

Community Stakeholder Perceptions of Market-Aligned Technical and Vocational Education and Training (TVET): Implications for Skills Development and Labour Market Alignment in Mombasa County, Kenya

Anwar H. Ahmed*

School of Business, Technical University of Mombasa, Kenya

**Corresponding Author*

William Kingi

School of Business, Technical University of Mombasa, Kenya

Abstract

Across policy and practice, Technical and Vocational Education and Training (TVET) is increasingly treated as a practical route for tackling youth unemployment, narrowing skills gaps, and advancing sustainable socio-economic progress. Yet, even with wide-ranging reforms in Kenya's TVET landscape, empirical work that captures how community stakeholders judge the relevance and responsiveness of market-aligned programmes remains limited. This study investigated how community stakeholders perceive market-aligned TVET programmes delivered by the Technical University of Mombasa (TUM) in Mombasa County, Kenya. Attention centred on perceived programme quality, the technical and digital skills considered most urgent, constraints affecting participation, openings for stronger community and industry collaboration, and variations in perceptions across stakeholder categories and sub-counties. A quantitative, cross-sectional descriptive survey design guided the study. Data came from 240 community stakeholders, selected through a two-stage stratified proportional sampling strategy spanning Mombasa County's six sub-counties. A structured questionnaire supported primary data collection. Analysis drew on descriptive statistics, Cronbach's alpha to examine internal consistency, composite index development, chi-square procedures, one-way Analysis of Variance (ANOVA), Kruskal-Wallis tests, cross-tabulations, and Cramér's V to estimate effect sizes. Community respondents largely expressed favourable views toward TVET. In aggregate, 83.3% reported positive perceptions of TUM-TVET, and 86.7% rated TVET as important for youth employment and regional economic development. The composite TVET Quality Index averaged 3.50 (Cronbach's $\alpha = 0.79$), a pattern consistent with generally satisfactory perceived quality. Priority technical areas included electrical installation, hospitality, plumbing, welding and fabrication, ICT support, automotive maintenance, and maritime services. On the digital side, respondents pointed to digital literacy, programming, cybersecurity, and digital marketing as increasingly necessary competencies. Key constraints to participation were financial pressure, transport expenses, limited awareness, and weak career guidance. Stakeholders advocated for broader scholarship coverage, transport support, flexible learning routes, internships, apprenticeships, and closer institutional collaboration with industry. Inferential results showed statistically significant differences among sub-counties ($p < 0.001$), signalling that TVET planning benefits from locally sensitive approaches. Overall, the study argues that community perspectives serve as a useful source of labour market intelligence for strengthening market-aligned TVET. When community participation is built into curriculum review, institutional planning, and policy processes, programme relevance and graduate employability can improve while institutional responsiveness is strengthened. Empirically, the results add to the literature on community-responsive vocational education and provide evidence-based guidance for TUM, county governments, TVETA, employers, HELB, KUCCPS, and development partners working to strengthen demand-driven TVET systems in Kenya.

Key Words: Technical and Vocational Education and Training (TVET); Community Stakeholders; Labour Market Alignment; Skills Development; Graduate Employability; Curriculum Relevance; Community Participation; Industry Partnerships; Mombasa County; Kenya

Doi: 10.61250/ssmj/v1.i4.4

1. Introduction

Globally, TVET has moved closer to the centre of strategies aimed at reducing youth unemployment, improving productivity, and widening inclusive socio-economic gains. Expectations placed on TVET institutions have also sharpened, namely, to equip learners with practical competencies that match industry needs and support transitions into employment, entrepreneurship, and lifelong learning. The Sustainable Development Goals reinforce this direction: SDG 4 calls for equitable access to quality technical and vocational learning, while SDG 8 promotes productive employment and decent work (United Nations, 2015). Taken together, these commitments have elevated TVET as a policy tool connected to economic transformation, innovation, and social inclusion.

In Kenya, government policy frames TVET as central to industrialization ambitions under Vision 2030, the Bottom-Up Economic Transformation Agenda (BETA), and the Competency-Based Education and Training (CBET) framework. Reforms anchored in the TVET Act (2013) and related policy instruments have sought to modernize institutions, widen employer participation, and improve employability through competency-based curricula and quality assurance. Even so, questions remain about how effectively programmes keep pace with fast-moving labour market demands, particularly in counties facing rapid economic shifts such as Mombasa. Available evidence continues to show that many graduates struggle to secure employment, linked to gaps in practical competence, limited employer linkages, and misalignment between training and workplace expectations (World Bank, 2023).

Mombasa County holds a distinct role within Kenya's economy, shaped by the Port of Mombasa and a mix of logistics, tourism and hospitality, manufacturing, maritime services, and a growing digital economy. These sectors depend on a workforce that combines occupational expertise with transferable capabilities suited to technological change and competitive pressure. TVET providers in the county are therefore expected to produce graduates whose competencies closely match employer needs, while also contributing to youth employment and local development. Yet, recurrent evidence points to continuing skills gaps, with graduate unemployment persisting even as investment in vocational education expands (ILO, 2022).

Research on TVET frequently prioritizes employer assessments, graduate outcomes, curriculum reform, and institutional performance, leaving community stakeholder perceptions less examined. Parents, youth, community leaders, civil society actors, business owners, persons with disabilities, and other local stakeholders influence enrolment decisions, support retention, shape public attitudes toward vocational learning, and can help build partnerships. Their views affect the social acceptance of TVET, the willingness of communities to support training initiatives, and the degree to which institutions remain attentive to local priorities. Capturing these perspectives, then, provides actionable insight for designing programmes that are both community-responsive and market-oriented.

The study draws conceptual grounding from Stakeholder Theory, which links organizational success to balancing expectations across stakeholder groups rather than privileging internal objectives alone (Freeman, 1984). In TVET, community stakeholders represent a key external constituency whose expectations about quality, accessibility, affordability, competence, and labour market fit should shape planning and policy. Human Capital Theory offers complementary logic, framing education as investment that yields returns through productivity gains and improved employment outcomes (Becker, 1993). Together, these perspectives suggest that perceptions held by

community stakeholders can influence both participation and the effectiveness of workforce development efforts.

Recent international evidence also points to the value of active community engagement. UNESCO (2024) observes that TVET institutions embedded in strong community and industry partnerships often show better employability outcomes, more responsive curricula, and stronger institutional sustainability. OECD (2023) similarly stresses that collaboration among providers, employers, local governments, and communities increasingly determines whether vocational training reflects regional economic priorities. Such collaboration supports curriculum relevance, expands work-based learning, and improves pathways into employment.

Despite policy attention to market alignment, barriers to TVET participation persist, especially for vulnerable groups. Financial constraints, limited awareness, transport costs, weak career guidance, and enduring misconceptions about vocational education continue to discourage participation, particularly among low-income households, women, school dropouts, and persons with disabilities. Addressing these constraints requires evidence that goes beyond administrative metrics by incorporating community experiences and perceptions that shape educational decisions. In this sense, community-generated evidence becomes necessary for inclusive policy design and stronger institutional responsiveness.

This study forms part of a feasibility initiative undertaken by TUM to assess how well its TVET programmes align with market needs across the county's six sub-counties. A scientifically designed county-wide survey involved 240 respondents drawn from Changamwe, Jomvu, Kisauni, Likoni, Mvita, and Nyali using a two-stage stratified proportional approach, designed to balance geographical and stakeholder representation. The survey measured perceived quality, labour market relevance, skills priorities, barriers to enrolment, partnership potential, and support mechanisms. Methodologically, the aim was to generate statistically credible evidence to inform curriculum development, institutional planning, and policy interventions.

Unlike studies that rely mainly on administrative performance indicators or employer evaluations, this work uses a community-centred framing that treats local stakeholders as partners in building responsive TVET systems. By comparing perceptions across stakeholder categories and geographical contexts, the study adds empirical evidence on how communities assess accessibility, quality, and labour market responsiveness. In practical terms, the findings inform curriculum relevance, community engagement strategies, industry partnership design, equity-oriented access measures, and evidence-based policymaking within Kenya's changing TVET sector.

The study general objective is to determine how community stakeholders perceive the market-aligned TVET programmes provided by TUM within Mombasa County, Kenya. The specific objectives are:

1. To evaluate stakeholder views on both the quality of TUM's market-aligned TVET programmes and their fit with labour market requirements.
2. To identify the technical and digital competencies that stakeholders judge as most critical for employability and for meeting current workplace demands.
3. To investigate the factors that hinder community members from accessing and participating in market-aligned TVET programmes.
4. To examine strategies for enhancing collaboration among TUM, industry, community stakeholders, government agencies, and other partners in the design and implementation of market-aligned TVET programmes.

5. To analyse variations in community stakeholders' perceptions according to stakeholder category and the six sub-counties of Mombasa County.

2. Theoretical Framework

2.1 TVET and Human Capital Theory

Human Capital Theory remains a core framework for explaining how TVET contributes to economic growth and labour market development. In foundational work by Schultz (1961) and later development by Becker (1964, 1993), education and skills development are understood as investments that raise productivity, improve employability, and increase earnings, with positive effects on national economic performance. In TVET, technical knowledge and occupational competence represent a form of human capital that can generate long-term economic and social returns. Compared with general education, TVET emphasises occupation-specific competencies designed to match labour market requirements and to support smoother transitions from school to work.

Internationally, many governments treat TVET as a tool for improving workforce competitiveness and supporting industrial development. UNESCO (2024) links responsive TVET systems to stronger employment outcomes when graduates' competencies match technological change and employer expectations. ILO (2022) similarly argues that investment in vocational education reduces youth unemployment by strengthening technical proficiency, entrepreneurship, and adaptability. The World Bank (2023) notes related gains in productivity and innovation, particularly in sectors undergoing rapid technological change.

Within Kenya, Human Capital Theory is reflected in national strategies, including Vision 2030, BETA, and the CBET framework. These initiatives share an assumption that sustainable development depends on a skilled workforce able to drive industrialization, manufacturing, digital change, and the blue economy (Republic of Kenya, 2023). Still, graduate employability concerns persist, pointing to gaps between competencies acquired and those demanded by employers. This suggests that expanding TVET access alone is insufficient when programmes do not keep pace with evolving industry needs.

For this study, Human Capital Theory supports examination of community perceptions of market-aligned TVET. Community stakeholders invest financial, social, and institutional resources in education with expectations of tangible returns, including meaningful employment and local economic contribution. Positive perceptions, therefore, are likely to depend on visible outcomes such as employability, relevant competence, and stronger industry linkages. The theory frames market-responsive TVET as beneficial both for individual welfare and for regional competitiveness.

2.2 Skills Mismatch Theory

Skills Mismatch Theory explains imbalances between competencies graduates hold and those employers require. It proposes that unemployment and underemployment often stem less from a lack of jobs and more from training outputs that do not match workplace requirements (McGuinness et al., 2018). Mismatches can take multiple forms: qualification, competency, field-of-study, and technological mismatch. These gaps lower productivity, raise recruitment and retraining costs, and weaken graduate employability.

Workforce demands have shifted under the pressure of technological change, global integration, and industrial restructuring. The World Economic Forum (2023) estimates that close to half of workforce skills will require significant upgrading within the current decade due to automation,

artificial intelligence, and digitalization. TVET institutions are thus expected to anticipate emerging occupational trends and revise curricula frequently. UNESCO-UNEVOC (2023) also stresses the need for strong industry partnerships so programmes remain aligned with changing economic and technological conditions.

In Kenya, skills mismatch remains a continuing concern even with substantial reform. Employers report gaps in practical competence, digital skills, communication, and workplace readiness (World Bank, 2023). In Mombasa, these gaps are especially relevant in logistics, manufacturing, maritime services, tourism, and ICT, sectors central to the county economy. This study uses the skills mismatch perspective to assess whether community stakeholders believe existing programmes prepare youth adequately and whether the skills they prioritize align with labour market demand. Such evidence can inform curriculum redesign, partnerships, and strategic planning.

2.3 Community Participation Theory

Community Participation Theory argues that development interventions are more effective and sustainable when communities help identify needs, shape programmes, take part in implementation, and assess outcomes. Arnstein's (1969) Ladder of Citizen Participation conceptualizes participation as a range from symbolic consultation to genuine partnership and citizen control. The central claim is that interventions become more equitable, responsive, and sustainable when beneficiaries help make decisions rather than simply receiving services.

In education, community participation is widely recognized as linked to accountability, relevance, and learner success. Epstein (2018) argues that collaboration among schools, families, communities, employers, and civil society strengthens educational quality by aligning programmes with local priorities and labour market realities. In TVET settings, participation supports curriculum relevance, builds confidence in vocational routes, strengthens recruitment, and supports partnerships that expand internships, apprenticeships, and workplace learning.

For market-aligned TVET, participation should extend beyond consultation. Parents, youth organizations, employers, community leaders, civil society groups, and local businesses can contribute to identifying priority skills, barriers, and opportunities. In Mombasa County, where economic opportunities and constraints differ across sub-counties, such participation becomes particularly important for ensuring programmes match local development priorities. The study therefore draws on this theory to justify why community perceptions are a necessary evidence base for inclusive, demand-driven, locally relevant TVET.

2.4 Community Participation Theory

2.4 Stakeholder Theory

Stakeholder Theory (Freeman, 1984) links organizational success to balancing the interests of groups that influence or are affected by organizational activity. It differs from approaches that prioritize shareholder interests alone, instead proposing inclusive decision-making that considers customers, employees, governments, communities, suppliers, and others. In TVET, stakeholders include students, parents, employers, industry associations, government agencies, development partners, community leaders, and civil society organizations, each contributing to system effectiveness and long-term viability.

Modern TVET systems increasingly rely on stakeholder engagement to sustain curriculum relevance, quality assurance, resource mobilization, and employability outcomes. OECD (2023) describes successful vocational systems as those where external stakeholders contribute continuously to programme design and delivery. UNESCO (2024) also points out that meaningful participation increases accountability and improves responsiveness to socio-economic needs. Employers offer insight into emerging skills, while communities influence enrolment decisions, learner support, and public perceptions.

Within this study, Stakeholder Theory provides the conceptual basis for examining community perceptions of market-aligned TVET in Mombasa. Treating community members as strategic partners supports the incorporation of local knowledge into planning and curriculum design. Understanding stakeholder perceptions can strengthen partnerships, improve responsiveness, and support graduate employability, contributing to sustainable regional development (Freeman, 1984; World Bank, 2023).

2.5 Labour Market Alignment

Labour market alignment refers to the extent to which education and training correspond with workforce requirements, both current and emerging. It implies continuous coordination of curricula, teaching methods, assessment practices, and graduate competencies with employer demand and new industries. An aligned TVET system equips learners with technical, digital, entrepreneurial, and transferable skills that support employability and national competitiveness (ILO, 2022).

With technological shifts, automation, global competition, and digital transformation, TVET institutions must update curricula regularly, expand work-based learning, and build strong employer relationships. The World Economic Forum (2023) projects that about 44% of workers' core skills will change within five years, underlining the need for continuous revision and upgrading. UNESCO-UNEVOC (2023) argues that labour market intelligence should drive programme planning and occupational standards.

In Kenya, labour market alignment is emphasized through CBET, which focuses on competency acquisition rather than content delivery. BETA also frames economic growth as dependent on competencies that match priority sectors such as manufacturing, logistics, maritime services, tourism, agriculture, renewable energy, and the digital economy (Republic of Kenya, 2023). However, persistent gaps remain between employer expectations and graduate competence, especially in practical skills, workplace readiness, problem-solving, communication, and digital literacy (World Bank, 2023). These challenges reinforce the need for sustained engagement of employers and communities in curriculum and programme evaluation.

This study uses the labour market alignment perspective to assess whether stakeholders view TUM-TVET as responsive to Mombasa's economic conditions. Perceptions about skills priorities, employment opportunities, quality, and industry collaboration provide evidence that can strengthen curriculum relevance and institutional positioning.

2.6 Previous Empirical Studies

International studies: International literature continues to show that strong alignment between TVET and labour market demand improves employability and productivity. OECD (2023) reports higher vocational graduate employment rates in contexts with strong employer partnerships and work-based learning compared to institution-centred models. UNESCO (2024) links community and

employer participation in curriculum development to relevance, technology transfer, and smoother entry into employment. The World Economic Forum (2023) also notes the growing necessity of integrating digital competence, entrepreneurship, and lifelong learning into vocational programmes in labour markets affected by automation and artificial intelligence.

African studies: Across Africa, research notes persistent difficulties in aligning vocational education with labour market demand despite increased public investment. Oketch (2021) argues that many institutions still privilege theory over practice, leaving graduates in need of workplace retraining. Afeti (2020) reports that weak employer collaboration limits responsiveness, innovation, and employability in Sub-Saharan Africa. UNESCO-UNEVOC (2023) similarly identifies limited labour market intelligence, reduced industrial attachment opportunities, and insufficient stakeholder engagement as continuing constraints.

Kenyan studies: In Kenya, evidence also shows ongoing obstacles to market-oriented vocational education. KIPPRA (2024) indicates that although enrolment expanded after reforms, employment outcomes remain constrained by skills mismatches, limited industry exposure, and inadequate practical facilities. The World Bank (2023) reports employer concerns about communication, digital competence, critical thinking, and workplace readiness. Coastal Kenya studies further suggest that maritime, logistics, hospitality, and manufacturing employers seek specialized competencies that training programmes do not always supply adequately. The literature thus points to the need for deeper collaboration among institutions, employers, county governments, and communities.

2.7 Research gap

While international, African, and Kenyan studies have advanced understanding of TVET quality, employability, and alignment, community stakeholder perspectives are less examined. Much of the literature focuses on employers, graduates, institutional performance, or policy, with limited analysis of parents, community leaders, youth groups, civil society actors, persons with disabilities, and local businesses who shape enrolment, social acceptance, and partnership potential. Also, there is little county-level evidence focused on Mombasa, despite its economic significance. This study addresses that gap through county-wide empirical findings on community perceptions of quality, relevance, priority skills, barriers, and partnership opportunities. The results add to work on community-responsive TVET while informing evidence-based curriculum review, planning, and policy.

2.8 Conceptual Framework

The study's conceptual framework maps hypothesized relationships among community-linked factors shaping market-aligned TVET in Mombasa. Informed by Human Capital Theory, Stakeholder Theory, Community Participation Theory, and Skills Mismatch Theory, the framework assumes TVET effectiveness emerges from the interaction of community expectations, labour market needs, institutional responsiveness, and stakeholder collaboration. Market-aligned TVET development is treated as the dependent variable, with four independent variables: community perceptions, skills priorities, access barriers, and support mechanisms. These variables reflect the study objectives and survey design.

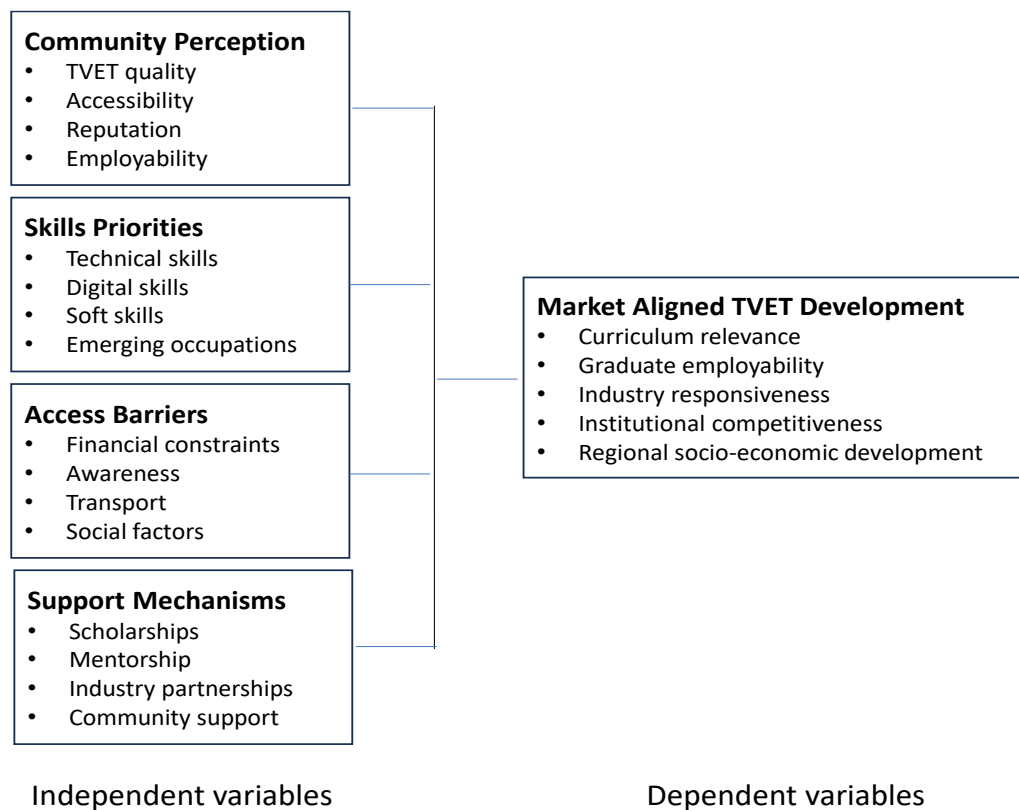


Figure1: Conceptual framework

Community perceptions capture attitudes regarding quality, accessibility, reputation, and labour market relevance. Positive perceptions are expected to strengthen confidence, increase enrolment, encourage participation, and support institutional legitimacy. Negative perceptions, by contrast, can discourage potential learners even when employment prospects are favourable. Skills priorities refer to technical, digital, entrepreneurial, and soft skills stakeholders view as necessary for employability, assumed to mirror labour market demand in sectors such as logistics, maritime services, hospitality, manufacturing, construction, ICT, and the blue economy. Access barriers include financial constraints, transport costs, limited awareness, weak guidance, social stigma, disability-related obstacles, and geographic constraints. Support mechanisms cover interventions such as scholarships, bursaries, transport subsidies, flexible schedules, guidance and mentorship, internships, apprenticeships, employer partnerships, and community collaboration.

Market-aligned TVET development is defined as the extent to which programmes respond to labour market demand while supporting employability, competitiveness, community satisfaction, and regional development. Indicators include curriculum relevance, employer satisfaction, workplace readiness, industry partnerships, and responsiveness to emerging opportunities. The framework therefore proposes that favourable perceptions, clear skills priorities, reduced barriers, and effective support structures contribute positively to market-aligned TVET development and provide an analytic basis for examining how stakeholder views inform planning and policy.

3. Methodology

3.1 Research design

A cross-sectional descriptive survey with a quantitative approach was used to measure community stakeholder perceptions of market-aligned TVET in Mombasa County. Cross-sectional surveys are suitable for capturing perceptions from diverse groups at a single point in time and for comparing patterns across locations and categories (Creswell & Creswell, 2023). Given the study aim, the design served evidence needs for planning and institutional improvement rather than causal inference. The study was embedded within a broader feasibility assessment by TUM, and standardized procedures were applied to ensure comparability of responses.

3.2 Study area

The study took place in Mombasa County, Kenya's main maritime and commercial centre. The county consists of six sub-counties: Changamwe, Jomvu, Kisauni, Likoni, Mvita, and Nyali. Economic activity spans maritime transport, logistics, manufacturing, tourism, hospitality, construction, fisheries, trade, and ICT, making the county a fitting setting for examining labour market-oriented TVET. To ensure full spatial coverage, data collection included all six sub-counties with a balanced allocation approach.

3.3 Study population

The target group comprised adult community stakeholders aged 18 years and older living in Mombasa County. A role-based approach was used, focusing on respondents' participation in community and economic life rather than only demographic attributes. Eligible groups included parents and guardians, community leaders, youth, business owners, CBOs, NGOs, informal sector workers, women's group representatives, persons with disabilities, and other relevant actors. Respondents had to reside in the county, fall within a stakeholder category, and provide voluntary informed consent.

3.4 Sampling and sampling frame

A two-stage stratified proportional allocation design supported balanced geographic coverage and stakeholder representation. First, equal quotas were assigned to each sub-county, 40 respondents per sub-county, producing a sample of 240. Second, stakeholder categories were distributed proportionally within each sub-county to preserve representation across respondent groups. This dual-margin strategy improved subgroup comparisons and reduced sampling bias without relying on post-stratification weighting. The sampling frame combined validated community sources, including ward records, community mobilizers, women's group registers, PWD associations, informal trader groups, and CBO directories. Eligibility checks were conducted, duplicates removed, and unique IDs assigned before systematic random selection within each Sub-County $\times$ Stakeholder cell. A reserve sample equal to 10% of the main sample (24 respondents) was prepared and used only if needed to manage non-response and maintain quotas.

3.5 Questionnaire development

A structured questionnaire was developed for the survey, guided by feasibility objectives and literature on TVET quality, labour market alignment, participation, and workforce development. Seven sections captured respondent characteristics, perceptions of TVET, skills priorities, employability, enrolment barriers, community priorities, partnership options, funding support, and recommendations. Items were largely closed-ended with limited open-ended prompts for contextual detail. Perception measures used five-point Likert scales, enabling composite index construction and statistical testing.

3.6 Pilot testing

Before the main survey, pilot testing checked clarity, sequencing, wording, and comprehension. The pilot helped identify ambiguous items, improve flow, refine response categories, and estimate interview duration. Feedback led to minor revisions for readability and contextual fit. Pilot work also supported enumerator training on ethics, coding, and quality assurance procedures (Creswell & Creswell, 2023).

3.7 Reliability and validity

Cronbach's alpha was used to test internal consistency of the perception scale. The four-item TVET quality scale returned $\alpha = 0.79$, an acceptable value in exploratory social science research. A composite quality index was computed using mean item scores, supporting comparisons across groups and locations. Content validity was addressed through literature review, alignment of items with objectives, and expert consultation during instrument development. Construct validity was strengthened by linking items to the study's theoretical foundations, including Human Capital, Skills Mismatch, Stakeholder, and Community Participation theories. The sampling design and standardized field procedures also supported internal validity (Taherdoost, 2016).

3.8 Ethical approval

Ethical principles for research with human participants were followed. Participation was voluntary and based on informed consent. Respondents received information on study purpose, confidentiality, voluntary participation, and the right to withdraw. No personally identifying information was included in the dataset; completed instruments were stored securely with access restricted to authorized team members. Data protection and confidentiality procedures were consistent with institutional governance requirements.

3.9 Statistical analysis

Data were coded, cleaned, and analysed in SPSS. Frequencies, percentages, means, and standard deviations summarized respondent characteristics, perceptions, skills priorities, barriers, and support mechanisms. The TVET Quality Index was computed from four Likert items, with reliability tested using Cronbach's alpha. Inferential analysis examined differences across stakeholder groups and sub-counties. Chi-square tested associations among categorical variables. One-way ANOVA and Kruskal-Wallis compared mean perception scores across locations. Where applicable, effect sizes were computed to estimate practical significance. Statistical testing used a 5% significance threshold ($p < 0.05$).

4. Results

4.1 Respondent profile

The survey included 240 community stakeholders across Mombasa's six sub-counties. The design aimed at broad spatial coverage while ensuring representation across stakeholder groups linked to community development, youth empowerment, and vocational learning. The distribution across gender, age, categories, and sub-counties supports interpretation as reflective of surveyed stakeholder groups, though findings should not be read as county-population estimates because probability weights were not applied.

Gender distribution: Respondents were almost evenly divided by gender, with 122 females (50.8%) and 118 males (49.2%). This balance reduces the likelihood that findings are driven by disproportionate participation from either gender.

Age distribution: Age coverage was broad. The 46–60 group was largest (31.3%), followed by 36–45 (22.1%) and 18–24 (21.3%). Remaining respondents were distributed across other age groups.

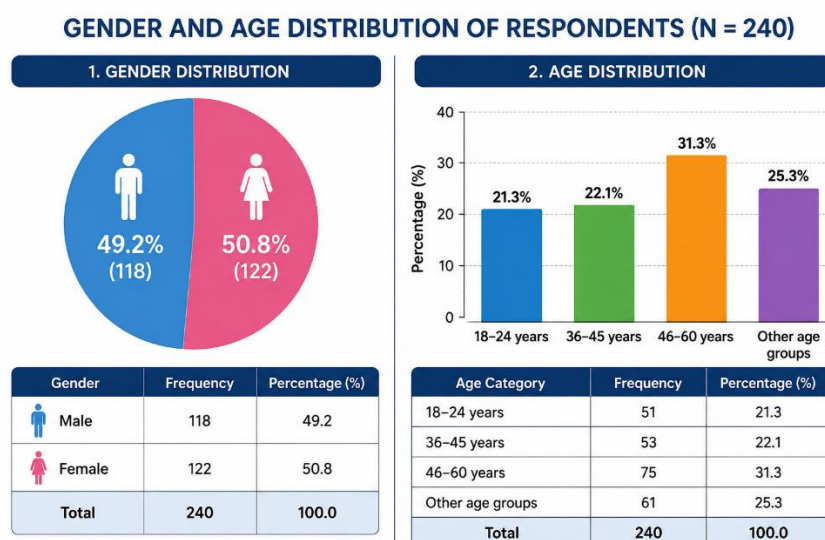


Figure 2: Gender and Age Distribution

Stakeholder categories: Multiple stakeholder groups were included. After harmonizing related categories, parents/guardians/community leaders formed the largest group (32.5%), followed by youth aged 18–35 (17.9%), out-of-school youth/school dropouts (11.7%), local business owners (9.2%), and informal sector workers (9.2%). Women's organizations, CBO/NGO representatives, and persons with disabilities were also represented.

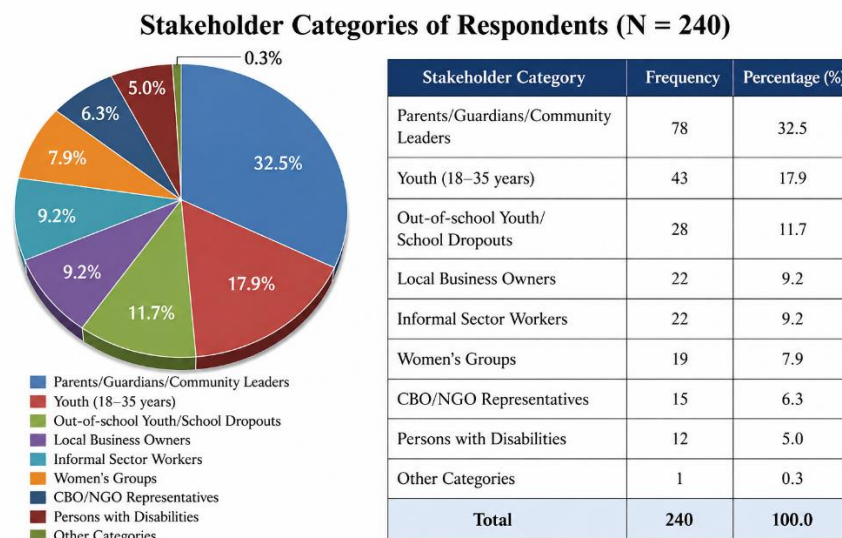


Figure 3: Stakeholder categories

Geographical distribution: Respondents came from all six sub-counties. Although equal quotas were planned, small deviations arose due to field realities. Each sub-county still contributed enough respondents to support comparative analysis.

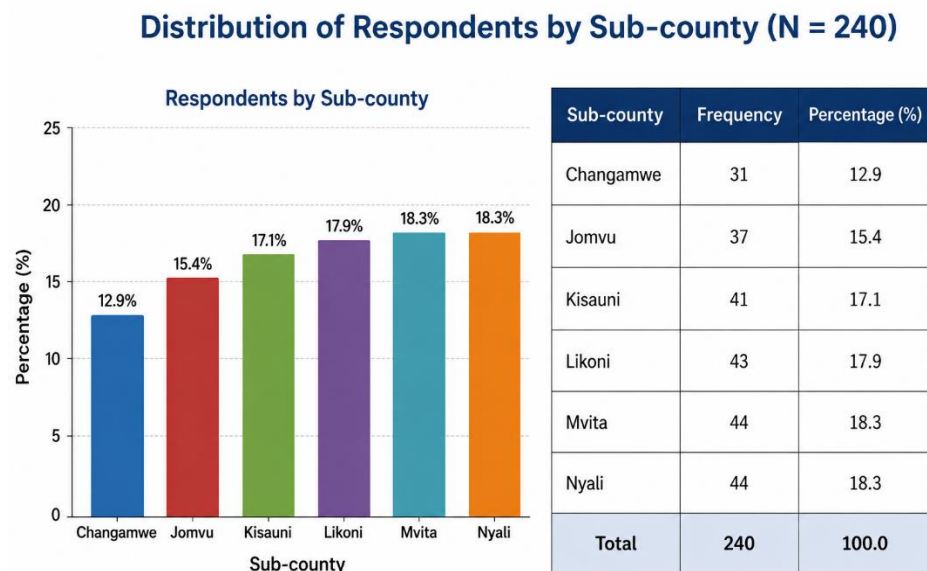


Figure 4: Geographical distribution

Educational attainment: Educational backgrounds ranged from primary schooling to university degrees and TVET qualifications. However, the dataset lacked complete category frequency tables, so only interpretive description is provided.

4.2 TVET Quality Index

A composite TVET Quality Index was constructed from four indicators: meeting community skills needs, graduate practical readiness, accessibility to local youth, and contribution to employment opportunities. The index provides a summary measure and supports comparisons across groups and locations. Reliability of the TVET quality scale Cronbach's alpha for the four-item scale was 0.79, supporting acceptable internal consistency.

Table 1 Reliability Analysis of the TVET Quality Scale

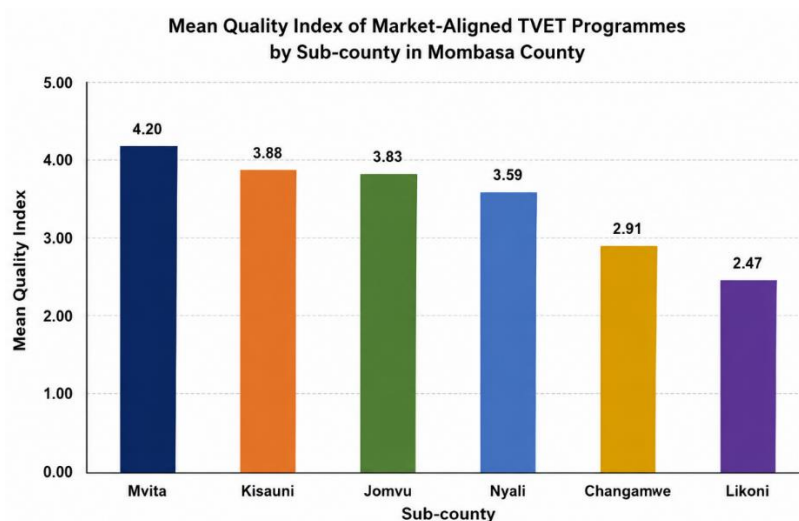
Reliability Statistic	Value
Number of Items	4
Cronbach's Alpha	0.79
Interpretation	Acceptable Internal Consistency

Table 2 Community Perceptions of TVET Quality

TVET Quality Indicator	Mean	Rank
TVET increases employment opportunities	3.53	1
Graduates possess practical work-ready skills	3.51	2
TVET programmes meet community skills needs	3.48	3
TUM-TVET is accessible to local youth	3.47	4
Composite Mean	3.50	—

TVET increases employment opportunities received the highest mean (3.53), indicating recognition of vocational learning as a labour market pathway. Practical skills were also rated positively (3.51). The lowest, though still above midpoint, was accessibility (3.47), pointing to continued concerns about reach, affordability, and inclusion.

Geographical variation in TVET quality: Quality perceptions differed notably across sub-counties. Mvita recorded the highest mean (4.20), followed by Kisauni (3.88) and Jomvu (3.83). Likoni (2.47) and Changamwe (2.91) had the lowest, with Nyali moderate (3.59).



Source: Field Survey Data, 2025

Figure 5: Perceived Quality of TVET

4.3 Priority skills

Respondents could select multiple skills, allowing broad mapping of community workforce priorities.

Technical skills priorities: Electrical installation (62.9%) ranked highest, followed by hospitality and culinary arts (60.4%) and plumbing (56.7%). Welding and fabrication (53.8%), hairdressing and beauty therapy (53.8%), ICT support and hardware repair (50.0%), automotive repair (50.0%), and maritime or port operations (49.2%) were also prominent.

Table 3 Priority Technical Skills

Technical Skill	Percentage (%)	Rank
Electrical Installation	62.9	1
Hospitality & Culinary Arts	60.4	2
Plumbing	56.7	3
Welding & Fabrication	53.8	4
Hairdressing & Beauty Therapy	53.8	4
ICT Support / Hardware Repair	50.0	6
Automotive Repair	50.0	6
Maritime / Port Operations	49.2	8

Digital skills priorities: Digital competence was widely viewed as increasingly central. Basic computer literacy ranked first, followed by graphic design, social media and digital marketing, coding and programming, cybersecurity, data entry and management, web development, and computer networking.

Table 4 Priority Digital Skills

Rank	Digital Skill
1	Basic Computer Literacy
2	Graphic Design
3	Social Media & Digital Marketing
4	Coding / Programming
5	Cybersecurity
6	Data Entry & Management
7	Web Development
8	Computer Networking

Soft skills priorities: Respondents consistently emphasized communication, teamwork, problem-solving, professionalism, customer service, adaptability, leadership, and critical thinking, even though the dataset did not provide percentage frequencies for each.

4.4 Barriers to TVET access

Financial barriers: High tuition fees were cited by 70.4% of respondents, transport costs by 64.2%, and the need to work or support family by 61.7%, making affordability the most frequently reported constraint.

Social and institutional barriers: Limited awareness of TVET options affected 64.6% of respondents. Inadequate career guidance (52.1%) and negative perceptions (49.6%) also discouraged enrolment.

Required support mechanisms: Scholarships and bursaries (77.5%) were the most common recommendation. Other widely supported measures were transport stipends (59.6%), subsidized meals (59.2%), flexible class schedules (58.8%), childcare support (56.7%), career mentorship (56.2%), and assistive devices for persons with disabilities (39.6%).

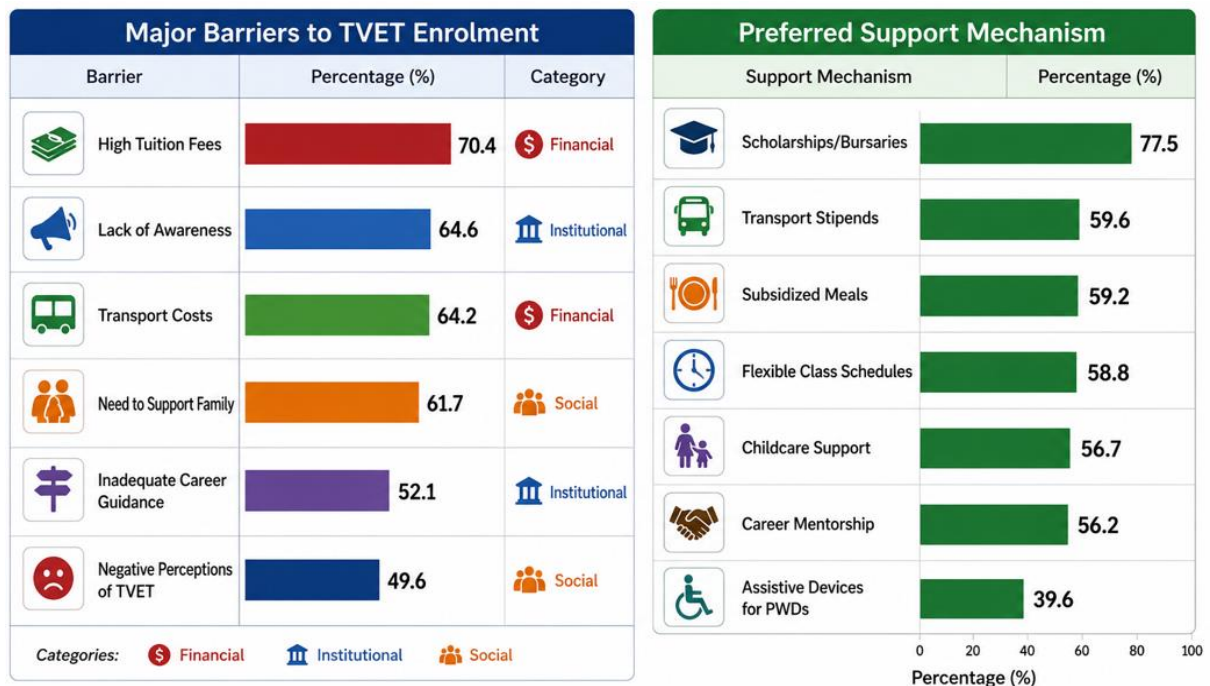


Figure 6: Barriers to and support for TVET enrolment

4.5 Community partnerships

Willingness to collaborate with TUM-TVET Most respondents indicated willingness to collaborate through awareness campaigns, mobilization of prospective learners, mentorship, internship placement support, apprenticeship opportunities, providing venues for outreach, and participation in community projects. These responses suggest that vocational education is viewed as a shared community responsibility rather than an institutional task alone.

Industry partnerships: Four partnership areas were highlighted: internships, apprenticeships, student and programme sponsorship, and equipment or resource donations. Internships and apprenticeships were rated as particularly valuable because they provide workplace exposure before graduation.

Table 5 Preferred Industry Partnership Areas

Partnership Area	Community Response
Internships	Highly Supported
Apprenticeships	Highly Supported
Sponsorship Programmes	Moderately to Highly Supported
Equipment Donations	Moderately Supported

Beyond finances, respondents pointed to recruitment, awareness campaigns, facility provision for outreach, collaboration on development projects, advocacy, mentorship, and linkages with employers and partners. Funding opportunities Awareness of supporting organizations varied. Still, respondents perceived opportunities for stronger partnerships with county and national agencies, private sector actors, NGOs, development partners, foundations, and CBOs to expand scholarships, attachments, entrepreneurship support, and learner services.

4.6 Inferential statistics

Analysis of variance (ANOVA) and Kruskal Wallis Tests

ANOVA was run to determine whether stakeholders' views on the quality of market-aligned TVET programmes varied across the six sub-counties in Mombasa County. Results showed clear differences in the average TVET Quality Index between sub-counties ($p < 0.001$). Put simply, perceptions of programme quality were not consistent across the county.

Figure 5 illustrates this pattern. Mvita posted the highest mean score (Mean = 4.20), implying that respondents there reported the strongest satisfaction with both quality and labour-market relevance. Kisauni (Mean = 3.88) and Jomvu (Mean = 3.83) followed, also reflecting generally positive views. Nyal's rating was moderately favourable (Mean = 3.59). In contrast, Changamwe (Mean = 2.91) and, most notably, Likoni (Mean = 2.47) recorded much lower mean scores, pointing to less positive assessments of TVET quality in those areas.

Since the TVET Quality Index did not meet the normality assumption, the ANOVA results were checked using the Kruskal–Wallis H test. This non-parametric procedure compares median ranks across independent groups. The Kruskal–Wallis test likewise returned a highly significant outcome ($p < 0.001$), again indicating meaningful differences in perceived TVET quality across the six sub-counties. With both the ANOVA and Kruskal–Wallis tests reaching the same conclusion, confidence in the stability of the results increases, and it becomes less likely that the pattern is simply an artefact of non-normal data.

These differences across sub-counties suggest the influence of local conditions. Factors such as institutional resources, how easy it is to reach training centres, the standard of facilities, instructor capability, links with industry, socio-economic circumstances, and how well communities know about TVET options can all shape stakeholder judgements. The stronger ratings in Mvita, Kisauni, and Jomvu likely signal better institutional capacity and closer matching of training content to labour market demands. Lower scores in Changamwe and Likoni, on the other hand, raise concerns about uneven service delivery and programme standards that merit policy focus.

Overall, the agreement between the ANOVA and Kruskal–Wallis results offers solid evidence that sub-county location is associated with stakeholders' perceptions of TVET quality. The findings point to the need for targeted measures to narrow geographical gaps in TVET provision and to support fairer access to high-quality, market-responsive training throughout Mombasa County.

Table 6 ANOVA and Kruskal Wallis tests

Variable	Result
Test	One-way ANOVA
Dependent Variable	TVET Quality Index
Grouping Variable	Sub-county
Significance	$p < 0.001$
Interpretation	Significant differences exist among sub-counties

Test	Kruskal–Wallis H Test
Dependent Variable	TVET Quality Index
Grouping Variable	Sub-county
Significance	$p < 0.001$
Interpretation	Median stakeholder perceptions of TVET quality differed significantly across sub-counties, confirming the ANOVA findings despite the non-normal distribution of the data.

Chi-square analysis

Chi-square results showed statistically significant associations ($p < 0.05$) between sub-county and key outcomes: general perceptions of TUM-TVET, perceived importance of TVET, household familiarity with TVET, and perceived graduate preparedness.

Table 7 Summary of Chi-square Tests

Variable	Chi-square Result	Interpretation
General Perception of TUM-TVET	Significant ($p < 0.05$)	Associated with sub-county
Importance of TVET	Significant ($p < 0.05$)	Associated with sub-county
Graduate Preparedness	Significant ($p < 0.05$)	Associated with sub-county
Familiarity with TVET	Significant ($p < 0.05$)	Associated with sub-county

Cross-tabulation analysis

Cross-tabulations showed more favourable perceptions in Mvita, Kisauni, and Jomvu than in Likoni and Changanamwe. Stakeholder differences were also visible: parents, community leaders, CBO representatives, women's groups, persons with disabilities, and informal sector workers reported higher perceived quality, whereas youth, local business owners, and out-of-school youth tended to rate quality lower.

Table 8 Summary of Cross-tabulation Findings

Stakeholder Group	Relative Quality Rating
Parents / Community Leaders	High
Women Groups	High
CBO Representatives	High
Persons with Disabilities	High
Informal Sector Workers	High
Youth	Moderate
Local Business Owners	Moderate
Out-of-school Youth	Lower

Effect size analysis

Although the significance tests, Chi-square, ANOVA, and Kruskal–Wallis, confirmed that stakeholder views differed across sub-counties, an effect size check was still necessary to show how strong those differences actually were in practical terms. Significance testing mainly tells us whether a pattern is unlikely to be random. Effect size, by contrast, speaks to the scale of that pattern, and so gives a clearer sense of real-world relevance.

Because the variables under review were categorical, Cramér's V was selected to capture association. Across the four perception indicators, the effect sizes sat in the moderate band, roughly

between 0.30 and 0.37. Put simply, where a respondent lived, by sub-county, mattered for how they viewed market-aligned TVET programmes, but it did not dominate the story.

The clearest location-linked difference appeared in familiarity with TVET programmes (Cramér's $V \approx 0.37$). That result points to noticeable gaps in awareness across the six sub-counties. Those gaps could stem from uneven outreach, different levels of access to information, how visible institutions are in a given area, or how actively programmes are promoted. The implication is straightforward: some communities know more about TVET options than others, and areas that lag behind would likely benefit from focused awareness efforts.

A similar, moderate association emerged for perceived graduate preparedness for employment (Cramér's $V \approx 0.35$). Stakeholders in different sub-counties did not judge employability in the same way. Such variation could reflect differences in training quality, the extent of hands-on learning, the strength of industry ties, and the kind of labour market exposure available to institutions operating in different locations.

Perceived importance of TVET also varied by location at a moderate level (Cramér's $V \approx 0.32$). While the value of TVET was generally acknowledged, the weight people attached to vocational education shifted from one community to another. Local job prospects, socio-economic realities, community attitudes toward vocational careers, and the presence, or absence, of visible success stories from TVET graduates may all shape those differences.

General judgements about TVET quality showed the smallest, though still moderate, relationship with location (Cramér's $V \approx 0.30$). Geography therefore explained some of the spread in opinions, but clearly not all of it. Other influences, including respondents' education, their past contact with TVET institutions, employment situation, and personal experiences, also likely fed into how they rated programme quality.

Taken together, the moderate Cramér's V values point to sub-county location as a meaningful driver of stakeholder perceptions of market-aligned TVET programmes, yet not the only one. For policy and planning, that means improvement efforts should not be uniform across the county. Place-sensitive responses are needed, ones that match the specific barriers and advantages in each sub-county. Targeted awareness drives, closer industry collaboration, better infrastructure, and stronger career guidance could be especially useful in areas where views were less positive. Designing interventions in this geographically responsive way can help move Mombasa County toward fairer access to high-quality, labour market-responsive TVET..

Table 9 Effect Size Estimates

Variable	Cramér's V	Interpretation
General Perception	~ 0.30	Moderate Association
Importance of TVET	~ 0.32	Moderate Association
Graduate Preparedness	~ 0.35	Moderate Association
Familiarity with TVET	~ 0.37	Moderate Association

Summary of findings

The inferential results confirm that perceptions vary by location and by stakeholder group. While views were generally favourable, Mvita, Kisauni, and Jomvu consistently scored higher than Likoni and Changamwe, pointing to unequal experiences with accessibility and quality. Youth and business owners were more critical than parents and community organizations, implying that labour

market proximity influences evaluation. These results reinforce the value of tailoring reforms, outreach, and partnerships to local conditions.

4.7 Discussion

The study assessed how community stakeholders perceive market-aligned TVET in Mombasa County. Results show broad support for TVET, alongside clear expectations for stronger quality, accessibility, labour market responsiveness, and collaboration. Interpretation is guided by Human Capital, Skills Mismatch, Community Participation, and Stakeholder theories and compared with relevant literature.

Community perceptions of TVET

Positive perceptions were widespread: 83.3% reported positive or very positive perceptions of TUM-TVET, and 86.7% saw TVET as important for youth development. While 83.8% believed graduates were prepared for employment, respondents still emphasized the need for continuous quality improvement. These patterns align with Human Capital Theory, where community confidence reflects expectations that skills development yields employability and livelihood improvements (Becker, 1993). The results also match UNESCO (2024), which reports growing recognition of TVET as a mechanism for reducing unemployment and supporting development, and OECD (2023), which links public confidence to employment outcomes and employer engagement. However, the moderate composite score (3.50) suggests support coexists with unmet expectations regarding responsiveness and access, consistent with Stakeholder Theory's emphasis on sustained attention to stakeholder needs (Freeman, 1984).

TVET quality and labour market responsiveness

The TVET Quality Index average (3.50) and the high rating for employment opportunity signal that respondents associate TVET with labour market gains, consistent with ILO (2022). Yet, accessibility and perceived alignment with community skills needs were rated lower. This echo concerns that institutional expansion can outpace investment in infrastructure, equipment, and partnerships, limiting labour market outcomes (World Bank, 2023), a problem also noted in Kenyan evidence (KIPPRA, 2024). Programme quality, therefore, should be considered through accessibility, relevance, and practical readiness, not only graduate outputs.

Priority skills and skills mismatch

Stakeholders prioritized electrical installation, hospitality, plumbing, welding and fabrication, ICT support, automotive repair, and maritime services. Digital capabilities, including literacy, programming, cybersecurity, and digital marketing, were also emphasized. The skills pattern supports Skills Mismatch Theory, where employment challenges arise from competence gaps rather than job scarcity (McGuinness et al., 2018). The strong focus on digital skills aligns with global projections of rapid skills change (World Economic Forum, 2023) and with UNESCO-UNEVOC (2023), which recommends embedding digital skills across vocational programmes rather than isolating them within ICT courses.

Barriers to TVET access

Financial constraints dominated reported obstacles, with tuition fees, transport costs, and household responsibilities frequently noted. Awareness gaps, inadequate guidance, and negative

perceptions also limited participation. These results align with Community Participation Theory, where socio-economic realities influence education decisions (Arnstein, 1969). The findings are also consistent with Kenyan evidence on access constraints affecting low-income households (KIPPRA, 2024) and with UNESCO (2024), which highlights affordability and information gaps as common barriers. Respondents' strong support for scholarships, transport assistance, mentorship, and flexible schedules indicates that access strategies must extend beyond tuition support.

Community partnerships and stakeholder engagement

Stakeholders expressed strong readiness to collaborate with TUM-TVET through internships, apprenticeships, mentorship, awareness campaigns, sponsorships, equipment support, and outreach. This supports Stakeholder Theory's focus on joint action for organizational effectiveness (Freeman, 1984). The results also align with OECD (2023), which links strong employer partnerships to higher employment outcomes. For TUM-TVET, structured employer collaboration across maritime, logistics, hospitality, manufacturing, ICT, construction, and renewable energy is likely to strengthen relevance and employability.

Geographical differences in perceptions

Significant differences across sub-counties were identified, with Mvita, Kisauni, and Jomvu scoring higher than Likoni and Changamwe. Associations between location and perceptions of quality, preparedness, familiarity, and importance were statistically significant, with moderate effect sizes. These patterns suggest perceptions are shaped by local conditions, including institutional access, transport, labour market opportunities, and exposure to TVET. The finding reinforces the importance of localized labour market intelligence and sub-county-specific interventions, consistent with UNESCO-UNEVOC (2023).

Overall interpretation

Community stakeholders support the expansion of market-aligned TVET in Mombasa, while calling for stronger alignment with evolving labour market needs, improved access, deeper practical training, stronger digital competencies, and closer cooperation with employers and community actors. The evidence supports the central claims of Human Capital, Skills Mismatch, Community Participation, and Stakeholder theories. Market-aligned TVET requires sustained responsiveness to stakeholder expectations, and community perspectives offer concrete guidance on curriculum content, support systems, partnerships, and localized implementation.

5. Conclusion, Implications and Recommendations

5.1 Conclusion

This study assessed community stakeholder perceptions of market-aligned TVET in Mombasa County. Respondents generally held positive views and recognized TVET's contribution to youth employment, economic development, and workforce preparation. Priority technical skills included electrical installation, hospitality, plumbing, welding, ICT support, automotive maintenance, and maritime services, while digital competencies and transferable employability skills were also emphasized. Barriers centred on finances, limited awareness, transport costs, and weak career guidance.

The study extends prior work by shifting emphasis from employer-only evaluations to community stakeholder perspectives, incorporating views of parents, leaders, youth, business owners, community organizations, and vulnerable groups. The theoretical integration clarifies how community expectations interact with programme quality and labour market alignment.

Limitations include the cross-sectional design, the county-specific scope, reliance on self-reported perceptions rather than objective employment measures, and small subgroup sizes for some stakeholder categories. Future research can use longitudinal designs, multi-county comparisons, and combined datasets including employer surveys, tracer studies, and institutional indicators. Advanced methods such as Structural Equation Modelling (SEM) could also test relationships among perceptions, quality, engagement, and employability.

Overall, the study concludes that market-aligned TVET cannot rely on curriculum reform alone. Sustainable vocational education depends on continuous coordination among institutions, employers, governments, communities, development partners, and financing agencies. When community perspectives are systematically integrated into planning and decision-making, TVET institutions are better positioned to produce graduates with relevant competencies that support industrial transformation, youth employment, and sustainable socio-economic development.

5.2 Practical implications

Implications for TUM

Community confidence in TUM-TVET is high, yet respondents pointed to accessibility, relevance, practical training, and employer engagement as areas for improvement. Periodic labour market surveys could strengthen curriculum review, especially in maritime services, logistics, renewable energy, ICT, advanced manufacturing, and the blue economy. Expanded industrial attachments, apprenticeships, simulation labs, entrepreneurship training, and digital infrastructure can strengthen competency-based learning. Establishing a Labour Market Observatory would support continuous tracking of trends and emerging skills.

Implications for the County Government of Mombasa

Geographical differences in perceptions indicate that county-wide interventions should be paired with sub-county-specific actions. Collaboration with TUM-TVET could support community skills centres, bursary schemes, improved transport links to institutions, and integration of TVET into county development planning. Stronger coordination with local industries can expand internships, apprenticeships, and youth employment initiatives aligned with the CIDP.

Implications for TVETA

As the regulator, TVETA can incorporate stakeholder perception surveys into quality assurance processes, using community evidence alongside employer and institutional assessments. Requirements for employer participation in curriculum review, competency-based assessment, and trainer professional development in emerging technologies remain relevant areas for strengthening.

Implications for industry

Industries in maritime transport, logistics, manufacturing, hospitality, ICT, renewable energy, and construction can support internships, apprenticeships, mentorship, equipment contributions, and curriculum advisory roles. Such cooperation helps reduce skills mismatch and strengthens workplace readiness.

Implications for development partners

Demand remains for scholarships, digital infrastructure, entrepreneurship initiatives, outreach, and capacity building. Partners can focus on labour market intelligence systems, digital learning platforms, inclusion support for persons with disabilities, youth and women empowerment, and green skills. Innovation hubs and incubation centres within TVET settings can strengthen entrepreneurship outcomes.

Implications for HELB

Given the centrality of financial barriers, expanding TVET financing through bursaries and loans, simplifying processes, and improving public awareness is important. Flexible mechanisms targeted at low-income households, women, persons with disabilities, and vulnerable youth are likely to improve access and completion.

Implications for KUCCPS

Career guidance can be strengthened so TVET is presented as a viable pathway comparable to university routes. Wider dissemination of labour market information, employment outcomes, and programme options would support informed choices. Partnerships between institutions and employers can also improve placement decisions grounded in labour market demand.

5.3 Policy recommendations

Curriculum redesign

Systematic curriculum review should be grounded in labour market intelligence and stakeholder consultation, with attention to electrical installation, maritime services, hospitality, ICT, logistics, manufacturing, renewable energy, construction technologies, and entrepreneurship in Mombasa.

Integration of digital skills

Digital competencies should be embedded across programmes, including digital literacy, AI awareness, cybersecurity, coding, cloud computing, digital marketing, data analytics, and e-commerce.

Strengthening employer partnerships

Formal agreements should support internships, apprenticeships, attachments, co-design of curricula, guest teaching, equipment sharing, and collaborative research. Sector skills advisory committees can help maintain alignment in priority industries.

Flexible programme delivery

Accessibility can improve through evening and weekend options, modular training, blended and online learning, recognition of prior learning (RPL), and competency-based progression.

Expanded scholarships and financial support

Support should extend beyond tuition to transport allowances, accommodation, meals, assistive devices for persons with disabilities, and digital learning resources. 8.6 Transport subsidies and infrastructure Given the weight of transport costs, county transport subsidies and improved public transport connections to institutions warrant consideration.

Community awareness and outreach

Sustained awareness campaigns should address programme opportunities, employment outcomes, and financing options, working with community leaders, schools, faith groups, youth and women's organizations, employers, and local media.

Institutional labour market observatory

A dedicated observatory at TUM-TVET could monitor labour trends, conduct tracer studies, analyse skills demand, maintain employer databases, and supply evidence for curriculum review and planning.

References

- Afeti, G. (2020). Technical and vocational education and training for industrialization in Africa. African Union Commission.
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216–224.
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- Epstein, J. L. (2018). *School, family, and community partnerships: Preparing educators and improving schools* (3rd ed.). Routledge.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- International Labour Organization (ILO). (2022). *Global Employment Trends for Youth 2022: Investing in transforming futures for young people*. ILO.
- Kenya Institute for Public Policy Research and Analysis (KIPPRA). (2024). *Kenya Economic Report 2024: Skills development and labour market transformation*. KIPPRA.
- McGuinness, S., Pouliakas, K., & Redmond, P. (2018). Skills mismatch: Concepts, measurement and policy approaches. *Journal of Economic Surveys*, 32(4), 985–1015.
- Oketch, M. (2021). Technical and vocational education and training in Sub-Saharan Africa: Challenges and opportunities for sustainable development. *International Journal of Educational Development*, 84, 102403.
- Organisation for Economic Co-operation and Development (OECD). (2023). *Education at a Glance 2023: OECD Indicators*. OECD Publishing.
- Republic of Kenya. (2013). *Technical and Vocational Education and Training Act, No. 29 of 2013*. Government Printer.

- Republic of Kenya. (2023). Bottom-Up Economic Transformation Agenda (2022–2027). Government Printer.
- Taherdoost, H. (2016). Validity and reliability of the research instrument. *International Journal of Academic Research in Management*, 5(3), 28–36.
- UNESCO. (2024). Global Education Monitoring Report 2024: Leadership in education. UNESCO.
- UNESCO-UNEVOC. (2023). Trends in Technical and Vocational Education and Training. UNESCO-UNEVOC.
- United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. United Nations.
- World Bank. (2023). Kenya Economic Update: Boosting productivity through skills and innovation. World Bank.
- World Economic Forum. (2023). The Future of Jobs Report 2023. World Economic Forum.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.