Dilla Journal of Education
https://www.du.edu.et/duj

Cooperative Training as a Means of Implementing Dual Training Model for Sustainable Employment Opportunity in SNNPR, Gedeo Zone

Mesfin Demissie Ducalie[1,*], **Mesfin Molla Demissie**[1], **and Roza Belew Abebe**[1]

[1] Department of Educational Planning and Management, Dilla University, Ethiopia

Received: 30 June 2022 Accepted: 25 September 2022 Published: 12 October 2022

ARTICLE INFO.

Key words/phrases: Cooperative training, Trainers, Trainee, TVET

Abstract

Cooperative training in vocational education is a dual training system developed in collaboration between businesses and TVET institutions. It aimed to provide trainees with employable skills by spending the majority of their courses in practical sessions. The main objective of the study is to explore the role of cooperative training in tracking unemployment in TVET colleges. To achieve this goal, three major research questions were formulated. These are the current cooperative training statuses. How does cooperative training help to reduce unemployment? What factors are influencing cooperative training? To answer these research questions, 385 research participants were involved for both quantitative and qualitative data. Multistage sampling was employed. An embedded mixed research design was used. Both descriptive (frequency, percentage, and mean) and inferential (ANOVA and regression) statistics were implemented to analyze the data. A survey questionnaire, an interview guide, and document analysis were employed as data collection tools. The study identified that, despite its weaknesses, the current status of cooperative training is promising. It is significantly contributing to tracking youth unemployment. However, it is distressed due to a lack of adequate demand assessment, weak collaboration in partnerships, and an inadequate amount of industry and enterprise. It is recommended that TVET colleges plan workshops and trainer training to equip them with the skills needed to conduct demand assessments in collaboration with nearby universities. Likewise, a strong partnership should be maintained with the government and non-government sectors of the zone and regional states to eliminate challenges.

1 Introduction

1.1 Background of the Study

Youth unemployment continues to represent a significant developmental challenge in many developing economies, including Ethiopia. In response, Technical and Vocational Education and Training (TVET) has been increasingly promoted as a strategic instrument for equipping young people with practical competencies that facilitate their transition into productive employment. Unlike general academic education, TVET emphasizes occupation-oriented skill formation that is directly linked to labor market requirements (Maclean & Wilson, 2009; UNESCO, 2006).

Cooperative training—often described as a dual training model—constitutes one of the most structured approaches within vocational education. This model distributes training responsibilities between educational institutions and enterprises, enabling trainees to alternate between classroom-based instruction and workplace-based practical learning. The rationale behind this arrangement is that sustained exposure to authentic production environments strengthens technical proficiency and en-

* Corresponding Author; Email: mesdemise@gmail.com
Article DOI: 10.20372/dje.v01i02.04

hances employability outcomes (European Commission, 2019; Fawcett, Sawi, & Allison, 2014).

Comparative studies indicate that vocationally trained graduates frequently experience smoother school-to-work transitions compared to individuals without occupation-specific preparation (Ryan, 2001; Wolbers, 2007).

In countries where dual systems are well institutionalized, such as Germany and Austria, youth unemployment rates tend to be relatively lower, partly due to strong alignment between training standards and industry demand (Pilz & Wiemann, 2021; European Commission, 2020). These systems integrate apprenticeship contracts, enterprise engagement, and nationally regulated occupational standards to ensure labor market responsiveness.

From a theoretical perspective, three European vocational governance patterns are commonly discussed: the liberal market-oriented model (often associated with the United Kingdom), the state-regulated bureaucratic approach (as seen in France), and the coordinated dual system exemplified by Germany (Greinert, 2004; Fawcett *et al*., 2014). Among these, the German dual arrangement has attracted particular attention due to its structured cooperation between enterprises and vocational institutions, combining institutional instruction with enterprise-based apprenticeship in a complementary manner.

Historically, vocational education in Ethiopia evolved gradually. Early forms of skill-oriented instruction were introduced during the early twentieth century through mission-based initiatives. Formal technical education later expanded into structured public institutions. More recently, national reform frameworks have aimed to transform TVET into an outcome-based and decentralized system capable of supporting economic growth and poverty reduction (MoE, 2008; Girma, 2009).

The Ethiopian TVET strategy explicitly emphasizes the development of a comprehensive system intended to produce skilled, entrepreneurial, and self-reliant graduates. Central to this reform is the adoption of cooperative or dual training modalities, whereby a substantial proportion of training time is expected to take place within enterprises rather than exclusively in institutional workshops (MoE, 2008; MoE, 2015). This design seeks to strengthen industry linkage and reduce the mismatch between training output and labor market demand.

The expansion of TVET institutions across regions reflects policy commitment to workforce development. Enrollment levels, training centers, and instructor numbers have increased significantly over the past decade (MoE, 2017). Nevertheless, rapid expansion has raised concerns regarding quality assurance, institutional capacity, and the adequacy of enterprise partnerships. Studies suggest that insufficient demand assessment, weak collaboration mechanisms, and limited industrial absorption capacity can undermine cooperative training effectiveness (Birhane, 2014; Geda, 2021).

Unemployment data further justify closer scrutiny of vocational training outcomes. National urban labor force surveys report considerable unemployment rates, particularly among youth and female populations (FDRE CSA, 2016). Although TVET is designed to mitigate such challenges by promoting employability and self-employment, empirical evidence assessing its measurable contribution to unemployment reduction remains limited and context-specific.

In Southern Nations, Nationalities, and Peoples' Region (SNNPR), particularly in Gedeo Zone, TVET colleges have implemented cooperative training programs for several years. These programs are expected to enhance job readiness and entrepreneurial capability. However, most existing studies in the region have concentrated primarily on implementation challenges rather than systematically evaluating the direct relationship between cooperative training and employment outcomes (Matwos, 2013; Desalegn, 2014).

Institutional and environmental factors may significantly influence the performance of cooperative training systems. Limited availability of enterprises capable of hosting trainees, infrastructure shortages, weak stakeholder coordination, and financial constraints are frequently reported barriers (Melaku, 2019; Dereje, 2018). Without addressing such systemic constraints, the transformative potential of

the dual training model may not be fully realized.

Therefore, examining cooperative training as a mechanism for promoting sustainable employment opportunities is both timely and necessary. A comprehensive analysis of its current implementation status, its contribution to employment generation, and the contextual factors affecting its effectiveness can provide evidence-based insights for policymakers, institutional leaders, and regional planners.

Accordingly, this study investigates the role of cooperative training in enhancing employment opportunities within TVET colleges in SNNPR, with particular emphasis on Gedeo Zone. By employing an embedded mixed-method design, the research aims to generate contextually grounded findings that inform the strengthening of dual training implementation and contribute to strategies addressing unemployment.

1.2 Statement of the Problem

Despite sustained expansion of Technical and Vocational Education and Training (TVET) in Ethiopia, unemployment, particularly among urban youth, remains a persistent socio-economic concern. National labor force surveys indicate that unemployment rates continue to affect a substantial proportion of the active population, with female youth experiencing disproportionately higher rates compared to males (FDRE CSA, 2016). This reality raises important questions regarding the extent to which vocational education initiatives are fulfilling their intended role in enhancing employability.

TVET institutions are expected to address labor market demands by producing competent graduates equipped with practical and entrepreneurial skills. However, structural and institutional limitations have been repeatedly identified as obstacles to achieving this objective. Education sector development reports highlight challenges such as weak stakeholder participation, limited institutional capacity, and insufficient awareness regarding the strategic role of TVET in economic development (MoE, 2011). Furthermore, although cooperative training guidelines stipulate that a substantial proportion of formal training should occur within enterprises, evidence suggests that this expectation is not consistently realized in practice (MoE, 2015).

Beyond policy-level challenges, broader systemic constraints affect the responsiveness of TVET programs. In many developing contexts, vocational institutions struggle with outdated infrastructure, limited industry engagement, and inadequate adaptation to technological change (Atchoarena, 2002). Such constraints may weaken the alignment between training outcomes and actual labor market requirements, thereby reducing the employment prospects of graduates.

Previous empirical investigations conducted in different Ethiopian regions have explored challenges and opportunities related to cooperative training implementation (Matwos, 2013; Desalegn, 2014; Birhane, 2014). While these studies have contributed valuable insights into operational barriers—such as enterprise shortages and coordination weaknesses—they have given comparatively limited attention to systematically assessing the measurable contribution of cooperative training to unemployment reduction. In addition, many of these studies were conducted several years ago, creating a temporal gap that limits their applicability to current implementation realities.

Recent research also emphasizes the importance of labor market demand assessment and institutional autonomy in ensuring effective vocational training delivery. The absence of structured mechanisms for identifying skill gaps and forecasting labor market needs can undermine training relevance and sustainability (Birhane, 2014). Similarly, limited access to adequate training equipment and mismatches between occupational standards and instructional resources have been reported as persistent constraints in Ethiopian TVET institutions (Geda, 2021).

At a continental level, scholars argue that insufficient prioritization of skills development contributes significantly to unemployment and underemployment in African economies (Inyiagu, 2014). Without strong integration between training institutions and productive sectors, vocational systems may struggle to fulfill their mandate of supporting economic growth and job creation. Therefore, strengthening cooperative training models becomes

particularly important in contexts where youth unemployment poses developmental risks.

In Southern Nations, Nationalities, and Peoples' Region (SNNPR), and specifically in Gedeo Zone, cooperative training programs have been implemented across several TVET colleges. These programs are designed to foster enterprise-based learning and enhance graduate employability. However, empirical evidence documenting their actual effectiveness in tracking unemployment remains limited. Questions persist regarding the current implementation status of cooperative training, the degree to which it contributes to employment outcomes, and the institutional and environmental factors influencing its performance.

Given the significant public investment directed toward TVET expansion, failure to critically evaluate the effectiveness of cooperative training could result in inefficient resource utilization. Without empirical assessment, policymakers and institutional leaders may lack reliable evidence to guide reform and strengthen partnership mechanisms.

Accordingly, this study seeks to address the following core concerns:

1. What is the current status of cooperative training implementation in TVET colleges in Gedeo Zone?
2. To what extent does cooperative training contribute to reducing unemployment among graduates?
3. What institutional and environmental factors affect the effectiveness of cooperative training?

By systematically examining these questions, the study aims to generate evidence that informs policy refinement and strengthens the implementation of the dual training model within the regional context.

1.3 Theory

Among three distinct European TVET models, namely the UK liberal market model, the French state-regulated bureaucratic model, and the German dual system model, cooperative training as well as the German dual system model have been highly encouraged as a type of TVET in enabling the economic development of countries (Fawcett, Sawi, & Allison, 2014).

According to Fawcett *et al.* (2014), cooperative training or the dual-system model of German establishes effective practical learning through apprenticeships, on-the-job training, and internships. Hence, the model is effective in making sufficient numbers of apprenticeship and internship placements for the trainee.

Germany's dual training system, as well as the TVET cooperative training approach, are well defined and have evolved over time in Germany and other countries such as Austria and Switzerland (Pilz & Wieman, 2021). This model was designed primarily to address both the skills shortage and the unemployment problem that many countries face.

The literature suggests important points for the effective implementation of the dual model. The European Commission (2019) states that the dual vocational training system is grounded on training occupations. It refers to training courses that are nationwide and planned in training regulations; they mainly aid in the objective of providing the trainees with vocational requirements. The fundamental objective is to offer them chances for long-lasting employment. Also, the training is to deliver entrepreneurial business skills with qualified skilled labor for an extended period of time. The training is usually undertaken within two conjoining learning sites: the company or enterprise and the TVET institution.

Industry-based training—"the training at the workplace"—has to be a major part of the trainee's training time at the vocational college or institution. That is why in Ethiopia's dual training modality, 70% of training activities are expected to be performed at the workplace or on the company site. Therefore, effective implementation of the dual system implies strong involvement between the enterprise, the government, and the collective partners, including the private and public sectors.

Some findings substantiate that dual-model vocational training has a significant contribution to tracking unemployment. Among these, Saleh (2017)

reveals that vocationally trained graduates were more likely to be employed than those with amateur or no vocational training. Even adult workers with vocational training have a higher chance of being employed full-time than other adult workers who do not have the same training. Similarly, research conducted in China's poorest province, Gansu, identified the pleasing contribution of Germany's dual training model (Postiglionea *et al*. Tang, 2019).

They illustrate Dual models. The German TVET model highly contributes to addressing six determinant difficulties: graduate employment, the success-related problem of enterprises, internship place constraints, teacher upgrading, quality standards, and poverty mitigation. Provision of an incentive mechanism for enterprises, long-sustaining employment stability, professional career development of trainers, and a well-equipped information system for institutions, selecting systematically, and placing interns are prominent best practices gained from the area in implementing this model.

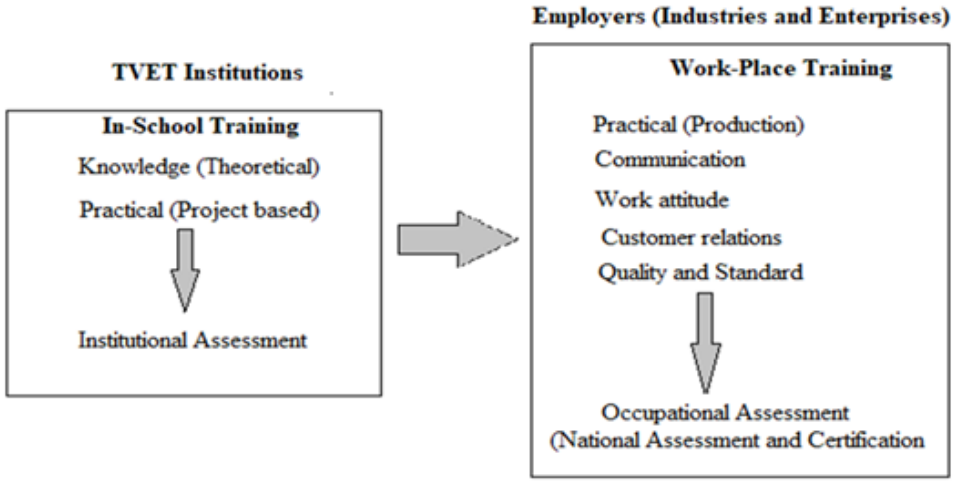

Figure 1: Conceptual framework of Ethiopian Dual Training System

Moreover, Paryono (2017) identified that the German dual-system model meets the labor market demand by contributing to sustainable development, especially in green job formation, which positively aids in sustainable environmental development. According to BMZ (2012), the dual TVET training model had better play a vital role in tracking employment problems by transferring needs-oriented social and personal skills, thereby improving graduate employability.

2 Methodology

TVET leaders, trainers, trainees, and enterprise office experts were chosen for this embedded mixed research using simple random, stratified, and purposeful methods. Purposive for TVET leaders, a simple random sampling technique for trainers, and strata for trainees were used. Questionnaires and interviews were used in collecting data from the respondents. The questionnaire and interview were self-prepared based on a review of related literature.

The questionnaire includes 42 questions and four scopes, including the status of cooperative training in TVET (Questions 1–10), the effects of cooperative training in reducing unemployment (Questions 1-9), stakeholder contributions to the effectiveness of TVET (Questions 1–5), and factors affecting the effectiveness of cooperative training (Questions 1–18). This questionnaire was answered on a five-point Likert scale (from strongly disagree to strongly agree, and from very low and very high scales).

The quantitative tools were tested in Gedeb Wereda TVET College, which was not chosen for the main study, and their reliability was scientifically assessed using Chronbach's alpha statistics. Likewise, the reliability tool was reported as having

a 0.81 coefficient using Cronbach's alpha coefficient. According to the literature, a figure of 0.75 or higher is usually used as a rule of thumb to denote an acceptable level of reliability (Singh, 2007). A demographic questionnaire was used to collect data on the demographic characteristics of the participants, including age, sex, educational qualification, and service year. The Dilla University Institute of Education and Behavioural Science's Center for Education Studies and Research approved this study. Finally, the data were analyzed using appropriate statistical analysis such as frequency, percentages, mean, standard deviation, ANOVA, and regression in SPSS version 22.

3 Results and Discussions

3.1 Results

In terms of demographics, more than half of the respondents 193 (52%), are male, and 138 (48%), are female. It affirms the status of female participation in the sector as being in progress and a little bit promising. Likely, the majority, 43 (52%) of leader and trainer respondents, have 1–5 years of service, and only 12 (11% of respondents) have 16 years of service or more. This implies that the majority of TVET workers are less experienced; specifically, trainers have fewer experiences than the leader's group. This suggests that the status of TVET colleges in terms of retaining workers or trainers is low.

Trainers' educational backgrounds confirm that 31 (60%) of respondents are degree holders, and the rest 15 (30%) of respondents are MA or MSc holders. This data ensured that trainers' educational backgrounds met standards, as the required minimum standard set to be an instructor was at least 30% M.A./MSc degrees and 70% B.A./BSc degree holders (MOE 2006, cited in Wondfraw, 2015).

Out of the 379 questionnaires distributed, 325 were filled out by the participants, representing a response rate of 85%. Most participants, 250 (76%) were trainees, and the rest, 75 (24%), were trainers and leaders.

Hence, Table 1 shows that respondents are "agreed" (mean values range from 3.5 to 4.20), with the statements "Provisions of the entrepreneurship course for trainees" having x = 3.85, SD = .777, and "Enable trainees to achieve the necessary competencies" having x = 3.87, SD = .741. However, the other respondents are "undecided" (ranging from 2.70 to 3.40) with two statements that indicate the status of TVET cooperative training. These are "practices of adapting the curriculum to the world of work", with a grand mean score of x = 2.95, SD = .781, and "TVET industry partnership has been strongly established", x = 2.94 and SD = .759.

Table 1: Results for Status of Cooperative Training

SN	Variables	No	Descriptive		ANOVA	
			Mean	SD	F	Sig.
1	Provisions of the entrepreneurship course for trainee	325	3.85	.777	3.99	.019
2	Enable trainees to achieve the necessary competences	325	3.87	.741	3.822	.022
3	There is practices of adapting the curriculum to the world of Work	325	2.95	.781	.472	.624
4	TVET industry partnership has been strongly established	325	2.94	.759	.779	.460
5	All training programs are demand driven in the colleges	325	2.10	.711	.034	.967
6	Intensive training is provided for both rural and urban labour market	325	2.10	.695	.226	.798
7	Adequate resource granted to facilitate training	325	2.19	.750	2.782	.063
8	Labour market demands assessments are conducted	325	2.06	.666	.387	.679
9	Skill gaps are properly identified before provision of training	325	1.51	.898	1.43	.241
10	There is enough industry and enterprise space for CT	325	1.46	.869	.328	.720
11	Practice of encouraging through advertising, &financial incentives	325	1.46	1.285	.123	.885
12	Full collaboration during planning of CT with industries ensured	325	1.44	8.09	.239	.787

*Significant at $p < 0.05$. Source: Researchers' Field Survey Result

Note: 1-1.8 strong disagreement, 1.9-2.6 disagreement, 2.7-3.4 Undecided, 3.5-4.02 Agree & 4:21-5.00 strong agreement.

Besides, respondents "disagreed and strongly disagreed" (1.00–1.80) with the eight statements: "All training programs are demand-driven; intensive training is provided for both rural and urban labor markets; adequate resources are granted to facilitate training; labor market demands assessments are conducted; skill gaps are properly identified before the provision of training; there is enough industry and enterprise space for CT ; the practice of encouraging trainees; and full collaboration during the planning of CT with industries is ensured". The grand mean is x = 2.10, 2.10, 2.10, 2.19, 2.06, 1.51, 1.51, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46, 1.46.

The result reveals that cooperative training is promising in terms of providing entrepreneurship courses and enabling trainees to achieve the necessary competencies. However, it is constrained by other potential aspects of cooperative training, including granting adequate resources, identifying skill gaps before the provision of training, the unavailability of enough industry, and collaborative planning with industry. Except for items one and two (p = 0.019 and 0.022 0.05), the ANOVA test result revealed no statistically significant differences in mean value in all ten cases (p = 0.624, 0.460, 0.967, .798, .063, .679, .241, .720, .885, .785 > 0.05). It consolidates the findings as perceived by the majority of respondents.

Supporting this finding, interviewee respondent "B" said that *the available industries, as well as enterprises, are not sufficient for cooperative training in the Geo Zone. The problem is countrywide. Therefore, TVET institutions are forced to provide more training at the college by accessing materials and machines*. Also, respondent "A" asserted that *identifying skill gaps before the provision of training has practical constraints on the side of technical and vocational education and training*.

Table 2 presents the effects of cooperative training on tracking unemployment. Hence, respondents rated "high" (mean values range from 3.5 to 4.20) on variables "graduates' communication and collaborative ability" having x = 3.83, SD = .813, "graduates' ability to develop adaptable skills to their environment" having x = 3.81, SD = .903, and "graduates' access to get start-up finance credit" having x = 3.70, SD = .986. However, the respondents rated "moderate" (mean values ranging from 2.70 to 3.40) on six variables. It includes "graduates' ability to start their own businesses", "ability to use relevant training machines in the local situation", "graduates' trend of getting job opportunities", "graduates' ability to assess the realistic labor market", "graduates' business management skills and openness to risk", and "success of self-employed graduates in a small and micro-enterprise" with grand mean scores x = 3.02, 2.96, 2.96, 2.94, 2.92, and 2.90; SD = .83.

Table 2: Effects of Cooperative Training in Tracking Unemployment

SN	Variables	No	Descriptive		ANOVA	
			Mean	SD	F	Sig.
1	Graduates' Communication and collaborative ability	325	3.83	.813	.966	.382
2	Graduates' ability of developing adaptable skills to their environment	325	3.81	.903	.247	.782
3	Graduates' access to get start up finance credit	325	3.70	.986	.210	.811
4	Graduates' ability of creating their own businesses	325	3.02	.835	.421	.657
5	Ability of using relevant training machines to local situation	325	2.96	.796	.708	.493
6	Graduates' trend of getting job opportunity	325	2.96	.736	.176	.839
7	Graduates' ability of assessing the realistic labour market	325	2.94	.868	.063	.938
8	Graduates' business management skills and openness to risk	325	2.92	.855	2.66	.071
9	Success of self-employed graduate in small and micro enterprise	325	2.90	.818	1.190	.306
10	Graduates' access to land or structures to operate	325	1.91	.874	.319	.727

*Significant at p < 0.05. Source: Researchers' Field Survey Result
Note: 1-1.8 very low, 1.9-2.6 low, 2.7-3.4 moderate, 3.5-4.20 high & 4.21-5.00 very high.

Aside from that, respondents were rated "low" (1.0-1.8) on the variable "graduates' access to land or structures to operate," with a grand mean value of x=1.91 and a standard deviation of.874 respectively. F (0.966, .247, .210, .421, .708, .176, .063, 2.66, 1.190, and .319; P = 0.382, .782, .811, .657, .493, .839, .938, .071, .306, and .727, respectively) show that there are no statistically significant differences between the respondents.

Thus, the presented result justifies the effects of cooperative training in tracking unemployment as significant, in which the majority of respondents rated "high" and "moderate" for the given variables that illustrate the graduate's ability to develop adaptable skills and to start their business. Whereas access to land or structures to operate their businesses has been a major challenge for graduates.

Table 3 shows the effect of cooperative training on unemployment tracking using a linear regression model. The linear regression model statistical test result shows r = .890 coefficient and p = .017, 0.05, as well as [R = .890; p = 0.017, 0.05] for the dependent and independent variables. The independent variables are graduates through cooperative training, and the dependent variable is the employment rate in each year. The year encompasses data from 2014 to 2018 for five consecutive years for both variables. The study reveals cooperative training has an estimated 79% impact on increasing the employment rate, and the model is the best fit since p = 0.17, 0.05 acknowledges statistical significance. This is happening due to the number of graduates, and the number of employed graduates each year has been increasing across the years.

Thus, based on this data, one can conclude that though unemployment is a serious problem in the area, there is a reality that assures TVET colleges in southern Ethiopia, particularly Gedeo Zone that they have been contributing most to tracking youth unemployment through cooperative training.

Cooperative training or TVET training, according to interview respondent "A", significantly contributes to employment opportunities. Annually, a greater number of graduates have been participating in different job opportunities like construction (paving stone, metal work, *etc*.), greenery, poultry, food preparation, surveying, metal work, and hotel management.

This finding is in line with empirical literature that says youth unemployment is low in countries with well-working dual VET systems (European Commission, 2020).

Table 3: Liner regression on effect of cooperative training in tracking unemployment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.890[a]	.793	.741	77.962

a. Predictors: (Constant), Graduate Through Cooperative training

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93035.259	1	93035.259	15.307	.017[b]
	Residual	24312.074	4	6078.019		
	Total	117347.333	5			

a. Dependent Variable: Employment Rate

b. Predictors: (Constant), Graduate through cooperative training

Several institution-related factors have been affecting cooperative training in TVET. Table 4 presents institution-related factors affecting cooperative training.

Table 4: Institutions Related Factors Affecting Cooperative Training in TVET

SN	Variables	No	Descriptive		ANOVA	
			Mean	SD	F	Sig.
1	Discrepancy between number of trainees and capacities of enterprises to provide training	325	4.32	1.180	.625	.536
2	Inadequacy of physical facilities, for provision of training	325	3.84	.913	.294	.746
3	Low commitment of TVET leaders	325	3.73	.927	1.852	.159
4	Financial problems of trainee to afford training fee	325	3.14	.824	.114	.892
5	Lack of collaboration among TVET stake holders	325	3.20	2.89	.441	.644
6	Low trainers motivation and Commitment	325	2.37	.933	.776	.461
7	Trainers less qualifications, and pedagogical knowledge	325	2.31	.923	1.652	.193
8	High cost of TVET training	325	2.29	.914	4.78	.009

*Significant at p < 0.05. Source: Researchers' Field Survey Result.
Note: 1-1.8 very low, 1.9-2.6 low, 2.7-3.4 moderate, 3.5-4.20 high & 4.21-5.00 very high.

Thus, respondents rated it "very high" (mean values range from 4.21 to 5.00) on the variable "discrepancy between the number of trainees and capacities of enterprises to provide training," with x = 4.32 and SD = 1.180. Also, respondents rated "high" for "inadequacy of physical facilities, provision of training", and "low commitment of TVET leaders", with x = 3.84, SD = .913, and 3.73, SD = .927, respectively. Furthermore, respondents rated "moderate" (mean values ranging from 2.7 to 3.4) on "financial difficulties of the trainee in affording training fees" and "lack of collaboration among TVET stakeholders", with x = 3.14 SD = .824 and x = 3.20 SD = .644, respectively. Respondents rated "low" for "lack of collaboration among TVET stakeholders," "low trainer motivation and commitment", "lack of trainer qualifications and pedagogical knowledge", and "high cost of TVET training", respectively, with x = 3.20, 2.37, 2.31, and 2.29; SD = 2.89, .933, .823, and .914.

The ANOVA test result, F (0.625, .294, 1.852, .114, 441, .776, 1.652, & 4.78), P = 0.536, .746, .159, .892, .644, .461, & 193, > 0.05, authorizes this because there are no statistically significant differences between the respondents' perspectives. However, there is a statistically significant difference for item eight that states "high cost of training" is among the factors influencing cooperative training, considering it has less impact on training.

Likewise, qualitative data confirming this finding says: *Interviewee C said that institutional-related factors like less infrastructure and low commitments of academic and administrative staff members are among the main problems negatively influencing cooperative training*.

Table 5 illustrates work environment-related dynamics that hinder cooperative training. Concerning this, respondents rated a "very serious problem" (mean values range from 4.21 to 5.00) on the variables "insufficient working capital" and "collateral loan requirement by credit and saving organizations" with x = 4.29 and 4.23, SD = 1.251 and 1.317, respectively.

Similarly, respondents rated "major problem" (mean values ranging from 3.50 to 4.20) for five variables, including "lack of marketplace for display or sale, high market competition, lack of infrastructure such as electric cities and water, lack of linkage between market and enterprise, and dissimilarity of activities during training with activities in the world of work", with x = 3.63, 3.56, 3.51, 3.63, and 3.58; SD = 0.946, 1.039, 1.035. Furthermore, respondents ranked "minor problem" (mean values ranging from 1.9 to 2.6) for two variables: "nearby raw material availability, insufficient size of production to gain profit, and high level of taxes", with x = 2.00, 2.06, and 2.79 SD = .669, .736 and .826, correspondingly.

Table 5: Work Environment Related Dynamics Affecting TVET Training

SN	Variables	No	Descriptive		ANOVA	
			Mean	SD	F	Sig.
1	Insufficient working capital	325	4.29	1.251	.026	.975
2	Collateral loan requirement by credit and saving organizations	325	4.23	1.317	.131	.878
3	Lack of market place for display or sale	325	3.63	.946	1.785	.169
4	High market competition	325	3.56	1.039	.477	.621
5	Lack of infrastructure like electric city, and water	325	3.51	1.035	.789	.455
6	Lack of linkage between market and enterprise	325	3.63	.955	.061	.941
7	Lack of similarity of activities during training with the activities in the world of work	325	3.58	.925	.795	.453
8	Non availability of raw materials in close proximity	325	2.00	.669	.445	.641
9	High level of taxes	325	2.06	.736	.004	.996
10	Insufficient size of production to get profit	325	2.79	.826	.858	.425

*Significant at p < 0.05. Source: Researchers' Field Survey Result.
Note: 1-1.8 not problem, 1.9-2.6 minor problem 2.7-3.4 moderate problem, 3.5-4.20 major problem& 4.21-5.00 very serious problem.

The ANOVA test result, F (.026, .131, 1.785, .477, .789, .061, .795, .445, .004 & .858; P = 0.975, .878, .169, .621, .455, .941, .453, .641, .425 & .996, > 0.05), supports this because there is no statistically significant difference between the respondents' perspectives. Thus, it validates that the majority of respondents have an almost similar understanding of environmental-related factors as being among the major dynamics hindering the success of cooperative training in the study area.

Likely, interviewee C said that: *Institutional factors such as fewer infrastructures and low commitments of academic and administrative staff members are serious issues that have a negative impact on cooperative training*.

At the same time, interviewee A said that "absences of motivation as well as an incentive package for enterprise or industry ownership and trainers are among the greatest challenges ever affecting cooperative training".

4 Discussions

The analysis of the empirical results along with the theoretical frameworks included in this research has provided insights into the various issues of cooperative training. As a result of this quantitative and qualitative analysis, important discussions are made that have implications for the improvement of cooperative training.

The philosophical basis of Ethiopian TVET is grounded in the vision of raising the level of education and creating a self-reliant and innovative society. Moreover, it is primarily focusing on preparing the youth today and in the future as well. To implement this, TVET institutions are expected to address praiseworthy cooperative training, which would maintain a dual training system that demands 30% of theoretical training in the colleges and the rest of the percentage of training in industry workshops. Findings indicate that the current state of cooperative training in TVET colleges is precarious due to a lack of adequate demand assessment, a lack of partnership collaboration, an insufficient amount of industry and enterprise, and a reduced practice of encouraging potential stakeholders.

This finding substantiates the research results of the previous study. According to Aman (2021), the most common challenges trainees face when learning practical skills are a lack of training resources, a mismatch between training equipment and established training standards, and fewer concerns dedicated by the institution to industrial or enterprise collaboration. Equally, there are trainers who are incapable of demonstrating their expertise and knowledge during the practical training of skills. Moreover, there is empirical evidence revealing that in developing countries, states importunately

call for TVET growth, but there are still several limitations deterring this field from accomplishing the demanded standards and accomplishments, such as management systems and financial support (Xiaohui & Ramadan, 2019). This study varies from previous research findings regarding the weakness of demand assessment before the provision of training and the mismatch of the industry with trainee numbers, which are the points of departure from those referred research findings.

Despite its several limitations, cooperative training is significantly contributing to tracking unemployment. Therefore, TVET could be the greatest means to escape poverty. Furthermore, graduates' ability to develop adaptive skills, communication, and collaborative abilities, the trend of getting job opportunities, and getting access to start-up finance credit are encouraging practices. The regression model estimate specifies that 79.3 percent of employment opportunities obtained by TVET graduates are due to employability skills obtained from the training. However, for self-employed graduate entrepreneurs, access to land or structures to operate is not promising.

This may adversely affect TVET's journey to reduce unemployment. Researchers addressed themselves to ten enterprises organized by TVET graduates years ago; almost all of them are suffering due to the absence of places to display their products. It magnifies through cooperative training, which is significantly contributing to employment, but it is bottlenecked by several constraints.

This finding is supported by the literature, which shows that expanding technical and vocational education has a displacement effect on less educated or secondary school-leaving workers. Amazingly, the study reveals a 10% increase in vocational education graduates in the labor market, which minimizes the opportunity of having a formal job by 4.9% for male secondary school graduates (Machikita & Fukunishi, 2017). This elaborate training from technical and vocational education has enabled TVET graduates to get employment opportunities to the advantage of those who have no such training, while at the same time reducing unemployment.

The discussion paper conducted by the University of California and the World Bank discloses that the effect of TVET cooperative training on employment is positive but adjacent to zero and statistically not significant. Even the positive effects are heavy when training is offered by the private owners of the institutions (Hirshleifer, McKenzie, Almeida, & Ridao-Cano, 2014). Similarly, this research reveals the existence of the positive impact of cooperative training on reducing unemployment, which in turn substantiates its positive effect on raising employment opportunities. On the other hand, the study brought the impact statistically significant in reverse to previous findings in advance of the previous study. Further, it is stated that dual vocational education and training are well recognized in Europe and are reputable, for example, in Austria and Germany. Youth unemployment in countries with well-working dual VET systems is low (European Commission, 2020). The informal and traditional rural sectors, in particular, play an important role in providing massive employment opportunities; this necessitates employability skills from technical and vocational education (UNESCO, 2016).

Because of the astonishing nature of technical and vocational cooperative training, several studies recommend the government give it due focus by broadening access, improving funding, and holistically restoring the sector needed to tackle the load of unemployment and create wealth to a great extent (Inyiagu, 2014; Jwasshaka & Fadila, 2020; Saleh, 2017; Obidile, Obi, & Ikpat, 2020; Ogbunaya & Udoudo, 2015).

Also, the study identified that institutional and work environment-related factors are among the major dynamics affecting the success of cooperative training. Institutional-related factors like fewer infrastructures, the inadequacy of physical facilities, the lack of a marketplace for enterprise, and low commitments of academic and administrative staff members are serious problems negatively affecting cooperative training. In addition to this, the absence of motivational support as well as an incentive package for enterprise or industry ownership and trainers is among the most serious challenges ever affecting cooperative training. Moreover, the discrepancy between the number of trainees and the capacity of industry and the lack of sufficient

working capital are among the greatest shortfalls. These findings are in line with previous studies. It has been identified that cooperative training has been continuously influenced by insufficient essential resource supply. Subsequently, the cooperative training quality process has been too weak to equip pupils with the needed capabilities (Melaku, 2019). Also, a deficiency of vital facilities, less funding for the programs, weak training quality, ineffective training methods, and poor managerial activities are among the factors negatively hampering cooperative training (Dereje, 2018).

Critique

The study determined that cooperative training was the only means of achieving employment opportunities. In its background section, it has cited some evidence to depict the seriousness of unemployment and the importance of skills development programs in reducing the problems.

The researcher claimed the development of a conceptual framework for a dual training system would serve as a bridge between training institutions and employers. The conceptual framework, however, lacked clear linkage with the principles of hands-on job training and school-based training, which are the major components of dual training programs. A typical framework of the Ethiopian TVET dual system is presented in Figure 1.

The theoretical section referred to three major European training models: the UK liberal market model, the French state-regulated bureaucratic model, and the German dual system model. The study deepened its view of the unfolding German dual training system while discounting the two. For a better understanding of the dual training system, it would have been better had the study discussed the two models in a bit more detail. Furthermore, the pieces of evidence presented for the sole importance of cooperative training in curbing youth unemployment were not enough.

Further education in the UK, Australia, New Zealand, and Canada is conducted to prepare graduates for skilled workers at the middle level of the occupational range (Wheelhan, 2016). Community colleges, in addition to preparing graduates for upper-division degrees at universities, also provide vocationally oriented qualifications to prepare graduates for specific occupations in the labor market (Dennison 1995; Meier 2013). In British English, the training program is regarded as no more than a market process in which the participants are employees, employers, and partners (Mückenberger 1998, p. 37 etseq.). In French, the production process, by itself, is considered a political entity where the key players are the state and its executors, called inspecteurs de travail, on the recognition of the social order; it is more centrally controlled by the state than the market process.

By its nature, cooperative training requires the coordinated efforts of the stakeholders based on a predetermined memorandum. In this regard, the TVET strategy also stated:

To this end, maximum flexibility is given to TVET providers to negotiate and develop relationships with individual employers, groups of employers, or business or sector associations about the organization of cooperative delivery schemes. TVET providers will also be encouraged to venture into more agreements with small companies and the micro-enterprise sector, as these companies represent the target labor market for a large group of trainees (MOE, 2008, p. 31).

Although the study mentioned a lack of cooperation among the stakeholders, it didn't give much attention to how the main actors should work together for mutual benefit. Cooperative training provides an opportunity for both the training institution and the employer (MOE, 2008).

Recent studies conducted in similar areas revealed the primary determinant of the quality of TVET training programs was the unavailability of sufficient industries and enterprises for the implementation of dual training programs. The study gave equal importance to this problem and other factors such as lack of demand assessment and weak collaboration between actors in the sub-sector. Others also concluded several factors determine young graduates' employability. Economic model investigations such as household income, job preference, access to credit, access to training, and cooperative membership were found to have significant impacts

on youth unemployment (Menta, L., & Leza, T. 2020). Furthermore, Demissie, M. M., Herut, A. H., Yimer, B. M., Bareke, M. L., Agezew, B. H., Dedho, N. H., and Lebeta, M. F. (2021) found demographic characteristics, curriculum, institutional characteristics, graduate characteristics, and market and labor market conditions determine graduate unemployment. Other challenges of the sub-sector include perceptions of the TVET program in general and the cooperative training program in particular.

Self-employment is one of the components that it is important to include in the TVET strategy. It requires not only possessing certain skills but also market analysis, product development, work attitude change, and business leadership. The strategy stated, "The TVET executive bodies will also undertake initiatives to strengthen and raise quality in traditional apprenticeship training, as this mode of TVET delivery is particularly effective in preparing youth for self-employment" (MOE, 2008, p. 32). The study did not trace self-employment or the creation of jobs for others.

The 48% participation of female respondents in the study was weak evidence from which to conclude that there is promising progress in the inclusion of females in the TVET sub-sector as a whole. The same analogy applies to only 12% of participants having an experience of more than 16 years of claiming the sub-sector as being challenged by inexperienced workers. It should include and be verified by the country's TVET leaders, trainers, and administrative staff members' statistical data. A report obtained from the Ministry of Science and Higher Education's Federal TVET Agency indicated the sub-sector is still challenged by the low participation of TVET leaders and trainers (MOSHE, 2019–20).

The study, in general, found there are several challenges in implementing a cooperative training program in SNNPR and Gedeo TVET institutes, criticizing the system as obsolete, inadequate, and unable to adapt to the private sector. However, it revealed cooperative training can be used as an important method of reducing graduates' unemployment. For the program to be effective, the TVET institutions must facilitate trainer training to assess demand and closely work with major actors to overcome challenges. By proclaiming the importance of the study in the improvement of TVET programs and as a means of challenging the policy, the study called for further investigations in the area.

5 Conclusion and Recommendations

Finally, the study can be viewed as a step toward closing the sub-sector's research gap. It raised an important course of inquiry, for unemployment is challenging the country's development while investing huge capital in the training institutions, which could be lost otherwise. It gives better information for policymakers to improve the implementation of cooperative training to ensure the dual training model, which is the major component of the TVET strategy (MOE, 2008). It can finally serve as a base for further studies in the area.

To that end, colleges should collaborate with nearby universities to plan workshops and train trainers to equip them for conducting demand assessments. Likewise, a strong partnership should be maintained with the government and non-government sectors of the zone and regional states to disregard the challenges. Further research on the role of cooperative training in reducing unemployment at regional and national levels should be conducted to generalize the magnitude of its effect.

Conflicts of interest

The authors affirm that there are no conflicts of interest regarding the publication of this paper.

Acknowledgments

The Center for Education Studies and Research, the Institute of Education and Behavioral Science, the Research and Development Office, and Dilla University are all gratefully acknowledged by the research team for their financial support and diligent follow-up. The Gedeo Zone TVET departments and TVET institutions also contributed secondary source data, which the researchers are appreciative for. We are also appreciative of the study's respondents.

Ethical Approval

Consent was sought form the research participants. Confidentiality was maintained in reporting information.

References

Alemu, D. (2018). Factors Affecting the Quality of Technical and Vocational Education and Training Program, the Case of Governmental TVET Colleges in East Gojjam Administration Zone. Ethiopian Institute of Textile and Fashion Technology Department of Garment. http://hdl.handle.net/123456789/9404.

Breen, R. (2005). Explaining Cross-national Variation in Youth Unemployment: Market and Institutional Factors. *European Sociological Review*, 21 (2), 125-134. http://dx.doi.org/10.1093/esr/jci008.

BMZ (2012). Vocational education and training in German development policy.BMZ strategy paper 8.

Demissie, M. M., Herut, A. H., Yimer, B. M., Bareke, M. L., Agezew, B. H., Dedho, N. H., & Lebeta, M. F. (2021). Graduates' unemployment and associated factors in Ethiopia: analysis of higher education graduates' perspectives. *Education Research International*, 2021.

Dobbins, M. (2017). Convergent or divergent Europeanization? An analysis of higher education governance reforms in France and Italy. *International Review of Administrative Sciences*, 83(1), 177-199.

European Commission (2019). The Dual VET system: The secret behind the success of Germany and Austria. www.dualvet.eu

Fawcett, C, Sawi G, & Allison C. (2014). TVET models, structures and policy reform: Evidence from the Europe & Eurasia Region. United States Agency for International Development.

Geda, A.(2021). Challenges Facing Trainees in Practical Skills Acquisition: The Case of Some TVET Colleges of Oromia Regional State, Ethiopia. Journal of Education and Practice. Vol.12 (4).

Gemechu, A. (2021). Challenges Facing Trainees in Practical Skills Acquisition: The Case of Some TVET Colleges of Oromia Regional State, Ethiopia. Journal of Education and Practice www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online).Vol.12 (4) pp. 9-18

Greinert, W. D. (2004). European Vocational Training" Systems"–Some Thoughts on the Theoretical Context of Their Historical Development. *European Journal: Vocational Training*, 32, 18-25.

Hirshleifer, S, McKenzie D, Almeida R, & Ridao-Cano C. (2014). The Impact of Vocational Training for the Unemployed: Experimental Evidence from Turkey. Washington, DC 20433 USA.

Inyiagu E.(2014). Challenges Facing Technical and Vocational Education in Nigeria. *Journal of Educational Policy and Entrepreneurial Research*, Vol.1 (1) Pp. 40-45.

Jwasshaka, K., & Fadila, N. (2020). Minimizing Unemployment of Graduates through Technical Education and Training: Meta-Analysis Approach in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 10(2), 34–44.

Keramati, M. R., & Gillies, R. M. (2021). Advantages and Challenges of Cooperative Learning in Two Different Cultures. *Education Sciences*, 12(1), 3.

Machikita, T, & Fukunishi T.(2017). Vocational Education and Employment Outcomes in Ethiopia: Displacement Effects in Local Labor Markets. Institute of Developing Economies, JETRO Chiba 261-8545, Japan.

Melaku, M. (2019). The Practice of Quality Assurance in the TVET System of the State of Amhara as Perceived by Major Stakeholders. *Bahir Dar journal education*. Vol. 19(1) pp. 80-104.

Menta, L., & Leza, T. (2020). Determinants of Youth Unemployment: The Case of Areka Town, Wolaita Zone, Ethiopia.

Ministry of Education (2008) National Technical & Vocational Education & Training (TVET) Strategy. 2^{nd} Edition.

Ministry of Science and Higher Education Ethiopia (2019/20). Annual Report, FDRE TVET Agency.

Mückenberger, U. Nationale Arbeitsrechte und soziales Europa. **In**: Gattero, B. (ed.): Modell Deutschland, Modell Europa. *Opladen*, 1998, p. 33-54.

Obidile, J, Obi O, & Ikpat N. (2020). Technical, Vocational Education and Training (TVET): Tool for Combating Insecurity in Nigeria. *International Journal of Vocational and Technical Education Research*, Vol. 6(3) pp.21-28.

Ogbunaya, T, & Udoudo S. (2015). Repositioning Technical and Vocational Education and Training (TVET) for Youths Employment and National Security in Nigeria.

Ramadan, A, & Xiaohui C. (2019). *Challenges and Opportunities of TVET in Developing Countries*: A Case of Sudan. Developing Country Studies www.iiste.org ISSN 2224-607X (Paper) ISSN 2225-0565 (Online) Vol.9,(10).

Ryan, P. (2001). The school-to-work transition: a cross-national perspective. *Journal of economic literature* 39 (1), 34-92. http://dx.doi.org/10.1257/jel.39.1.34

Paryono, A. (2017). The Importance of TVET and Its Contribution to Sustainable Development. AIP Conference Proceedings 1887, 020076 (2017); https://doi.org/10.1063/1.5003559

Pilz, M, & Wieman, K. (2021). Does Dual Training Make the World Go Round? Training Models in German Companies in China, India and Mexico. *Vocations and Learning* pp 95–114.

Postiglionea, G.& Tangb, M. (2019). International experience in TVET-industry cooperation for China's poorest province. *International Journal of Training Research*, Vol. 17, (51) pp. 131–143.

Powell, J. J., Graf, L., Bernhard, N., Coutrot, L., & Kieffer, A. (2012). The shifting relationship between vocational and higher education in France and Germany: towards convergence?. *European Journal of Education*, 47(3), 405-423.

Saleh, I. (2017). The Role of Vocational Training in Reducing Unemployment Rate in the Outlying States of United States of America. Universitas Pendidikan Indonesia, Indonesia. www.tvet-online.asia Issue 9(1).

Shavit, Y., and W. Müller (1998). *From School to Work*. A Comparative Study of Educational Qualifications and Occupational Destinations. Oxford: Clarendon Press.

UNESCO (2016). Strategy for Technical and Vocational Education and Training (TVET) 2016-2021. place de Fontenoy, 75352 Paris 07 SP, France.

Wheelahan, L. (2016). "College for all' in Anglophone Countries – Meritocracy or Social Inequality? An Australian Example." *Research in Post-Compulsory Education* 21 (1–2): 33–48. www.https://doi.org/10.1080/13596748.2015.1125675.

Wheelahan, L., & Moodie, G. (2017). Vocational education qualifications' roles in pathways to work in liberal market economies. *Journal of Vocational Education & Training*, 69(1), 10-27.

Wolbers, M. H. J. (2007). Patterns of Labour Market Entry: A Comparative Perspective on School-to-Work Transitions in 11 European Countries. *Acta Sociologica* 50 (3), 189-210. http://dx.doi.org/10.1177/0001699307080924

Wolter, S. C., and P. Ryan (2011). *Apprenticeship*. **In**: Handbook of the Economics of Education (1 ed.), Volume 4, pp. 521-576. North Holland: Elsevier.

Xiaohui, C, & Ramadan, A. (2019). Challenges and Opportunities of TVET in Developing Countries: A Case of Sudan. *Developing Country Studies* www.iiste.org. Vol.9(10) pp.77-87.