AJOLD

African Journal of Leadership and Development

2026, Vol. 11 No. 1, 249-273

DOI: https://doi.org/10.63990/2026ajoldvol11iss1pp249-273

The Effects of Leadership Practices on School Improvement through Mediating Role of Teachers' Job Satisfaction

[1] Gizachew Tadesse Hajallo [2]Ojulu Okock [3] Assefa Beyene Bassa

OPEN ACCESS

Abstract

This study examined the effects of leadership practices on school improvement. It also investigated mediating role of job satisfaction of teachers between leadership practices and school improvement. Participants of the study were 345 teachers from Kembata and Halaba zones of central Ethiopia. This study implemented quantitative approach to assess the relationship among variables. PLS-SEM is used to measure direct and indirect effects. The finding revealed existence of significant and positive relationship between leadership practices, and school improvement. The finding also revealed significant and positive relationship between leadership practices, and teachers' job satisfaction. Besides, the study found significant and positive relationship between teachers' job satisfaction and school improvement. Moreover, the study revealed teachers' job satisfaction significantly mediated relationship between leadership practices and school improvement. It revealed significant indirect effect of leadership practices on school improvement through teachers' job satisfaction (β = 0.205, t = 4.130, p < 0.001). Thus, it suggests that to achieve sustainable school improvement in the school systems, leadership interventions must focus on monitory and non-monitory incentive schemes to promote long-term commitment, intrinsic motivation, and overall workplace happiness of the frontline educators or teachers.

Keywords

Leadership Practices, Teachers' Job Satisfaction, School Improvement, Central Ethiopia, Secondary Schools

Article History

Submitted: March 31, 2026
Accepted: June 12, 2026
Published: June 30, 2026

Introduction

The pursuit of sustainable school improvement has become central priority for educational systems worldwide as they strive to meet the shifting demands of the 21St century global economy (Fullan, 2007; Harris & Jones, 2019). School improvement is not merely an administrative shift but a systematic process aimed at enhancing students' achievements by modifying curriculum, teaching

[1] Corresponding Author, Ph.D. Candidate, Ethiopian Public Service University, email: tadessegizachew008@gmai.com
[2] PhD, Associate Professor, Ethiopian Public Service University, email: okumo1972@gmail.com
[3] PhD, Assistant Professor of Management and Leadership Studies, Ethiopian Public Service University, email: ase200840@gmail.com
ISSN - 2519-5255 (Print) ISSN - 2957-9104 (Online)
This is an open access article licensed under a Creative Commons Attribution 4.0 International License

practices, and the internal school environment (Harris & Jones, 2019). While various factors contribute to this transformation, the role of leadership is consistently identified as the most influential school level factor affecting students learning, surpassed only by classroom instruction (Leithwood, Harris, & Hopkins, 2020).

Leadership practices are the primary drivers of organizational change in educational settings (Fullan, 2016; Leithwood et al., 2008). Effective leaders do not just manage daily operations but they 'model the way', 'inspiring a shared vision', and 'enabling others to act' (Kouzes & Posner, 2017). Recent studies revealed that the impact of leadership on school improvement is rarely direct (Judijanto et al., 2024). This means that school leaders do not improve student outcomes or institutional quality by working directly with students; rather they improve schools by influencing the intermediate variables such as teachers, school climate, and instructional processes. One of these variables which this study tried to focus is job satisfaction of teachers.

For almost more than two decades, school improvement program has been the primary vehicle for quality enhancement in Ethiopian schools. Consequently, substantial body of empirical researches, including dissertation, theses, and journal articles, have emerged to evaluate its implementation. However, these researches are often located and examining specific regions or districts (woredas) or zones which were not in combination with factors like leadership practices, school improvement and job satisfaction of teachers. Existence of yet unsolved school improvement challenges motivated researchers to conduct this study by even taking it to a higher-level assessment. Despite substantial growth in school enrollment, concerns over quality in education are still problematic (Mitchell, 2015). However, school improvement variable has been studied, several factors lead to significant issues in its implementation such as minimal contextual adaptation, weak leadership, weak management and little stakeholder engagement (Mitchell, 2015), lack of proper understanding, weak monitoring and evaluation systems, and limited leadership capacity (Bore & Triegaardt, 2022). The impact level of their challenges and leadership practices were not well identified. This means, however, most studies identified problems related to school improvement, they are lacking showing or indicating the mediating variable that plays mediating role in the relationship between leaders' intervention and school improvement challenges.

This study addresses the following research objectives: 1) Identify the extent of leadership practices to improve school, 2) Indicate the level of school improvement, 3) Determine the current job satisfaction level of teachers, 4) Assess effects of leadership practices on school improvement, 5) Assess effects of leadership practices on teachers' job satisfaction, 6) Assess effect of teachers' job satisfaction on school improvement, and 7) Examine the mediating role of teachers' job satisfaction between leadership practices and school improvement.

Literature Review

Theoretical Review

Educational leadership practices have been studied widely for their influence on several school outcomes (Hallinger, 2011). Effective leadership has been described over the years as one of the most crucial factors in shaping school success (Leithwood & Hopkins, 2008). Scholars have focused on different styles, models, or approaches to leadership, in particular transformational, transactional, instructional, distributed leadership, and others analyzed them for their effect on schools' performance and improvement (Harianto et al., 2025; James et al., 2022; Katsikas, 2025; Maqbool et al., 2023). Similarly, other leadership practices which were identified by Kouzes & Posner (2007) have been explored for their effect on any organizational settings.

This study focused on Kouzes and Posner's Theory of leadership. Their theory is also known as the five exemplary leadership practices, which posits that leadership is not a formal position, but a measurable and learnable set of behaviors (Kouzes & Posner, 2017). Based on over thirty years of longitudinal research into best leadership experiences, the theory argues that extraordinary results in organizations are achieved when leaders consistently engage in five specific practices such as 'modeling the way', 'inspiring shared vision', 'challenging the process', 'enabling others to act' and 'encouraging the heart' (Kouzes & Posner, 2017). More importantly Kouzes & Posner (2002) stressed that although these qualities were observable, they only manifest themselves when people actually do them. The current researcher claims that implementing these leadership practices effectively at education setting will certainly have impact on the effectiveness of the setting.

Teacher's activity is one of the most critical variables for student-learning (Ingersoll & Collins, 2019). Student's engagement, determination, and commitment to learning are all strongly related to teacher's daily classroom action (Baker & Crompton, 2000). A teacher is more likely to be effective if he/she is satisfied with his/her job and current work conditions (Skaalvik & Skaalvik, 2014). Different studies suggest that students tend to be academically more successful when their teachers are pleased with their jobs and have a strong sense of psychological wellbeing than those who are emotionally exhausted or unsatisfied (Day, 2008; Katrin Arens & Morin, 2016; McInerney et al., 2018). The above statement indicates that teachers' satisfaction on their job is very important and assuring this value is a necessity of a good and effective leadership if they are to achieve effective learning of their students. Teachers' job satisfaction is a crucial factor that influences their performance and overall school climate. Individuals may view a leader as effective or ineffective according to satisfaction they derive from the total experience (Bertocci, 2009). Conceptually, the concept of teacher job satisfaction has been popular in recent times (Skaalvik & Skaalvik, 2011). The primary focus of teachers' job satisfaction falls in professional attitude toward teaching, passion for the teaching job, and enthusiasm toward work in the educational system (Sumanasena & Mohamed, 2022).

The Hertzberg two factor theory has been considered for teacher's job satisfaction (Alshmemri et al., 2017; Herzberg, 2015) in the context of this study and investigate experiences that dissatisfy

or satisfy employees at work individually (Herzberg, 2015). This two-factor theory: motivators and hygiene factors affect motivation (Mausner & Snyderman, 1993). According to this theory, motivators are intrinsic elements embedded in the job content itself. They include achievement, recognition, challenging work, responsibility, and advancement that drive actual engagement and performance. While providing autonomy or celebrating specific accomplishments fosters long-term motivation, a deficit in these intrinsic factors leads to a state of active dissatisfaction. Hygiene factors are seen as extrinsic elements like pay, benefits, job security, conditions of service, supervision, procedures and policies, and interpersonal relationships (colleagues), personal life and status (Bogler, 2001; Gooden & Creque, 2017; Herzberg, 2015). This current study sought to measure five factors job satisfaction such as salary, supervision, working conditions, colleagues, and teaching autonomy (Bogler, 2001).

Change theory provides educational leaders with the strategic architecture necessary to orchestrate general organizational improvements (Evans et al., 2012). This transformative process is primarily informed by four theoretical pillars such as continuous improvement model by Deming's, 1986 cited in Evans et al. (2012) which emphasizes iterative quality enhancement; theory of organizational learning (Argyris & Schoen, 1978) focusing on the corrective power of double-loop learning; learning organizational framework (Senge, 1990) which prioritizes systems thinking and shared vision; appreciative inquiry by Cooperrider and Srivasta, 1987 cited in Evans et al. (2012) which leverages an institution's positive core to catalyst growth. Collectively, these frameworks suggest that sustainable school improvement requires the alignment of technical efficiency, cognitive adaptability, and relational strengths (Fullan, 2016).

School improvement is basically a change process that demands active engagement of entire school community. Effective reform needs a shift in existing school culture and climate, empowering stakeholders to take the initiative in driving institutional improvement (Fullan, 2007; Hargreaves & Fullan, 2012). School improvement is an approach to educational reform that aims to increase students results by improving educational achievement through teaching-learning process and focus on the supporting conditions required for effective learning (Fullan, 2007; Hopkins (2003). It serves as a strategic framework to enhance school's ability to provide quality education, especially during stages of change and improvement (Hopkins, 2003; Leithwood & Hopkins, 2008). Although the concept 'school improvement' emerged in 1960s, its' importance was greatly reinforced with OECD-sponsored international school improvement project in the mid-1980s, which developed a specific and internationally recognized body for school improvement practices (Reynolds, Bollen, Cremers, Hopkins, & Stoll, 1996, as cited in Hailu (2010). Research has been highlighted that a skilled education system is required to continuously progress toward low secondary education to the target of universal access that is capable of providing both quality instructions and adequate learning achievements (Joshi & Verspoor, 2013; UNESCO., 2015). It aligns with a comprehensive global education agenda, which requires the consequence of equity, quality, and better learning for sustainable development (OECD., 2019; World Bank., 2020).

Worldwide, school improvement has been reconceptualized as fundamental strategy for advancing educational quality, marked by a transition from centralized, top-down reforms to decentralized, school-based initiatives that empower institutions to diagnosis their specific needs and implement customized interventions (Harris, 2002). In the context of globalization, enhancing schools is regarded as the essential pathway through which nations can achieve the overarching goals of education. Numerous scholars have identified school improvement as a critical instrument for educational change, emphasizing its role in enabling individuals and communities to engage comprehensively in development processes by acquiring the necessary knowledge, skills, and attitudes (Bore & Triegaardt, 2022; MoE, 1994).

School improvement investigations have highlighted the importance of leadership in creating better schools (Harris, 2003; Harris et al. 2000). Much evidence shows that leadership quality improves teaching and learning. Such leadership has shown to make a difference by influencing inspiration of teachers and quality of teaching that takes place in classroom (Fullan, 2002; Sergiovanni, 2001). Leadership can be the chief catalyst and supportive factor for school improvement (Hallinger & Heck, 2011). Others also state that leadership is found to be the most significant aspect in improving learning outcomes (Nusche & Pont, 2008; Pont, Beatriz, 2014; Robinson et al., 2008).

Studies revealed that leadership practices have positive, typically moderate impact on student achievement. The effects on school improvement processes are often larger and mostly indirect. A comprehensive meta-analysis uncovered significant overall connection between principal leadership and student achievement, with a small effect size of d=0.34 (Wu & Shen, 2022). Finding across 512 primary studies reported similarly small to moderate overall effect of r = 0.33. Remarkably, it highlighted that the impact of leadership was stronger on organizational and teacher outcomes compared to direct student outcomes (Tan et al., 2022). The type of leadership exercised also plays a crucial role. For instance, instructional leadership showed effects that were 3 to 4 times greater than those of transformational leadership, according to analysis of 27 studies. The most effective practice was identified as a leader's active promotion and participation in the teacher leaning and development. Additionally, reasonable effects were distinguished for activities such as setting objectives and planning, coordinating, and evaluating teaching and curriculum (Robinson et al., 2008). Longitudinal studies also indicated that leadership primarily enhances organizational capacity. Both distributed leadership and collaborative leadership have shown to significantly boost a school's capacity for improvement, leading to indirect increases in reading and math achievement over a span of four years (Hallinger & Heck, 2010; Heck & Hallinger, 2010). Successful principals seem to intertwine transformational and instructional strategies, allowing a collection of small, positive effects to build momentum through enhanced teaching, stronger school culture, better attendance, heightened motivation and engagement (Day et al., 2016). Additional evidence shows teacher leadership is also positively related to achievement (r = 0.19), especially when it focuses on improving curriculum, instruction and assessment (Shen et al., 2020).

Empirical Studies Related to Current Study

Empirical research highlights that exemplary leadership is primarily driver of school improvement, acting as a catalyst for cultural transformation and academic excellence (Eckert & Morgan, 2023; Maqbool et al., 2023). Exemplary leadership focuses on mobilizing collective expertise of teachers and staff to increase the school's internal capacity for change unlike traditional administrative management (Maqbool et al., 2023). Eckert & Morgan (2023) highlights that collective leadership where teachers and school principals share influence to accelerate school improvement. A quantitative study revealed statistically strong positive relationship among various leadership styles such as strategic, cultural, instructional, and the sustainability of academic quality (Maqbool et al., 2023).

Effectiveness of educational mission appears to be contingent upon teachers' attitudes toward their profession and their overall level of job satisfaction. Studies revealed that schools must give more attention to increasing teacher job satisfaction (Heller et al., 1993). Research conducted in school settings has also shown that leader behaviors have influence on teachers' job satisfaction (Bogler, 2001; Dinham & Scott, 2000). The study which was conducted in secondary schools of Israeli found evidence of the influence of transformational leadership on teachers' job satisfaction (Bogler, 2001). Study result indicates that transformational leadership influence teachers' job satisfaction (Metaferia et al., 2023). Kiboss & Jemiryott (2014) proposed that the administration and school leadership play a significant role in the student outcomes through influencing the educator morale, and aspects of transformational and transactional leadership predicting job satisfaction (Yohannes & Wasonga, 2023). Kouali (2017) identified the school principal's leadership style as having far greater impact on teacher job satisfaction, with transformational and transactional leadership serving as the most effective path to greater teacher job satisfaction.

Overall, numerous qualitative and quantitative studies indicate that teachers' job satisfaction is impacted by leadership practices. Teachers have a positive impression of leadership practices that encourage positive school climate, teamwork, and creativity that in turn enhances the values within a school, specifically job satisfaction. Leaders that use support practices appear to create a sense of belonging and involvement for their team members enhancing job satisfaction (Amimi et al., 2022). Teachers report high satisfaction in their work when they perceive their principal as someone who shares information with others, keeps open channels of communication with the teachers and delegates authority (Bogler, 2001). Studies also revealed that teachers feel valued and more encouraged, they will be more willing to take the instructional risks necessary for school wide pedagogical improvement (Eckert & Morgan, 2023).

Despite the established link between leadership and school outcomes, there is a pressing need to know the mediating role of teachers' job satisfaction more deeply. Previous studies or research works have often focused on direct correlations, yet the black box of how leadership translates into actual schoolwide improvement remains a subject of intense academic inquiry. Thus, this study aimed at examining the indirect path through which leadership practices influence the improvement of schools and their schooling quality via the satisfaction of teachers.

Research Methods and Procedures

Research Design, Methods, Population and Sample Size

This quantitative study utilized cross sectional design to assess causal relationship between leadership practices, teacher satisfaction and school improvement in central Ethiopia. There was totally 1195 teachers and 50 school principals. After applying Yamane's (1967) formula for sample size determination from teachers' population, 300 teachers were selected and school principals who were available were added to the sample of the study. Questionnaire was distributed to all those were selected and of which 296 teachers and 50 school principals' copies were returned. The return rate was 98.7% for teachers and 100% for school principals. One case is identified as an outlier and removed from dataset. Finally, data were coded and analyzed using questionnaire from 345 secondary school teachers and principals across Kembata and Halaba Zones employing systematic probability sampling for teachers and all available principals are taken as samples. The analysis is conducted using PLS-SEM (SmartPLS 4) to validate measurement models and test complex structural relationships, including mediation effects, ensuring rigorous assessment of both direct and indirect impacts. Bootstrapping with 5,000 subsamples is performed to test mediation effect in the model.

Measurement Model Assessment and Procedures

Factor Loadings

In this study factor loading for each item is above 0.70 except for four items under salary, school climate, working conditions and students' achievement construct such as SAL1, SC2, WCO2 and SA7 is 0.374, 0.500, 0.110, and 0.483 respectively. These items, except Sc2, are removed from the data. All other loadings are above the threshold according to Hair and his associates' established criteria threshold of 0.708. However, items with loadings 0.50 to 0.70 were retained provided they do not adversely affect the AVE of their respective constructs (Hair & Alamer, 2022).

Reliability and Validity Tests

The two most widely utilized methods for assessing reliability are Cronbach's Alpha and composite reliability (Hair et al., 2021). The assessment results for both methods range from 0.851 to 0.939 and 0.900 to 0.952 respectively. Both indicators have reliability statistic over the required threshold of 0.7 (Hair et al., 2011). Therefore, we can say that construct reliability is established. AVE result is above 0.5 indicating an adequate level of convergent validity for all constructs (Fornell & Larcker, 1981). This means each latent construct describes no less than 50% of the indicator variance, and according to Yu et al. (2021), it should exceed 0.5 threshold. The result in this current study ranged from 0.624 to 0.805, surpassing threshold and supporting convergent validity of their latent constructs.

Table 1: Reliability & Validity Tests

Constructs	Alpha	CR (rho_a)	CR (rho_c)	AVE
Colleague	0.851	0.852	0.900	0.692
Challenging the Process	0.926	0.926	0.942	0.730
Community participation	0.899	0.904	0.921	0.624
Encouraging the heart	0.939	0.941	0.952	0.768
Enabling other to act	0.923	0.924	0.940	0.723
Inspiring the shared vision	0.894	0.896	0.919	0.653
Modeling the way	0.909	0.914	0.929	0.687
Students' Achievement	0.879	0.898	0.909	0.593
Salary	0.873	0.875	0.922	0.798
School Climate	0.875	0.907	0.908	0.629
Supervision	0.909	0.917	0.929	0.686
Teaching Autonomy	0.867	0.869	0.909	0.715
Working Conditions	0.878	0.885	0.925	0.805

Source: Analysis Result from the Data by the Researchers (2025)

Discriminant validity has become generally accepted requirement for studying bond among latent variables (Henseler et al., 2015). For variance based structural equation modeling, such as partial least squares (PLS), the Fornell Larcker test and investigation of cross loadings are dominant methods for assessing discriminant validity (Henseler et al., 2015; Rönkkö & Evermann, 2013).

Table 2: Fornell-Larcker Criterion

	COL	CP	Com	EH	EOA	ISV	MW	SA	SAL	SC	SUP	TA	WCO
COL	**0.832**												
CP	0.297	**0.854**											
Com	0.289	0.403	**0.790**										
EH	0.249	0.389	0.478	**0.876**									
EOA	0.302	0.481	0.476	0.495	**0.850**								
ISV	0.253	0.420	0.414	0.483	0.473	**0.808**							
MW	0.249	0.396	0.400	0.375	0.427	0.421	**0.829**						
SA	0.274	0.440	0.576	0.457	0.489	0.433	0.481	**0.770**					
SAL	0.268	0.293	0.567	0.370	0.341	0.288	0.235	0.364	**0.893**				
SC	0.405	0.365	0.458	0.360	0.425	0.373	0.362	0.532	0.280	**0.793**			
SUP	0.439	0.320	0.274	0.323	0.360	0.239	0.345	0.343	0.298	0.323	**0.829**		
TA	0.299	0.239	0.489	0.322	0.309	0.234	0.194	0.366	0.505	0.314	0.266	**0.846**	
WCO	0.323	0.322	0.405	0.336	0.427	0.366	0.326	0.423	0.431	0.366	0.282	0.493	**0.897**

***Note**: COL = Colleague, CP = 'Challenging the Process', EH = 'Encouraging the heart', EOA = 'Enabling other to act', ISV = 'Inspiring the shared vision', MW = 'Modeling the way', SA = 'Students' Achievement', SAL = Salary, SC = School Climate, SUP = Supervision, TA = Teaching Autonomy, Com = Community Participation, WCO = Working Conditions.*

In this study, both the Fornell-larcker criteria and Hetrotrait-Monotrait (HTMT) ratio are used to check for or validate discriminant validity. This is to determine how different each latent variable is from other constructs (Hair et al., 2014). The square root of AVE of the construct is shown in bold on the diagonal of the correlation matrix as shown in Table 2. It is necessary to prove that the square of individual AVE to develop discriminant validity (Fornell & Larcker, 1981). The AVE for each variable, which is with bold, is greater than the corresponding inter-construct relationships (Fornell & Larcker, 1981).

Focusing on the weakness of Fornell-larcker criteria, Henseler et al. (2015) and Voorhees et al. (2016) proposed the Hetrotrait-Monotrait (HTMT) ratio approach to examine discriminant validity. Scholars recommend to compare the Hetrotrait-Monotrait ratio of correlations with a threshold value of 0.85 (Henseler et al. 2015; Voorhees et al., 2016), less than 0.85 (Garson, 2002; Zhao et al., 2010), a threshold of 0.9 (John & Benet-Martínez, 2000). Voorhees et al. (2016) conducted a simulation study in which they defined a correlation of 0.75 as having no discriminant validity issues and 0.9 as having discriminant validity issues. Teo et al. (2008) and Gold et al. (2001) claimed that HTMT ratios should not be hitting 0.90 and more, however, Rönkkö & Evermann (2013) define a correlation at 0.8 or higher as having discriminant validity issues. All constructs show no discriminant validity issues as illustrated in table 3 below. The HTMT ratio of correlations for the constructs is also much lower than the thresholds set by different scholars in different empirical studies.

Table 3: Hetrotrait-Monotrait (HTMT) Ratio Assessment

	COL	CP	Com	EH	EOA	ISV	MW	SA	SAL	SC	SUP	TA	WCO
COL													
CP	0.333												
Com	0.328	0.439											
EH	0.278	0.417	0.519										
EOA	0.340	0.520	0.521	0.532									
ISV	0.289	0.461	0.456	0.525	0.520								
MW	0.281	0.433	0.433	0.406	0.466	0.464							
SA	0.319	0.482	0.642	0.501	0.541	0.487	0.536						
SAL	0.312	0.326	0.635	0.407	0.379	0.322	0.262	0.412					
SC	0.461	0.394	0.504	0.391	0.459	0.415	0.391	0.597	0.322				
SUP	0.499	0.345	0.297	0.341	0.384	0.254	0.372	0.381	0.333	0.360			
TA	0.345	0.267	0.550	0.355	0.345	0.263	0.216	0.414	0.580	0.355	0.297		
WCO	0.374	0.356	0.448	0.368	0.472	0.411	0.364	0.477	0.485	0.409	0.310	0.558	

Source: Analysis Result from the Data by Researchers (2025)

Cross Loadings

According to criteria established by Hair et al., (2024), an indicator's loading on its assigned latent construct should be higher than its cross loadings on any other construct. As shown in the cross-

loadings matrix, all indicators exhibited higher loadings on their respective constructs (MW, ISV, CP, EOA, EH, SAL, SUP, WCO, COL, TA, SC, SA, and Com) compared to their loadings on other constructs. For instance, COL1 loaded at 0.836 on its parent construct COL, while its highest cross loading was 0.403 with the SUP construct. All indicators are exceptionally strong, loading at 0.721 to 0.925, except for Sal1, WCO2, SA7 and SC2, this suggests high reliability for this specific constructs. However, item SC2 have loading of below 0.70 or 0.708, in Smart-PLS this item is usually candidate for removal if they lower AVE. Thus, SC2 loading under its respective construct do not affect average variances extracted and kept in the data set. This confirms that constructs in the model are distinct, and capture different phenomena.

Validity and Reliability Test for Higher Order Constructs (HOC)

Reliability

Table 4: Cronbach's Alpha and Composite Reliability

Variable	Cronbach's Alpha	CR (rho_a)	CR (rho_c)
Leadership Practices	0.794	0.798	0.859
School Improvement	0.766	0.773	0.865
Teachers' Job Satisfaction	0.738	0.744	0.827

Source: Analysis Result from the Data by Researchers (2025)

The measurement model was evaluated for internal consistency reliability and convergent validity. In table 4 above, Cronbach's Alpha for all constructs range from 0.738 to 0.794. exceeding the recommended threshold of 0.70 (Henseler et al., 2009). In addition to this, composite reliability (rho-c) values range from 0.827 to 0.865 signifying high internal consistency.

Convergent validity

Table 5: Average Variance Extracted for Higher Order Constructs

Variables	AVE
Leadership Practices	0.549
School Improvement	0.681
Teachers' Job Satisfaction	0.490

Source: Analysis Result from the Data by Researchers (2025)

Convergent validity is assessed via the AVE for three higher order constructs. The AVE values as illustrated in table 5 above, for leadership practices is 0.549 and for school improvement is 0.681 were well above the 0.50 benchmark. Although the AVE for teachers' job satisfaction is 0.490 was slightly below 0.50, its convergent validity is supported as its composite reliability (0.827) is well above the required 0.60 threshold (Fornell & Larcker, 1981). This mean, however, teachers' job satisfaction latent variable shows a marginal AVE, the high composite reliability (rho-c = 0.827)

suggests that the construct remains a robust measure for structural equation modeling analysis (Haji-Othman et al., 2024; Kamranfar et al., 2023). Thus, all constructs demonstrate sufficient reliability and validity for structural model testing (Haji-Othman & Yusuff, 2022).

Discriminant Validity

Discriminant validity measurement, for higher order constructs, is used. Table 6 below illustrates that Fornell Larcker criteria and Hetro-trait-Mono-trait ratio are measurement applied to assess distinctness of latent variables of the study.

Table 6: Foenell Larcker Criteria and Hetrotrait-Monotrait Ratio

Hetrotrait-Monotrait Ratio			
	LP	**SI**	**TJS**
Leadership Practices			
School Improvement	0.888		
Teachers' Job Satisfaction	0.761	0.843	
Fornell Larcker Criteria			
Leadership Practices	0.741		
School Improvement	0.696	0.826	
Teachers' Job Satisfaction	0.587	0.638	0.700

Source: Analysis Result from the Data by Researchers (2025)

Discriminant validity is measured using both Fornell-Larcker criterion and Hetrotrait-Monotrait (HTMT) ratio (Fornell & Larcker, 1981; Hair et al., 2021). According to Fornell-Larcker criterion, the square root of AVE for each construct was greater than its highest correlation with any other construct, confirming that each latent variable is distinct (Fornell & Larcker, 1981). As illustrated in table 6 above, the squared root of AVE is very lower than the correlation value of any other construct.

Furthermore, the HTMT ratios remained below the 0.90 threshold (Hair et al., 2024), with values ranging from 0.761 to 0.888. while correlation between leadership practices (LP) and school improvement (SI) is relatively high (HTMT = 0.888), it remains within the acceptable parameters for behavioral research. Collectively, these results indicates that measurement possesses adequate discriminant validity. Hence, the model passes the HTMT test at the < 0.90 level which is generally accepted threshold for conceptually similar constructs (Hair et al., 2019).

Table 7: Collinearity Test

Variables Relationship	**VIF**
Leadership Practices -> School Improvement	1.526
Leadership Practices -> Teachers' Job Satisfaction	1.000
Teachers' Job Satisfaction -> School Improvement	1.526

Source: Analysis Result from the Data by Researchers (2025)

The VIF for each construct is examined to assess the structural model for potential collinearity issues. In SEM (specifically PLS-SEM) and regression analysis, VIF is used to detect multicollinearity among predictor constructs. Multicollinearity occur when independent variables are too highly correlated, which can bias the results and inflate standard errors (Hair et al., 2019). As shown in the table 7 above, all VIF ranged between 1.00 and 1.526. These values are significantly lower than conservative recommended threshold 3.0 (Hair et al., 2019). The VIF value < 5 is the most common threshold for acceptable multicollinearity (Hair et al., 2011), VIF value < 3 is a more conservative and modern threshold often recommended to ensure no collinearity issues exist (Hair et al., 2019). VIF value above 5 or 10 is indicative of more serious problem (Kim, 2019). The value of VIF = 1 indicates that the independent variables are not correlated to each other (Shrestha, 2020). Multicollinearity exists, If variance inflation factor is greater than 5 to 10 and R^2 = 0.8 to 0.9 (Kim, 2019).

Thus, according to the above discussion, multicollinearity is not an issue among the predictors. Specially, it supports the reliability of the estimated regression coefficients for leadership practices, school improvement and teacher job satisfaction, confirming that their individual or specific contributions to the model can be interpreted with confidence. The measurement model is confirmed that we can move on to testing the structural model or theory (Hair et al., 2021).

Structural or Inner Model Assessment: Explanatory Power, Predictive Relevance, and Effect Size

Table 8 below displays latent variable values for R^2 and adjusted R^2. The R^2 values 0.750, 0.500, and 0.250 stand for significant, moderate, and weak respectively indicates that all are valid ranges for R^2 statistic (Hair et al., 2014). According to Henseler et al. (2009) and Hair et al., (2011), R^2 values 0.75, 0.50, and 0.25 can be substantial, moderate, and weak respectively. However acceptable R^2 value is based on the context, in some disciplines R^2 value can be as low as 0.10 (Raithel et al., 2012) which is considered satisfactory. Table 8 below shows R^2 value which is produced based on the data analyzed.

Table 8: Result of Coefficient Determination (Measurement of R^2), Q^2 & VIF

Construct	R^2	Adjusted R^2	Q^2	F^2	
Leadership Practices				LP -> SI	0.363
School Improvement	0.565	0.562	0.475	LP -> TJS	0.526
Teachers' Job Satisfaction	0.345	0.343	0.334	TJS -> SI	0.184

Source: Analysis Result from the Data by Researchers (2025)

According to the analysis results above, the R^2 value of school improvement variable is 0.565. This shows that leadership practices and teachers' job satisfaction explain 56.5% of the variance in school improvement. This is considered moderate to strong explanatory power, while remaining 43.5% is explained by other variables outside the study. The R^2 of teachers' job satisfaction is 0.345. This shows that percentage of variance in teachers' job satisfaction variable is explained by

the variable leadership practices by 34.5%, while remaining 65.5% is explained by other variable (s) out the study. This is considered moderate explanatory power. The adjusted R^2 values are very close to the raw R^2, which indicates that the model is not artificially inflated by having predictor variables.

The change in R^2 is estimated if a given exogenous construct is omitted from the model to estimate explanatory power of each exogeneous variable (Haji-Othman & Yusuff, 2022; Richter et al., 2020). This measure is referred to as effect size (F^2). In PLS-SEM path model, when an independent variable omitted from the model, it measures the variation in squared correlation values and determine whether the omitted independent variable has a strong effect on the value of dependent variable or not (Haji-Othman et al., 2024). The impact of predictors is high at the structural level if F^2 is 0.35, and it is medium if F^2 is 0.15, small if F^2 is 0.02 (Cohen, 1988). The model F^2 effect size shows how much an exogenous latent variable contributes to an endogenous latent variable of R^2 value (Cohen, 1988). This F^2 measures strength of relationship between the variables. The result in table 8 above reveals that F^2 effect size ranges from 0.184 to 0.526. The f^2 value for teachers' job satisfaction is 0.526. This represents large effect size, indicating that the predictor (leadership practices) has very substantial impact on teachers' job satisfaction. The f^2 value for teachers' job satisfaction is 0.183 representing medium effect size, showing meaningful but less dominant impact.

Regarding Q^2 Hair et al., (2013) states that 0.02, 0.15, and 0.35 for weak, moderate, and strong predictive relevance of each effect. Thus, Q^2 for both endogenous constructs (0.475 and 0.334) were well above zero, confirming model's predictive relevance. This Q^2 has a value in the range $0 < Q^2 < 1$, the better the model when the closer its result is to 1 (Hair et al., 2013). Q^2 value greater than 0 indicates that the model has predictive relevance for that construct (Shmueli et al., 2019). Both school improvement (0.475) and teachers' job satisfaction (0.334) are well above zero. The value for school improvement is particularly high, supporting excellent predictive power for this construct.

Overall, all tests such as reliability, validity, average variance extracted, and collinearity (VIF) values remained below recommended thresholds. Hence, the result for R^2, F^2, Q^2, VIF and others indicate that the structural model demonstrated moderate to substantial predictive relevance and the data is computed for further hypothesis testing.

Results and Discussion

Assessing the Level of Leadership Practices, Teachers Job Satisfaction, and School Improvement Constructs

Construct level analysis is conducted to assess which component is well practiced in the study area. Here under, each construct (at multivariate level) is discussed as follows organizing them into three specific theoretical domains such as leadership practices, teachers' job satisfaction, and school improvement.

Table 9: Constructs of the Latent variables

Construct Name	Mean	Median	Standard deviation	kurtosis	Skewness
1. Modeling the Way	3.755	4	0.823	-0.462	-0.424
2. Inspiring a Shared Vision	3.782	4	0.847	-0.288	-0.514
3. Challenging the Process	3.774	4	0.949	-0.588	-0.578
4. Enabling Others to Act	3.920	4	0.900	-0.374	-0.683
5. Encouraging the Heart	3.929	4	0.952	-0.395	-0.790
6. Salary	2.877	2.750	0.719	-0.583	0.187
7. Supervision	3.654	3.667	0.951	-0.952	-0.197
8. Working Conditions	3.756	3.750	0.620	-0.133	-0.234
9. Colleagues Relationship	3.469	3.500	0.939	-0.752	-0.076
10. Teaching Autonomy	3.204	3	0.848	-0.754	0.473
11. School Climate	3.702	3.833	0.582	-0.247	-0.102
12. Sstudents' Achievement	3.042	3	0.531	0.300	0.434
13. Community Participation	3.083	3	0.644	-0.402	0.123

Source: Data Collected from Kembata and Halaba Zones of Central Ethiopia (2025)

Constructs of Leadership Practices

This research assessed the five dimensions of exemplary transformational leadership practices. As illustrated in table 9, respndents indicated that their institution incorporates these leadership behaviors to a great extent. The five leadership practices obtained high mean scores of between 3.755 (modeling the way) and 3.929 (encouraging the heart). A median score of 4.00 in any of the five constructs suggests strong agreement among the participants that the aforementioned leadership practices are being demonstrated. The top two dimensions with the highest scores are encouraging the heart and enabling others to act. This shows leaders are viewed as supportive facilitators who appreciate contributions and promote collaborations. All constructs, in this category, show negative skewness ranging from -0.424 to -0.790. This confirmed majority of the respondents' scores are clustered at the higher end of the scale. It also indicated positive consensus regarding leadership effectiveness.

Current Job Satisfaction Level of Teachers

The results show that the respondents agreed on the effectiveness of working conditions (M= 3.756, SD= 0.620) and good supervision (M= 3.654, SD= 0.951). The variable on working conditions has the lowest standard deviation score signifying relatively low ratings by the respondents. It is in fact one of the few variables to have a positive skew (0.187), indicating the most responses are clustered towards lower end of satisfaction scale. Colleague relationship scored higher than teaching autonomy according to the study. The skewness of autonomy of teachers is a

positive (0.473), which indicate constraint teaching. In general, currently, teachers are not satisfied regarding salary and teaching autonomy.

School Improvement Practices

As shown in table 9, three constructs of school improvement measured institutional outcomes and environmental factors. Among these, school climate is the strongest factor within this domain (M = 3.702) and boosts a low standard deviation (0.582). This aligns with highly rated leadership practices and supportive working conditions in section above. It suggests positive institutional environment. Students' achievement and community participation scored comparatively low mean score. They display positive skewness (0.434 and 0.123 respectively). This result indicates that while leadership and climate are rated highly, those positive internal dynamics are not currently translating into perceived high academic achievement or strong external community engagement.

The descriptive statistics revealed an educational environment characterized by strong transformational leadership behaviors and a positive school climate in general. However, it faces distinct challenges. There is a noticeable disconnection between high level of perceived leadership and significantly lower satisfaction with salary and teaching autonomy. Additionally, the strong internal climate and leadership have not fully bridged the gap to enhance student achievement and community participation. It, however, highlights targeted areas for institutional intervention.

Hypothesis Testing

The β coefficient, the t-vale, and p-value are used for hypothesis testing.

H1: There is significant direct effect of leadership practices on school improvement.

H2: There is significant direct effect of leadership practices on teachers' job satisfaction.

H3: There is direct effect of teachers' job satisfaction on school improvement.

H4: Teachers' job satisfaction mediates the relationship between leadership practices and school improvement.

Table 10: Path Coefficient (Direct Effect)

Relationship	β	T statistics	P Value	CI		Decision
				LL	UL	
LP -> SI	0.491	7.480	0.000	0.382	0.595	Significant
LP -> TJS	0.587	14.248	0.000	0.510	0.647	Significant
TJS -> SI	0.350	5.068	0.000	0.239	0.465	Significant

Source: Analysis Result from the Data by Researchers (2025)

The results, in table 10 above, indicate that all hypothesis paths are statistically significant at the $p < 0.001$ level. The path coefficients represent strength and direction of these relationships. There is significant and positive effect ($\beta = 0.491$, $t = 7.480$, $p < 0.001$) of leadership practices on school improvement. This shows that school leaders in the study context have a substantial impact on school progress. Leadership practices exert very strong and significant effect ($\beta = 0.587$, t =

14.248, p < 0.001) on teachers' job satisfaction. This path has the highest coefficient value in the model (0.586), suggesting that leadership behavior is the primary predictor of how satisfied teachers feel within their professional environment. Teachers' job satisfaction has significant moderate direct effect (β = 0.350, t = 5.068, p < 0.001) on school improvement. The direct effect of job satisfaction on school improvement is lower than the direct impact of leadership practices on school improvement (0.350 < 0.491) suggesting that while satisfied teachers are essential for improvement, they operate within guidance of /established by/ leadership.

Table 11: Specific Indirect Effect

Relationship	β	T statistics	P values	CI		Decision
				LL	UL	
LP -> TJS -> SI	0.205	4.130	0.000	0.129	0.291	Significant

Source: Analysis Result from the Data by Researchers (2025)

The result (Table 11 above) revealed significant indirect effect of leadership practices on school improvement through teachers' job satisfaction (β = 0.205, t = 4.130, p < 0.001). this significant indirect path suggests that portion of the influence exerted by school leaders is transmitted through the enhancement of teacher morale and professional well-being, which in turn affects school improvement. The robustness of this mediation relationship is further substantiated by the 95% confidence interval (Lower limit is 0.129, Upper limit is 0.291), which remains entirely above zero confirming a significant mediation.

Table 12: Total Direct Effect

Relationship	β	T statistics	P values	CI		Decision
				LL	UL	
LP -> SI	0.696	15.030	0.000	0.603	0.759	Significant
LP -> TJS	0.587	14.248	0.000	0.510	0.647	Significant
TJS -> SI	0.350	5.068	0.000	0.239	0.465	Significant

Source: Analysis Result from the Data by Researchers (2025)

Table 12 above shows that total direct effect of leadership practice on school improvement is significant (β = 0.696, t = 15.030, p < 0.001). leadership also exerts a strong total effect on teacher job satisfaction (β = 0.587, t = 14.248, p < 0.001). The table also shows that total effect of teachers' job satisfaction on school improvement is moderate and significant (β = 0.350, t = 5.068, p < 0.001).

Overall, in three tables above (from table 10-12), the high t-statistics and confidence intervals (CI) for all direct effects, indirect and total effects do not cross zero providing rigorous evidence that these paths are stable and positive across the entire sample. Furthermore, direct effect of leadership practices on school improvement remained significant when mediator is included in this model (β = 0.491, t = 7.480, p < 0.001). We can conclude that teachers' job satisfaction partially mediates relationship between leadership practices and school improvement. This is

because both direct and indirect effects are significant supporting H4, the mediation role being complementary partial mediation.

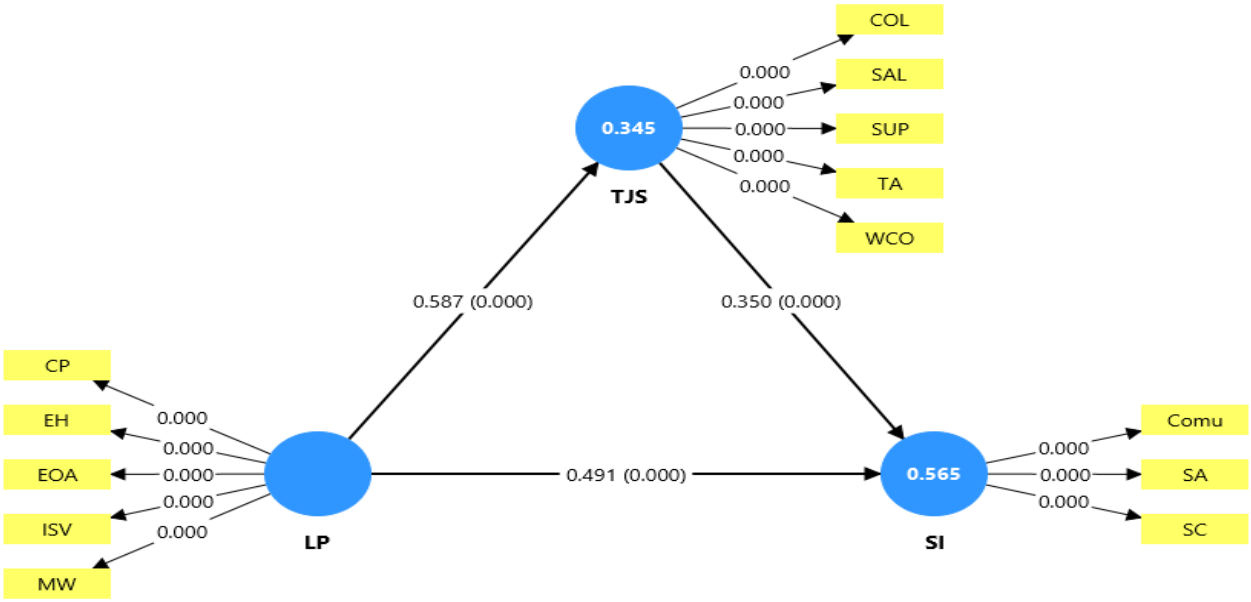

Figure 1: Structural Model
Source: Analysis Result from the Data (2025)

Discussions

The study highlights that while leadership practices have notable effect on school improvement, their effectiveness is significantly improved when they foster high levels of teachers' satisfaction. This study revealed significant indirect effect of leadership practices on school improvement through mediating role of teachers' job satisfaction. Having not zero confidence interval for this indirect effect, it confirms a significant mediation. The significant indirect effect found in the model confirms that teachers' job satisfaction is not merely byproduct of good leadership, rather a critical mediating bridge. This means without a satisfied and motivated teaching staff, even the most robust leadership strategies may fail to translate into tangible school improvements (Hair et al., 2024).

This result also supported by different studies which suggest that teachers who are satisfied with their jobs, and have strong sense of psychological wellbeing tend to be academically more effective than those who are emotionally exhausted or unsatisfied (Day, 2008; Katrin Arens & Morin, 2016; McInerney et al., 2018). Studies emphasized importance of leadership in creating good, and better schools (Harris, 2003; Harris et al., 2000). Leadership has also shown to make difference to the school's ability to progress by influencing motivation of teachers, and the quality of teaching that takes place in the classroom (Fullan, 2002; Sergiovanni, 2001). Leadership can be an important catalyst, and supporting factor for school improvement according to Hallinger & Heck (2011). Others also stated that leadership has been found to be the most important school

level factor in improving learning consequences (Nusche & Pont, 2008; Pont, Beatriz, 2014; Robinson et al., 2008). This study finding align with the empirical findings different global and local studies (Bogler, 2001; Dinham & Scott, 2000; Maqbool et al., 2023; Metaferia et al., 2023; Yohannes & Wasonga, 2023). From theoretical perspective, this finding reinforces the change theory paradigm as it provides empirical evidence that exemplary leadership does not operate in isolation but rather improves school outcomes by fostering an environment that increases teachers' job satisfaction (Hallinger, 2011; Hallinger & Heck, 2011). The school-leadership relationship indicates the existence of cause-effect relationship between practices of leaders, school improvement activities, teachers' classroom activities, and student achievement.

Conclusion

The study revealed an educational environment characterized by strong transformational leadership behaviors and a positive school climate however it faces distinct challenges. There is a noticeable discontinuation between high level of perceived leadership and significantly lower satisfaction with salary and teaching autonomy. The strong internal climate and leadership have not fully bridged the gap to enhance student achievement and community participation. In general, this quantitative study demonstrates that leadership practices serve as primary catalyst for school improvement both directly and indirectly through the mediation of teacher job satisfaction. Utilizing PLS-SEM analysis, the research validated a robust framework where leadership behavior first cultivates supportive environment that elevates teacher morale which in turn drives school progress.

Recommendations

This study bridges a significant theoretical gap by integrating leadership practices, teacher job satisfaction and school improvement into a single groundbreaking model in Ethiopian context. The findings suggest that policy makers should prioritize leadership development focused on emotional intelligence and teacher autonomy to drive institutional performance. The government should focus on transformational strategies those can change the living conditions of teachers. School leadership including principals, supervisors and school management board members should focus on plans and activities those can improve the work morale of teachers. To achieve sustainable school improvement in the school systems, leadership interventions must focus on monitory and non-monitory incentives schemes to promote long-term commitment, intrinsic motivation, and overall workplace happiness of the frontline educators or teachers. To solve cross-sectional design limitations for causal interference, future research should employ longitudinal studies or multigroup analysis comparing public vs private schools to explore how additional variables such as budget constraints, school size, and other resources further affect these complex relationships.

Acknowledgement

We would like to thank our respondents for filling the data or questionnaire provided. We also would like to thank the Ethiopian public service university for providing the grant for data collection.

References

Alshmemri, M., Shahwan-Akl, L., & Maude, P. (2017). Herzberg's two-factor theory. *Life Science Journal*, *14*(5), 12-16.

Amimi, R., radgui, A., & hassane, I. el haj el. (2022). *A survey of smart classroom: Concept, technologies and facial emotions recognition application*. http://arxiv.org/abs/2212.01675

Argyris, C., & Schoen, D. A. (1978). *Organizational learning: a theory of action perspective.*

Bahtilla, M., & Hui, X. (2021). The Impact of School Environment on Teachers' Job Satisfaction in Secondary Schools. *European Journal of Education Studies*, *8*(7). https://doi.org/10.46827/ejes.v8i7.3799

Baker, D. A., & Crompton, J. L. (2000). *Quality, Satisfaction and Behavioral Intentions*. www.elsevier.com/locate/atoures

Bertocci, D. I. . (2009). *Leadership in organizations : there is a difference between leaders and managers*. University Press of America.

Bogler, R. . (2001). *The Influence of Leadership Style on Teacher Job Satisfaction. The Dynamics of Group Learning in a Cohort: From Nonlearning to Transformative Learning, . 37*(5), 662-683.

Bore, Y. H., & Triegaardt, P. (Paul). (2022). Perception, Practices and Problems of School Improvement Program Implementation: The case of selected secondary schools in Hawassa City Administration, Ethiopia. *ICRRD Quality Index Research Journal*, *3*(3). https://doi.org/10.53272/icrrd.v3i3.7

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences, Lawrence Erlbaum Associates, .*

Cohen, L. , Manion, L. , & Morrison, K. (2002). *Research methods in education. routledge.*

Creswell, J. W. . (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.*

Creswell J.W., & Clark V. P. (2018). *Designing and Conducting Mixed Methods Research*.

Day, C. (2008). Committed for life? Variations in teachers' work, lives and effectiveness. *Journal of Educational Change*, *9*(3), 243–260. https://doi.org/10.1007/s10833-007-9054-6

Day, C., Gu, Q., & Sammons, P. (2016). The Impact of Leadership on Student Outcomes: How Successful School Leaders Use Transformational and Instructional Strategies to Make a Difference. *Educational Administration Quarterly*, *52*(2), 221–258. https://doi.org/10.1177/0013161X15616863

Dhoj Joshi, R., & Verspoor, A. (2013). *Secondary Education in Ethiopia*.

Dinham, S., & Scott, C. (2000). Moving into the third, outer domain of teacher satisfacction. *Journal of Educational Administration*, *38*(4), 379–396. https://doi.org/10.1108/09578230010373633

Eckert, J., & Morgan, G. (2023). Collective leadership: A catalyst for school improvement. *Education Policy Analysis Archives*, *31*. https://doi.org/10.14507/epaa.31.7603

Esposito Vinzi, V., Chin, W. W., Henseler, J., & Wang, H. (Eds.). (2010). *Handbook of Partial Least Squares*. Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-540-32827-8

Evans, L., Thornton, B., & Usinger, J. (2012). Theoretical Frameworks to Guide School Improvement. *NASSP Bulletin*, *96*(2), 154–171. https://doi.org/10.1177/0192636512444714

Ezra Harianto, J., Hasanah, U., Hidayat, Y., & Isnani, T. (2025). The Impact of Leadership Styles on School Performance: A Comparative Study of Educational Management Models. International Journal for Science Review. In *International Journal for Science Review* (Vol. 2, Number 3). https://ijfsr.com/index.php/ijfsr

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39. https://doi.org/10.2307/3151312

Fullan, M. . (2007). The New Meaning of Educational Change (4th ed.). *Teachers College Press.*

Fullan, M. . (2016). *The new meaning of educational change.*

Garson. (2002). *Guide To Writing Empirical Papers, Theses, And Dissertations*.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge Management: An Organizational Capabilities Perspective. *Journal of Management Information Systems*, *18*(1), 185–214. https://doi.org/10.1080/07421222.2001.11045669

Gooden, D. J. , & Creque, C. A. (2017). The impact of metacognitive, cognitive and motivational cultural intelligence on behavioral cultural intelligence. . *The International Business & Economics Research Journal (Online), , 16*(3), 223.

Hailu, B. . (2010). *Implementation of the School Improvement Program (SIP) in Addis Ababa City Administration: Achievements, Challenges and Prospects.*

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3), 100027. https://doi.org/10.1016/j.rmal.2022.100027

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *An Introduction to Structural Equation Modeling* (pp. 1–29). https://doi.org/10.1007/978-3-030-80519-7_1

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *Long Range Planning*, *46*(1–2), 1–12. https://doi.org/10.1016/j.lrp.2013.01.001

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. In *European Business Review* (Vol. 31, Number 1, pp. 2–24). Emerald Group Publishing Ltd. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. In *European Business Review* (Vol. 26, Number 2, pp. 106–121). Emerald Group Publishing Ltd. https://doi.org/10.1108/EBR-10-2013-0128

Hair, J. F., Sharma, P. N., Sarstedt, M., Ringle, C. M., & Liengaard, B. D. (2024). The shortcomings of equal weights estimation and the composite equivalence index in PLS-SEM. *European Journal of Marketing*, *58*(13), 30–55. https://doi.org/10.1108/EJM-04-2023-0307

Haji-Othman, Y., Sheh Yusuff, M. S., & Md Hussain, M. N. (2024). Data Analysis Using Partial Least Squares Structural Equation Modeling (PLS-SEM) in Conducting Quantitative Research. *International Journal of Academic Research in Business and Social Sciences, 14*(10). https://doi.org/10.6007/IJARBSS/v14-i10/23364

Haji-Othman, Y., & Yusuff, M. S. S. (2022). Assessing Reliability and Validity of Attitude Construct Using Partial Least Squares Structural Equation Modeling (PLS-SEM). *International Journal of Academic Research in Business and Social Sciences*, *12*(5). https://doi.org/10.6007/IJARBSS/v12-i5/13289

Hallinger, P., & Heck, R. H. (2010). Leadership for learning: Does collaborative leadership make a difference in school improvement? *Educational Management Administration and Leadership, 38*(6), 654–678. https://doi.org/10.1177/1741143210379060

Hallinger, P. (2011). Leadership for learning: lessons from 40 years of empirical research. *Journal of Educational Administration*, *49*(2), 125–142. https://doi.org/10.1108/09578231111116699

Hallinger, P., & Heck, R. H. (2011). Exploring the journey of school improvement: Classifying and analyzing patterns of change in school improvement processes and learning outcomes. *School Effectiveness and School Improvement*, *22*(1), 1–27. https://doi.org/10.1080/09243453.2010.536322

Hargreaves, A. , & Fullan, M. (2012). *Professional Capital: Transforming Teaching in Every School.*

Harris, A., Busher, H., & Wise, C. (2000). *Effective Training for Subject Leaders. Management in Education*. doi:10.1177/089202060001400310

Harris, A., & Jones, M. (2019). Leading professional learning with impact. In *School Leadership and Management* (Vol. 39, Number 1, pp. 1–4). Routledge. https://doi.org/10.1080/13632434.2018.1530892

Heck, R. H., & Hallinger, P. (2010). Testing a longitudinal model of distributed leadership effects on school improvement. *The Leadership Quarterly*, *21*(5), 867–885. https://doi.org/10.1016/j.leaqua.2010.07.013

Heller, H. W., Clay, R., & Perkins, C. L. I. N. E. (1993). The relationship between teacher job satisfaction and principal leadership style. . *Journal of School Leadership, , 3*(1), 74–86.

Hemamala Sumanasena, M. L., & Mohamed, N. F. (2022). Teacher Job Satisfaction: A Review of The Literature. *Muallim Journal of Social Science and Humanities*, 1–12. https://doi.org/10.33306/mjssh/209

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). *The use of partial least squares path modeling in international marketing* (pp. 277–319). https://doi.org/10.1108/S1474-7979(2009)0000020014

Herzberg, F. . (2015). *Motivation-hygiene theory. Organizational behavior* (Vol. 1).

Hopkins, D. (2003). School Improvement for Real. In *School Improvement for Real*. Taylor and Francis. https://doi.org/10.4324/9780203165799

James, J., Talin, R., & Bikar, S. S. (2022). The Summary of School Leaderships Theories According to Malaysia Perspectives. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, *7*(4), e001400. https://doi.org/10.47405/mjssh.v7i4.1400

John, O. P. , & Benet-Martínez, V. (2000). *Measurement: Reliability, construct validation, and scale construction. Handbook of research methods in social and personality psychology.*

Judijanto, L., Suwarna, A. I., Hanim, S. A., Nuswantoro, P., & Noviyani, R. (2024). Assessing the Role of School Leadership in Mediating the Impact of Teacher Professional Development on Curriculum Implementation in Indonesia. *The Eastasouth Journal of Learning and Educations*, *2*(03), 173–187. https://doi.org/10.58812/esle.v2i03.373

Kamranfar, S., Damirchi, F., Pourvaziri, M., Abdunabi Xalikovich, P., Mahmoudkelayeh, S., Moezzi, R., & Vadiee, A. (2023). A Partial Least Squares Structural Equation Modelling Analysis of the Primary Barriers to Sustainable Construction in Iran. *Sustainability*, *15*(18), 13762. https://doi.org/10.3390/su151813762

Katrin Arens, A., & Morin, A. J. S. (2016). Relations between teachers' emotional exhaustion and students' educational outcomes. *Journal of Educational Psychology*, *108*(6), 800–813. https://doi.org/10.1037/edu0000105

Katsikas, A. (2025). Leadership Style in Education: Advantages and Challenges. *International Electronic Journal of Elementary Education*, *17*(3), 397–403. https://doi.org/10.26822/iejee.2025.387

Kiboss, J. K., & Jemiryott, H. K. S. (2014). Relationship between principals' leadership styles and secondary school teachers' job satisfaction in Nandi South District, Kenya. . *Journal of Education and Human Development, , 3*(2), 493-509.

Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, *72*(6), 558–569. https://doi.org/10.4097/kja.19087

Kouali, G. (2017). The instructional practice of school principals and its effect on teachers' job satisfaction. *International Journal of Educational Management*, *31*(7), 958–972. https://doi.org/10.1108/IJEM-11-2016-0253

Kouzes & Posner. (2002). *The leadership challenges (3rd ed.).*

Kouzes & Posner. (2007). *The leadership challenge.: (4thed.)*.

Leavy, P. . (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches. Guilford publications.*

Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. In *School Leadership and Management* (Vol. 28, Number 1, pp. 27–42). https://doi.org/10.1080/13632430701800060

Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. *School Leadership and Management*, *40*(1), 5–22. https://doi.org/10.1080/13632434.2019.1596077

Leithwood, K., & Sleegers, P. (2006). Transformational school leadership: Introduction. In *School Effectiveness and School Improvement* (Vol. 17, Number 2, pp. 143–144). https://doi.org/10.1080/09243450600565688

Maqbool, S., Zafeer, H. M. I., Zeng, P., Mohammad, T., Khassawneh, O., & Wu, L. (2023). The role of diverse leadership styles in teaching to sustain academic excellence at secondary level. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.1096151

Mausner, B., & Snyderman, B. B. (1993). *The motivation to work. Transaction Publishers.*

Metaferia, T., Baraki, Z., & Mebratu, B. (2023). Transformational leadership practices and its influence on teachers job satisfaction in Addis Ababa government secondary schools. *Cogent Education*, *10*(2). https://doi.org/10.1080/2331186X.2023.2249658

McInerney, D. M., Korpershoek, H., Wang, H., & Morin, A. J. S. (2018). Teachers' occupational attributes and their psychological wellbeing, job satisfaction, occupational self-concept and quitting intentions. *Teaching and Teacher Education*, *71*, 145–158. https://doi.org/10.1016/j.tate.2017.12.020

Mitchell, R. (2015). The implications of school improvement and school effectiveness research for primary school principals in Ethiopia. *Educational Review*, *67*(3), 328–342. https://doi.org/10.1080/00131911.2014.927829

MoE. (1994). *Ministry of Education School Improvement Program Guidelines*.

Nusche, Deborah., & Pont, Beatriz. (2008). *Improving School Leadership : Vol. 1: Policy and Practice*. Organization for Economic Cooperation & Development.

OECD. (2019). PISA 2018 Results. . *OECD Publishing.*

Pont, Beatriz. (2014). School Leadership: From Practice to Policy. *IJELM – International Journal of Educational Leadership & Management*, (1), 4–28. https://doi.org/10.4471/ijelm.2014.07

Raithel, S., Sarstedt, M., Scharf, S., & Schwaiger, M. (2012). On the value relevance of customer satisfaction. Multiple drivers and multiple markets. *Journal of the Academy of Marketing Science*, *40*(4), 509–525. https://doi.org/10.1007/s11747-011-0247-4

Richard M. Ingersoll, & Gregory J. Collins. (2019). *Accountability, Control, and Teachers' Work in American Schools*.

Richter, N. F., Schubring, S., Hauff, S., Ringle, C. M., & Sarstedt, M. (2020). When predictors of outcomes are necessary: guidelines for the combined use of PLS-SEM and NCA. *Industrial*

Management & Data Systems, *120*(12), 2243–2267. https://doi.org/10.1108/IMDS-11-2019-0638

Robinson, V. M. J., Lloyd, C. A., & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, *44*(5), 635–674. https://doi.org/10.1177/0013161X08321509

Rönkkö, M., & Evermann, J. (2013). A Critical Examination of Common Beliefs About Partial Least Squares Path Modeling. *Organizational Research Methods*, *16*(3), 425–448. https://doi.org/10.1177/1094428112474693

Rungtusanatham, M., Miller, J. W., & Boyer, K. K. (2014). Theorizing, testing, and concluding for mediation in SCM research: Tutorial and procedural recommendations. *Journal of Operations Management*, *32*(3), 99–113. https://doi.org/10.1016/j.jom.2014.01.002

Senge, P. M. . (1990). *The fifth discipline: The art and practice of the learning organization. Doubleday.*

Sergiovanni, T. (2001). Leadership What's in it for schools? *Routledge.*

Shen, J., Wu, H., Reeves, P., Zheng, Y., Ryan, L., & Anderson, D. (2020). The association between teacher leadership and student achievement: A meta-analysis. *Educational Research Review*, *31*, 100357. https://doi.org/10.1016/j.edurev.2020.100357

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Shrestha, N. (2020). Detecting Multicollinearity in Regression Analysis. *American Journal of Applied Mathematics and Statistics*, *8*(2), 39–42. https://doi.org/10.12691/ajams-8-2-1

Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, *27*(6), 1029–1038. https://doi.org/10.1016/j.tate.2011.04.001

Skaalvik, E. M., & Skaalvik, S. (2017). Still motivated to teach? A study of school context variables, stress and job satisfaction among teachers in senior high school. *Social Psychology of Education*, *20*(1), 15–37. https://doi.org/10.1007/s11218-016-9363-9

Skaalvik, E. M., & Skaalvik, S. (2020). Teacher burnout: relations between dimensions of burnout, perceived school context, job satisfaction and motivation for teaching. A longitudinal study. *Teachers and Teaching*, *26*(7–8), 602–616. https://doi.org/10.1080/13540602.2021.1913404

Skaalvik, E. M., & Skaalvik, S. (2021). Collective teacher culture: exploring an elusive construct and its relations with teacher autonomy, belonging, and job satisfaction. *Social Psychology of Education*, *24*(6), 1389–1406. https://doi.org/10.1007/s11218-021-09673-4

Stevens, J. (2002). *Applied multivariate statistics for the social sciences (Vol. 4). Mahwah, NJ: Lawrence erlbaum associates.*

Tan, C. Y., Gao, L., & Shi, M. (2022). Second-order meta-analysis synthesizing the evidence on associations between school leadership and different school outcomes. *Educational*

Management Administration & Leadership, *50*(3), 469–490. https://doi.org/10.1177/1741143220935456

Teo, T. S. H., Srivastava, S. C., & Jiang, L. (2008). Trust and Electronic Government Success: An Empirical Study. *Journal of Management Information Systems*, *25*(3), 99–132. https://doi.org/10.2753/MIS0742-1222250303

UNESCO. (2015). *Education 2030: Incheon Declaration and Framework for Action: Towards inclusive and equitable quality education and lifelong learning for all. UNESCO Publishing.*

Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science*, *44*(1), 119–134. https://doi.org/10.1007/s11747-015-0455-4

Wang, W., Tie, F. H., Omar, I. M. B., Chen, W., Li, P., & Shi, C. (2023). An Empirical Study on the Creative Learning Environment Fostering Student Creativity: A Multiple Mediation Analysis Using Smart PLS 4. *Journal of Educational and Social Research*, *13*(4), 10–21. https://doi.org/10.36941/jesr-2023-0085

World Bank. (2020). World Development Report: Learning to Realize Education's Promise. . *World Bank Publications.*

Wu, H., & Shen, J. (2022). The association between principal leadership and student achievement: A multivariate meta-meta-analysis. *Educational Research Review*, *35*, 100423. https://doi.org/10.1016/j.edurev.2021.100423

Yohannes, M. E., & Wasonga, T. A. (2023). Leadership styles and teacher job satisfaction in Ethiopian schools. *Educational Management Administration & Leadership*, *51*(5), 1200–1218. https://doi.org/10.1177/17411432211041625

Yu, H., Tong, T., Gao, Y., Zhang, H., Tong, H., & Liang, C. (2021). Reliability and validity evaluation of the chinese version of the ethical sensitivity questionnaire for nursing students. *BMC Nursing*, *20*(1), 244. https://doi.org/10.1186/s12912-021-00768-z

Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research*, *37*(2), 197–206. https://doi.org/10.1086/651257.