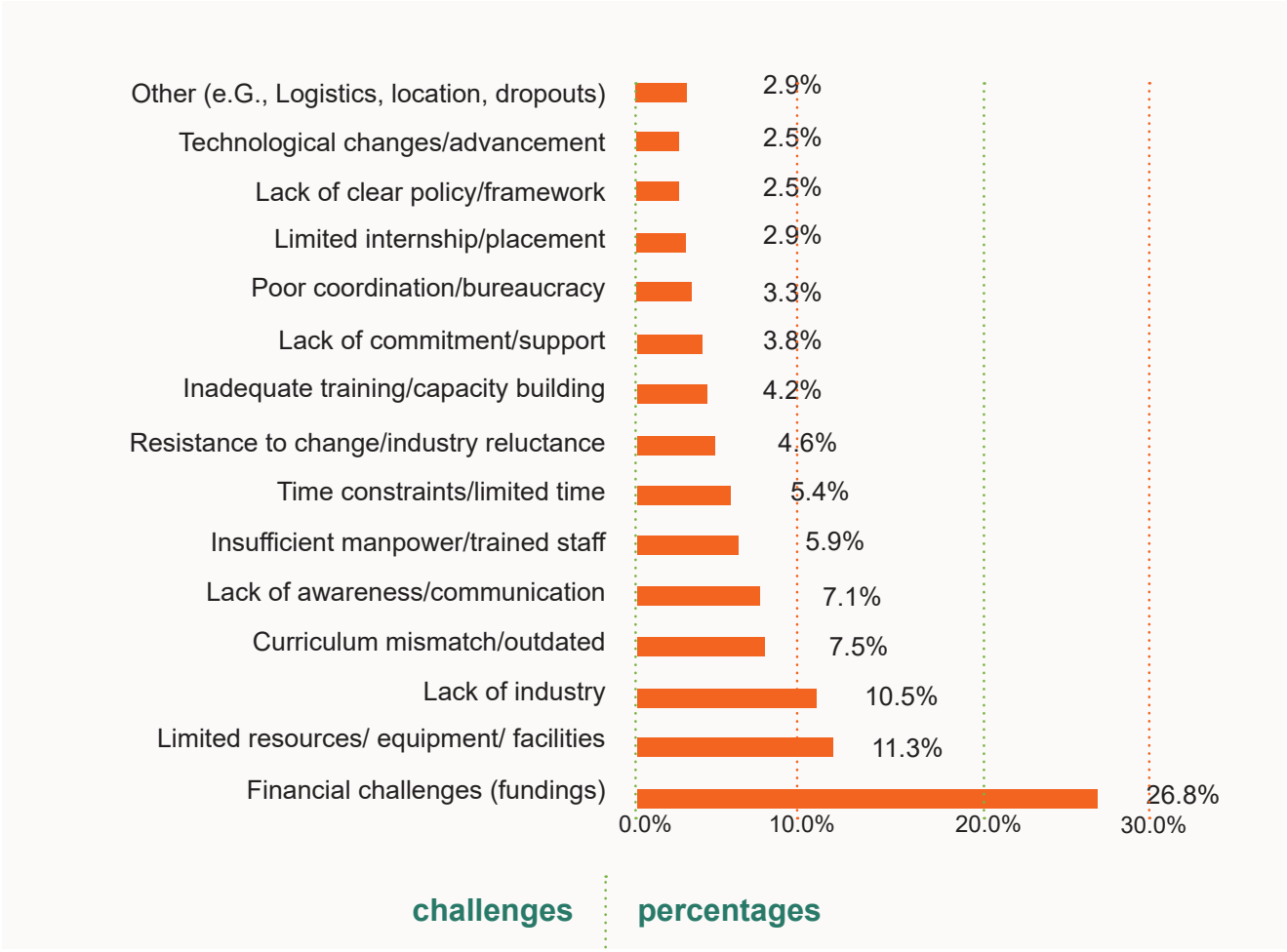

Fig. 4.1 Challenges

I. Financial Constraints (26.8%)

Inadequate funding undermines core components of vocational training—industrial attachments, equipment procurement, infrastructure upgrades, and trainer development. Institutions lack resources to purchase or maintain modern tools like GC-MS and HPLC systems, especially in technical disciplines. Compounding this, some industries demand fees for mentorship or internship opportunities.

> *"We can't even afford basic maintenance for machines, let alone upgrading. Industries expect modern skills, but we're working with obsolete tools"*
> *Head of Department, Public TVET, Central Kenya.*

The study recommends establishment of a TVET-Industry Innovation Fund to subsidize industrial attachments, modernize training infrastructure, and incentivize industry participation. Fiscal policies should offer tax rebates to industries that host trainees or contribute equipment and expertise. Funding criteria should be linked to KNQF-aligned training programs, ensuring public investment supports recognized and quality-assured qualifications.

2. Inadequate Resources and Facilities (11.3%)

Many institutions operate with obsolete or insufficient tools, creating a mismatch between training environments and industry expectations.

> *"Our students read about tools they've never touched. That gap is dangerous—it sets them up for failure in the job market"*
> *Trainer, Electrical Engineering, Nyanza Region.*

The study recommends fostering public-private resource-sharing agreements to provide access to modern tools or surplus equipment. National policy should support regional centers of excellence mapped to KNQF qualification levels, ensuring learners have access to facilities appropriate for the competencies being assessed.

3. Limited Industry Participation and Collaboration (10.5%)

Industries are often reluctant to engage due to unclear benefits or perceived operational disruption. There is need for mandating Industry Advisory Committees at national and institutional levels, with clearly defined mandates and performance indicators.

> *"We're invited, but there's no clarity on what we're supposed to contribute or how our input is used"*
> *Industry Representative, ICT Sector.*

Legislate for industry quotas on curriculum review panels and provide recognition awards for outstanding industry partners.

4. Curriculum Relevance and Alignment (7.5%)

TVET curricula often lag behind technological advances, especially in fast-evolving fields like automation and digital technologies. The slow pace of curriculum review results in graduates lacking the specific skills employers need.

> *"The curriculum is not outdated—it's ancient. We review every five years, but technology changes daily"*
> *Deputy Principal, Urban TVET, Nairobi.*

The study recommends institutionalization of biennial curriculum review cycle co-led by curriculum developers and industry experts, anchored to KNQF descriptors and standards; to promote modular, stackable qualifications that can be flexibly updated and recognized nationally; and align industry short courses with KNQF credit accumulation and transfer systems for enhanced lifelong learning pathways.

5. Communication and Awareness Gaps (7.1%)

There is inadequacy of awareness between TVET institutions and industry regarding each other's capacities, expectations, and objectives. This leads to misaligned expectations and missed opportunities for collaboration.

> *"We want to help, but we don't know what the schools need- and they don't ask."*
> *Industry expert, Construction Sector, Eldoret*

The study recommends implementation of a national TVET-industry engagement platform, combining an online portal and annual forums to facilitate structured dialogue and information exchange. Policy should require annual industry engagement reports from all accredited TVET institutions.

6. Staffing and Capacity Challenges (5.9%)

Many institutions suffer from a shortage of qualified trainers, high student-to-instructor ratios, and limited opportunities for staff upskilling. This hampers the delivery of quality training aligned with industry needs. The study recommends development of a National TVET Faculty Development Framework, mandating regular industry immersion programs for trainers and providing funded Continuous Professional Development (CPD) aligned with emerging technologies and practices.

7. Time Constraints (5.4%)

Compressed academic calendars and rigid schedules limit the ability to coordinate stakeholder involvement, update curricula, or implement work-based learning effectively,

> *"Our calendar is too packed to allow proper engagement. Industry activities get squeezed in or left out entirely."*
> *Principal, Rural TVET, Coast Region.*

Revise TVET operational frameworks to include dedicated industry engagement periods within the academic year. Institutions should be required to submit annual industry coordination plans that allocate time for review, planning, and partnership activities.

8. Resistance to Change (4.6%)

Bureaucratic inertia and entrenched institutional cultures resist reform efforts,

> *"There's deep skepticism about new approaches- people are used to the old ways, even if they're failing."*
> *ILO person at the MoE.*

Industries are often cautious about experimenting with new training models, while institutions fear the resource demands of reform. There is need to establish a Change Management Taskforce under the Ministry of Education to lead reforms, supported by performance-based incentives for institutions and industry players that pilot innovative CBET models or adopt reform benchmarks.

9. Inadequate Training Capacity (4.2%)

TVET trainers often lack up-to-date skills in emerging technologies due to insufficient exposure to modern industry practices,

> *"Our trainers don't know how to use the machines they're teaching. That's a system failure."*
> *Industry Stakeholder, Agro-processing Sector.*

The study recommends a launch of industry accredited trainer certification schemes that include mandatory exposure to modern equipment and current workflows. Policy should link trainer promotion and renewal of teaching licenses to participation in such programs.

10. Stakeholder Commitment (3.8%)

Partnerships often lack consistency, with sporadic involvement from both institutions and industry,

> *"We meet once and then it dies off. There's no follow-through from either side."*
> *TVET-IAC Member, Western Region.*

This undermines sustainability and impact. Mandate multi-year partnership agreements between TVET institutions and industry players, with built-in accountability frameworks. Introduce performance contracts for institutional leaders tied to stakeholder engagement metrics.

11. Coordination Challenges (3.3%)

Fragmented partnership structures, duplication of efforts, and bureaucratic complexity impede effective implementation of CBET initiatives. The study recommends creation of County-Level TVET-Industry Coordination Boards, aligned with national policy, to streamline implementation and monitoring. These should be integrated into the National Skills Development Framework for consistency and coherence.

12. Internship Limitations (2.9%)

Workplace learning opportunities are limited due to capacity constraints in industry,

> *"Most firms can only take one or two students, and they're far from most colleges."*
> *Placement Officer, Urban TVET, Nairobi, geographic misalignment, and insufficient student preparedness.*

There is need to adopt a dual training system where institutions partner with industry from the outset of the training program. Provide transportation subsidies and logistical support for students posted to remote industrial sites.

13. Policy Framework Gaps (2.5%)

There is a lack of standardized national guidelines to govern TVET-industry partnerships, leading to inconsistent practices and weak enforcement. Enact and implement a National TVET-Industry Partnership Policy that defines roles, responsibilities, incentives, and penalties. Embed mandatory compliance audits into national quality assurance mechanisms overseen by regulatory bodies like TVETA.

14. Technological Changes (2.5%)

Rapid technological advancements outpace curriculum adaptation and institutional capacity. High costs and lack of infrastructure impede the adoption of new tools and digital systems,

> *"We can't train for tomorrow's jobs using yesterday's tools."*
> *ICT Curriculum Expert, Nairobi.*

The study recommends establishment of a Technology Foresight and Innovation Unit within the TVET Authority to guide institutions on future trends and procurement priorities. Provide digital transition grants for institutions updating curricula and infrastructure.

15. Other Challenges (2.9%)

Logistical challenges such as inadequate transportation, remote location of institutions, safety concerns, and student attrition complicate program delivery. Formulate Regional Implementation Support Units tasked with addressing localized challenges such as transportation, safety, and student retention through targeted policies and community-industry linkages.

> *"Some students miss opportunities just because industries are too far. We need local solutions and transport subsidies for trainees."*
> *TVET ILO, Rift Valley Region*

4.2.1 Conclusion

Despite moderate optimism (mean effectiveness rating of 3.36/5), the neutrality expressed by 42.1% of stakeholders indicates untapped potential in TVET-industry collaboration. By addressing the challenges outlined above-through targeted policies, structured engagement, and reforms grounded in the National Qualifications Framework-the TVET system can significantly enhance its relevance and responsiveness to labor market demands.

The IAC remains the critical anchor for aligning qualifications with industry expectations. Strategic integration of the NQF across all partnership elements is essential for transforming Kenya's CBET implementation into a dynamic and demand-driven engine for socio-economic development.

4.3 Assessment of IAC's Effectiveness in Fulfilling Its Mandate

The evaluation of IACs reveals a generally positive yet cautious perception of their effectiveness in fulfilling their advisory roles within the Competency-Based Education and Training (CBET) framework. As shown in Table 4.1, the IACs received an average rating of 3.34 on a five-point scale, with a median score of 3, indicating that most stakeholders consider the committees to be performing "Well" or "Moderately Well." Nearly half of the respondents (48.4%) rated the IACs as moderately effective, while 34.7% rated them positively. However, only a small proportion (5.3%) gave the highest rating of "Very Well," and 11.6% rated the committees as performing "Minimally Well."

These findings suggest that while the IACs are operational and generally meet expectations, their strategic influence remains underutilized. The predominance of middle-range scores reflects a perception that the committees are functioning but not yet achieving their full potential in shaping training relevance, guiding curriculum development, and fostering sustained industry linkages. The limited number of top-tier ratings highlights a critical gap-namely, that advisory input does not always translate into tangible improvements or visible changes at the institutional level.

Qualitative feedback reinforced this interpretation.

> *"The committee has good intentions, but its recommendations are not always followed through, and sometimes it feels like a formality rather than a real partnership."*
> *One stakeholder noted*

This statement reflects broader concerns about the disconnect between advisory outputs and actual implementation. It also suggests that some institutions may lack the mechanisms or commitment to fully integrate IAC input into decision-making processes.

To enhance their effectiveness, IACs must transition from consultative forums to active strategic partners. This requires deeper industry engagement to ensure that the advice provided is timely, relevant, and closely aligned with labor market dynamics. Institutions should also improve transparency by reporting back on how IAC recommendations are adopted, thereby reinforcing the committee's sense of ownership and purpose. Embedding routine feedback loops and performance reviews would further strengthen accountability and provide continuous improvement pathways.

Overall, the data supports the conclusion that IACs are fulfilling their basic functions but have yet to achieve transformative impact. With improved integration, clearer mandates, and consistent follow-through on their inputs, IACs can play a far more influential role in bridging the gap between education and employment in Kenya's TVET ecosystem.

N	Mean	Median	Std. Deviation	Skewness	Minimally Well	Moderately Well	Well	Very Well
95	3.34	3	0.752	0.117	11.6%	48.4%	34.7%	5.3%

Table 4.1: Descriptive Statistics on Effectiveness in Fulfilling Its Mandate

4.3.1 Prioritizing Roles of Industry Advisory Councils to Enhance Impact

An analysis of stakeholder responses reveals a clear consensus on the roles IACs should prioritize to enhance their strategic influence within the TVET ecosystem. Foremost among these is the role of advising on labor market trends and identifying skills gaps, highlighted by an overwhelming 90% of respondents. This reflects a strong recognition that aligning training with current and emerging labor market demands is essential for ensuring that graduates possess skills relevant to evolving industry needs. By providing timely and accurate labor market intelligence, IACs can help institutions proactively tailor programs and avoid skills mismatches.

A similarly high priority is placed on supporting curriculum development and review, with 80% of respondents emphasizing this function. This underscores the critical role of IACs in ensuring that vocational curricula remain dynamic, responsive, and in sync with technological advancements and sector-specific requirements. Regular input from industry professionals can help shorten the lag between innovation in the workplace and its integration into training programs.

In addition, facilitating internships, industrial attachments, and mentorship opportunities was identified by 75% of stakeholders as a vital function. Practical exposure to real work environments bridges the gap between classroom theory and on-the-job performance, reinforcing technical competence and enhancing employability. One industry representative captured this sentiment during the interviews, stating:

> *"If we're expected to employ these graduates, then we must be involved in shaping their training. That includes giving them a chance to learn on-site, not just in classrooms."*

This view illustrates the perceived necessity of industry participation not only in advisory roles but in active skill development. While slightly less emphasized, advocating for stronger industry-TVET collaboration was selected by 65% of respondents, indicating a moderate yet meaningful role in strengthening institutional partnerships. IACs are well-positioned to act as conveners and champions for systemic collaboration, influencing policy dialogue, partnership models, and public-private engagement at both local and national levels.

Assisting with equipment mapping and procurement was identified by 50% of respondents as

a relevant role, though ranked lower in comparison to strategic advisory responsibilities. This suggests that while appropriate tools and technology are indispensable for effective training delivery, stakeholders view IACs more as thought leaders and facilitators of quality education than as operational actors in resource mobilization.

In summary, the data indicates that stakeholders view the most impactful roles of IACs to be those that ensure training remains labor market-driven, curricula stay relevant, and learners have access to real-world experience. While advocacy and equipment support are still important, the primary value of IACs is seen in their ability to shape direction, inform decisions, and serve as a conduit between industry and training institutions. Prioritizing these core functions will allow IACs to play a more strategic role in enhancing the quality and responsiveness of TVET in Kenya.

Role	Percentage (%)
Advising on labor market trends and skills gaps	90%
Supporting curriculum development and review processes	80%
Facilitating internships, attachments, or mentorship opportunities	75%
Assisting with equipment mapping and procurement processes	50%
Advocating for stronger industry-TVET collaborations	65%

Table 4.2 Roles of Industry Advisory Councils to Enhance Impact

4.3.2 Challenges Faced by Industry Advisory Committees in Fulfilling their Mandate

Industry Advisory Committees (IACs) in Kenya's TVET sector face several interrelated challenges that limit their effectiveness in supporting Competency-Based Education and Training (CBET) and in fulfilling their strategic mandate. Foremost among these challenges is the issue of inadequate funding and limited resources, which severely constrains the operational capacity of many committees. Respondents consistently pointed to financial shortfalls, insufficient logistical facilitation, and lack of dedicated budgets to support IAC activities. These resource constraints inhibit committee operations such as convening meetings, conducting field assessments, or following up on implementation of recommendations within training institutions.

A significant communication gap between IACs and TVET institutions also emerged as a critical barrier. Many respondents reported the absence of structured and consistent communication channels, resulting in poor coordination and delayed feedback. In particular, TVET institutions were often cited as failing to provide timely updates on the status or outcomes of recommendations made by the committees. This weak information flow leads to misaligned expectations, reduces mutual accountability, and undermines the committees' ability to provide timely and relevant industry guidance. One industry participant captured this challenge in the following statement:

> *"We support curriculum reviews and offer internship slots, but we rarely receive feedback on where the students go after graduation. It's difficult to know if we're truly making a difference or just ticking boxes"*
> *(Industry Representative, Hospitality Sector)*

Compounding these operational and communication challenges is a lack of clarity surrounding the roles, authority, and mandate of IACs. Several stakeholders expressed concerns over the ambiguous nature of committee responsibilities, reporting limited involvement in strategic processes such as curriculum development, policy advisement, and institutional planning. Without a clear operational framework, many committees struggle to assert their influence or align their contributions with institutional decision-making cycles. This issue is further exacerbated by the absence of standardized engagement strategies and coordination mechanisms between industry and training institutions.

Inconsistent member engagement was also highlighted as a major concern. Some committee members exhibit irregular participation due to competing professional obligations, lack of incentives, or insufficient understanding of the committee's long-term objectives. Limited capacity-building opportunities contribute to this problem, particularly in terms of familiarization with national frameworks. Enhanced orientation on how the KNQF aligns with TVET goals could improve the committees' ability to articulate skill needs, align qualifications, and support structured training pathways.

Interview data reinforces these findings. Approximately 70% of qualitative respondents cited systemic barriers, including:

- Weak institutional ownership of IAC recommendations,
- Faculty members' limited exposure to current industry practices-hindering their ability to assess practical skill relevance,
- Geographic disparities restricting students' access to industry-aligned training,especially in remote areas.

These perspectives corroborate survey findings that identified financial constraints (26.8%), resource gaps (11.3%), and communication breakdowns (65%) as top obstacles. As one interviewee observed:

> *"Until institutions are accountable for acting on our inputs, and we see real impact, industry players won't stay engaged for long."*
> *Expert, Energy Sector*

In summary, the effectiveness of IACs is compromised by a combination of operational, structural, and systemic barriers, most notably underfunding, unclear mandates, poor coordination, and insufficient industry representation. Without targeted interventions to address these issues, including clearer mandates, structured engagement strategies, enhanced capacity-building on frameworks like KNQF, and improved institutional responsiveness, industry-TVET partnerships risk remaining fragmented and superficial. Strengthening these committees is therefore essential to anchoring a robust, demand-driven TVET system that can deliver high-quality, industry-relevant qualifications.

4.3.3 Assessment of Outcome Tracking Systems and Perceived Impact of IACs on Graduate Employability

The effectiveness of Industry Advisory Committees (IACs) in influencing graduate employability is viewed with cautious optimism; however, significant concerns persist regarding their ability to systematically track and evaluate outcomes. The survey results reveal a major gap in the implementation of robust graduate outcome tracking systems across TVET institutions. A majority of respondents indicated the absence or limited existence of such systems, with 43.2% reporting no tracking mechanisms at all. In contrast, only a small fraction (8.5%) described their systems as either advanced or comprehensive. These findings, as summarized in Table 4.3, suggest that outcome measurement remains a significant weakness in the overall effectiveness of IACs.

Mean	Mean	Medi-	No System	Partial System	Mod-erate	Advanced	Comprehen-
Tracking outcomes	2.05	2	43.2%	43.2%	28.4%	5.3%	3.2%
Overall impact	3.34	3	2.1%	9.5%	50.5%	28.4%	9.5%

Table 4.3 Descriptive Statistics for Outcome Tracking Systems and Perceived Impact of IACs on Graduate Employability

The lack of consistent tracking not only undermines efforts to validate the employability outcomes of graduates but also limits the ability of institutions and IACs to use data for strategic improvements. The wide variation in institutional capabilities indicates that tracking is neither standardized nor integrated into core institutional practices. Without reliable data on where graduates are employed, how quickly they find work, or how well their skills align with job requirements, both training institutions and IACs are constrained in their ability to measure impact or advocate for reforms based on evidence.

In contrast, perceptions of the IAC's impact on graduate employability are notably more positive. Respondents generally rated this influence as moderate to advanced, with over 78% indicating that IACs have a meaningful impact. These perceptions are likely influenced by the committees' involvement in shaping curricula, identifying industry-relevant competencies, and facilitating practical learning opportunities such as attachments and mentorship. However, the disconnection between perceived impact and actual tracking mechanisms raises questions about how this effectiveness is measured and validated. As one industry stakeholder noted:

> *"We support curriculum reviews and offer internship slots, but we rarely receive feedback on where the students go after graduation. It's difficult to know if we're truly making a difference or just ticking boxes"*
>
> *Industry Representative, Hospitality Sector*

This qualitative insight underscores the concern that, in the absence of strong outcome monitoring systems, IACs may be contributing in ways that are appreciated anecdotally but not measured systematically. This gap hinders evidence-based planning and reduces opportunities to demonstrate return on investment, especially when seeking greater industry engagement or policy support.

To strengthen the value proposition of IACs, two critical areas require prioritization. First, institutions should develop and institutionalize comprehensive graduate outcome tracking systems, supported by digital tools and consistent reporting structures. These systems should capture employment rates, job relevance, and employer satisfaction, enabling IACs to link their interventions directly to measurable graduate success. Second, IACs must build on their existing contributions by leveraging tracking data to target interventions more effectively, especially for institutions or sectors where perceived impact is still low.

In summary, while IACs are regarded as beneficial in enhancing graduate employability, the lack of structured outcome tracking remains a critical blind spot. Addressing this gap will not only strengthen institutional accountability but also empower IACs to optimize their role in aligning TVET training with labor market outcomes.

4. 4 Recommendations

4.4.1 Enhancing IAC Effectiveness and Industry–TVET Collaboration

Survey and interview data converge on several strategic priorities to improve the effectiveness of Industry Advisory Committees) in Kenya's TVET sector. While respondents acknowledged the value of IACs in supporting skills development, persistent structural, operational, and systemic barriers continue to limit their potential. Recommendations fall into four broad but interconnected themes: structural reforms, enhanced engagement, systemic support, and alignment with CBET and KNQF.

4.4.2 Structural Reforms for IACs

A recurring theme in the data is the need for clear operational structures to guide and strengthen IAC performance. Respondents called for formalization of IAC roles through well-defined ToRs, consistent reporting obligations, and better monitoring systems. The recommendation to create "one point of convergence for all IACs" suggests fragmentation in current coordination models, while suggestions for "mandatory quarterly reporting" reflect the need for transparency and performance tracking.

Several stakeholders also advocated for diversified representation within IACs-ensuring a mix of large corporations and SMEs, and inclusion of human resource professionals, technical specialists, and senior managers. This broader industry perspective would enrich decision-making and better align TVET outputs with employer expectations.

> *"Without clear guidelines or feedback loops, most of our input disappears after meetings. We need defined structures, not just invitations to forums."*
> *TVET Institution IAC Chairperson, Nairobi*

4.4.3 Enhanced Engagement Strategies

Beyond structure, respondents emphasized the need for active, hands-on collaboration between industry and training institutions. Strong recommendations were made for:

- Short-term industrial attachments for trainers
- Joint curriculum development
- Industry participation in assessments and examinations
- Regular stakeholder workshops and forums

The suggestion to "commercialize innovations through joint ventures" highlights a desire to move beyond passive advisory roles toward deeper economic partnerships. More than 90% of survey participants prioritized IAC involvement in advising on labor market trends and emerging skills needs, while 80% highlighted curriculum review support, and 75% emphasized facilitation of internships and mentorship programs.

> *"We're willing to offer internship slots and participate in assessments, but only if institutions treat us as partners, not token participants"*
> *Industry Representative, Manufacturing Sector*

4.4.4 Systemic Support Requirements

Stakeholders consistently pointed to resource constraints as a barrier to functional IAC oper-

- Increased funding for equipment and administrative support
- Digitization of graduate tracking and industry engagement systems
- Creation of regional IAC coordination offices
- Capacity building and training for IAC members, especially on KNQF and CBET principles

Importantly, several respondents stressed the urgency of a national TVET–Industry Partnership Strategy Framework, supported by legislation and coordinated implementation across counties. This would ensure consistency, accountability, and scalability.

> *"We're often unsure how KNQF relates to our curriculum input. A short training would go a long way in making our contributions more meaningful"*
> *Industry Member, Hospitality Sector*

4.4.5 CBET and KNQF Alignment

Although fewer in number, responses referencing CBET and KNQF frameworks were critical. Respondents urged:

- Continuous alignment of training programs with KNQF levels and descriptors
- Stronger integration of industry-led certifications into CBET assessments
- Regular orientation sessions on CBET principles and KNQF architecture
- Recognition of industry-led short courses through credit transfer mechanisms

Embedding these frameworks into IAC operations would create greater coherence across policy, curriculum, and labor market outcomes.

4.5.6 Implementation Considerations

Effective implementation of these recommendations requires:

- **Formalized Structures**
  Clear ToRs, performance indicators, and reporting frameworks.
- **Sustainable Resources**
  Funding for operations, digital systems, and trainer upskilling.
- **Reciprocal Industry Incentives**
  Recognition and co-certification mechanisms to reward active participation.
- **Data-Driven Planning**
  Integration of labor market analytics and graduate employment tracking.
- **Inclusive Participation**
  Representation of SMEs, emerging sectors, and gender diversity in IACs.

4.5 Summary of IAC Effectiveness and Improvement Strategies

Survey data revealed a mean rating of 3.34/5 for IAC effectiveness, with 48.4% of respondents describing performance as “moderate” and 34.7% as “well-performing.” However, only 5.3% rated them as “very effective.” The core challenges identified include:

- Lack of Graduate Outcome Tracking: 43.2% of institutions reported having no tracking systems in place.
- Funding Constraints: Insufficient resourcing hampers IAC coordination and operational success.
- Communication Gaps: Weak feedback mechanisms reduce the effectiveness of industry-TVET collaboration.
- Ambiguity of Roles: Unclear mandates limit IAC influence on policy and curricula.

4.6 Recommended Prioritized Roles for IACs

Survey results underscore the top roles that IACs should focus on:

- Advising on labor market trends and skills gaps (90%)
- Supporting curriculum development and review (80%)
- Facilitating practical learning through internships and mentorships (75%)

4.7 Conclusion

While IACs are contributing meaningfully to employability outcomes and curriculum relevance, their potential is not yet fully realized. Strategic investments in governance, funding, digital systems, and capacity building, alongside clearer alignment with KNQF and CBET, are essential. If implemented, the recommendations outlined here can transform IACs from advisory bodies into strategic development partners, catalyzing demand-driven, responsive, and future-ready TVET systems in Kenya.

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