MEDIATION EFFECT OF TEACHERS' EMOTIONAL INTELLIGENCE, PERCEIVED ORGANIZATIONAL SUPPORT ON RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP OF ADMINISTRATORS AND TEACHERS'WORK ENGAGEMENT IN PUBLIC HIGHER VACATIONAL COLLEGES IN NORTHERN OF HENAN PROVINCE

[1]Li Hui, [2]Sukhum Moonmuang and [3]Sataporn Pruettikul

Bangkokthonburi University, Thailand

[1]823259234@qq.com, [2]Sukhum.moo@BTU.ac.th, [3]Pruettikul20@gmail.com

Received: October 28, 2024; **Revised**: December 15, 2024; **Accepted**: January 29,2025

Abstract

The objectives of this research were: (1) To determine the components and indicators of Transformational Leadership, Teachers' Work Engagement, Emotional Intelligence, and Perceived Organizational Support among administrators; (2) To find the effects of Transformational Leadership, Teachers' Emotional Intelligence, and Perceived Organizational Support on Teachers' Work Engagement; (3) To find the mediation effects of Teachers' Emotional Intelligence and Perceived Organizational Support on the relationship between Transformational Leadership and Teachers' Work Engagement. Population in this research were teachers in 15 public higher vocational colleges, The Northern of Henan Province. The sample were selected by proportional stratified random sampling technique, total was 396 teachers. The data collection by 5-point rating scale questionnaire and data analyzed by CFA and SEM.

Research findings were: (1) Transformational Leadership, Teachers' Work Engagement, Emotional Intelligence, and Perceived Organizational Support components, were valid able and reliable, and the model fit well with empirical data. (2) There were positive direct effects of Transformational Leadership, Emotional Intelligence, and Perceived Organizational Support, on Teachers' Work Engagement, and (3) The Emotional Intelligence and Perceived Organizational Support were positive mediation effects on the relationship between Transformational Leadership and Teachers ' Work Engagement.

Keywords: Transformational Leadership, Teachers' Work Engagement, Emotional Intelligence, Perceived Organizational Support, Public Higher Vocational College

Introduction

Transformational leadership has been a hotspot of leadership research both at home and abroad since it was proposed in the 1980s. With the globalization of knowledge and the economy, the fast-changing world brought very serious challenges and tests to managers. Both good and average managers used transformational leadership behaviors in the leadership process, (Howell and Avolio, 1993). Teachers' work engagement was a positive psychology and state that could effectively reduce and alleviate work stress, burnout, and turnover behavior, and improve individual and school performance. International data found that Chinese teachers worked 45.30 hours per week, the longest working hours in the world; various professional development activities were up to 62.80 days in a year, which was twice

as much as the international average, and the satisfaction level was lower than the international average (Chen Chunjin, 2017).

In 1990, Mayer and Salovey introduced the concept of emotional intelligence based on Thorndike's social intelligence. With the depth of research, emotional intelligence has also become a key research point in the intersection of disciplines, from social psychology to the fields of education, health care, and management (Xu Tan, 2018). Emotions were ubiquitous in the interaction between leaders and their subordinates, and leaders' emotions had a direct, or indirect, impact on the psychology and behavior of organizational members. Perceived organizational support was a hot research topic in the field of management, and it had been established that employees with higher perceived organizational support were less negatively affected at work (George et al., 1993), and that perceived organizational support enhanced an individual's sense of well-being, including overall job satisfaction and work-family balance (Kurtessis et al., 2017). In addition, perceived organizational support conveyed the organization's positive opinion of the employee and satisfied the employee's need for respect and recognition, which could enhance intrinsic motivation and thus promote employee engagement (Eisenberger et al., 2011).

At that time, most of the academic research on the impact of transformational leadership on work engagement focused on companies, enterprises, the medical industry, etc. Domestic research on the impact of transformational leadership on teachers' work engagement focused on kindergartens and primary and secondary schools, and there were fewer studies on the impact of transformational leadership on teachers' work engagement involving college administrators. In the previous studies, scholars had mainly carried out in-depth excavation and exploration from the individual level of teachers but had not conducted too much in-depth research on the influence and role of organizational support and emotional intelligence on the formation of teachers' work engagement. Therefore, this research took emotional intelligence and perceived organizational support as mediating variables to dialectically analyze the mechanism of administrators' transformational leadership on the formation of teachers' work engagement in higher vocational colleges.

Research Objective

1. To determine the structure of the components and indicators of Transformational Leadership, Teachers' Work Engagement, Emotional Intelligence, and Perceived Organizational Support among administrators.

2. To find the effects of Transformational Leadership, Emotional Intelligence, and Perceived Organizational Support on Teachers' Work Engagement.

3. To find the mediation effects of Emotional Intelligence and Perceived Organizational Support on the relationship between Transformational Leadership and Teachers' Work Engagement.

Research Hypotheses

H1: Transformational Leadership of administrators had a positive direct effect on Teachers' Work Engagement.

H2: Transformational Leadership of administrators had a positive direct effect on Teachers' Emotional Intelligence.

H3: Transformational Leadership of administrators had a positive direct effect on Perceived Organizational Support.

H4: Teachers' Emotional Intelligence had a positive direct effect on Teachers' Work Engagement.

H5: Perceived Organizational Support had a positive direct effect on Teachers' Work Engagement.

H6: Teachers' Emotional Intelligence had a positive direct effect on the Perceived Organizational Support.

H7: Transformational Leadership of administrators had a positive indirect effect on Teachers' Work Engagement through emotional intelligence.

H8: Transformational Leadership of administrators had a positive indirect effect on Teachers' Work Engagement through perceived organizational support.

H9: Transformational leadership of administrators had a positive indirect effect on Teachers' Work Engagement through the effect of Emotional Intelligence on Perceived Organizational Support.

Research Methodology

The researcher employed a quantitative research method by reviewing and organizing a substantial amount of relevant literature to identify key factors influencing teacher work engagement. These factors include transformational leadership, teacher emotional intelligence, and perceived organizational support. This study preliminarily established the impact of these factors on teacher work engagement.

1. Population and Sample

The population used in this research included 10,573 teachers from 15 public vocational colleges in six cities of the Northern Region under Henan Province. This study employed stratified random sampling, and the final sample size of 396 teachers was determined using the G*Power software.

2. Data Collection

This study used the "Questionnaire Stars" online survey system to distribute questionnaires to teachers in public higher vocational colleges. A total of 396 questionnaires were distributed to samples, and all were return back with 100% response rate.

3. Data Analysis

Data analysis were descriptive statistics for demographic information, CFA for the measurement model, and SEM was employed for structural model analysis, and z-test was used to test the hypotheses.

Research Conceptual Framework

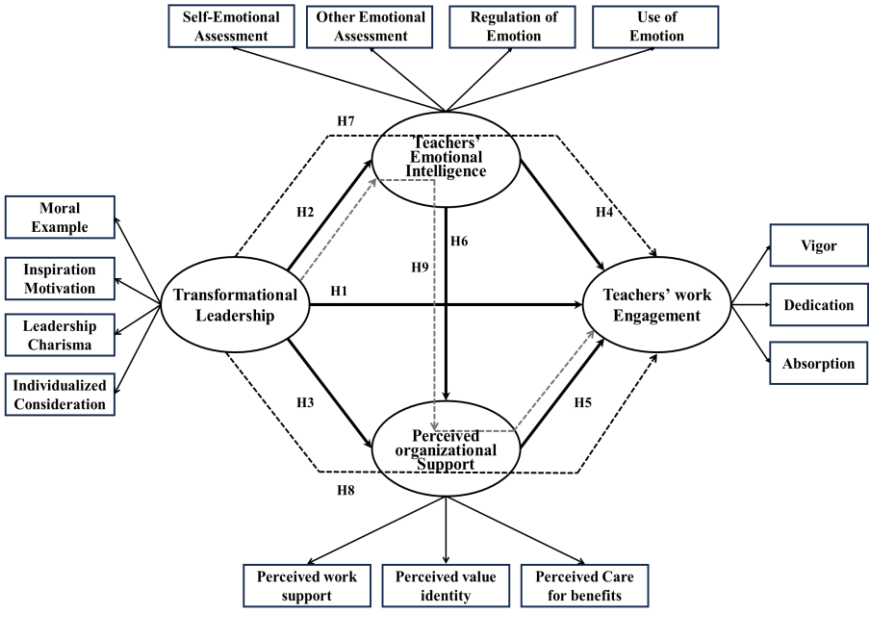

Figure 1 Research conceptual framework

This research examined the relationship between Transformational Leadership of administrators and Teachers' Work Engagement in public higher vocational colleges of the northern region under Henan Province. Transformational leadership was treated as the independent variable and included four observed variables: Moral Example, inspirational motivation, Individualized Consideration, and Leadership Charisma. Teachers' Work Engagement was the dependent variable, which comprised three observed variables: Vigor, Dedication, and Absorption. The research utilized Teachers' Emotional Intelligence and Perceived Organizational Support as two mediating variables. Emotional intelligence, as a mediating variable, was measured through four observed variables: Self-Emotional Awareness, Others' Emotional Awareness, Regulation of Emotion, and Use of Emotion. Perceived Organizational Support, as the other mediating variable, was assessed through three observed variables: Perceived work support, Perceived value identity, and Perceived Care for benefits.

Research Results

1. Descriptive data analysis

Table 1 Means Standard Deviation Skewness and Kurtosis test

	N	Mean	SD	Skewness	SE	Kurtosis	SE
Transformational Leadership							
ME	396	3.92	0.931	-0.6469	0.123	-0.1595	0.245
IM	396	4.18	0.791	-1.0284	0.123	1.3556	0.245
IC	396	3.87	0.983	-0.6919	0.123	-0.0737	0.245
LC	396	4.07	0.890	-0.9121	0.123	0.7472	0.245
Teachers' Work Engagement							
VIG	396	5.40	1.060	0.1144	0.123	-0.9372	0.245
DED	396	5.05	1.196	0.0140	0.123	-0.5405	0.245
ABS	396	5.00	1.263	0.1082	0.123	-0.6113	0.245
Teachers' Emotional Intelligence							
SEA	396	5.80	0.917	-0.5200	0.123	0.7237	0.245
OEA	396	5.60	1.001	-0.6797	0.123	0.7017	0.245
ROE	396	5.37	1.135	-0.6442	0.123	0.5651	0.245
UOE	396	5.60	0.976	-0.4305	0.123	0.3685	0.245
Perceived Organizational Support							
PWS	396	3.68	0.815	-0.3838	0.123	0.3959	0.245
PVI	396	3.40	0.951	-0.2871	0.123	-0.0816	0.245
PCB	396	3.38	0.978	-0.3524	0.123	-0.1583	0.245

The analysis of the descriptive statistics revealed that most variables had mean scores ranging from moderate to high, with standard deviations indicating varying levels of dispersion. Skewness values were generally negative, indicating that the distributions were skewed to the left (towards lower values). Kurtosis values varied, with some variables showing platykurtic (flatter) distributions, while others showed leptokurtic (peaked) distributions. These findings suggested that while the data were generally well-distributed around the means, there were differences in the shapes of the distributions across different variables.

2. Measurement model analysis

1) Assumption checks for CFA analysis as the Table 2

Table 2 Mardia's coefficient multivariate testing

	Coefficient	z	χ^2	df	p
Skewness	42.80		2826.00	560.00	< .001
Kurtosis	335.38	52.36			< .001

In the table1.3 above, both the skewness and kurtosis coefficients showed substantial deviations from multivariate normality, suggesting that the data did not follow a multivariate

normal distribution. In order to solve the problem of non-multivariate normality, the researcher used the robustness for parameter estimation.

2) CFA Model Evaluation

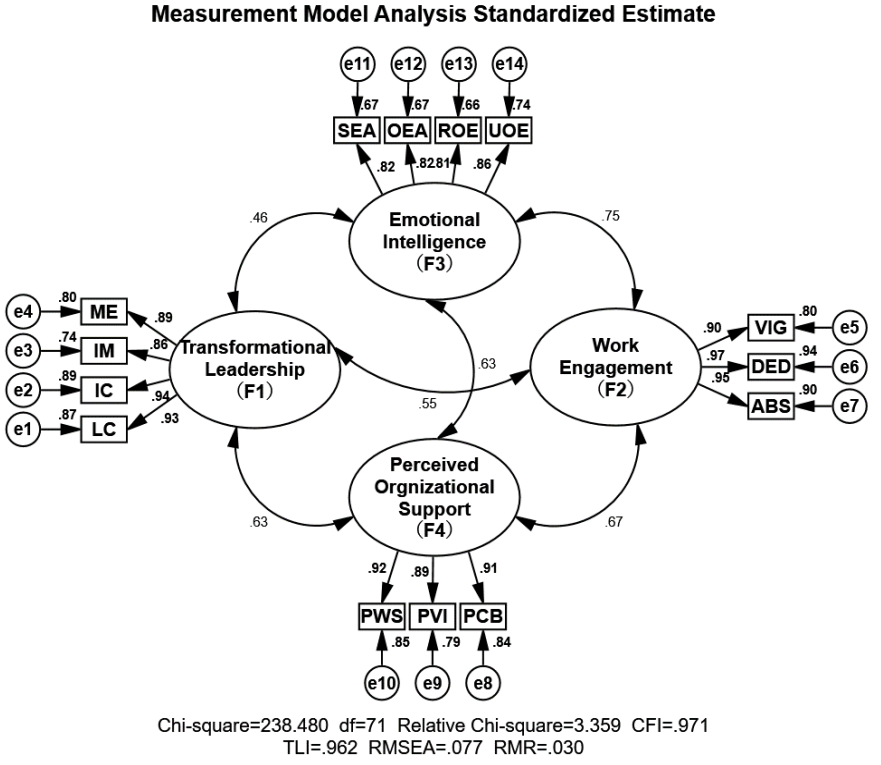

Figure 2 Confirmatory Factor model in standardized

Table 3 Show indicator on CFA Model Testing

Measure	Estimate	Threshold	Interpretation
CMIN	239	--	
DF	71	--	
CMIN/DF	3.359	Between 3 and 5	Acceptable
CFI	0.971	>0.95	Excellent
TLI	0.962	>0.95	Excellent
SRMS	0.030	<0.05	Excellent
RMSEA	0.077	<0.08	Excellent

This structural equation model demonstrates that transformational leadership positively influences emotional intelligence, perceived organizational support, and work engagement, with the model showing good overall fit based on key statistical indices.

3) Factor loadings analysis as the Table 4

Table 4 Standardized estimate factor loading analysis

Latent	Observed	Estimate	S.E.	Lower	Upper	β	z	p
F1	ME	1.00	0.00	1.00	1.00	0.89		
	IM	0.82	0.03	0.75	0.88	0.86	24.80	< .001
	IC	1.12	0.04	1.05	1.19	0.94	30.90	< .001
	LC	1.00	0.03	0.94	1.07	0.93	30.20	< .001
F2	VIG	1.00	0.00	1.00	1.00	0.89		

	DED	1.22	0.04	1.15	1.29	0.97	34.30	< .001
	ABS	1.26	0.04	1.18	1.34	0.9	32.30	< .001
F3	SEA	1.00	0.00	1.00	1.00	0.8		
	OEA	1.09	0.06	0.98	1.21	0.82	18.60	< .001
	ROE	1.23	0.07	1.10	1.36	0.8	18.40	< .001
	UOE	1.12	0.06	1.01	1.23	0.86	19.80	< .001
F4	PWS	1.00	0.00	1.00	1.00	0.92		
	PVI	1.13	0.04	1.05	1.21	0.89	27.90	< .001
	PCB	1.19	0.04	1.11	1.27	0.91	29.70	< .001

The analysis demonstrated that all observed variables had strong and statistically significant relationships with their respective latent variables, indicating the robustness of the measurement model. The model fit indices suggested that the model provided a good fit to the data.

4) Quality of measurement model

(1) Reliability

Table 5 Reliability indices

Variable	α	ω_1	ω_2	ω_3	AVE
F1	0.948	0.951	0.951	0.951	0.832
F2	0.953	0.959	0.959	0.96	0.887
F3	0.895	0.896	0.896	0.896	0.684
F4	0.932	0.933	0.933	0.932	0.824

All variables (F1, F2, F3, F4) demonstrated high to very high reliability across both Cronbach's alpha and omega coefficients, with the omega coefficients slightly higher than or very close to the alpha values. This suggested that the items for each variable consistently measured the underlying construct they were intended to assess.

(2) Validity

The analysis concluded that all four latent variables (F1, F2, F3, and F4) exhibited good to excellent convergent validity, as indicated by their AVE values. F1, F2, and F4 had AVE values above 0.8, indicating that these factors captured a very high proportion of variance from their indicators and had very strong convergent validity. F3 had an AVE value of 0.684, which, while slightly lower, still indicated good convergent validity, suggesting that it captured a substantial proportion of variance from its indicators.

2) Discriminant validity

Table 6 Heterotrait-monotrait (HTMT) ratio of correlations

	F1	F2	F3	F4
F1				
F2	0.555			
F3	0.461	0.762		
F4	0.609	0.665	0.620	

All pairs of constructs (F1, F2, F3, F4) demonstrated adequate discriminant validity, as evidenced by their HTMT ratios being below the commonly accepted threshold of 0.85. This indicated that the constructs were sufficiently distinct from each other, supporting the discriminant validity of the measurement model.

3. Structural Equation Model

1) SEM Model Evaluation

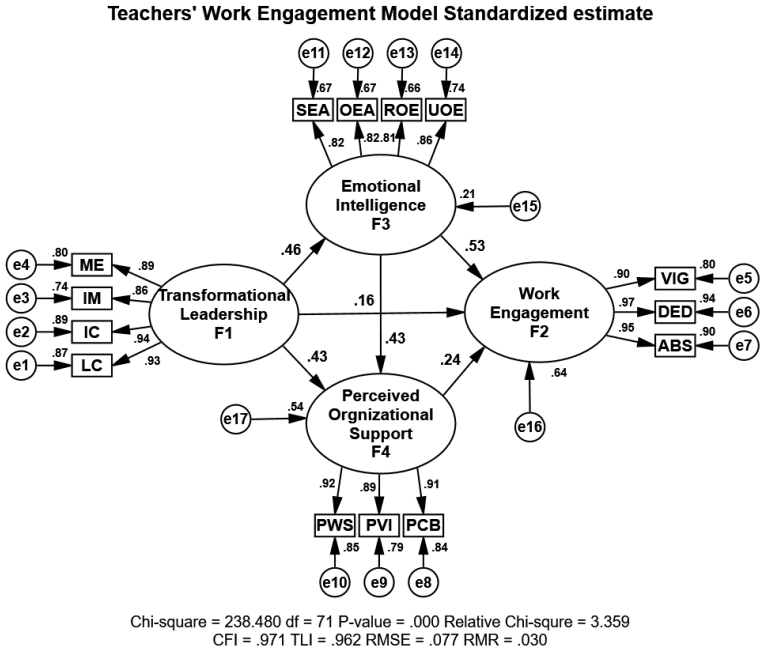

Figure 3 Structural Equation model in Standardized

The model fit indices suggested that the overall model provided a good fit to the data, with the RMSEA, CFI, and TLI values all indicating acceptable to excellent model fit. This supported the reliability and validity of the measurement model, confirming that the constructs were well-measured by their respective indicators.

2) Hypothesis testing

For direct effects hypothesis testing as the Table 7

	Dep	Pred	Estimate	SE	β	Lower	Upper	z	p
H1	F2 ⇐	F1	0.18	0.05	0.15	0.07	0.25	3.53	< .001
H2	F3 ⇐	F1	0.47	0.04	0.46	0.37	0.55	8.79	< .001
H3	F4 ⇐	F1	0.38	0.04	0.42	0.34	0.51	9.24	< .001
H4	F2 ⇐	F3	0.67	0.06	0.52	0.44	0.61	10.12	< .001
H5	F2 ⇐	F4	0.29	0.08	0.23	0.13	0.30	4.39	< .001
H6	F4 ⇐	F3	0.43	0.09	0.43	0.34	0.51	8.92	< .001

The hypothesis analysis yielded the following results:

H1: The dependent variable was influenced by the predictor F1. The estimate was 0.182 with a standard error of 0.052, The standardized coefficient β was 0.159, with a 95% CI ranging from 0.072 to 0.247. The z-value was 3.53, p-value was less than .001.

H2: The dependent variable F3 was influenced by the predictor F1. The estimate was 0.417 with a SE of 0.048, The standardized coefficient β was 0.462, with a 95% CI ranging from 0.377 to 0.547. The z-value was 8.79, p-value was less than .001.

H3: The dependent variable F4 was influenced by the predictor F1. The estimate was 0.385 with a SE of 0.042, The standardized coefficient β was 0.426, with a 95% CI ranging from 0.343 to 0.508. The z-value was 9.24, p-value was less than .001.

H4: The dependent variable F2 was influenced by the predictor F3. The estimate was 0.670 with a SE of 0.066, The standardized coefficient β was 0.529, with a 95% CI ranging from 0.443 to 0.615. The z-value was 10.12, p-value was less than .001.

H5: The dependent variable F2 was influenced by the predictor F4. The estimate was 0.299 with a SE of 0.068, The standardized coefficient β was 0.237, with a 95% CI ranging from 0.133 to 0.341. The z-value was 4.39, p-value was less than .001.

H6: The dependent variable F4 was influenced by the predictor F3. The estimate was 0.434 with a SE of 0.049, The standardized coefficient β was 0.433, with a 95% CI ranging from 0.349 to 0.517. The z-value was 8.92, p-value was less than .001.

Table 8 Indirect effect testing in standardized

	Description	Estimate	SE	Lower	Upper	β	z	p
H7	F1 ⇒ F3 ⇒ F2	0.28	0.04	0.20	0.36	0.24	7.02	< .001
H8	F1 ⇒ F4 ⇒ F2	0.12	0.03	0.06	0.17	0.10	3.94	< .001
H9	F1 ⇒ F3 ⇒ F4 ⇒ F2	0.05	0.01	0.03	0.08	0.05	3.79	< .001

H7: The indirect effect of F1 on F2 through F3 was positive and significant. This means that F1 positively influenced F3, which in turn positively influenced F2. The unstandardized estimate of 0.279 indicated that for every unit increase in F1, F2 increased by 0.279 units through F3. The standardized coefficient (β = 0.244) indicated a moderate positive indirect relationship, and the high z-value confirmed the statistical significance of this pathway.

H8: The indirect effect of F1 on F2 through F4 was positive and significant. This means that F1 positively influenced F4, which in turn positively influenced F2. The unstandardized estimate of 0.115 indicated that for every unit increase in F1, F2 increased by 0.115 units through F4. The standardized coefficient (β = 0.101) indicated a small to moderate positive indirect relationship, with a significant z-value confirming the statistical significance of this pathway.

H9: The indirect effect of F1 on F2 through F3 and F4 was positive and significant. This means that F1 positively influenced F3, which in turn positively influenced F4, and F4 then positively influenced F2. The unstandardized estimate of 0.054 indicated that for every unit increase in F1, F2 increased by 0.054 units through the F3 and F4 pathway. The standardized coefficient (β = 0.047) indicated a small positive indirect relationship, and the significant z-value supported the validity of this pathway. For decomposition effects as the Table 9

Table 9 Decomposition effects (F2 as dependent variable)

variable	DE	IE	TE	Correlation	Spurious
F1	0.16	0.39	0.55	0.55	0.00
F3	0.53	0.10	0.63	0.75	0.12
F4	0.24	0.00	0.24	0.67	0.43

The results in Table 9 illustrated the decomposition effects with F2 as the dependent variable. F1 had a direct effect (DE) of 0.159, an indirect effect (IE) of 0.393, and a total effect (TE) of 0.552. The spurious correlation for F1 was 0.000. F3 showed a stronger direct effect of 0.529, an indirect effect of 0.103, and a total effect of 0.631. Its overall correlation was 0.752, with a spurious value of 0.121. F4 demonstrated a direct effect of 0.237 and no indirect effect, resulting in a total effect of 0.237. The correlation for F4 was 0.670, with a spurious value of 0.433.

Conclusion

Transformational Leadership, Teachers' Work Engagement, Emotional Intelligence, and Perceived Organizational Support components, were valid and reliable, and the model fit well with empirical data. There were positive direct effects of Transformational Leadership,

Emotional Intelligence, and Perceived Organizational Support, on Teachers' Work Engagement in public higher vocational colleges of the Northen region under Henan Province. And There were positive mediation effects of Emotional Intelligence and Perceived Organizational Support on the relationship between Transformational Leadership and Teachers ' Work Engagement.

Discussion

In the subsequent discussion, the focus revolves around contextualizing the research findings as follow; **1).** Transformational Leadership of administrators has positive direct effect on Teachers' Work Engagement (H1): resonates with established literature, as emphasized by scholars like Rong Lei (2023). Different levels of transformational leadership in public vocational colleges have a significant impact on teachers' work engagement. This consistency underscores the ongoing positive correlation between transformational leadership and teachers' work engagement found in previous studies. 2). The Transformational Leadership of administrators has positive direct effect on Teachers' Emotional Intelligence (H2): resonates with established literature, as emphasized by scholars like Milhem (2019). Transformational leadership can directly enhance teachers' work motivation, and this leadership style also helps improve teachers' emotional intelligence, enabling them to better manage their emotions and establish effective emotional connections with others. 3). The Transformational Leadership of administrators has positive direct effect on Perceived Organizational Support (H3); resonates with established literature, as emphasized by scholars like Peng Chen (2021). This study further demonstrates that transformational leadership can enhance employees' trust and sense of belonging to the organization through motivation and care, thereby improving overall organizational performance and employee work engagement. 4). The Teachers' Emotional Intelligence has positive direct effect on Teachers' Work Engagement (H4)**;** resonates with established literature, as emphasized by scholars like Zhao Yifei (2023), This consistency confirms that emotional intelligence, as a key factor, can effectively enhance teachers' performance and engagement at work, providing theoretical support for further research and practice. 5). The Perceived Organizational Support has positive direct effect on Teachers' Work Engagement (H5)**;** resonates with established literature, as emphasized by scholars like Wang Juan (2022), This consistency further confirms the effectiveness of perceived organizational support as a motivating factor, providing theoretical basis and practical reference for improving the work environment and enhancing teachers' performance. and 6). The Teachers' Emotional Intelligence has positive direct effect on the Perceived Organizational Support (H6) **;** resonates with established literature, as emphasized by scholars like Huang Zijin (2022). This consistency further validates the key role of emotional intelligence in promoting healthy relationships between teachers and the organization, providing theoretical support for research and practical applications in this field.

Recommendation

1. Recommendation for Policies Formulation: To enhance teacher engagement and performance, organizations should implement transformational leadership training programs, prioritize the development of emotional intelligence, and strengthen organizational support systems. Additionally, integrating leadership and emotional intelligence into the organizational culture will foster a more supportive and dynamic environment. Finally, developing comprehensive engagement strategies will ensure sustained motivation and commitment among teachers improved outcomes.

2. Recommendation for Practical Application: Implementing policies that enhance organizational leadership through transformational leadership behavior is essential. Providing leadership training that focuses on setting high performance expectations and inspiring visions

can help boost teachers' engagement. Encouraging managers to lead by example and offer personalized support during challenges strengthens organizational cohesion. Similarly, promoting emotional intelligence development through targeted training programs can enable teachers to better manage their emotions and improve interpersonal relationships. This, in turn, enhances their perceived organizational support and increases their work engagement. Additionally, establishing transparent communication channels and aligning institutional values with personal values can foster a sense of belonging.

3. Recommendation for Further Research

(1) The Role of Perceived Organizational Support in Enhancing Teachers' Work Engagement : A Structural Equation Modeling Approach.

(2) Emotional Intelligence and Its Mediating Effect on Transformational Leadership and Teacher Work Engagement.

References

Chen Chunjin. (2017). An empirical study on the factors affecting job satisfaction of middle school teachers: An analysis based on PISA 2015 teacher survey data. Teacher Education Research , 29 (2), 84-91.

Eisenberger, R., & Stinglhamber, F. (2011). *Perceived organizational support: Fostering enthusiastic and productive employees*. American Psychological Association.

George, J. M., Reed, T. F., Ballard, K. A., Colin, J., & Fielding, J. (1993). Contact with AIDS patients as a source of work-related distress: Effects of organizational and social support. *Academy of Management Journal*, *36*(1), 157-171.

Howell, J. M., & Avolio, B. J. (1993). Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated business-unit performance. *Journal of applied psychology*, *78*(6), 891.

Huang Zijin. (2022). *A study on the impact of leaders' emotional intelligence on employee innovation behavior*. Master's thesis, Tianjin University of Commerce.

Kurtessis, J. N., Eisenberger, R., Ford, M. T., Buffardi, L. C., Stewart, K. A., & Adis, C. S. (2017). Perceived organizational support: A meta-analytic evaluation of organizational support theory. *Journal of management*, *43*(6), 1854-1884.

Milhem, M., Muda, H., & Ahmed, K. (2019). The effect of perceived transformational leadership style on employee engagement: The mediating effect of leader's emotional intelligence. *Foundations of Management*, *11*(1), 33-42.

Peng Chen. (2021). *Research on the relationship between transformational leadership and employee innovation behavior*. Master's thesis, Tianjin University of Commerce.

Rong Lei. (2023). *The impact of transformational leadership on employee Work engagement: A study of Company A*. Master's thesis, Zhejiang Gongshang University.

Wang Juan. (2022). *The impact of perceived organizational support on work engagement of clinical nurses.* Master's thesis, Shandong University.

Xu Tan. (2018). *The relationship between emotional intelligence, self-efficacy, and job burnout among university teachers*. Doctoral dissertation, Central China Normal University, Wuhan, China.

Zhao Yifei., & Yue Yaping. (2023). The impact of kindergarten teachers' emotional intelligence on work engagement: The mediating role of self-efficacy. *Early Childhood Education*, (09), 41-45. doi:CNKI:SUN.0.2023-09-008.