Evaluating the Quality Factors of Technical and Vocational Education and Training and their Influence on Enrolment Rates in Ethiopian TVET Colleges

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ABSTRACT

This study investigates the quality of training factors in Ethiopian Technical and Vocational Education and Training (TVET) colleges and their impact on declining enrollment rates. Employing a descriptive survey design and both quantitative and qualitative data were collected from diverse stakeholders, including Grade 12 graduates, current TVET trainees, trainers, college deans, community members, high school directors, teachers, and officials from TVET government agencies. The sample included 20 TVET centers from various Ethiopian regions. Secondary data were obtained from college and government documents, while primary data were gathered through questionnaires, interviews, focus group discussions, and observations. Analysis was conducted by using descriptive statistics with SPSS, capturing response frequencies and percentages. The findings of the study show TVET quality gaps, such as limited infrastructure, weak trainer skills, misaligned curriculum, poor training delivery, and low CoC pass rates, which hinder enrollment and require urgent reforms to enhance relevance and outcomes. Many TVET institutions lack qualified trainers, adequate machinery, and timely provision of materials for practical skills training. Based on these findings, the study recommends enhanced infrastructure investment, professional development for trainers, curriculum adjustments to better align with industry needs, and standardized assessment practices. Addressing these areas through collaborative efforts with government bodies and industry stakeholders is essential to improve the quality and appeal of Ethiopian TVET programs, ultimately strengthening enrollment and outcomes.

KEYWORDS
TVET Enrollment; Training Quality; Curriculum alignment; Trainer competency

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1. Introduction

Globally, Technical and Vocational Education and Training (TVET) has been recognized as a pivotal component in addressing unemployment, reducing poverty, and improving inclusive economic growth (UNESCO, 2016). High-quality TVET systems contribute significantly to workforce development by providing learners with job-relevant skills that meet the evolving demands of industry and technology. In both developed and developing economies, there is a growing consensus on the need to enhance training quality to improve employability and productivity outcomes (ILO, 2021). In the context of Sub-Saharan Africa, TVET is increasingly promoted as a solution to the region's high youth unemployment rates and skills mismatch in labor markets.

In Ethiopia, despite the efforts made by government in intensifying accessibility of TVET colleges even at the woreda level, enrollment in TVET programs remains lower than anticipated. This study explores how factors related to training quality, such as curriculum relevance, instructor qualifications, availability of resources, and alignment with industry requirements, might contribute to low student interest and enrollment. Understanding these aspects is crucial as they directly influence the effectiveness of TVET education in producing graduates with the skills required by employers, especially in a rapidly industrializing economy. Consequently, improving training quality in TVET centers holds significant potential for addressing workforce shortages, enhancing productivity across sectors, and fulfilling the government's objectives of sustainable economic growth and employment (Adugna, 2014).

Existing literature identifies several key factors influencing training quality in TVET programs, which are essential for producing graduates capable of meeting industry standards and demands. Notably, the quality of curriculum design plays a critical role, as relevant, up-to-date curricula help align TVET training with industry needs (Kebede et al., 2024). Furthermore, the qualifications and experience of instructors directly impact training's effectiveness as skilled educators are better equipped to provide practical and theoretical knowledge essential for students entering technical fields (Admas et al., 2024).

Access to up-to-date machinery, tools, and training facilities plays a crucial role in ensuring the quality of practical, hands-on instruction in TVET programs. When such resources are lacking, trainees often face significant gaps in skill acquisition, ultimately diminishing their employability prospects (Anindo et al., 2016). Additionally, strong partnerships between TVET institutions and industries are vital, as they help align training curricula with the evolving demands of the labor market (Tekle et al., 2024). Together, these elements significantly influence the overall quality and relevance of vocational education, underscoring the need for strategic improvements that can better position TVET programs to support Ethiopia's economic development and industrialization goals.

The research on TVET training quality factors and low enrollment rates in Ethiopian TVET colleges contributes to the existing body of knowledge by addressing gaps in understanding the role of training quality in influencing enrollment in Ethiopia's TVET sector. While prior studies have identified the importance of factors, such as curriculum relevance, instructor qualifications, resource availability, industry partnerships, and societal perceptions on training outcomes, there remains limited study specifically linking these quality dimensions to enrollment rates. This study, therefore, adds valuable insights into how training quality or perceived lack thereof may directly discourage potential students from enrolling despite the substantial governmental investments made to build capacity in the TVET sector.

This study focused on the persistently low enrollment rates in Ethiopian TVET colleges, a concern that remains a concern despite substantial investments and policy initiatives by government over the past thirty years. It approaches this issue by investigating how deficiencies in training quality, such as outdated curricula, inadequate resources, poorly trained instructors, and weak industry partnerships, may contribute to the declining interest among prospective trainees. The study emphasizes the urgent need for high-quality, labor market-aligned training that not only imparts practical skills but also enhances the perceived value and relevance of TVET programs. By examining these critical factors, the study aims to offer evidence-based recommendations for improving training standards, thereby increasing student enrollment and helping to meet the country's demand for a skilled workforce.

1.1. Statement of the problem

Ethiopia is one of the African countries that have prioritized TVET initiatives in their national development policy documents. The National TVT Strategy of Ethiopia (Ministry of Education, 2006) mirrors an important paradigm shift, emphasizing primarily on access, quality and relevance of TVT. As stipulated by the strategy, TVT envisions responding to both the skill needs of the country and the global market. The government envisages that TVT should provide the necessary relevant demand – driven education and training that corresponds to the needs of economic and social sectors for employment and self-employment.

To increase enrolment rates, the Ethiopian government has recognized the importance and the need for establishing a large number of TVT institutions in the country. Within a short period, it has managed to increase the number of TVT centers from 15 in 1994 to 1023 in 2006/7 (Adugna, 2014). This number has shown a significant improvement. As a result, there are around 1,340 TVT institutions throughout the country (MoLS, 2023). Different measures were taken to expand the formal and non-formal TVT programs across regions and woredas. The result of this was a sharp increase in the number of students enrolled in formal TVT training institutions. The total enrollment that was only 72,162 in 2002/03 became 191,151 in 2006/07. The annual average increase was 28.1%., which is a big success.

Despite the numerous increases in the number of TVT institutions in the country, there has been unexpected decline in the enrollment of students across all regions in the country in

2022/2023 academic year. According to the biannual report of Ministry of Labor and Skills (MoLS, 2023)**,** there were about 603,066 students potentially expected and eligible to join the TVT training all over the country. However, it is about 150,795 newly enrolled students who managed to join TVT institutions within the same year. Based on this data, the majority of students (452,271 or 74.99 %), who fulfilled the enrollment criteria didn't join the TVT institutions. Though the case becomes very worst in the 2022/23 academic year, the scenario was manifested in different parts of the world in the previous academic years.

Though there are efforts made by both local and international researchers, the width and breadth of their studies are quite different from the objectives of the current research. As far as the knowledge of the research team's is concerned, there is no previous study undertaken regarding factors related with training quality that hinder students' enrolment in to TVT institutions at country level. It is unarguable fact that enrolling students in TVT sector plays paramount role both in human resource development and socio-economic prosperity of a nation. Despite this fact, there is a dramatic decline of students' enrollment into the TVT colleges of Ethiopia in which the worst scenario is recorded in the 2022/23 academic year.

Low enrollment in the TVET sector in Ethiopia has become a pressing concern, undermining the country's efforts to develop a skilled workforce essential for economic transformation and industrialization. Despite the Ethiopian government's consistent investments in TVET over the past three decades, including infrastructure development, curriculum reform, and promotional campaigns, student enrollment rates remain significantly lower than expected. This issue is not only evident through personal observations at institutional levels but is also repeatedly highlighted in the Ministry of Education's annual evaluation reports, which cite declining interest, negative public perception, and weak linkage with labor market demands as persistent challenges. The consequences of low enrollment are multifaceted, affecting both the sector and the broader economy, leading to an undersupply of skilled labor, increased youth unemployment, and underutilization of training facilities.

Several empirical studies have attempted to explore the causes of this problem. For instance, Anindo et al. (2016) and Tekle et al. (2024) identified outdated curricula, lack of qualified instructors, and poor industry partnerships as key barriers to effective training and student engagement. However, while these studies offer valuable insights, there remains a gap in understanding how these factors interact to influence students' enrollment decisions specifically within the Ethiopian context. Existing study often focuses on individual components without addressing the systemic interplay between training quality, labor market alignment, and student perception. This study aims to fill this gap by examining the core factors contributing to low TVET enrollment and providing context-specific recommendations.

1.2. Research Questions

- How does the quality of the curriculum shape student enrollment in Ethiopian TVET colleges?
- To what extent does instructor expertise influence students' decisions to enroll?
- How does the instructor's approach to cooperative training affect students' willingness to enroll?
- How does the availability of resources, like equipment and facilities, affect students' interest in joining TVET programs?

2. Literature Review

2.1. Enrollment Criteria for the Ethiopian TVT

The Ethiopian Ministry of Education (MoE) decides the score or cut points for the national examination. These cut points are set so that the capacity of the government TVT colleges can accommodate the number of students who correspond to each cut point and are therefore qualified for TVT. The number of spots that universities can hold corresponds to the number of students who are eligible to pursue their education. The cutoff points are not permanent; rather, they fluctuate annually based on the number of TVT institutions and the number of places by specialization (Ministry of Education, 2019).

In the previous Ethiopian TVT system, students who achieved high marks in grade 10 National Examination (2.7 and above on a scale of 4) in 2012 joined college preparatory education, and those who achieved lower marks joined TVT. According to Addis Ababa TVT Agency (2012), the cutoff point for level IV TVT in 2012 was 2.57 for men and 2.29 for women. The streaming system is equivalent to declaring publicly that TVT is for the "less able" or the "academically weak". No courses are provided in regular secondary education to orient and direct pupils on career development and choice of employment. The majority of high school students (84%) felt that the institution's administration had not given them any information on TVT as a potential alternative for their future profession (Krishnan & Shaorshadze, 2013).

2.2. Employment Opportunities for TVT Graduates

Strengthening the culture of self-employment and promoting job creation in the economy through the extension of TVT is the primary objective of Ethiopia's national TVT plan, which was published in 2008. Despite this, the Urban Employment, Unemployment Survey (UEUS) demonstrates that TVT graduates end up working for the government (Eden, 2012). The graduation profiles showed that, contrary to what the national TVT program had envisioned, TVT graduates are highly involved in the labor market as potential employees and government wage workers. The results showed that while the graduates had an interest in and vision for self-employment, they lacked the abilities and confidence to engage in such risky

endeavors. Among the socio-cultural factors, the entrepreneurial idea of families and communities is a major contributor that affects self-employment endeavors (Hailu, 2012).

TVT plays a great role in providing the skilled manpower needed by the various economic sectors in Ethiopia, but planning for implementation in technical-vocational colleges is not simple due to the difficulties of the current competence-based TVT in terms of strategy and curriculum development. Besides this, TVT teachers are not well trained, and they lack the psychological readiness to deliver the responsibilities that competence-based TVT requires. Strong school-industry partnerships are also lacking in TVT, which makes it challenging to undertake cooperative training (Solomon, 2016).

The government of Ethiopia has incorporated an entrepreneurship curriculum both at the TVT and university levels. Since there are still issues with a low rate of entrepreneurial ambition and a high level of unemployment throughout the nation, teaching entrepreneurship as a subject in colleges and universities is insufficient. TVT graduate students agreed that subjective norms, locus of control, entrepreneurial self-efficacy, and perceived behavioral control had effects on their decision to start their own firms after graduation Habtamu (2020). Additionally, the dependent variable, entrepreneurial intention, and the previously indicated variables have a positive association. However, all other variables, with the exception of entrepreneurial education, had a favorable and statistically insignificant impact on entrepreneurial ambitions. Practically, everyone in the neighborhood encourages their young children to work for the company. Even their own families prioritize their businesses over their schooling. The community does not value children who attend school and work for the government; instead, they value students who start businesses that can generate daily revenue (Alamineh, 2020).

2.3. TVET Infrastructure factors

The financial restriction is obviously one of the most serious of all, which again affects the infrastructure of a sector. Science and Technology is not cheap, and TVT is one of the most expensive components of any education system. The importance of a well-functioning facility and appropriate equipment must be realized so as to make TVT effective. If not, the quality and effectiveness of the training to meet the objectives of knowledge and skills required by the labor market will be insufficient. As a result, the presence or absence of updated and standardized machines and related workshops can be one of the important factors that affect students' enrollment preferences.

For example, in an institute where many of its equipment or machines are missing, outdated, or inadequate, teachers have inadequate practical abilities, and they impart theoretical knowledge rather than practical skills; obviously, many students will be less likely to join the sector. Is it so that TVT places too much emphasis on theory and certification rather than on skill acquisition and directly tests the competencies students need in their future work lives? Since the presence of adequate and updated infrastructure plays a great role in making the sector effective, this issue should be taken seriously.

2.4. Trainer Competency and Training Delivery Quality

The competency of trainers and the quality of training delivery significantly influence trainees' enrollment rates in Technical and Vocational Education and Training (TVET) colleges. A study indicates that effective trainers enhance the learning experience, which in turn attracts more students to enroll. Competent trainers are crucial for delivering high-quality education as they possess the necessary skills and knowledge to engage students effectively (Oroni et al., 2023). Trainers who utilize diverse teaching methods and practical examples foster better skill acquisition, leading to higher student satisfaction and enrollment rates (Barasa et al., 2023).

High-quality training delivery, characterized by interactive and practical approaches, motivates students and enhances their learning experience. Aligning training with industry needs ensures that students perceive the value of their education, which can increase enrollment. Conversely, inadequate trainer competency and poor training delivery can deter potential students, leading to lower enrollment rates. This highlights the need for continuous professional development for trainers and investment in training resources to maintain high educational standards (Abdullah et al., 2022).

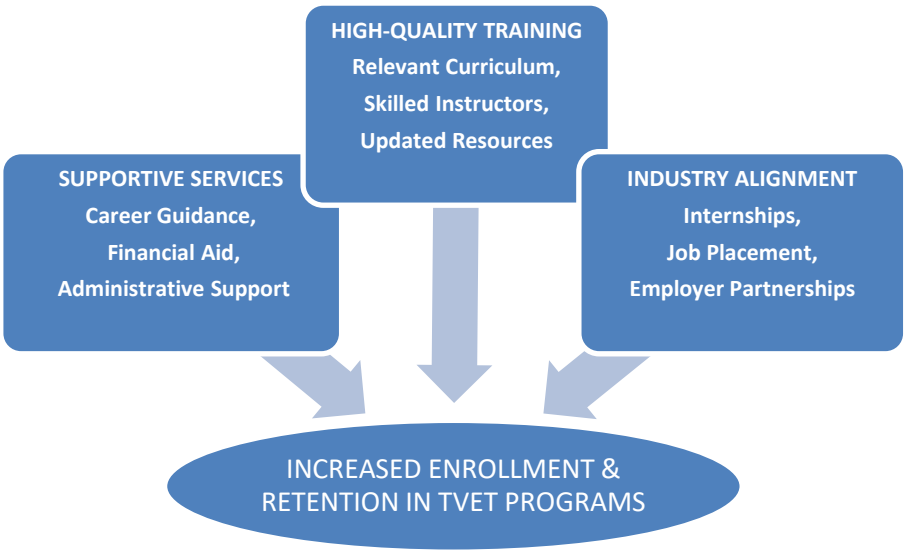
2.5. Industry Involvement in TVET Development by Cooperative Training Programs

The role of industries in providing cooperative training and internships to TVET trainees is crucial for enhancing their employability and improving enrollment rates in TVET colleges. By raising partnerships between educational institutions and industries, a more effective training environment can be created, which benefits both students and employers. Industries can actively participate in the development of TVET curricula, ensuring that training aligns with current market needs (Lee, 2010). Cooperative training (CT) programs provide students with authentic work experiences, which are essential for job readiness (Abdullahi & Othman, 2022). The engagement of company supervisors and TVET trainers significantly influences the effectiveness of CT programs, with higher involvement leading to better outcomes for trainees (Wudneh et al., 2022).

Legislative frameworks that promote university-industry linkages can facilitate compulsory internships and professional integration into TVET curricula. Such policies can enhance the quality of training and attract more students to enroll in TVET programs, as they see clear pathways to employment (Agbo & Nnajiofor, 2023). While the involvement of industries in TVET is beneficial, challenges, such as low engagement levels and differing perspectives between trainers, and trainees can hinder the effectiveness of these programs (Wudneh et al., 2022). Addressing these issues is essential for maximizing the potential of industry partnerships in TVET.

2.6. Conceptual Framework

The following conceptual framework diagram illustrates how high-quality training, combined with supportive services and industry alignment, increases enrollment and retention in TVET programs.



3. Methodology

3.1. Research Approach

Creswell (2007) emphasizes the importance of illustrating the research approach as an effective strategy to increase the validity of social research. In this study, a mixed research approach is used. Beside this, researcher, (Jhonson, 2014), also defines mixed research as a class of research studies in which researchers mix or combine quantitative and qualitative research approaches and techniques in a single study. The researchers used a mixed-method approach to investigate factors contributing to low enrollment of students completing grade 12 in TVET colleges as combining quantitative and qualitative data offsets each method's limitations and provides a comprehensive understanding of the issue.

3.2. Research Design

This study employed a convergent parallel mixed method design, using both quantitative and qualitative data to examine the research problem. This design offsets the limitations of each method as they provide complementary information. It allows for the merging of quantitative and qualitative findings, offering a more comprehensive analysis. Ultimately, this approach integrates diverse data for a holistic interpretation of the results (Creswell, 2014).

3.3. Population of the Study

The researchers selected a study sample from the entire study population because it is believed that including the entire population in the study would be impractical. The population for this study was 455,717 grade 12 complete students with potential to be enrolled into TVT colleges in 2022–2023 (MoLS, 2023). Additionally, TVT officials (senior experts from MoLS, TVT bureau/zonal/woreda expertise, TVT College Deans, TVT trainers, TVT trainees); Educational bureau/zonal/woreda expertise; Secondary school (directors, teachers); student families and community members; and the industry owners/expertise were considered as population of the study. The researcher chose six regions of Ethiopia—Oromia, Amhara, SNNPR, South-west, Sidama, and Somali—for further investigation due to poor performance. Based on the regions' enrollment achievement, 20 towns as research data collection area and the grade 12 complete students with potential to be enrolled into TVT colleges were participated in questionnaire.

3.4. Sampling Techniques

The study utilized both probability and non-probability sampling techniques. Non-probability sampling allowed inferences about specific participants, while probability sampling enabled generalization to a larger population. Stratified, cluster, and purposive sampling techniques were employed, and observations assessed TVT's overall enrollment status and capacity (Naing, 2003). The sample was purposefully taken from six regions—Oromia, Amhara, SNNP, South West, Sidama, and Somali—due to low trainee enrollment in 2022/23 academic year, with 20 towns selected based on significant deviation from expected enrollment numbers.

The formula to determine sample size is $n = \frac{N}{1+ Ne^2}$ (Naing, 2003)

Where:

n= the size of the sample

N= the size of the population

e= the margin of error with 90% confidence level

Thus, based on the above sample size determination formula, the sample size of the study is 20 towns. The calculated sample sizes for various TVT college centers/towns were determined based on their respective population sizes. For instance, Gonder had a population of 3,871 with a sample size of 98, while Kombolcha, with a smaller population of 777, required a sample size of 89. Other towns, such as D/Tabor, D/Markos, and Agaro had sample sizes of 94, 93, and 98, respectively. In total, the sample sizes across the 20 selected towns amounted to 1,883, reflecting the varying population sizes of the centers.

Other than potential grade 12 complete students expected to join TVT colleges, the sample size for participants selected for panel discussions and key informant interviews varied across different groups. In total, there were four federal TVT officials from the Ministry of Labor and Social Affairs and two experts from the TVT bureau participating in the interviews. Two zonal/woreda experts, two TVT college deans, and four TVT trainers were involved in both discussions and interviews. Additionally, 20 TVT trainees, two educational bureau experts, and several secondary school directors and teachers participated, with sample sizes of two for both groups. Other contributors included five student families, five community members, and two industry owners, providing a diverse range of insights for the study.

3.5. Source of Data

Both primary and secondary data sources were consulted in the study in order to present a wide range of information.

3.5.1.Primary Data

According to Trochim (2003), alternative forms are designed to be equivalent to the types of questions that lead to the outcome. Likewise, Kothari (2006) described that the collection of primary data is either through questionnaires or through interviews. Accordingly, for this study, primary data were collected directly from the sample respondents through the selected instruments. The primary data sources were TVT officials (Senior expertise from MoLS, TVT bureau/Zonal/Woreda expertise, TVT college Deans, TVT trainers, TVT trainees); Educational bureau/Zonal/Woreda expertise; Secondary school (directors, teachers); grade 12 complete students with potential to be enrolled into TVT colleges; student families and community members; and the industry owners/expertise.

3.5.2.Secondary data

Besides primary data, secondary data were obtained from different sources, like TVT sector plans and reports, TVT policy and strategy documents, trainee's admission criteria and cut points and relevant books. In addition to this, authentic and reliable online scholarly written literatures were used to supplement the information.

3.6. Data Collection Instruments

Data collection involved a questionnaire with closed-ended and open-ended questions. Researchers selected interview and run panel discussion with subjects from TVET officials, general education bureau representatives, secondary school directors, teachers, families, graduates, trainers, trainees, and industry professionals. Observation and document analysis were employed to triangulate findings, focusing on groups that directly accessed TVT institutions.

3.7. Data Analysis Techniques

The data collected through the specified instruments were categorized and organized by conceptual similarity. Both quantitative and qualitative data were analyzed and described according to appropriate methods. Closed-ended items were analyzed by using frequency and percentage, while open-ended questions were summarized to supplement the closed-ended responses. Likert scale items were coded and analyzed using descriptive statistics. SPSS version 25 software was used for quantitative data analysis. Handwritten notes from key informant interviews, observations, document analysis, and discussions were analyzed and interpreted through narrative expressions.

4. Results and Discussions

Based on data, from 20 selected TVET colleges, the study identified several key factors impacting low enrollment, including inadequate infrastructure, insufficient trainer competency, outdated or misaligned curriculum, poor quality of training delivery, limited implementation of cooperative training with industry stakeholders, and a low pass rate on Certificate of Competency (COC) exams, resulting in reduced success among graduates. These factors are categorized into internal and external influences on training quality and the findings are discussed in the following sub topics.

4.1. Infrastructure capacity of TVET colleges

Capacity of TVT institutions could negatively affect quality of the graduates because of the fact that such an institution lack training equipment and machineries which accommodate the latest technologies. TVT deans in some regions, like Amhara, Oromia and Sidama argue in support of this idea. Deans in these TVT institutions confirmed that TVTs lacked the necessary tools and equipment to train the students adequately and that in turn will decrease the likelihood of getting employment opportunities. Consequently, new entrants may not be interested to join TVTs to stay two to four years in those institutions. A peculiar observation is caught from TVT trainees in SNNP region (Basketo & Sawla), where nearly two-third of the trainees in automotive and ICT departments quit the study before completing the program due to absence of basic training equipment required for the training. However, some deans don't agree with this attribution; they claim that institutional capacity doesn't have an impact on enrollment. A TVT dean has the following to say:

> *Before some years the infrastructural capacity of our institution was limited, but we had enrollment rate far better than today. Currently, we are at a better standing but the grade 12 completers' interest to enroll in our institution is declining, our training equipment are more or less fulfilled. Yet, we have been unable to attract more trainers. The COC passing rate for Level-III and above has also increased from 68% in 2022 to 72% in 2023, and yet new enrollment goes inversely.*

These participants rather attributed the declining trend of new enrolment to other factors, like limited employment opportunity and new developments following the endorsement of thoughts of the education roadmap. These participants argue that the enrolment decline is temporal, which may be reversed once awareness is created to parents and students on the changes introduced by the education roadmap.

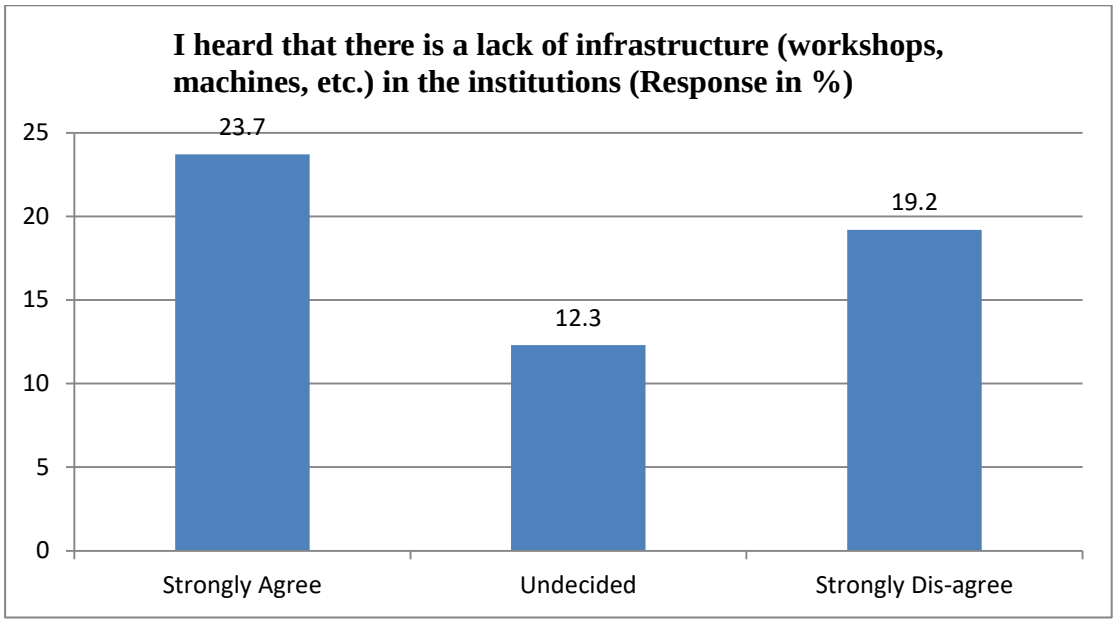


Figure 1: Responses related to lack of infrastructure

Organizational capacities are also critical factor in TVT. The overall infrastructures are not found in a situation able to provide proper training. Lack of qualified TVET in terms of human resources, materials and infrastructure that attract trainees and impart sufficient knowledge and skills are also the main concern. Allocation of very limited budget to public colleges hinders the training quality at large. This is the main factor which results lack of confidence to be exhibited in TVET graduates. Even in the future, if there is no other means to support public TVT colleges with appropriate budget the training quality gets severe problem.

There is severe shortage of training material for practical skill training; as a result; there is no opportunity to learn by doing projects. How is it possible to be competent with such training gaps? The situation leads the students to lose their moral. Critical problem related to training material (tools and equipment, raw materials). It brings dissatisfaction among trainees. As a result, many students subjected to dropout their training. Such situation has its own impact that TVT to be perceived negatively. Absences of enough input including machinery, classrooms, and building in TVT is also an obstacle to creating qualified graduates.

4.2. TVET college trainers' competency

The TVET college trainers are not willing to update themselves. No one supports the trainees to read different materials. There is practice of immediate curriculum revision, and it is not supported by training for trainers. Trainers' training methodology is a critical problem of the sector. It is necessary to update trainers to have the right knowledge and skills of pedagogy. Trainer's long-term capacity building training at FTVTI needs attention. Some of the trainers return without better knowledge, skill, attitude and confidence. As one and critical factor, working on continuous professional development for trainers is paramount to bring quality training. The capacity building schemes in TVT is very limited. Many trainers train without proper training methodology. Similarly, there is visible skills gap of trainers in many occupational areas. Nowadays, private colleges are full of students without keeping class room size standards. We have a lot of training resources but with of trainee. It needs attention.

The ignorance of FTVTI certificate (BSC) with other higher institution is also a headache and a great bottle neck which prevents most of us not able to study the next educational career by our expenses. It has its own influence in keeping quality TVT delivery. The teachers are not teaching students seriously. Teachers are occasionally absent from the class. That is, even if they come to class, they do not teach them properly. Then, they began to drop from the class. The other thing is our training delivery becomes theoretical. The training tools and equipment are out of date. They are out dated from the market.

4.3. Curriculum of TVET programs

The main problem is related with the curriculum that we have used. In one hand, the time given needs extra years beyond the expected nominal time. On the other hand, there is unexpected revision of curriculum without in depth discussion with responsible bodies. The situation also disturbs the training system and enforces trainers to lose their working motive and satisfaction. We are delivering a training which is not compatible to the industry standard. The training itself is handicapped. All these factors have cumulative effect on poor quality of training delivery.

Regarding the curriculum, most of the time, there is a tendency of "copy and paste". There is no proper contextualization. Curriculum revision becomes simply nominal hour adjustment. It has its own negative effect on training delivery and producing qualified graduates. Regional curriculum preparation practice also exposed to poor quality curriculum output. One of the problems is unexpected dynamism of occupational standard and curriculum. For example in my occupation, Automotive, in 2012 E.C, 2014 E.C the curricula were revised. There is no justified reason, and also there is no smooth transition from one practice to the other as it seems military commands "Stop the previous and start the new one". The expertise discussion in curriculum and OS development is very limited. Some individuals who have good communication (friends and relatives) with Regional and Federal experts were invited repeatedly. Similar practices were done without new experience and expertise's knowledge and skills. The same garbage" ASSES GESSES" developed and disseminated. The curriculum revision sometimes does not consider the next carrier of students. In some occupations,

transition opportunity to the next carrier is blocked. Sometimes, due to curriculum revision, trainees were subjected to be assessed with new curriculum. There is mismatch between access and quality. There are a lot of colleges established, but their organization is almost empty. There is a problem with quality teachers. Whenever there is a change in the curriculum, there should be training for the teacher, but this is not properly done in TVT.

4.4. Low quality of Training delivery in TVET colleges

Graduates get employment opportunity only if they acquire the underpinning knowledge and skills set for the level, and this has to be approved in external assessments, like the COC. Nevertheless, participants of this assessment claim the skills acquired by TVT graduates seldom match the needs of the labour market. Not only are they unable to secure employment opportunity, but also reasonable share of TVT trainees especially those graduated in Level-III and above still remain 'not yet competent' in the COC assessment. This, according to panel discussants in different regions (Sidama, SNNP, Oromia, and Amhara), is mainly associated with low training quality in TVT institutions. One of the panel discussants in Sidama region (Aleta Wondo TVT) regrettably said ''most of the unemployment was due to the lack of capacity of the graduates to create jobs. They don't have the necessary skill to create and run a business.'' Trainers' competency plays a significant role in creating graduates with the required competency. However, participants in almost all regions are challenged with getting qualified teachers both for the high school and TVT. This led to unqualified graduates who are competent neither to create own jobs nor to secure employment opportunity. The more this information is disseminated, the higher is the likelihood for new entrants to abstain from joining government TVT institutions.

4.5. Implementation of cooperative training and shortage of industries

The majority of the regions of the country suffer with shortage of industries that could be able to support the students and graduates. If available in a reasonable amount, they could have played two roles for giving students practical training as apprentices and employing the graduates. As the participants from Sawla PTC and Laska industrial college (Basketo), both from Southern Ethiopia region; Debre Markos, Debre Tabor, Gonder from Amhara; Jigjiga from Somali; Chiro, Chercher from Oromia; Dilla from South Ethiopia reported that there is a high scarcity of industries to support both the students and graduates.

At a panel discussion in Haromaya PTC, all families, trainers, students unanimously raised the absence of industries as a key factor for low enrollment rate of students. Even, the available industries show little or no interest for accommodating TVT students in whatever ways as apprentices and as employees. As one of the parents who has a child at Trainee TVT college witnessed, students who are sent to some industries get no chance to get trained on machines than washing and cleaning of machines and workshops. Because of this, children could not get market oriented training. Due to this, panelists at different centers request the government to draft law that force industries to take TVT trainees for practical training or cooperative training.

On one hand, industries hesitate to employ the graduates of TVT, giving priority to university graduates claiming that they need holistically trained human power. Besides, industries prefer low-cost labor and hire 8th and 10th graders with little wage as they are not professionals. They feel that TVT graduates demand better pay since they are qualified. They consider the graduate of TVT expensive to employ. In the industrial parks, they trained workers in one specific duty, which was easy to learn. The industries in the industrial park wanted low-skilled workers. An interview with TVT Dean at Sidama discloses;

> *The industries employ anyone who wanted the job. They simply give them a week's training and give them a job. Thus, students preferred to directly go to the industries and seek jobs than spend two years in training. This gives an advantage to untrained workers, giving them more experience than the TVT graduate who spends time in the institution.*

It is in some areas, like Chiro and Aleta wondo, that the sector's key stakeholders are reported to play a crucial role in promoting the sector and attracting trainees; however, because their expectations have not been met, the projected enrollment of trainees has been reduced. There is lack of industry for practical training. It has a negative influence on trainees' performance and level of competence. The situation results their competitiveness and the possibility of employment. There should be real TVT-industry linkage that functions beyond memorandum of understanding (MoU). They are expected to be open to support the system.

4.6. Failing level of COC exams and less success rate of graduates

One of the main objectives of education and training is to produce a skilled and viable work force. If this so, educated man power is an asset for the country, the community as well as for the individual itself. Educational institutions are accountable to equip individuals with the necessary knowledge, skills and attitude. For this reason, different kinds of assessments are employed to check the utility of education, and amendments are made in the curriculum based on the result of these assessments.

Curriculum and occupational competence assessment (COC) should be aligned, and the assessment package quality problem also needs attention. In Ethiopia from 2000 E.C on, competence assessment center was established. This center operates in different regions of Ethiopia, having the occupational standards as a criterion for measuring the required competence of the candidates. The candidates who successfully pass the assessment of this center are certified and are said to be 'competent' and those who are not qualified accordingly said 'not yet competent' then given the chance to retake the test when they are ready to do so. The learning outcome, i.e, competences, is formulated in terms of knowledge, skill and attitudes (KAS). Hence, it is important to develop a consistent and coherent terminology of KAS for defining competence and learning outcome requirements. In measuring the competence of the graduates, the center administered paper and pencil test to check whether they possess the necessary knowledge and practical test to check that they have the necessary skills. The assessment is done with respect to the level and occupation (department) of the graduates.

To increase the effectiveness of technical and vocational education and training (TVT), the government bodies refer different country by experiences and develop new and effective methods to get the maximum benefit from this sector. As the Ministry of Education (MOE, 2006) describes, in 2003, the Ministry of Education together with the Ethio-German TVT Program developed an Ethiopian TVT Qualification System. The 2003 TVT Qualification System already included basic level descriptions outlining the target work environment, the scope of responsibility intitule workplace, as well as some initial indications of the expected competence at different qualification levels.

While it needs three or four years to complete a level III or IV certification in TVT, a private college certifies degree only within two or three years. Besides this, since the COC exam is very strict when it is offered in the TVT, only few students are able pass the exam. While almost all private college students easily pass the COC exam because of the money given to the COC examiners to attract students. Therefore, many students want to attend in private colleges so as to get the COC certificates easily instead of failing to pass this exam after suffering for long years.

> *I don't want to spend four years for level II or III certification, while I can get degree only within two or three years." S2 He added that "only very few graduates of TVT pass the COC while almost all graduates of the private colleges get their COC certificate easily.*

5. Conclusions

The following conclusions were made based on the findings.

1. The relevance of curriculum, the expertise of instructors, and the adequacy of resources are pivotal. Findings likely reveal that outdated curricula, insufficiently skilled instructors, and limited resources contribute to low enrollment rates.
2. Partnerships with employers, internship opportunities, and robust job placement services make TVET programs more attractive. When students see a clear pathway to employment, they are more likely to enroll. The study likely shows a positive correlation between industry alignment and enrollment rates, as industry-aligned programs meet the labor market's demand and offer students a tangible return on investment.
3. Based on the above factors, the study concluded that strengthening training quality, support services, and industry alignment can address low enrollment rates in Ethiopian TVET colleges. A strategic emphasis on these areas can create a more supportive and employment-oriented training environment that appeals to prospective students and encourages them to stay.

Generally, enhancing training quality, offering robust supportive services, and aligning with industry needs are essential to increasing both enrollment and retention in Ethiopian TVET programs. Enhancing the financial capacity of TVT institutions using mechanisms, like endorsing directives that allow TVT institutions multiply internal revenues, building human

resource capacity of writing winning grants, and reconsidering the budget allotment from government may work to improve infrastructural capacity of TVT institutions.

6. Recommendations

The following recommendations were forwarded based on the conclusions.

- Secure additional funding to upgrade equipment, materials, and learning spaces to align with modern industry standards.
- Establish continuous capacity-building programs to improve trainers' technical and pedagogical skills, ensuring they can effectively deliver quality education.
- Engage industry professionals in curriculum development to ensure the curriculum is relevant, up-to-date, and provides clear career pathways.
- Develop policies that incentivize industries to collaborate with TVET institutions through apprenticeships, internships, and cooperative training agreements.
- Ensure COC exams and other competency assessments align with curriculum goals, providing consistent, industry-relevant benchmarks for students' skills.

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