

## Factors Affecting Effective Implementation of Technical and Vocational Education and Training (TVET) in Ethiopia: A case study in Entoto Polytechnic College, Addis Ababa.

Dennebo Mekuria <sup>1</sup>, Dr. Harikrishnan M. <sup>2</sup>

<sup>1</sup> Research Scholar) School of Education, Sharda University, Knowledge Park III, Greater Noida-201310  
[dennebomk@gmail.com](mailto:dennebomk@gmail.com)

<sup>2</sup>(Assistant Professor) School of Education, Sharda University, Knowledge Park III, Greater Noida-201310  
[harikrishnan.madhusoodanan@sharda.ac.in](mailto:harikrishnan.madhusoodanan@sharda.ac.in)

**How to cite this article:** Dennebo Mekuria, Harikrishnan M. (2024) Factors Affecting Effective Implementation of Technical and Vocational Education and Training (TVET) in Ethiopia: A case study in Entoto Polytechnic College, Addis Ababa. *Library Progress International*, 44(2), P. 1086-1096.

### ABSTRACT

The capability of technical and vocational education and training to update and enhance individuals understanding, abilities, and skills and prepare them to meet the ever-changing demands of the labour market and society makes it an appealing development of human resources approach. However, a various factors have been affecting effective implementation of TVET in Ethiopia. A case study research design has been used to identify the factors affecting effective implementation of TVET in Entoto Polytechnic College of Addis Ababa, Ethiopia. Quantitative research method was used. A total of 145 trainees from the TVET college were randomly selected for this study. As per the findings of this study, challenges primarily in infrastructure, consumable materials, TVET funding, and inadequate supply of qualified trainers have been identified as the government related elements. Moreover, institutional elements such as inadequacy in teaching strategies, inadequately furnishing of labs/workshops/libraries, and inadequate supply of instructional materials have been revealed being factors affecting effective implementation of TVET. In addition to these, issues such as lack of motivation, lack of resources, distance from the college, and assessment practices are perceived as concerns with regard to trainees related elements affecting effective implementation of TVET. Furthermore, absence of motivation for teaching, insufficient proficiency in their field of expertise, poor staff office and poor condition of work, inadequate textbooks and other educational resources for TVET, and inadequate teaching preparation were identified as elements relating to trainers. Finally, the researcher has pointed out recommendations for improvement.

**Key words:** - Education; Technical; Training; Vocational; TVET; Competency based Education

### 1. Introduction

Education is an instrument for human advancement, social mobility, and socioeconomic progress in any community. Moreover, Education is a learning process that aims to impart knowledge, foster skills, and foster capabilities that may help improve mental acuity and a positive attitude on life. People who have a proper education will be able to advance their own interests as well as the growth and prosperity of their immediate society (Okoye & Okwelle, 2013). It has long been acknowledged that education plays a crucial role in promoting social and economic advancement. Education increases one's capacity for function and analysis, which increases one's access to the labour market and to sources of income for individuals as well as for society. If we are to satisfy the labour supply demands of more rapid development, we must have a better educated labour force. In addition to being a useful tool for increasing productivity, education also serves as a means of improving the general standard of living for both individuals and society as a whole. Knowledge and skills are the foundations of any nation's social and economic advancement (Goel, 2017)

Vocational and technical education (TVET) refers to any learning that prepares individuals for employment, whether it be formal learning (offered by an institution of learning and leading to certification), non-formal learning (training that occurs outside of the formal system), or informal learning (learning that results from daily activities related to work, family, or leisure) (Khan et al., 2020). Vocational education is a form of technical teaching which guarantees the availability of manpower for a definite occupation or specialized activity in accordance with the country's labour market needs (Ramadan & Chen, 2018). Moreover, TVET is a term used to describe a series of learning experiences pertaining to the workplace that might occur in a wide range of educational contexts, which includes educational institutions and the workplace (Salleh & Sulaiman, 2020). Furthermore, TVET is referred to be the "engine of economic development and international competitiveness" by the European Union (EU) (Azzoni & Arbizu, 2013). Nations need to transition to a knowledge-based economy, and the strength of its competitive advantage will depend on how well its people can produce, share, and apply knowledge. Nations will need to train its workforce to become knowledge workers that are more adaptive, versatile, and analytical (Stromquist & Monkman, 2014).

Ethiopia was first exposed to modern education almost a century ago. In the 1950s and 1960s, limited vocational education was implemented at the high school and college levels. However, the school system at the time did little to alter the perspectives of the trainees or assist them in ending their reliance on government employment and learning how to start their own businesses in the private sector (MoE, 2002). With regard to vocational and technical education, Ethiopia first adopted it in 1942. The earliest TVET institution to establish in Addis Abeba was the Ecole National des Artes Technique, later known as Addis Abeba Technical School. The goal of TVET in Ethiopia is to create middle-level workers who can contribute to the economic and social growth of the country, by enhancing living standards for all Ethiopians and eradicating poverty sustainably. These workers should be competent, motivated, adaptable, innovative, and self-reliant. It also intends to develop the culture of self-employment and promote economic job growth (MoE, 2008).

For its ability to update and advance manpower in knowledge, skills, and competence and enable them to respond to the dynamic changes in societal and requirements of the labour market, vocational and technical education (TVET) is a preferred strategy for human resource development. In this regard, governments are coming under growing pressure to broaden the extent and size of their national TVET programs as a result of changes in technology, population, and the emphasis on lifelong learning. However, TVET continues to be the "poor relative" of educational systems due to insufficient public funding, a lack of qualified teachers, and a lack of data and research that is comparable internationally (Rawkins, 2018). According to Hai (2012) the main issues with the TVET sector in emerging countries are destabilization in TVET organization and management, poor capacities of TVET institutions managers, limited capacity of Instructors, training courses that are not well matched to the variety of needs of labour markets and employers, limited awareness of and access to the TVET system.

Although there are some studies with limited research methods and sample sizes conducted in Ethiopia, more researches are required to pinpoint the major factors affecting effective implementation of technical and vocational education and training in the City Administration of Addis Ababa, Ethiopia. Hence, this study entitled "factors affecting effective implementation of technical and vocational education and training in Ethiopia: A case study in Entoto Polytechnic College" has been recommended after a thorough review of related literature.

### **Review of Related Literature**

**Zite, B.N. and Deebom, M.T., (2017)** indicated that, this study focuses at the hurdles, obstacles, and solutions for change related to technical vocational education and training (TVET) in order to boost national development. It is commonly acknowledged that Technical Vocational Educational and Training (TVET), together with its practical training component, is essential for any country to become internationally competitive in the global market and technologically relevant. Despite this, technical and vocational education are still largely disregarded when it comes to proper funding, staffing, up-to-date facilities, and employee motivation. As a result, the nation is losing out on the economic development that these graduates could have brought about. The study included 74 TVET lecturers in total and employed a method based on descriptive statistics. The investigators used a tool called the self-structured questionnaire to gather data. The result showed that TVET, through its pertinent hands-on teaching element, is extensively regarded as the significant to any country suitably technically significant and globally economical in the worldwide marketplace. Despite this, there are still many obstacles to vocational and technical training in Nigeria. These obstacles include a shortage of necessary TVET infrastructures, insufficient financing for TVET program, and much of maintenance costs for TVET institutes, all of which prevent the country

from benefiting from the economic development that graduates of technical/vocational education can bring about.

**Likisa, K.D., (2018)** stated that in Ethiopia's educational system, one of the key priority areas is Technical and Vocational Education and Training (TVET). TVET was established to address issues of joblessness, impoverishment, lower technological advancement, and poor economic production (MoE, 2008). In response to the skill demands of the labour market, TVET with focus on competency-based education (CBE) was implemented in Ethiopia in 2004. In order to assure graduates' employability, the main goal of this study was to determine if TVET curriculum were properly connected with occupational standard. It also aimed to assess the curriculum's suitability for ensuring beginners proficiency. Three experts from the centre of competency, sixty-four instructors, and two hundred and ten Adama Science and Technology University alumni were the primary sources of knowledge. The research participants' information was gathered via a questionnaire. Descriptive statistics including frequency, percentages, and mean scores were used in the data analysis. The study revealed that competency-based education (CBE) which is the form of vocational and technical education (TVET) is not properly connected with occupational standards, making graduates unemployed. Moreover, the nature, focus, assessment, and curriculum development of CBE were also found to be poorly understood by instructors, Centre of Competency (CoC) experts, and alumni students.

**Yamada, S., Otchia, C.S. and Taniguchi, K., (2018)** conducted the study which aimed to find out which characteristics of garment production vary from those of Addis Ababa industrial executives in terms of vocational education teachers' predictions and assessments of employees' ability. The researchers looked at abilities on 4 areas on which production of garment goes through: patterning garment, structural understanding of garment, fabric assembly with a sewing machine, and garment finishing. The researchers used the same four areas in an assessment of company executives and vocational teachers on the abilities they anticipated garment employees required. According to the findings, vocational teachers anticipate trainees gain a broad set of abilities and rate workers' skills more generously, whereas factory managers seek quality rather than diversity and grade workers' performance more critically. These inequalities are amplified by differences in assessors' educational backgrounds and practical experience.

**Boldrini, E., Sappa, V., & Aprea, C. (2019)** in their study, they examine resources and perceived challenges among vocational education and training (VET) teachers as a preliminary step towards examining teachers' resilience. It is based on an ecological perspective of teacher resilience. Considering the significant dearth of theoretical and empirical research on this demographic, additional studies on resilience in VET teachers are both pertinent and essential. Interviews with 37 VET instructors in Switzerland were conducted for this exploratory qualitative study in order to pinpoint the resources that needed to be addressed as well as the particular challenges that these trainers encounter. The findings indicate resources and challenges particular to VET teachers in Switzerland. In addition to validating the many protective factors and crucial challenges that emerged from the literature study, a macro contextual analysis highlights the teachers' poor social recognition as a major concern. In addition, the implementation of curriculum reforms causes anxiety and strain because of the necessity of topic modifications and content standardization. We observed teachers' discontent at the micro-system level with regard to students' poor vocational passion and immaturity as well as particular new instructional problems in the teaching of vocational subjects. Teachers saw the opportunity to switch up their professional position by combining extracurricular and academic activities as a helpful resource.

**Ramadan, A., & Xiaohui, C. (2019)** explained that technical and vocational education and training (TVET) system has the potential to be a vital source of human capital for improving the structures of economic development in emerging nations. Nevertheless, the Sudanese TVET system has not made any notable advancements or achievements since this type of education was first introduced in 1902. Using Sudan as a case study, the article aims to discuss the opportunities and problems that emerging nations face. In Khartoum, Sudan, the study was conducted in vocational education centres and technical secondary schools. Purposive sampling was used to establish the sample size, which consisted of seven individuals. Thematic analysis was used to guide the qualitative study of the data. Data from primary and secondary sources were gathered. Open-ended interviews with four students, one parent, and two ministerial TVET specialists were used to gather primary data. The contextual analysis from the empirical studies was included into secondary data. The results showed that, despite

governments in developing nations' constant calls for TVET development, a number of barriers remain in preventing of this field's achievement of the necessary standards and success. These barriers include those related to the management system, training programs for teachers and instructors, curriculum and pedagogy, financial support, societal misconceptions, and technology integration.

**Francisco, S. (2020)** indicated that teachers in vocational education and training (VET) frequently start out with little to no teaching experience and must acquire a great deal of knowledge in the classroom. This study examines the occupational learning experiences of inexperienced VET teachers and the factors that facilitate or impede their learning. We believe that teachers largely pick up the skill of teaching in the same manner as other members of their teaching department. The concept of three distinct kinds of VET teachers—fringe teachers, slum teachers, and teachers with employment contracts or permanent jobs—whose learning is both enabled and hindered in different ways is introduced in this study. We demonstrate, using the theory of practice architectures, how diverse site-specific factors, such as material arrangements, arrangements pertaining to the use of VET and industry-related language, and social-political arrangements, affect teacher learning in the workplace.

According to **Kebede, A. and Asgedom, A., (2021)**, examining Ethiopian Technical University's teacher preparation program for technical and vocational education and training (TVET) is the aim of this study. The research strategy used was a case study, and both qualitative and quantitative data were gathered. 78 prospective trainers who had been chosen purposely and 22 members of the academic staff took part in the study. In order to create an environment that is conducive to TVET's effectiveness, the government has committed to reforming the TVET system. This commitment has been demonstrated by the adoption of sector-based initiatives and the enactment of legal frameworks. These, however, were not put into practice, which prevented TVET from fulfilling its goal of creating a skilled and dedicated labour force that could assist in the nation's development. The study revealed that the training provided by the Technical University does not adequately prepare them to fulfil their teaching responsibilities autonomously and independently, which is where TVET's constraints originate. The training delivery gives much time for theoretical knowledge rather than the development of practical and technological skills. The university teachers are not at the level of a high standard to provide quality training, and the participation of industries in cooperative training is minimal. The curriculum is not guided by competency standards of knowledge, skill, and competence of graduates required acquiring during the training period.

**Tacconi, G., Tütlys, V., Perini, M., & Gedvilienė, G. (2021)** showed that the goal of this study is to identify structures that are similar to and different from the development of pedagogical abilities among trainers and instructors of vocational education and training (VET) in Lithuania and Italy. Instructors from Lithuania and Italy were given a structured survey. The gathered information was examined and contrasted. The findings indicate that there are numerous issues that both countries face when it comes to the development of the pedagogical competencies of VET teachers. These issues include the marginalization of VET teachers' jobs and working conditions, particularly when it comes to their low pay and limited career opportunities, and the lack of or inadequate institutionalization of their training and qualifications. The findings might help managers of teacher training programs and pedagogical development in Lithuania and Italy who look after the work of VET centres and schools. Moreover, authorities at the national and European levels may view the results as an assortment of recommendations.

McPherson, C.B. and Foncha, J.W., (2022) indicated that traditional/academic methods of instruction are what current lecturers in TVET Colleges utilize to teach and learn. These teaching approaches are ineffective with the present student population since, considering the outcomes that first attracted them to TVET colleges, the students enrolled there are insufficient. When seen in this light, the learning difficulties that these student groupings face necessitate that their lecturers do more than just employ conventional teaching techniques in order to meet the needs of their students. This is consistent with the suggestion made by scholars that students with difficulties with learning acquire knowledge in a different way than their non-challenged peers. Findings showed that lack of facilities for the lecturers due to poor management on the allocation of the necessary facilities cannot be ignored. Moreover, TVET colleges experience a great deal of poor institutional management and lecturers reveal that they do not receive adequate support, communication and teamwork from management. Furthermore, the lecturers noted that it has become a common problem within the campus that management creates poorly designed schedule which creates challenges for both students and lecturers alike. Additionally, lecturers have been observed of being

ill-disciplined by misusing the timetable. Finally, they indicated that the college does not offer any skills development related to teaching methods.

**Tilije, R. N. (2020)** explained that around the world, technical vocational education and training, or TVET, is acknowledged as a means of increasing production, reducing poverty, and promoting social and economic advancement. According to the National Policy on Education, Technical and Vocational Education and Training (TVET) can generate people who can lead the country's sustainable growth, staff its numerous sectors, and be self-sufficient. If Nigeria wants to catch up with the rest of the world, the high policy declarations on entry, finances, training programs, curriculum, equipment, and teacher education must be effectively put into practice. However, the poor execution of TVET's programs is harming the emancipatory expectations of the program. This paper investigated the discrepancy between policy and execution and the pressing requirement to align implementation of programs with statements of policy, adopt 21st-century technologies, supply sufficient funds, adequate supplies, and infrastructure; pressure work-school partnership; and update TVET training for teachers based on the necessary competencies in order to optimize the benefits of TVET.

### **Research Design and Methods**

A case study research design has been used to identify the factors that affect the effective implementation of technical and vocational education and training using quantitative data collection and analysis techniques. Trainees in the TVET college were used as the source data for this study. In this regard, a total of 145 TVET trainees have been randomly selected from Entoto Polytechnic College, Addis Ababa. A five-point Likert scale questionnaire was adopted and used to collect data from the respondents. In this regard, Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree are all rated on a Likert-5 scale with numerical values of 5, 4, 3, 2, and 1, respectively.

In order to collect responses on the factors that affect the effective implementation of TVET, an adopted questionnaire was distributed to the respondents and the respondents were given five days to complete the questionnaire. Finally, the researcher collected the completed questionnaire and the return rate was hundred percent. The Statistical Package for version 27 of the Social Science (SPSS) application was utilized to analyse the mean and standard deviation as the statistical method.

### **Research Questions**

The study was guided by the following research questions.

1. What are the government related factors that affect the effective implementation of Technical and Vocational Education and Training in Entoto polytechnic college, Addis Ababa?
2. What are the institutional factors that affect the effective implementation of Technical and Vocational Education and Training?
3. What are the trainees' related factors that affect the effective implementation of Technical and Vocational Education and Training?
4. What are the trainers' related factors that affect the effective implementation of Technical and Vocational Education and Training?
5. What are the possible strategies to tackle the challenges of the effective implementation of Technical and Vocational Education and Training?

### **Objectives of the Study**

The objective of this research is to identify the factors that affect the implementation of Technical and Vocational Education and Training in Entoto polytechnic college, Addis Ababa. More specifically, the research aims:

1. To identify government related factors that affect the effective implementation of Technical and Vocational Education and Training in Ethiopia.
2. To identify institutional factors that affect the effective implementation of Technical and Vocational Education and Training.
3. To identify trainees' related factors that affect the effective implementation of Technical and Vocational Education and Training.

4. To identify trainers' related factors that affect the effective implementation of Technical and Vocational Education and Training.
5. To identify strategies to tackle the challenges of the effective implementation of Technical and Vocational Education and Training.

### Analysis and Interpretation

The study intended to investigate the factors that affect the effective implementation of technical and vocational education and training in Entoto Polytechnic College, Ethiopia. A case study research design was employed to conduct a thorough examination of the issue. In accordance with the research's questions, the findings are discussed and presented as follow.

**Table 1:** perception of respondents on government related elements affecting effective implementation of TVET in Entoto Polytechnic College.

S/N	Item Statement	N	M	SD	Decision
1	Lack of adequate infrastructure, including a library, school buildings, workshops, labs, and leisure spaces.	145	3.86	.764	Accepted
2	Inadequate supply of consumable supplies for TVET	145	3.82	.674	Accepted
3	Inadequate supply of quality trainers with TVET qualifications.	145	4.06	.695	Accepted
4	Funding for TVET is inadequate.	145	3.94	.775	Accepted
5	Government TVET policy is poor.	145	3.61	1.088	Rejected
	<b>Average</b>		<b>3.85</b>	<b>0.799</b>	

Table 1 indicates that the respondents rated the inadequacy of infrastructure in the TVET institution with a mean score 3.86. The relatively low standard deviation suggests that opinions were consistent across the respondents. (Zite and Deebom, 2017; McPherson and Foncha, 2022) have also mentioned lack of infrastructure and necessary facilities as challenges for the implementation of TVET. The mean score of 3.82 indicates a similar perception of respondents on inadequacy in the supply of consumable supplies. (McPherson and Foncha, 2022) showed that lack of facilities affects the provision of TVET. Respondents rated the supply of qualified trainers suggesting a perception of inadequacy. In line with this, (Hai, 2012; Francisco, 2020) showed that poor capacity of trainers is among the challenges of TVET sector in developing countries. Moreover, (Bekele and Asgedom 2021) indicated that the training provided to TVET teachers does not adequately prepare them to fulfil their teaching responsibilities autonomously and independently. The perception of respondents on funding inadequacy is with a mean score close to 4 which suggests a common concern among respondents regarding the funding levels allocated to TVET. In line with this, (Ayonmike et al., 2015; Zite and Deebom, 2017; Ramadan and Xiaohui, 2019) have showed that TVET funding is inadequate which in turn affects the proper implementation of TVET. The data reflects perceptions that TVET institutions face challenges primarily in infrastructure, consumable materials, TVET funding, and inadequate supply of qualified trainers. These perceptions can guide policymakers and stakeholders in identifying areas that may need improvement to enhance the quality and effectiveness of TVET programs.

**Table 2:** perception of respondents on institutional elements affecting effective implementation of TVET in Entoto Polytechnic College.

S/N	Item Statement	N	M	SD	Decision
6	Trainers in TVET use weak teaching strategies.	145	3.96	.763	Accepted
7	Poorly maintained facilities in the TVET department	145	4.03	1.003	Rejected
8	Inadequately furnished labs, workshops, and libraries	145	3.90	.664	Accepted

9	Inadequate supply of instructional materials for TVET	145	4.06	.705	Accepted
10	unfavourable atmosphere at school.	145	3.78	1.175	Rejected
	<b>Average</b>		<b>3.94</b>	<b>0.862</b>	

Table 2 showed that the respondents perceive the teaching strategies employed by trainers in TVET are weak. The finding of (Hunde and Tacconi, 2017; Ayonmike et al., 2015) in line with this indicated that poorly prepared teachers lacking pedagogical skills are employed to deliver training. This has led to poor quality TVET and a mismatch between the needs of the labour market and training. The relatively low standard deviation indicates a moderate level of agreement among respondents. Moreover, the respondents indicated that there is inadequacy in the furnishing of labs, workshops, and libraries in TVET. The lower standard deviation indicates more agreement among the respondents. Respondents feel that there is an inadequate supply of instructional materials for TVET. In this regard, (Zite and Deebom 2017; McPherson and Foncha, 2022) have indicated that labs, workshops and libraries are inadequately furnished and there is inadequate supply of instructional materials for TVET. The standard deviation suggests a moderate level of agreement among participants. The average score across all items is 3.94, with a standard deviation of 0.862. This suggests that the respondents generally perceive the institutional elements related to TVET to be in need of improvement. These findings suggest potential areas for improvement in the TVET institution, focusing on enhancing teaching strategies, improving supply of instructional materials, and possibly addressing the furnishing of labs/workshops/libraries.

**Table 3:** perception of respondents on trainees related elements affecting effective implementation of TVET in Entoto Polytechnic College.

S/N	Item Statement	N	M	SD	Decision
11	Absence of motivation to learn	145	3.86	.683	Accepted
12	Lack of study resources and textbooks for TVET	145	3.88	.702	Accepted
13	Distance of the college from residence	145	3.90	.674	Accepted
14	Absence of tuition fees	145	3.85	1.076	Rejected
15	Assessment and evaluation practices	145	3.81	.726	Accepted
16	Absenteeism	145	3.73	1.156	Rejected
	<b>Average</b>		<b>3.83</b>	<b>0.836</b>	

Table 3 indicates on average that trainees perceive a moderate level of absence of motivation to learn, with responses clustering around 3.86 mean score. The relatively low standard deviation suggests that responses were consistent across respondents. (Buthelezi, 2018) in his study have showed the unintended perception of students toward TVET. Trainees similarly perceive a moderate level of lack of study resources and textbooks for TVET with the mean of 3.88. In this regard, the study by (Ayonmike, et al., 2015) also showed that there are lack of necessary resources and facilities for TVET. The distance of the college from residence is perceived to be an issue with a mean of 3.90. The lower standard deviation indicates more agreement among the respondents. Trainees perceive assessment and evaluation practices with a mean of 3.81, indicating a moderate level of concern. Accordingly, (Ayonmike, et al., 2015) also indicated that poor assessment of TVET students' competency has been shown as a concern. From the analysis of this data, it is indicated that trainees in TVET settings face several challenges that impact their learning experience.

**Table 4:** perception of respondents on trainers related elements affecting effective implementation of TVET in Entoto Polytechnic College.

S/N	Item Statement	N	M	SD	Decision
17	Absence of motivation for teaching	145	3.84	.704	Accepted
18	Insufficient proficiency in their field of expertise	145	3.85	.730	Accepted
19	Poor staff office and poor condition of work	145	3.93	.597	Accepted
20	Absence of interest to participate in training sessions, seminars, and workshops that will refresh their knowledge and abilities	145	3.85	1.076	Rejected
21	Inadequate textbooks and other educational resources for TVET	145	3.90	.670	Accepted
22	Teaching preparation was inadequate	145	4.01	.717	Accepted
	<b>Average</b>		<b>3.89</b>	<b>0.749</b>	

Table 4 indicates that respondents rated trainers as not being motivated for teaching, with relatively consistent responses among respondents. In line with this, (Ramadan & Xiaohui 2019; Okolie et al., 2020) had indicated that lack of motivation for teaching as a challenging factor to trainers. Moreover, participants showed that trainers lack proficiency in their fields of education. Studies of (Ramadan & Xiaohui, 2019; Pirzada et al., 2022) have reported the similar result in their studies. The third item had an average score of 3.93, indicating that respondents generally perceived the staff office and work conditions as poor. Relating to this, (Zite & Deebom 2017; McPherson & Foncha, 2022) in their studies had shown the same results. The low standard deviation of 0.597 suggests a more consistent opinion among respondents on this issue. Respondents rated the fifth item at an average of 3.90, with a standard deviation of 0.670. This suggests that respondents generally perceived the availability of textbooks and educational resources as inadequate. In line with this, (Okolie, et al., 2020; Zite & Deebom, 2017; McPherson and Foncha, 2022) indicated same findings in their studies. Furthermore, the sixth item received the highest average score of 4.01, indicating that respondents feel that teaching preparation is inadequate. With regard to this, (Ramadan & Xiaohui 2019; Okolie, et al., 2020; Pirzada et al., 2022) have also showed that teachers' preparation for teaching needs improvement. The overall average score of 3.89 indicates that respondents have moderately critical perceptions across these aspects related to the availability of textbooks and educational resources as inadequate, work environment and professional development, and trainers lack proficiency in their fields. This data highlights areas where improvements could potentially enhance the effectiveness and satisfaction of trainers in the TVET sector, such as enhancing motivation, improving proficiency, upgrading work conditions, and providing better resources and professional development opportunities.

**Table 5:** perception of respondents on institutional elements affecting effective implementation of TVET in Entoto Polytechnic College.

S/N	Item Statement	N	M	SD	Decision
23	Improving funding for TVET programs	145	4.19	.601	Accepted
24	Hiring competent TVET trainers	145	4.28	.674	Accepted
25	Sufficient provision of equipment and facilities to enable effective TVET implementation	145	4.15	.793	Accepted
26	TVET trainers' retraining to keep their knowledge and abilities updated	145	4.13	.648	Accepted
27	Effective supervision of TVET programs	145	4.23	.717	Accepted
28	Establishing a collaboration between enterprises and TVET institutions	145	4.15	.673	Accepted
	<b>Average</b>		<b>4.18</b>	<b>0.684</b>	



Table 5 showed that funding TVET is generally well-rated, indicating that improving funding is seen as important, with relatively low variability in respondents' opinions. Hiring competent trainers is also highly rated, with a higher average score compared to funding. Ensuring adequate equipment and facilities is also rated above average. Retraining trainers is considered important, similar to equipment provision. Effective supervision is highly rated, with a score above the overall average. The standard deviation indicates moderate variability in how respondents view this solution. Collaboration between enterprises and TVET institutions is also rated well. With this regard, (Tilije, 2020) indicated that these are the strategic solutions in order to optimize the implementation of TVET. The lower standard deviation indicates more agreement among the respondents. The average rating across all strategic solutions is 4.18, indicating a generally positive perception of these strategic solutions. Hiring competent trainers and effective supervision are rated highest among the listed solutions. These ratings suggest that there is consensus on the importance of funding, competent trainers, equipment provision, retraining, and effective supervision, and collaboration with enterprises as strategic solutions for challenges of TVET.

### **Conclusion**

The capability of technical and vocational education and training to update and enhance individuals' knowledge, abilities, and attitude and prepare them to meet the ever-changing demands of the labour market and society makes it an appealing development of human resources approach. However, a various factors have been affecting the effective implementation of TVET in Ethiopia. As per the findings of this study, challenges primarily in infrastructure, consumable materials, TVET funding, and inadequate supply of qualified trainers have been identified as the government related elements. Moreover, institutional elements such as inadequacy in teaching strategies, inadequately furnishing of labs/workshops/libraries, and inadequate supply of instructional materials have been revealed being factors affecting effective implementation of TVET. In addition to this, issues such as lack of motivation, lack of resources, distance from the college, and assessment practices are perceived as concerns with regard to trainees related elements affecting effective implementation of TVET. Furthermore, absence of motivation for teaching, insufficient proficiency in their field of expertise, poor staff office and poor condition of work, inadequate textbooks and other educational resources for TVET, and inadequate teaching preparation were identified as elements relating to trainers. Based on the findings, the researcher recommends that enhancing TVET funding, hiring competent trainers, equipment provision, retraining of trainers, and effective supervision, and collaboration with enterprises as strategic solutions for tackling the challenges of the implementation of TVET in Addis Ababa, Ethiopia.

### **References**

- Abagissa, J. (2021). The assessment of micro and small enterprises performance and challenges in Addis Ababa, Ethiopia. *International Journal of Applied Economics, Finance and Accounting*, 9(1), 8-18.
- Agrawal, T. and Agrawal, A., (2017) Vocational education and training in India: a labour market perspective. *Journal of Vocational Education & Training*, 69(2), pp.246-265.
- Ayonmike, C. S., Okwelle, P. C., & Okeke, B. C. (2015). Towards Quality Technical Vocational Education and Training (Tvet) Programmes in Nigeria: Challenges and Improvement Strategies. *Journal of Education and Learning*, 4(1), 25-34.
- Azzoni, L. and Arbizu, F., (2013) TVET and skills development in EU development cooperation 2012/3080551, final report (p. 14). European Commission.
- Boldrini, E., Sappa, V., & Aprea, C. (2019). Which difficulties and resources do vocational teachers perceive? An exploratory study setting the stage for investigating teachers' resilience in Switzerland. *Teachers and Teaching*, 25(1), 125-141.
- Buthelezi, Z. (2018). Lecturer experiences of TVET College challenges in the post-apartheid era: a case of unintended consequences of educational reform in South Africa. *Journal of Vocational Education & Training*, 70(3), 364-383.

- Damit, M.A.A., Omar, M.K. and Puad, M.H.M., 2021. Issues and challenges of outcome-based education (OBE) implementation among Malaysian vocational college teachers. *International Journal of Academic Research in Business and Social Sciences*, 11(3), pp.197-211.
- Francisco, S. (2020). What novice vocational education and training teachers learn in the teaching workplace. *International Journal of Training Research*, 18(1), 37-54.
- Goel, D. V. P. (2017). Technical and vocational education and training (TVET) system\in india for sustainable development.
- Hai, N.M., (2012) Improving the Relevance of the TVET System to the Needs of the Business Sector.
- Hunde, A. B., & Tacconi, G. (2017). Professionalization of VET teachers in Ethiopia: The current practices, the challenges and the way forward. *Vocational Education and Training in Sub-Saharan Africa*, 329.
- Kebede, A. & Asgedom, A., 2021. Exploratory Case Study on Technical and Vocational Education and Training Teacher Training in Ethiopia. *European Journal of Science, Innovation and Technology*, 1(3), pp.9-21.
- Khan, A., Siddiqui, S.H. & Abbasi, M.I., 2020. Professional Development as a Determinant of Self-efficacy of TVET Teachers, under the Mediating & Moderating Effect of Technology Training and Work Culture. *Pakistan Journal of Social Sciences (PJSS)*, 40(2), pp.745-757.
- Likisa, K. D.(2018) Challenges and prospects of competency-based education: The case of adama science and technology university alumni students and hawas TVET college, adama, Ethiopia. *The Journal of Competency-Based Education*, 3(2), e01163.
- McPherson, C.B. & Foncha, J.W., 2022. Investigating appropriate teaching strategies used by TVET college lecturers to overcome challenges in teaching and learning. *European Journal of Economics*, 6(1).
- MoE, E. (2002). The education and training policy and its implementation. Addis Ababa
- Ministry of Education, (2008). National Technical and Vocational Education and training (TVET) strategy: Addis Ababa, Ministry of Education.
- Okolie, U. C., Elom, E. N., Igwe, P. A., Nwajiuba, C. A., Binuomote, M. O., & Igu, N. (2020). How TVET teachers foster employability skills: insights from developing countries. *International Journal of Training Research*, 18(3), 231-249.
- Okoye, K.R.E. and Okwelle, P.C., (2013) Technical and vocational education and training (TVET) in Nigeria and energy development, marketing and national transformation. *Journal of education and practice*, 4(14), pp.134-138.
- Pirzada, G., Muhammad, Y., & Mahmood, A. (2022). Assessment challenges faced by technical vocational education (TVET) stakeholders in pakistan: Stakeholders' perspectives. *Research Journal of Social Sciences and Economics Review*, 3(4), 17-26.
- Ramadan, A. & Chen, X. (2018) Teachers'perceptions on ICT Integration in TVET Classes: A Case Study in Khartoum State-Sudan. *Sciences*, 4(2), Pp.639-654.
- Ramadan, A., & Xiaohui, C. (2019). Challenges and Opportunities of TVET in Developing Countries: A Case of Sudan. *Developing Country Studies*, 9(10), 77-87.
- Rawkins, C., (2018) A global overview of TVET teaching and training: Current issues, trends and recommendations. 13th Session of the Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART). International Labour Organization.
- Salleh, K. M., & Sulaiman, N. L. (2020). Reforming Technical and Vocational Education and Training (TVET) on workplace learning and skills development. *International Journal of Recent Technology and Engineering*, 8(5), 2964-2967.

Stromquist, N. P., & Monkman, K. (2014). Defining globalization and assessing its implications for knowledge and education, revisited. *Globalization and education: Integration and contestation across cultures*, 1, 1-21.

Tacconi, G., Tütlys, V., Perini, M., & Gedvilienė, G. (2021). Development of pedagogical competencies of the vocational teachers in Italy and Lithuania: implications of competence-based VET curriculum reforms. *European Journal of Training and Development*, 45(6/7), 526-546.

Tilije, R. N. (2020). Technical and vocational education and training in Nigeria: Bridging the gap between policy and practice. *Kashere Journal of Education*, 1(2), 79-88.

Yamada, S., Otchia, C.S. & Taniguchi, K., (2018) Explaining differing perceptions of employees' skill needs: the case of garment workers in Ethiopia. *International Journal of Training and Development*, 22(1), pp.51-68.

Zite, B.N. & Deebom, M.T., (2017) Enhancing technical vocational education and training (TVET) as a tool for national development in Nigeria: issues, challenges and strategies. *Journal of Education, Society and Behavioural Science*, 21(4), pp.1-9.