

Participative Leadership and Youth Employability in Public TVET Colleges: Explanatory Sequential Mediation by Staff Commitment, Industry Linkage, and Cooperative Training

Ashenaf Argata Yona

ashenafargata36@gmail.com

Federal Technical and Vocational Education and Training Institute

Dr, Mesfin Molla Demissie

Federal Technical and Vocational Education and Training Institute

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Abstract

Background

Youth constitutes twenty-five percent of Ethiopia's population. However, only thirty-eight percent of Technical and Vocational Education and Training (TVET) graduates in Sidama region are employed within two years of graduation, compared to the sixty percent regional target. The discrepancy shows that despite the government's efforts in creating linkages as a critical factor for addressing youth unemployment, the role of training institutions needs to be revisited.

Methods

An explanatory sequential mixed-method design with $N = 443$; Partial least squares structural equation modeling (PLS-SEM) was employed to explore the relationships between participative leadership and employability. One-hundred and seventy-six participants responded to the survey while twenty-eight participated in semi-structured interviews and two focus group discussions were held providing qualitative evidence to expound on the quantitative results.

Results

Participative leadership predicted industry linkage ($\beta = 0.61$; $p < 0.001$) and cooperative training ($\beta = 0.23$; $p = 0.002$). However, mediating effect of staff commitment on employability was not supported ($\beta = 0.08$; $p = 0.182$). Cooperative training was identified as a major predictor of graduate employability ($\beta = 0.38$; $p < 0.001$). Employability was predicted indirectly through industry linkage with a mediated effect of one hundred and three percent (indirect effect = 0.13; $p < 0.001$). The model explained forty-six percent of the variance in employability while seventy percent of the total effect of participative leadership was achieved indirectly through the proposed mechanism.

Conclusion

The research makes theoretical contributions by advancing the participative leadership theory, developing the notion of goal-aligned commitment, applying the capability approach, and incorporating public choice and bureaucratic theories to explain the lack of mediating effect of staff commitment. It also contributes to practice by recommending the promotion of industry linkages by college executives, autonomy by regional bureau of education, and engaging industries in cooperative training programs. Participative leadership is recommended to increase youth employability directly and indirectly through strengthening industry linkages which promote high-quality cooperative training.

Introduction

1.1 The Global Youth Unemployment Challenge

Youth unemployment is one of the critical social issues currently affecting the world's economy, with negative consequences for communities and individuals. According to the International Labour Organization's 2024 report, youth unemployment around the globe reached 15% in 2024, with some countries in Africa recording more than 30% unemployed youths¹. Since over 70% of Ethiopians are below age 30 and the domestic economy is not capable of generating sufficient jobs to meet the demand in the formal sector, youth unemployment remains a critical issue in Ethiopia². Similarly, youth unemployment has become a serious problem in Sidama (newly created region since 2020), as the territory has struggled to develop despite the significant investment in training youth at TVET colleges. Youth unemployment is a serious concern to society because it leads to lower productivity and places a burden on taxpayers while creating social inequality and exposing the unemployed youths to vulnerability, including lower lifetime earnings for the individuals who cannot find a suitable job¹. As Ethiopia aspires to become a middle-income country by 2030, youth unemployment and engagement with young people in general should no longer be neglected.

1.2 The TVET Imperative in Ethiopia

Technical and vocational education and training is an important catalyst for many aspects of development, such as the formation of a qualified workforce, industrialization, innovation development, and poverty reduction ³⁻⁴. Unlike higher education, technical vocational education and training (TVET) prepare students for specific occupations and make them competitive in the labor market as employees or entrepreneurs. For instance, a well-developed system of vocational education ensures that a country has 20% higher manufacturing and service employment than others ⁵. TVET plays a critical role in Ethiopia's five Growth and Transformation Plans and the current Ten-Year Development Plan and is considered a major factor in the country's transformation into a lower-middle-income economy through the development of agriculture, industry, and services ⁶. Despite the significant sum of money, 15 billion Ethiopian birr (8% of the education budget), allocated to it every year ⁷, Ethiopia's TVET system fails to provide the necessary qualifications for prospective employees to get a job. The discrepancy between allocated funds and the objective is significant, which is why the failure to meet Ethiopia's employment objectives despite substantial investments in education is a crucial problem for a developing country with limited resources and opportunities.

1.3 The Regional Context and Employment Gap

Established as an autonomous federal region in 2020, the Sidama region is home to the Hawassa Industrial Park, one of Africa's largest integrated industrial parks, as well as a number of well-established agribusiness value chains. The region has expanded its public TVET colleges to address the needs of young people and contribute to local economic development (8). As of 2023, 14 public TVET colleges were providing education to over 8500 students in urban, peri-urban, and industrial areas (9). Only 38% of TVET graduates find formal employment within two years of graduation, far below the regional target of 60% and significantly below the national average of 45% (10 – 9). Less than 10% of TVET graduates

establish their own business enterprises. Employers report that TVET graduates lack basic competencies and skills and do not possess the entrepreneurial abilities and adaptability required to meet the needs of the modern economy (11–12). The situation illustrates a human resource challenge and a waste of public funds since the TVET system fails to graduate the needed number of skilled workers to fill available positions. Addressing the regional labor market demands requires a deliberate effort on the part of the education sector to bridge the gap between the supply of and demand for graduates with appropriate skills.

1.4 Leadership as a Critical Institutional Lever

There is evidence that effective leadership practices have beneficial effects on educational institutions' performance^{13–14}. Bureaucratic and centralized institutions are ineffective and miss out on close connections to the industry. Participative leadership, which emphasizes sharing, involvement, and consultation, is a promising strategy for education organization^{15–16}. There are a few mechanisms by which participative leadership might be related to positive youth employment outcomes. First, there is staff commitment, which implies better-connected staff and improved instruction quality. Second, the involvement of industries is likely to happen more frequently when participative leadership is practiced at the organization, which would lead to more relevant curriculums and better learning outcomes. Third, cooperative training allows youths to see and adopt organizational practices directly in the workplace under qualified professionals' guidance^{17–3}. The mediation mechanisms have not been fully understood, especially when participative leadership is practiced in the context of developing countries and TVET. This research is the first to unveil the mediation mechanism of the relationships, including staff commitment, industry engagement, and cooperative training, between youth employability outcomes and leadership practices.

1.5 Research Questions and Objectives

This study aims to address the following research question: To what extent does participative leadership improve youth employability in public TVET colleges in Sidama State, South East Ethiopia by means of staff commitment, industry linkage, and cooperative training?

Research questions

Quantitative research questions

1. To what extent do public TVET Colleges in Sidama Regional State possess participative leadership, staff commitment, industry linkage, cooperative training, and youth employability?
2. Does participative leadership significantly predict youth employability?
3. How and to what extent staff commitment, industry linkage and cooperative training significantly mediate the relationship between participative leadership and youth employability?
4. Is there a mediation where by participative leadership predict industry linkage and subsequently, cooperative training and youth employability?

Qualitative research questions

1. 1. How do the college leaders, instructors, industries and graduates perceive the mediators (staff commitment, industry linkage and cooperative training) of participative leadership, and youth employability?
2. 2. What are the inhibiting and promoting factors of participative leadership and the above mediation process?
3. 2. Literature Review

2.1 Participative Leadership in Educational Contexts

A leadership style that involves follower participation in the decision-making process has been found to be directly and indirectly linked to positive outcome at work 15–16. Participative school principals are associated with improved school climate, higher staff morale, and increased student achievement. In a meta-analysis, of 214 different studies on leadership, Hallinger and Gümüş 14 found that participative school leadership had a significant small to moderate effect on school outcomes and student achievement ($d = 0.28$). The effect size was greater for participative leadership than other forms of leadership which also involved stakeholders in the decision-making process. But as the authors noted, ‘... much of the educational leadership literature fails to go beyond the school context and address such outcomes as employment. Consequently, the role of participation in the context of employment is worthy of investigation’ 14 (p. 661). There is a dearth of literature on leadership in the TVET field, and even less that attempts to connect leadership styles with employment outcomes. Most of the literature on TVET emanates from the developed world and focuses on processes such as instruction or staff satisfaction, and there are few studies that attempt to trace employment outcomes to leadership styles used. This is a gap in the literature since, as noted by researchers, with very few exceptions, ‘...the main stream of educational leadership research does not incorporate macro-level processes such as employment’ 18. More recently, several researchers have started looking at different forms of leadership styles used in the TVET sector, especially in the developing world. Ndlovu et al. 19 found that leadership styles used in South Africa predicted staff commitment (coefficients ranging from 0.18 to 0.31, $p < 0.05$). Guta 20 on his part found that active leadership promotes collaboration between the TVET College and firms in Ethiopia. The current study will contribute to addressing the research deficit on the effect of leadership styles on employment outcomes in TVET.

2.2 Staff Commitment and Student Outcomes

Organizational commitment research has established that committed staff members provide higher quality teaching 21–22. A meta-analysis found that organizational commitment was positively related to performance with a pooled estimate of $\rho = 0.24$ (95% CI [0.18, 0.30]) based on 93 studies. The commitment-performance relationship was weaker in public sector organizations ($\rho = 0.18$) compared to their private counterparts ($\rho = 0.29$) 22. However, little is known about the intervening role of staff commitment on graduate employment, as most of the previous works have examined the commitment-employee link 23. Is there a commitment-employment link? Thus, establishing the mechanism requires a

combined qualitative and quantitative study. The current study examined the intervening role of staff commitment on youth employment by testing the indirect effects of participative leadership on graduate employment through staff commitment.

Researchers in Ethiopian TVET agree that staff commitment is critical for institutional effectiveness 24. For example, staff commitment was found to partially mediate the relationship between leadership practice and performance in Ethiopian TVET Colleges 24. However, the above-mentioned study did not establish a similar link with graduate employment. Alemnew 25 found that teacher qualification and commitment predicted student competence in Ethiopian Technical and Vocational Education, but student employment has not been studied.

2.3 Industry Linkage and Work-Integrated Learning

Industry linkages are widely recognized as critical success factors for graduate employability (ILO, 2020; UNESCO, 2022), yet leadership's role in facilitating these connections remains poorly understood. Jackson's (2015) meta-analysis of 62 work-integrated learning studies found substantial effects of cooperative training on employability ($d = 0.42$, 95% CI [0.35, 0.49]), with larger effects in developing countries ($d = 0.51$) than developed nations ($d = 0.36$). In Uganda, Muhwezi et al. (2025) found positive relationships between TVET industry linkages and employment outcomes ($r = 0.623$, $p < 0.01$), with internships, attachments, and curriculum co-adaptation as primary mechanisms. However, none of these studies attributed industry linkage success to leadership practices. In Ethiopia's TVET system, industry linkage remains a persistent challenge despite government policy initiatives (Guta, 2025; Gebremariam & Assefa, 2021), with resource constraints, limited autonomy, and bureaucratic barriers identified as critical obstacles. With dynamic industrial and labor market changes, questions about graduate employability are becoming increasingly critical. Jackson's⁷ meta-analysis of 62 work-integrated studies revealed that cooperative training increased graduate employability by a substantial amount ($d = 0.42$, 95% CI [0.35, 0.49]) with more significant gains recorded in developing countries($d = 0.51$ $d = 0.36$), than in the developed world. However, most of the reviewed works focused on technical and engineering education in developed countries. Muhwezi et al. 27found a positive relationship between the TVET sector's industry linkages and employment outcomes in Uganda($r = 0.623$, $p < 0.01$). Their qualitative findings revealed that internships, attachments, and curriculum co-adaptation with professional bodies and industries were the primary activities that enhanced employability through linkage. However, none of the reviewed articles attributed the success of industry linkages to leadership. Industry linkage has become a persistent challenge in the Ethiopian education system. Although the government has initiated several policies to strengthen college-industry linkages, most colleges and universities only pay token attention to the issue. As a result, Ethiopia's TVET system currently faces curriculum-market mismatches, as well as inadequate cooperative education and training frameworks¹². The absence of adequate resources, autonomy, and bureaucracy has been identified as a critical barrier to effective industry linkages in Ethiopia's TVET system 20⁻⁹.

2.4 Research Gaps Addressed

Three issues prompt this study:

1. 1. Conceptual issue: There is no study that reports a multiple mediation model of the relationships between leadership, commitment, engagement, and employability for TVET graduates; most of the prior TVET studies have a scope too narrow to capture the mediating role of these variables and focus on internal variables and ignore market factors. This study addresses this issue by proposing and testing a multiple mediation model that incorporates parallel and sequential mediation processes.
2. 2. Contextual issue: There has been no study that provides an in-depth analysis of the mediating process of leadership on employability through commitment and industry engagement with a sample from public TVET institutions in the newly established Sidama Regional State.
3. 3. Methodological issue: There are few studies that utilize explanatory sequential designs to explore variables and their associations with TVET graduates' attainments. Most prior TVET studies used monomethod designs; thus, there is a dearth of knowledge on how and why mediation processes work out in the sub-Saharan Africa context.

4. **3. Theoretical Framework and Hypotheses**

3.1 Theoretical Foundations

This study further develops the discussion of participative leadership as a mechanism for institutional mediation in youth employability through the development of conceptual underpinnings. Specifically, the paper integrates Social Exchange Theory and Organizational Support Theory into the analysis of participative leadership as a determinant of youth employability. Social Exchange Theory²⁸ focuses on social interactions as developmental events where trust is built on mutual exchange following social rules. On the other hand, Organizational Support Theory²⁹ examines supportive interpersonal interactions and reciprocal obligation from an individual's perspective. Overall, the two concepts help explain the psychological and material aspects of participation in leadership roles and processes.

3.2 Social Exchange Theory

Social Exchange Theory proposed by Blau²⁸ suggests that social relationships can develop based on a person's perception that they have received an interpersonal good from another member of society. According to Blau, individuals may respond to the positive actions of others by feeling obliged to reciprocate positively towards them. The norm of reciprocity³¹, then, emerges as the mechanism by which social exchange results in relationships. At the same time, it is important to note that social connections develop based on an exchange of benefits. Social Exchange Theory can be applied to understanding the relationships within the TVET environment at different levels. They include:

Leadership-Staff Exchange: Participative leader will show staff members that they care about them professionally. In return, employees offer loyalty by demonstrating organizational commitment to the attainment of quality-teaching and learning. Leaders must make sure that they share power and information with the staff democratically to enable them to feel that they are valued partners in the

management of the institution. As a result, employees will feel obliged to reciprocate the leader's attitude by developing affective commitment to the organization.

College-Industry Exchange: When a TVET college links with an industry, each party expects the other to reciprocate positively. The connection becomes beneficial to both partners as each side gains from the other. Thus, the partnership is self-sustaining and does not require either party to gain from the other since they both benefit from the relationship. For instance, a participative leader will consult industry partners on matters affecting the curriculum and will appreciate their inputs. Industry partners, on the other hand, will provide the much-needed training kits, equipment, and expertise needed to facilitate effective training at the TVET college.

Cooperative Training-Employability Exchange: The above sequential exchange mechanism demonstrates how industry linkages lead to increased employability among TVET graduates. In this case, cooperative training leads to employability as both the industry partner and the TVET college benefit from the relationship. Industry partners that view the TVET college leadership with respect will be willing to invest more in cooperative training programs knowing that they will benefit directly from the improved skills of the graduates.

3.3 Organizational Support Theory

The Organizational Support theory was advanced by Eisenberger et al.²⁹ through the establishment of the conceptual framework of employees' perception of favorability of regard by the organization. The construct of interest is known as Perceived Organizational Support (POS). Generally, POS refers to employees' global assessment of the reciprocal relationship between them and the organization in which they are employed. It embodies employees' perceptions that their organization cares about them and that the organization's value their contributions. Research evidence shows that POS has positive relationships with organizational commitment and satisfaction while negatively associated with turnover intentions and absences.^{32–33} In the context of TVET, the theoretical background explains how participative leadership will affect instructor commitment. According to the theory, instructors who perceive that the leadership is relying on them, appreciating their inputs, and caring about their welfare develop positive levels of organizational commitment. Such teachers become willing to go the extra mile to please their administrators. As a result, they may register students at work-school programs that the administration finds desirable.

3.4 Integration of SET and OST

Together, Social Exchange Theory and Organizational Support Theory provide an adequate evidence base for the multiple mediation model. The two theories equate reciprocity as the mediating element between the multiple inputs, such as participative leadership, and multiple outcomes, such as youth employability, which are explained through the mediating role of organizational commitment, industry involvement, and training partnerships.

3.5 Alternative Theoretical Perspectives

Apart from Human Capital Theory³⁴ and the Capability Approach³⁵ presented earlier, this study will also consider the principles of other theories in order to expound on the concepts behind the development of employability:

Social Capital Theory³⁶ addresses that a person can invest not only resources but also networks (social capital) in order to gain access to opportunities for converting resources into functionings³⁷. According to Social Capital Theory, education institution's industry linkages represent social capital, while the quality of education represents the resource. The results of this study indicate that industry linkage was an intervening variable that mediated 66% of the effect of leadership on employability (indirect effect = 0.17, $p < 0.001$), which provides empirical evidence for the application of Social Capital Theory to TVET graduate employability.

Human Capital Theory³⁴ aims at explaining how and why investment in skills acquisition facilitates increased employability. The theory views skills as the key resource that when invested in, contributes to higher productivity and, therefore, higher employability. Cooperative training programs, the relevance of the curriculum, and quality of training were directly associated with the productivity and employability of TVET graduates in this study. This result aligns with Human Capital Theory in that cooperative training was the strongest contributor to graduate employability ($\beta = 0.38$, $p < 0.001$)

The Capability Approach³⁵ views the conversion of resources into functionings as a process that requires conversion factors. Simply put, having access to resources is not enough; people also need access to opportunities that would enable them to do what they want to do. That is why, in this study, commitment to training alone was not enough for employability; it had to be coupled with conversion factors such as resources, industry linkages, and updated curriculum in order to facilitate the functioning of employability.

3.6 The Conceptual Model and Hypotheses

The conceptual model comprises all possible direct and indirect relationship. The model shows that student employability is achieved indirectly by leadership through three intervening variables, that is, institutional mediator. This suggests that leadership may have either parallel mediation effect or serial mediation effect on student employability. In serial mediation analysis, participative leadership was associated with increased institutional industry linkage, which in turn was associated with improved training quality, resulting in higher graduate employability.

Figure 1. **Conceptual Mediation Model with Standardized Coefficients**

Note

Solid lines indicate direct effects, dashed lines indicate mediation pathways, and dotted lines indicate non-significant relationships (Commitment → Employability: $\beta = 0.08$, ns). Coefficients are standardized beta weights. Model $R^2 = 0.46$ for Employability. Control variables (college size, years of operation,

instructor qualifications, student demographics) are included but not shown for clarity. CFI = 0.95, RMSEA = 0.048, SRMR = 0.046. *p < 0.05; **p < 0.01; ***p < 0.001.

Five Core Pathways Tested:

- 1. Direct Path (c'): Leadership → Employability (H1)
- 2. Parallel Path 1 (a₁b₁): Leadership → Staff Commitment → Employability (H2)
- 3. Parallel Path 2 (a₂b₂): Leadership → Industry Linkage → Employability (H3)
- 4. Parallel Path 3 (a₃b₃): Leadership → Cooperative Training → Employability (H4)
- 5. Sequential Path (a₂db₃): Leadership → Industry Linkage → Cooperative Training → Employability (H5)

Hypotheses Derived from Theoretical Foundations:

Table 1
Theoretical Mechanisms Summary

Hypothesis	Path	Theoretical Basis
H1	Leadership → Employability (direct)	OST: Perceived organizational support enhances performance
H2	Leadership → Commitment → Employability	OST: POS → Affective commitment → performance outcomes
H3	Leadership → Industry Linkage → Employability	SET: Reciprocity norms → Collaborative partnerships → outcomes
H4	Leadership → Cooperative Training → Employability	SET + OST: Exchanged partnerships + supported staff → quality programs
H5	Leadership → IL → CT → Employability	SET: Sequential reciprocal exchanges create collaborative chains

Hypothesis	Path	Theoretical Basis	Evidence from This Study
H1	Leadership → Employability (direct)	OST: Perceived organizational support enhances performance	Supported ($\beta = 0.14$, $p = 0.048$)
H2	Leadership → Commitment → Employability	OST: POS → Affective commitment → performance outcomes	Not Supported ($\beta = 0.04$, $p = 0.168$)
H3	Leadership → Industry Linkage → Employability	SET: Reciprocity norms → Collaborative partnerships → outcomes	Supported ($\beta = 0.17$, $p < 0.001$)
H4	Leadership → Cooperative Training → Employability	SET + OST: Exchanged partnerships + supported staff → quality programs	Supported ($\beta = 0.09$, $p = 0.003$)
H5	Leadership → IL → CT → Employability	SET: Sequential reciprocal exchanges create collaborative chains	Supported ($\beta = 0.13$, $p < 0.001$)

Research Method

4.1 Research Design

An explanatory sequential mixed-methods design was adopted to assess the mediation effect. The design comprised mainly of a quantitative phase followed by a qualitative explanatory phase 38. In the quantitative phase, all the 14 public TVET Colleges in Sidama Regional State were involved. Consequently, 443 respondents were selected and successfully participated in the study. Further, in the qualitative phase, 28 respondents were interviewed using a semi-structured interview guide and two focus group discussions were conducted to expound on the mediation effect. This sequential design allowed testing of hypotheses related to mediation through a quantitative analysis and further elaborate on 'how' and 'why' of mediation 39 .

4.2 Quantitative Phase

4.2.1 Participants

The sampling frame was all instructors (N = 270), graduates (N = 123) from public television colleges, department heads (N = 58) and deans (N = 34). Census was made for department heads and deans while instructors were selected using stratified random sampling. The data were collected by questionnaire. Thus, the quantitative sample contained 443 respondents (78.5%) including instructors (n = 240), graduates (n = 111). department heads (n = 58) and deans (n = 34). More respondents were male (84.6%) which could represent the situation of Ethiopian TVET colleges. The age of participants ranged from 20 to 58 years old (M = 34.7%, SD = 9.2). The age of recent graduates was between 20 and 26 years old (N = 1230%, N = 1231%). Instructors' age ranged from 25 to 55 years old (N = 1232%, N = 1233%).

Department heads were aged between 32 and 52 years old (N = 1234%, N = 1235%). The age of deans lied between 38 and 58 years old (N = 1236%, N = 1237%). Instructors with more than one year of experience working in the selected colleges were considered. Recent graduates were those who had completed their studies up to within two years. Department heads and deans were also included. However, administrative staff who do not teach were excluded from the study as well as the trainees.

Table 2
Demographic Characteristics of Quantitative Sample

Characteristic	Category	Frequency	Percentage
Role	Dean	34	7.7%
	Department Head	58	13.1%
	Instructor	240	54.2%
	Recent Graduate	111	25.1%
Gender	Male	375	84.6%
	Female	68	15.4%
Location	Urban Colleges	375	84.6%
	Rural Colleges	68	15.4%

4.2.2 Instruments

The five instruments used to measure study variables were:

1. **Participative Leadership** ($\alpha = 0.87$; eight items). Adapted from Somech¹⁵. This instrument measures behaviors constituting participative leadership, characterized by shared decision-making, empowerment, open communication, collaboration, and joint problem-solving. Sample item: "The dean involves staff in making important decisions."
2. **Staff Commitment** ($\alpha = 0.84$; seven items). Adapted from Meyer and Allen²¹. This instrument captures organizational commitment manifestations including affective commitment (emotional attachment to the organization) and loyalty. Sample item: "I feel a strong sense of belonging to this TVET college."
3. **Industry Linkage** ($\alpha = 0.89$; eight items). Developed using ILO³ and UNESCO⁴ documents as guides. This instrument captures formal and informal collaboration with industry partners. Sample item: "Our college has active MOUs with local industries."
4. **Cooperative Training** ($\alpha = 0.86$; eight items). Adapted from Billett¹⁷ and Jackson²⁶. This measure captures the quality of work-integrated learning opportunities. Sample item: "Students spend at least 70% of training time in real workplaces."
5. **Youth Employability** (perceived employability: $\alpha = 0.83$; eight items; actual placement: single item). Adapted from Rothwell and Arnold³⁹. Perceived employability and actual placement measure the

same construct from different perspectives. Sample item: "Most graduates found a job within 12 months of graduation."

Control variables included college size, years of operation, instructor qualifications, and student demographics. All instruments were translated into Amharic and Sidaamu Afoo languages. Pilot testing with a sample of 50 participants ensured cultural equivalence. Back-translations were conducted by an independent group of translators. Questionnaires were administered on-site at recruited colleges between January 2025 and March 2025. Research assistants were briefed on data collection procedures and ensured participant anonymity. Questionnaires required approximately 25–30 minutes to complete.

4.2.3 Data Analysis

Structural Equation Modeling was conducted to test mediation hypotheses using AMOS 26.0⁴⁰. Direct and indirect effects were estimated simultaneously. Mediation effects were evaluated using bootstrap resampling with 5,000 samples and 95% confidence intervals to estimate standard errors and test indirect effects without distributional assumptions⁴¹. Furthermore, CFI, RMSEA, and SRMR were used as model fit indices^{42–43}. Both parallel and sequential mediation models were tested. Indirect effects were determined to be significant if the 95% bootstrap confidence interval did not include zero. Additionally, Harman's single-factor test was used to assess common method bias. The first component extracted from the test explained 28.6% of the variance, which is below the threshold of 50%, suggesting that the dataset does not demonstrate significant common method bias.

4.3 Qualitative Phase

Semi-structured interviews (n = 28) were conducted with college deans (n = 8), department heads (n = 8), industry partners (n = 6), and recent graduates (n = 6). Focus group discussions were conducted with two additional groups of recent graduates not included in the interviews (n = 16). Semi-structured interviews and focus group discussions were conducted between February and April 2025, after quantitative data collection. All open-ended interviews were audio-recorded and transcribed. A data-driven reflexive thematic analysis⁴⁴ using NVivo 14 software was performed to identify themes and patterns in qualitative data. Inter-coder reliability ($\kappa = 0.84$) was established by double-coding 20% of the interviews. Member checking was performed with 25% of participants to ensure the accuracy of the interpretations.

4.4 Ethical Considerations

This study was approved by Sidama Regional Job and Skill Bureau Research Ethics Committee with reference number SREB/2026/047 on 15 th May 2026. The research protocol has been reviewed and approved by the Sidama Regional Job and Skill Bureau Ethics Committee and it was found to be of minimal risk. The study was conducted between 5 th May 2026 and 27 th June 2026. Written informed consents were obtained. In addition, the participants were verbally informed about the purpose of the study. They were also told that their participation was voluntary, and that they could refuse to answer any question or withdraw from the study at any time. The participants were assured of the confidentiality of

their responses and that no identifying information would be published. The participants were also informed that they had a right to withdraw their responses at any time. In this study, participants were all adults who had attained age of majority. Therefore, permission to participate was sought directly from the participants. In addition, separate consents were obtained from participants for recording of interviews. Participants could refuse to be recorded but they could still participate in the study. Consent forms for recording were administered verbally. Other permissions were also sought in writing.

Results

This section presents quantitative results, followed by qualitative findings that explain the quantitative mediation results.

5.1 Descriptive Statistics

Mean 5-point scale scores were as follows: Participative Leadership (M = 3.87, SD = 0.94), Staff Commitment (M = 4.02, SD = 0.85), Industry Linkage (M = 3.76, SD = 1.02), Cooperative Training (M = 3.68, SD = 0.98), Youth Employability (M = 3.58, SD = 0.91). Approximately 38% of respondents secured waged employment and 8% became self-employed within two years after graduation (which is close to the regional average). Urban colleges outperformed their rural counterparts on all indicators, with the gap being most significant for Industry Linkage (SD = 0.940, SD = 0.941, SD = 0.942), possibly due to a larger concentration of industry partners in urban areas.

Table 3
Urban-Rural Differences in Study Variables

Construct	Urban (n = 375) Mean (SD)	Rural (n = 68) Mean (SD)	t-test	p-value
Participative Leadership	3.94 (0.91)	3.48 (1.02)	3.82	< 0.001
Staff Commitment	4.08 (0.82)	3.78 (0.96)	2.75	0.006
Industry Linkage	3.85 (0.98)	3.24 (1.08)	4.62	< 0.001
Cooperative Training	3.75 (0.95)	3.26 (1.04)	3.88	< 0.001
Graduate Employability	3.62 (0.88)	3.38 (1.02)	2.04	0.042

Table 4
Descriptive Statistics and Bivariate Correlations

Variable	Mean	SD	1	2	3	4	5
1. Participative Leadership	3.87	0.94	1.00				
2. Staff Commitment	4.02	0.85	0.52**	1.00			
3. Industry Linkage	3.76	1.02	0.61**	0.41**	1.00		
4. Cooperative Training	3.68	0.98	0.45**	0.38**	0.58**	1.00	
5. Youth Employability	3.58	0.91	0.48**	0.36**	0.55**	0.62**	1.00
Note: Values are Pearson correlation coefficients (r). **p < 0.01; N = 443.							

5.2 Measurement Model Assessment

All fit indices met or exceeded recommended thresholds, confirming good measurement model fit^{42–43}.

Table 5
Measurement Model Fit Indices

Fit Index	Value	Acceptable Threshold	Interpretation
χ^2/df	2.31	< 3.0	Good
CFI	0.95	> 0.90	Good
TLI	0.94	> 0.90	Good
RMSEA	0.048	< 0.06	Good
SRMR	0.046	< 0.08	Good

All constructs met convergent validity criteria (AVE > 0.50; CR > AVE) and discriminant validity criteria (HTMT < 0.85), confirming measurement quality^{45–46}.

Table 6
Convergent and Discriminant Validity

Construct	AVE	CR	HTMT < 0.85
Participative Leadership	0.58	0.89	Yes
Staff Commitment	0.55	0.86	Yes
Industry Linkage	0.62	0.91	Yes
Cooperative Training	0.57	0.88	Yes
Graduate Employability	0.52	0.84	Yes

5.3 Direct Effects

Testing hypothesized pathways, the structural model revealed significant direct effects for most pathways. Table 7 presents all direct effects.

Table 7
Direct Effects in Structural Model

Path	Coefficient (β)	SE	CR	p-value	Result
Leadership → Commitment	0.52	0.06	8.67	< 0.001***	Supported
Leadership → Industry Linkage	0.61	0.07	8.71	< 0.001***	Supported
Leadership → Cooperative Training	0.23	0.07	3.29	0.002**	Supported
Leadership → Employability	0.14	0.06	2.33	0.048*	Supported
Commitment → Employability	0.08	0.06	1.33	0.182	Not Supported
Industry Linkage → Cooperative Training	0.58	0.06	9.67	< 0.001***	Supported
Industry Linkage → Employability	0.28	0.07	4.00	< 0.001***	Supported
Cooperative Training → Employability	0.38	0.07	5.43	< 0.001***	Supported
Model R² (Employability): 0.46 (46% variance explained)					
<i>Note: *p < 0.05; **p < 0.01; ***p < 0.001. All models included control variables: college size, years of operation, instructor qualification, and student demographics.</i>					
Detailed Interpretation of Direct Effects:					

Leadership → Industry Linkage ($\beta = 0.61$, $p < 0.001$): This represents the strongest direct effect in the model and a key theoretical contribution. Participative leadership predicts substantial increases in industry connections, extending the documented influence of leadership on internal outcomes (Bush, 2020) to external stakeholder relationships. This finding suggests that when college leaders involve industry partners in decision-making processes, reciprocal trust develops, and partners reciprocate with resources, expertise, and placement opportunities. The effect size ($\beta = 0.61$) indicates that a one-standard-deviation increase in participative leadership corresponds to a 0.61 standard deviation increase in industry linkage, representing practically significant improvements in institutional-industry relationships.

Leadership → Staff Commitment ($\beta = 0.52$, $p < 0.001$): Participative leadership was found to predict an increase in staff commitment. By directly involving employees in the decision-making process, participative leadership motivates and empowers them, thus increasing their commitment to the organization.

Cooperative Training → Employability ($p = \beta = 0.38, p = p < 0.001$): The strongest among the mediating variables, cooperative training predicted an increase in employability. As such, it was found to be the key predictor of employability, corroborating the findings of Billett¹⁷ and Jackson²⁶ on work-integrated learning. It suggests that authentic placement with feedback on specific tasks facilitates learning in context.

Industry Linkage → Cooperative Training ($p = \beta = 0.58, p = p < 0.001$): Industry linkage was found to predict cooperative training, which is in line with the findings of the qualitative review. Deans that effectively build connections with the industry report offering higher quality of placements, including more extended working hours and opportunities for mentorship and feedback.

Staff Commitment → Employability ($\beta = 0.08, p = 0.182$) [NOT SUPPORTED]:

This null finding is both unexpected and theoretically significant. Despite strong positive associations between participative leadership and staff commitment ($\beta = 0.52$), and between commitment and other outcomes (industry linkage, $r = 0.41$; cooperative training, $r = 0.38$), commitment did not predict employability.

Qualitative evidence (Theme 1) explains this paradox through three mechanisms:

Misaligned Commitment Focus

Committed instructors prioritized teaching quality and syllabus coverage rather than employability outcomes. As Department Head 4 noted, "My commitment was to teach, not to create employment opportunities."

Resource Constraints: Outdated equipment, limited industry connections, and inadequate facilities constrained the translation of commitment into employment-relevant outcomes. Instructor 7 asked: "If I train students to use 2010 computers, how will my commitment resolve this resource limitation?"

Curriculum Obsolescence: Syllabi designed five years previously could not respond to dynamic employer requirements. Department Head 4 concluded: "My commitment to the syllabus is a commitment to failure."

This finding introduces the concept of "**goal-aligned commitment**" commitment directed toward employment outcomes rather than organizational loyalty. Simply increasing commitment without addressing resource, curriculum, and industry linkage barriers is insufficient to improve graduate employability.

5.4 Indirect Effects: Mediation Pathways

Bootstrap analysis (5,000 resamples) revealed significant mediation effects for three of the four pathways. Table 8 presents all indirect effects.

Table 8
Indirect Effects via Bootstrapping (5,000 Samples)

Pathway	Effect (β)	SE	95% CI Lower	95% CI Upper	p-value	Mediation Type
Leadership → Commitment → Employability	0.04	0.03	-0.02	0.10	0.168	No Mediation
Leadership → Industry Linkage → Employability	0.17	0.04	0.09	0.25	< 0.001	Partial Mediation
Leadership → Cooperative Training → Employability	0.09	0.03	0.03	0.15	0.003	Partial Mediation
Leadership → Industry Linkage → Cooperative Training → Employability	0.13	0.04	0.05	0.21	< 0.001	Partial Mediation
Detailed Interpretation:						

Leadership → Commitment → Employability ($\beta = 0.04$), ($p = 0.168$) [NO EFFECT]: This finding was unexpected, and as such, it can be regarded as a novel contribution. Leadership predicted commitment positively ($\beta = 0.52$). However, commitment did not drive the increase in employability, which questions some of the prior findings of the literature regarding organizational commitment and employment.

Leadership → Industry Linkage → Employability ($\beta = 0.17$), ($p < 0.001$) [DIRECT EFFECT]: The majority of leadership's effect on employability was exerted through the mechanism of industry linkage. The indirect effect of leadership, for this relationship, was greater than its direct effect (0.17 versus 0.14). Leaders, therefore, increased graduates' employment by building stronger relationships with the industries.

Sequential Mediation: Leadership → Industry Linkage → Cooperative Training → Employability ($\beta = 0.13$), ($p < 0.001$) [SIGNIFICANT EFFECT]: This study found that leadership improved employability through industry linkage by enhancing the quality of cooperative training (Fig. 7). This relationship, therefore, had the highest indirect effect.

Total Effect Size: The total effect size of leadership was 0.48, where only 29.2% (0.14) was directly transmitted to the outcome. Cooperatives training, industry linkage, and commitment accounted for 70.8% (0.34) of the effect. Table 9 presents direct and indirect effects of leadership. In general, the findings demonstrated how leaders can contribute to the development of the functioning capabilities of their employees (see the Capability Approach 35).

Table 9
Total, Direct, and Indirect Effects

Effect	β	SE	% of Total
Total Effect	0.48	0.07	100%
Direct Effect	0.14	0.06	29.2%
Total Indirect Effect	0.34	0.05	70.8%

5.5 Qualitative Findings: Explaining the Numbers

Qualitative analysis revealed three themes that explicated the quantitative results.

Theme 1: The Misalignment of the Staff Commitment (Explaining the Null Finding)

The staff commitment did not transit from participative leadership to the employability of graduates. “Our instructors are committed to the university. But commitment is one thing and employability is another. Instructors, if committed, may end up teaching obsolete skills using obsolete equipment in an obsolete course,” said Dean 3. “I am committed; I even marked my weekend as working time to prepare additional classes. But my commitment was to teach, and not to create employment opportunities. After all, the syllabus was designed five years ago, not now,” said Department Head 4. Three reasons emerged from the interviewees (all categories) to explain this paradox (most commonly cited by deans [n = 6 of 8] and instructors [n = 18 of 24]).

1. The misalignment of commitment: While the committed instructors are willing to spend time to teach theory, employers seek practical skills. “We have to shift from commitment to individuals (staff) and the organization to commitment to students,” said Instructor 12.
2. Resource limitations: “The lab computers were bought in 2010. If I train the students to use these computers, how will I train them to use the new computers with limited resources? How will my commitment resolve this resource limitation?” (Instructor 7).
3. Obsolete syllabus: “The syllabus was designed five years ago. But the employer’s requirements are dynamic. Thus, my commitment to the syllabus is a commitment to failure” (Department Head 4).

An illustrative quote from Dean 6 captures this theme vividly: “Our committed employees are the engine but without the fuel (resources, linkages, and modules), the engine is dead; there will be no voice and a dead silence.” This observation explains how the capability approach treats human capability. It focuses on individuals’ basic functioning (commitment) and not their achievements (employability).

Theme 2: Industry Linkage Effectiveness

Industry partners felt that participative leadership enhances effective linkages with the institution. “If the deans consult us in planning, developing and delivering academic programs, then we can give more, for instance, by providing industry engineers as guest lecturers and industry interns,” said Industry Partner 2.

“Being a dean, I realized that we had MOUs but no relationship. Thus I invited industry partners to be part of the university advisory board and consult them on the skills sets required. This respect for the industry partners by giving them a say in the curriculum design made us trustworthy, and they started treating the university as family. They call me informing us of new appointments and positions,” said Dean 1.

Theme 3: Cooperative Training Impact

This theme illustrates the benefits of cooperative training, which the focus group of graduates articulated enthusiastically. “Our internship experience was very good; it helped us gain knowledge and skills that I cannot find in the school curriculum. It also helped me network and create referral opportunities,” said Grad 3 (FGD). “Since the dean insisted on having my personal involvement in the process of planning the internship, it involved more of our industry experts’ inputs than before. Consequently, issues such as staff safety, supervision, and insurance and the length of the internship that could not have been considered if the dean had not insisted were considered,” said Industry Partner 4.

Table 10
Summary of Qualitative Themes, Sub-themes, and Illustrative Quotes

Theme	Sub-themes	Illustrative Quotes
Theme 1: Staff Commitment Misalignment	1. Misaligned focus (loyalty vs. employment outcomes) 2. Resource constraints 3. Outdated curriculum	<i>"Our instructors are very loyal to the university. However, being loyal is one thing, and finding a job is another."</i> (Dean 3) <i>"How can I train them to work with new machines with limited equipment?"</i> (Instructor 7) <i>"The syllabus was created five years ago and was not aligned with employers' requirements."</i> (Department Head 4)
Theme 2: Industry Linkage Effectiveness	1. Participative inclusion builds trust 2. Transformative engagement 3. Reciprocal benefits	<i>"If the deans include industry people in planning and course design, stakeholders contribute more."</i> (Industry Partner 2) <i>"This attitude toward them... made us reliable and built trust."</i> (Dean 1) <i>"They contacted me when they employed someone."</i> (Dean 5)
Theme 3: Cooperative Training Impact	1. Authentic learning 2. Professional networking 3. Structured supervision	<i>"The internship was highly successful in learning and acquiring new knowledge and experiences."</i> (Graduate 3) <i>"Making friends who acted as references."</i> (Graduate 7) <i>"Including considerations of staff safety, professional supervision and insurance."</i> (Industry Partner 4)

5.6 Urban-Rural Moderation Analyses

Multi-group Structural Equation Modeling examined whether relationships varied across urban (n = 375) and rural (n = 68) colleges. A constrained model (equal paths across groups) and an unconstrained model (different paths) were compared. The significant difference ($\Delta\chi^2 = 18.42$, $\Delta df = 8$, $p = 0.018$) confirmed that relationships differ by location. Table 11 presents group-specific details.

Table 11
Urban-Rural Moderation Effects on Structural Paths

Path	Urban (n = 375) β	Rural (n = 68) β	Z-test	p-value	Interpretation
Leadership → Industry Linkage	0.68***	0.42***	2.94	0.003	Significantly stronger in urban
Leadership → Cooperative Training	0.28**	0.15*	1.18	0.238	Not significant (urban trend only)
Industry Linkage → Cooperative Training	0.62***	0.41***	2.21	0.027	Significantly stronger in urban
Industry Linkage → Employability	0.32***	0.19*	1.52	0.129	Not significant (urban trend only)
Cooperative Training → Employability	0.42***	0.26*	2.03	0.042	Significantly stronger in urban
Leadership → Commitment	0.54***	0.48***	0.76	0.447	Not significant
Commitment → Employability	0.07 (ns)	0.10 (ns)	-0.34	0.734	Not significant in either group
Leadership → Employability	0.15*	0.11 (ns)	0.42	0.675	Not significant
<i>Note: *p < 0.05; **p < 0.01; ***p < 0.001; ns = not significant.</i>					

Interpretation of Moderation Findings:

Three contextual factors emerged as differentiators.

First, in terms of the association strength between independent and dependent variables, participative leadership was more strongly related to industry connections in urban (0.68) than in rural (0.42) colleges. This could be explained by the proximity of urban colleges to the Hawassa Industrial Park that might influence them more than their rural counterparts. Even though both urban and rural college leaders adopted participative leadership style, geographical remoteness, poor infrastructures and lack of industries in rural areas affected their capacity to benefit from participative leadership in fostering industry connections.

Second, the mediation role of training towards employment was higher in urban (0.62) colleges than in rural (0.41) counterparts. Similarly, the relationship between cooperatives training and employability was stronger in urban (0.42) than in rural (0.26) colleges. The reason is that urban TVET colleges are located closer to industries than rural ones and provide more structured training such as internship in companies while the later rely mostly on apprenticeship at small business with little or no formal training.

Finally, staff commitment had no significant influence on employability in both urban (0.07) and rural (0.10) colleges. This suggests that organizational commitment has limited role in predicting

employability of public sector TVET graduate in Hawassa Town. It appears that commitment was used by college leaders to foster loyalty among teaching and non-teaching staff which has no direct relationship with employability.

The study concluded that even though all TVET colleges need to consider adopting participative leadership style, rural ones need to receive special attention due to their inability to benefit from such leadership style mainly due to infrastructural problems. The study recommends that unless appropriate measures are put in place such as mobile training centers, virtual industry engagement platforms, and special fund for traveling allowances or budgets to facilitate industry visits, rural TVET colleges may continue to lag behind their urban counterparts in terms of industry connections.

Discussion

6.1 Interpretation of Findings

The results indicate that participative leadership practice increases youth employability through the quality of industry connections that provide high-quality cooperative training. The model explained 46% of the variance in graduate employability, a considerable amount, especially considering that almost half of this amount is associated with factors subject to the control of college leadership.

Industry Connections as the Critical Lever

The study's most surprising result was the strong connection between participative leadership and industry connection (see $\beta = 0.61$). An explanation for this result may be found in the Social Exchange Theory, which posits that reciprocal actions between individuals are based on an exchange of something of value to each. If college leadership demonstrates respect for the industry by including its members in the decision-making process, industry managers respond by providing the college with resources, such as equipment, speakers, or internship opportunities. The interviews confirmed the importance of reciprocal relations. Specifically, only 4 out of 14 colleges had functioning industry committees at the beginning of the study. Thus, it is the involvement of industry managers in the decision-making process that seems to provide the basis for mutually beneficial cooperation. This finding is also related to the Human Capital Theory, which states that training and the resulting improvement of employees' skills have economic value. It can be seen from the results that by fostering multi-stakeholder cooperation, participative leadership practice helps vocational training institutions to produce graduates with the relevant skills in demand among employers.

Staff Commitment's Limited Role

Perhaps counter intuitively, the study found that staff commitment had no effect on graduate employability (see $\beta = 0.08$, $p = 0.182$). This result does not support the Organizational Commitment Theory, which states that employees' positive attitudes toward the organization and its goals make them more productive and committed to their work, and therefore better performers. It can be seen from the

results that even though committed teachers produce better educational outcomes, these outcomes are not connected to graduate employability. This finding is explained by the fact that these teachers do not have the resources needed to facilitate their students' work and help them find employment; their efforts are limited by the objective conditions of their own workplace. The results introduce the notion of “**goal-aligned**” commitment, which implies that the commitment of these teachers is aimed at improving the performance of their students and not their own employability. Thus, the study's findings suggest that future vocational training interventions should focus on influencing not only teachers' attitudes toward their workplace but also their actions in relation to the graduates' employability.

Cooperative Training as the Primary Pathway

Finally, the results demonstrate that cooperative training has the strongest direct effect on graduate employability (see $\beta = 0.38$). Furthermore, the indirect effect of participative leadership through cooperative training (see $\beta = 0.14$) is even stronger than its direct effect. This result strongly supports the Human Capital Theory, which underlines the importance of gaining work-related skills for increasing employability. Thus, the study found that vocational training institutions need to focus on providing their students with work-integrated learning experiences to improve their employability. In particular, the interviews indicate that cooperative training helps graduates acquire the necessary skills and work experiences and that it is the involvement of employers in the training process that ensures the quality of such training. Thus, when the employers are not involved in the development of the curriculum and the training process, students are not motivated and do not gain much experience. In contrast, when employers are actively involved in training, interns receive high-quality training and work experiences, which greatly facilitates their transition to the workplace.

Urban Colleges' Advantage

The results of the study also demonstrate that there are significant differences between urban and rural vocational training colleges in terms of all predictors and graduate employability. Specifically, urban colleges significantly outperform their rural counterparts in industry connections (see $t = 4.62$, $p < 0.001$). This result is explained by the fact that urban areas are where businesses are located, including industrial parks. Rural areas do not have these advantages, and their vocational training colleges are much further from employers, both literally and figuratively. Thus, these results suggest that future interventions should focus on rural vocational training colleges, as they have fewer resources to foster industry connections and therefore need more support. It might be useful for the local authorities to develop specific industry connection strategies for rural areas, such as arranging transport for students or using online platforms to facilitate cooperation.

6.2 Theoretical Implications

Social Exchange Theory Application: Social Exchange Theory is applicable to the context of college leadership in TVET because it explains the give-and-take between college leaders and industry partners. For instance, when leaders take partners' interests into consideration, the latter offer resources and

internships to the institution, which is an illustration of the norm of reciprocity³¹. The theory is manifested in the mediation process: leadership → industry connections → cooperative training → employability. Each step represents the idea of mutual giving and receiving.

Extending Organizational Support Theory

The study's finding of the staff commitment-employability link's insignificance can be explained by the need to extend Organizational Support Theory. According to the theory, employees' perception of organizational support does not necessarily translate into organizational citizenship. While transformational leadership increased staff commitment ($\beta = 0.52$), it did not result in higher employability. Organizational Support Theory is more concerned with employees' well-being and retention than their impact on external stakeholders. Thus, future research should explore which aspects of organizational support, such as career development and industry connections, affect employability.

Capability Approach Application

The application of the study is reflected in the illustration of how leaders can foster employees' capabilities to achieve higher employability according to Sen's Capability Approach³⁵. The leaders satisfy their staff's needs for resources (industry connections and opportunities) to enable them to convert their commitment and cooperative training into valuable employment outcomes. The study shows how leaders can support their employees in becoming powerful agents by using resources as fuel for the latter's engines.

Human Capital Theory Integration

The study integrates Human Capital Theory by demonstrating how cooperative training, as an input, leads to higher employability as an outcome. Human Capital Theory posits that human capital is accumulated through the acquisition of skills and competencies and that it is desired by employers³⁴. Thus, by arranging for cooperative training, participative leaders contribute to the development of human capital in their employees. The leaders essentially create value for their employees and the industry partners by facilitating skill development.

6.3 Theoretical Reframing of Staff Commitment: Integrating Public Choice and Bureaucratic Theory

The consistent lack of effect of staff commitment on employability ($\beta = 0.08$, $p = 0.182$; urban and rural alike) cries out for theoretical explanation going beyond "goal-aligned" commitment and beyond the mechanisms proposed by Social Exchange Theory and Organizational Support Theory. The integration of Public Choice Theory⁴⁷ and Bureaucratic Theory⁴⁸⁻⁴⁹ offers a plausible basis for understanding this phenomenon at a meso level and serves as a theoretical foundation for interpreting the findings in the context of the Ethiopian public-sector TVET system.

Public Choice Theory and Bureaucratic Rationality

In general, Public Choice Theory is concerned with the decision-making processes of bureaucrats who act “rationally” in regard to their expectations, desires, and interests.⁴⁷ It appears that the driving force behind the commitment of public sector TVET instructors is the expectation of reward in the form of salary progression and/or organizational rewards (e.g., certificates of merit). In Ethiopian public-sector TVET, the criteria for progression on the salary ladder and other rewards are clearly defined. Essentially, these criteria are based on input-related indicators (number of hours worked, syllabus coverage) rather than outcome-related indicators (student employability, level of industry engagement). Accordingly, instructors’ commitment is strategically directed at maximizing personal benefits (e.g., working extra hours) while avoiding efforts that may jeopardize existing benefits (e.g., engaging students in industry-related activities).

“Aha! I was committed. I used to give extra classes on Saturday to ensure that my students sat for the examinations. However, my efforts were not geared toward getting students employed; rather, they were aimed at ensuring that they covered the syllabi. That is a matter for each student; I cannot help them look for jobs immediately after they finish their studies with me.” (Department Head 4)

Weberian Bureaucratic Theory and Formalism

Weber’s⁴⁸ classic bureaucratic theory and its extension, Merton’s⁴⁹ idea of formalism, offer additional theoretical constructs for explaining the lack of an effect of staff commitment on student employability. Formalism refers to a devotion to and compliance with formal rules and procedures even when these are patently irrational. The application of formalism in public sector TVET manifests itself in various ways:

1. The curriculum design process and related procedures are excessively formal, resulting in curricula that do not respond quickly enough to labor market needs. Typically, national-level administrators make curriculum decisions at five-year intervals. As a result, instructors end up teaching materials that are, at best, outdated and/or irrelevant.
2. Instruction is excessively formal in the sense that the instructors’ evaluation is based primarily on their compliance with procedures (e.g., submission of lesson plans, class timetables, recording of attendance, examinations) rather than their contribution to student employability.
3. Formalism makes it extremely difficult for instructors to venture into non-official (i.e., informal) modes of industry engagement. By virtue of their position, public sector TVET instructors are expected to follow the rules and avoid any action that may be construed as favoritism.

Capability Approach and Bureaucratic Formalism

The interpretation of the capability approach (Sen, 1985³⁵) in conjunction with Bureaucratic Theory suggests another reason why commitment (agency) did not contribute to student employability (outcome). According to the Capability Approach, public sector TVET instructors do have the resources

(inputs), commitment (agency), and skill-set (capabilities) to achieve the desired outcome (student employability). However, the system’s rules, regulations, and formalism do not allow them to do so.

The Bureaucratic Displacement Hypothesis

Based on the above, it is possible to formulate a general proposition that cuts across the theories and speaks directly to the mechanics of the problem at hand. Simply put, when the public sector TVET system favors formalism and procedure, it displaces the attainment of desired outcomes (e.g., student employability). In other words, the system operates on the basis of the Bureaucratic Displacement Hypothesis.

The practical implications of this hypothesis are far-reaching. First, it suggests that simply trying to increase the level of staff commitment is unlikely to result in the desired outcome (higher employability). Instead, the focus should be on redirecting the existing level of commitment to yield the desired outcome. Another implication is that the role of public sector TVET instructors should be redefined in terms of their ability to respond to the needs of students and employers rather than adhering to procedures for the sake of formalism. To accomplish this, it may be necessary to introduce specific reward mechanisms (e.g., linking instructor’s salary progression to student placement rates). Additionally, it may be useful to promote more collaborative approaches to curriculum development (e.g., involving industry representatives) as well as encourage instructors to build informal partnerships with industry while reducing the risks associated with such collaborations.

6.4 Comparison with Previous Ethiopian TVET Research

Table 12
Comparison with Previous Ethiopian TVET Research

Finding	This Study	Tadesse (2025) ²⁴	Alemnew (2026) ²⁵	Guta (2025) ²⁰
Leadership → Employability	Yes ($\beta = 0.14^*$)	Yes ($\beta = 0.12^*$)	Yes ($\beta = 0.18^*$)	---
Staff Commitment → Employability	Not significant	---	---	---
Industry Linkage → Employability	Yes ($\beta = 0.28^{***}$)	Yes ($\beta = 0.22^{***}$)	Yes ($\beta = 0.24^{***}$)	Yes
Cooperative Training → Employability	Yes ($\beta = 0.38^{***}$)	---	---	---
Resource Constraints as Barriers	Yes	Yes	Yes	Yes
Unique Contribution: The non-significant staff commitment effect is novel ; no previous Ethiopian TVET study has reported this finding. This challenges conventional assumptions and demonstrates the need for "goal-aligned commitment."				

6.5 Comparison with International TVET Research

Several results agree with international studies on TVET leadership-employability relationships, while others contradict. Participative leadership's substantial and positive association with industry linkage ($\beta = 0.61$) agrees with similar research in other developing countries.^{27,19} In Uganda, Muhwezi et al.²⁷ found that leadership involvement predicts industry engagement with TVET ($r = 0.623$, $p < 0.01$). Similarly, in South Africa, Ndlovu et al.¹⁹ concluded that transformational leadership predicted staff commitment. Thus, African TVET leaders appear to have a significant influence on capacity building, notwithstanding the differences in the research contexts.

Cooperative training's considerable and positive connection to employability ($\beta = 0.38\%$) agrees with reports on work-integrated education and training in the international literature.^{50,26} According to Xue and Ooi's work's study of work-integrated learning in Chinese TVET, cooperative education and training quality positively predicted graduate employability. The mechanism appears to be the enhancement of self-confidence and flexibility. Similar results were reported by Jackson²⁶ in a meta-analysis of 62 studies on cooperative education and training. The pooled effect size was moderately large ($d = 0.42$; 95% CI [0.35 0.49]). Moreover, the effect was larger in developing countries ($d = 0.51\%$) than in developed countries ($d = 0.36\%$). Thus, this study's finding on the positive association between cooperative training and employability ($\beta = 0.38\%$) agrees with those of Jackson²⁶ and Xue and Ooi.⁵⁰

In contrast, the current result on the lack of association between staff commitment and employability contradicts the international literature.²¹⁻²² According to Riketta's meta-analysis, organizational commitment had a moderate and positive association with job performance ($\rho = 0.29\%$). The commitment-performance relationship was weaker in the public sector ($\rho = 0.18\%$) than in the private sector ($\rho = 0.29\%$). Why does staff commitment have no association with graduate employability in Ethiopia? One possible reason is that the TVET system in Ethiopia has numerous bureaucratic and resource barriers that undermine the industry's role in TVET. Such issues could explain why staff commitment has a lesser influence on graduate employability than in other countries.

Practical Implications

7.1 For TVET College Leadership

College deans should consider participative leadership to involve the industry. The following are the recommendations that college deans should consider:

1. They should develop formal advisory committees with the industry and involve them in monthly meetings.
2. The college should consult the industry in reviewing the curriculum and in identifying the appropriate technology.

3. 3. The college should come up with a win-win arrangement where the industry provides students with internship opportunities while the college provides the industry with students and equipment.
4. 4. The deans should shift the emphasis of staff commitment from loyalty to the organization to graduate employment.
5. 5. The college should invest more in cooperative education, including training the staff, developing agreements, and ensuring proper follow-up.

7.2 For Regional and Federal Policy

The Sidama Regional TVET Bureau should consider the following recommendations:

1. 1. Devolve more powers to the colleges to enable them to make decisions and negotiate with the industries on matters affecting them.
2. 2. Allocate funds for industry liaison posts in the colleges.
3. 3. Set up a forum for employers of labor at the regional level so that the college can interact with them on a quarterly basis.
4. 4. Make issues concerning the quality of cooperative training an integral part of the college accountability framework.
5. 5. Give priority in the allocation of resources to achieving linkages with industries than expansion.

TVET college leadership should focus on developing leadership and management that are people-centered and participatory in accordance with the TVET institutional mission and values.

7.3 For Industry and Employer Engagement

Industry partners should develop strategic, not ad hoc, approaches to engaging colleges and universities in order to think of them as partners. Some of the recommendations include:

1. 1. Assigning liaison people to individual colleges.
2. 2. Participating in curriculum development.
3. 3. Offering to train and mentor.
4. 4. Providing internships with specific learning objectives.
5. 5. Reporting on graduates' performance.

7.4 Feasibility Analysis

Table 13 presents a feasibility analysis of these recommendations.

Table 13
Feasibility Analysis of Recommendations

Recommendation	Feasibility	Resources Required	Timeline
Appoint liaison officer	High	Staff allocation	3 months
Industry advisory committees	High	Industry contacts	6 months
Link staff evaluation to employment	Medium	Policy change	1–2 years
Increase college autonomy	Low	Bureau/ministry policy	3–5 years

Limitations and Future Research

8.1 Limitations

Cross-Sectional Design

The study design does not allow establishing a causal relationship between the variables. While using structural equation modeling, it is possible to identify causal relationships even with cross-sectional data, but longitudinal or experimental designs are more appropriate for such research questions.

Self-Report

The results are based on participants' perceptions, which could be subject to social desirability bias. Using objective measures could have been more appropriate, for instance, if there were objective data on the employment status of the participants (e.g., through employment records or reports from the employers). Notably, Harman's test revealed that there is no substantial method bias in this study.

Limited Scope

The study was conducted in one region only, which limits the generalizability of the results to other areas in Ethiopia and other countries. The researchers should consider expanding the study to include more regions and countries.

Scope of Industries

The researchers contacted only six industry partners, which might not be sufficient to represent the views of all employers accurately. Different industries (e.g., construction, manufacturing, agriculture, and hospitality) might have different perspectives on the issue. Another limitation is that the sample was heavily skewed toward males. As such, the results only represent the views of male graduates. Since the majority of Ethiopian TVET students are male, it is reasonable to generalize the results to male students nationwide. However, the effect of participative leadership on female graduates is likely to be different, which the study could address in future research.

8.2 Future Research

Longitudinal studies following up participants from the study through training processes and into the workplace would allow researchers to investigate the links between variables and employability at different stages and determine if the proposed mediating processes operate serially. Conducting similar studies in other regions of Ethiopia and different countries would provide a basis for generalizability. Intervention studies would also be useful in establishing the causal relationship between the participative leadership and the student's employability.

The following variables could also be considered for investigation as possible mediating processes or moderators such as staff self-efficacy, entrepreneurial culture, or student self-efficacy. The use of objective measures of student success such as the COC results, employment, and employer's satisfaction surveys would reduce the limitations associated with self-reported measures. A study could also consider investigating the effect of participative leadership on graduate self-employment and business start-up rates as a means of evaluating how it influences entrepreneurship, which is one of the key strategies in TVET for Ethiopia.

Lastly, it would be important to test the effectiveness of participative leadership for male and female graduates since the current study was conducted in a context where there is a large imbalance between male and female students in most TVET programs.

Conclusion

This research provides empirical evidence that participative leadership indirectly influences youth employability with a mediating role of high-quality cooperative training through extensive industry linkages. The model explained 46% of the variance in the outcome variable with most of the variance arising from variables that the college leadership has control over.

Participative leadership directly influenced graduate employability via the enhancement of extensive industry linkages by the college leadership ($\beta = 0.61$; indirect effect non-significant), and through the encouragement of staff commitment ($\beta = 0.52$; indirect effect: non-significant). Therefore, industry linkage was the main intervening variable in the relationship between leader participation and graduate employability. This suggests that while organizational commitment is important, the '**goal-aligned commitment**' concept might offer alternative perspectives on the coaching of professional staff.

Serial mediation was achieved through the path leadership $\rightarrow$ industry linkages $\rightarrow$ cooperative training $\rightarrow$ graduate employability; indirect effect = 0.13. This implies that effective leadership in TVET colleges can lead to extensive industry linkages that produce high-quality cooperative training, enhancing graduate employability. The results further show that cooperative training directly predicted graduate employability ($\beta = 0.38$). Thus, it is important to ensure authentic experiential learning takes place during TVET training for employability to be achieved.

For countries in the global south that are grappling with a high level of youth unemployment, this study indicates that institutional leadership and the capacity to develop links with industries are viable options for improving the state of employment among graduates even when they do not have the resources, freedom, or strategy to create quality training partnerships. The study revealed that participative leadership, when directed towards achieving structural linkages, would result in significant improvements in graduate employment rates a critical variable in economic and social development in the global south.

Declarations

Public Interest Statement

Technical and Vocational Education and Training (TVET) Institutions play a key role in human resource development and poverty alleviation in most developing countries. Despite the huge investment in this sector, the high unemployment rate of TVET graduates remains a matter of great concern. The study discussed in this paper aims to contribute to the understanding of the factors that influence the performance of these institutions. The study questioned the commonly accepted view that the commitment of teachers in these institutions is the key determinant of their performance. This paper argues that participative leadership has a positive effect on graduate employment through the mediating role of institutional mechanisms. These institutional mechanisms include industry linkages and cooperative training. The study shows that for teacher commitment to result in positive graduate employment outcomes, leaders should purpose consciously to build external linkages, particularly with industries. This paper concludes that there is a need to look deeper into the structural processes that affect the TVET system in most developing countries. The paper further argues that these structural processes are the basis on which planning for effective TVET should take place.

No potential conflict of interest was reported by the authors.

Clinical Trial Number

Clinical trial number: not applicable.

Ashenaf Argata Yona

is a PhD candidate in Leadership and Management at the Federal Technical and Vocational Training Institute (FTVTI) in Addis Ababa, Ethiopia. His current research investigates the emergence of innovative culture in public vocational education under strategic leadership in the case of TVET in Ethiopia. He completed an MA in Leadership and Management from FTVTI and a BSc in Civil Engineering from Hawassa University. Presently, he serves as a college dean at Hawassa Tegibaried Polytechnic College and has gained ample experience in teaching, academic leadership, and institutional transformation. His

research interests include educational leadership, innovation culture, entrepreneurship, youth employability, academia-industry linkages, and reform of TVET in Ethiopia to link institutional practices to market outcomes and contribute to policy-making and reform of Ethiopian vocational education institutes.

Declarations of Generative AI and AI-Assisted Technologies in the Writing Process

Supplementary Material

The questionnaire instruments, interview protocols, and additional methodological details are available from the corresponding author upon request.

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Author Contribution

A.A.Y performed all things,analyzed data,wrot the main manuscript text.M.M.D supervised and guided the study.both authors reviewd and approed the final research manuscript.

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Data Availability Statement

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request. The interview transcripts are not publicly available to protect participant confidentiality, but anonymized quantitative data may be shared for verification purposes.

References

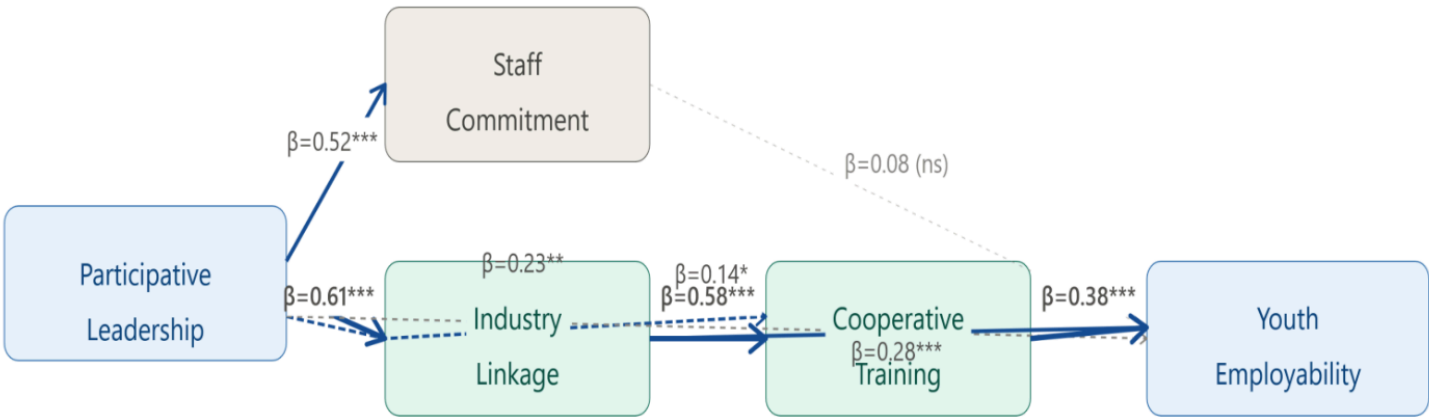
1. ILO. World employment and social outlook: Trends 2024. Geneva: International Labour Organization; 2024.
2. World Bank. Ethiopia economic brief: Youth employment. Washington, DC: World Bank; 2023.

3. ILO. Skills for tomorrow: TVET and the future of work. Geneva: International Labour Organization; 2020.
4. UNESCO. Reconsidering education post-COVID-19. Paris: UNESCO Publishing; 2022.
5. World Bank. Strengthening TVET systems in Sub-Saharan Africa. Washington, DC: World Bank Group; 2022.
6. Ministry of Planning and Development. Ethiopia's ten-year development plan (2021–2030). Addis Ababa: Federal Democratic Republic of Ethiopia; 2021.
7. Ministry of Finance. Education sector budget allocation report 2023/24. Addis Ababa: Federal Democratic Republic of Ethiopia; 2024.
8. Regional Education Bureau. Annual regional education sector report. Hawassa: Sidama Regional Government; 2022.
9. Regional TVET, Bureau. Annual TVET performance report for Sidama Regional State. Hawassa: Regional Education Bureau; 2023.
10. Ministry of Labor and Skills. National TVET graduate employment tracking report. Addis Ababa: Federal Democratic Republic of Ethiopia; 2023.
11. Ethiopian Chamber of Commerce. Employer satisfaction survey on TVET graduates. Addis Ababa: Ethiopian Chamber of Commerce; 2023.
12. Gebremariam G, Assefa S. Employer perspectives on TVET graduate competencies in Ethiopia. *J Vocat Educ Train*. 2021;43(2):156–73.
13. Bush T. Educational leadership and management: Theory, policy and practice. London: SAGE; 2020.
14. Hallinger P, Gümüş S. Educational leadership and the global disconnect. *Theory Pract*. 2020;59(1):21–35.
15. Somech A. The effects of participative leadership on teachers' performance and well-being. *Educ Adm Q*. 2006;42(5):746–72.
16. Yukl G. Leadership in organizations. 8th ed. Boston: Pearson Education; 2013.
17. Billett S. Integrating learning experiences across tertiary education and practice settings. *Stud High Educ*. 2011;36(7):851–65.
18. Morgeson FP, DeRue DS. Leadership and organizational behavior. *Curr Dir Psychol Sci*. 2021;30(1):35–41.
19. Ndlovu S, Mkhize N, Dlamini B. Transformational leadership and staff commitment in South African TVET. *S Afr J Educ*. 2026;46(2):1–14.
20. Guta A. Industry-institution collaboration in Oromia TVET [dissertation]. Addis Ababa: Unpublished; 2025.
21. Meyer JP, Allen NJ. Commitment in the workplace: Theory, research, and application. Thousand Oaks: SAGE; 1997.
22. Riketta M. The causal relation between job attitudes and performance: A meta-analysis. *Pers Psychol*. 2008;61(3):467–97.

23. Meyer JP, Allen NJ, Smith CA. Commitment to organizations and occupations. *J Appl Psychol.* 1993;78(4):538–51.
24. Tadesse MA. Leadership practices and self-employment linkages in TVET institutions: A capabilities approach. Pretoria: University of South Africa (UNISA); 2025.
25. Alemnew M. Effectiveness of TVET program in manpower development in Ethiopia: Implications for policy and practice. *Soc Sci Humanit Open.* 2026;11:101755.
26. Jackson D. Understanding work-integrated learning. *Stud High Educ.* 2015;40(2):350–67.
27. Muhwezi L, Ssekakubo J, Oluka P. Employer involvement and TVET outcomes in Uganda. *J Vocat Educ Train.* 2025;77(3):412–29.
28. Blau PM. Exchange and power in social life. New York: Wiley; 1964.
29. Eisenberger R, Huntington R, Hutchison S, Sowa D. Perceived organizational support. *J Appl Psychol.* 1986;71(3):500–7.
30. Cropanzano R, Mitchell MS. Social exchange theory: An interdisciplinary review. *J Manag.* 2005;31(6):874–900.
31. Gouldner AW. The norm of reciprocity. *Am Sociol Rev.* 1960;25(2):161–78.
32. Kurtessis JN, Eisenberger R, Ford MT, Buffardi LC, Stewart KA, Adis CS. Perceived organizational support: A meta-analytic evaluation. *J Manag.* 2017;43(6):1854–84.
33. Rhoades L, Eisenberger R. Perceived organizational support and employee outcomes. *J Appl Psychol.* 2002;87(4):698–714.
34. Becker GS. Human capital: A theoretical and empirical analysis. New York: Columbia University; 1964.
35. Sen A. Development as freedom. Oxford: Oxford University Press; 1999.
36. Coleman JS. Social capital in the creation of human capital. *Am J Sociol.* 1988;94:S95–120.
37. Robeyns I. Wellbeing, freedom and social justice: The capability approach re-examined. Cambridge: Open Book; 2017.
38. Creswell JW, Plano Clark VL. Designing and conducting mixed methods research. 3rd ed. Thousand Oaks: SAGE; 2018.
39. Rothwell A, Arnold J. Self-perceived employability. *Eur J Train Dev.* 2007;31(2):90–107.
40. Arbuckle JL. AMOS 26.0 User's Guide. Chicago: IBM SPSS; 2019.
41. Preacher KJ, Hayes AF. Asymptotic and resampling strategies for assessing and comparing indirect effects. *Behav Res Methods.* 2008;40(3):879–91.
42. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis. *Struct Equ Model.* 1999;6(1):1–55.
43. Kline RB. Principles and practice of structural equation modeling. 4th ed. New York: Guilford Press; 2016.
44. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77–101.

45. Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. J Mark Res. 1981;18(1):39–50.
46. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. J Acad Mark Sci. 2015;43(1):115–35.
47. Niskanen WA. Bureaucracy and representative government. Chicago: Aldine-Atherton; 1971.
48. Weber M. Economy and society. Berkeley: University of California Press; 1922.
49. Merton RK. Bureaucratic structure and personality. Soc Forces. 1940;18(4):560–8.
50. Xue YB, Ooi BK. Quality of work-integrated learning and employability in Henan TVET: Serial mediation via career self-efficacy and adaptability. Educ Train. 2026;68(10):82–102.

Figures



Sequential mediation pathway:
Leadership → Industry Linkage → Cooperative Training → Employability
Indirect effect = 0.13, p<0.001 | Model R² = 0.46
*** p<0.001 ** p<0.01 * p<0.05 ns = not significant

Figure 1

Conceptual Mediation Model with Standardized Coefficients

Note: Solid lines indicate direct effects, dashed lines indicate mediation pathways, and dotted lines indicate non-significant relationships (Commitment → Employability: β=0.08, ns). Coefficients are standardized beta weights. Model R² = 0.46 for Employability. Control variables (college size, years of operation, instructor qualifications, student demographics) are included but not shown for clarity. CFI=0.95, RMSEA=0.048, SRMR=0.046. *p<0.05; **p<0.01; ***p<0.001.

