Effect of administrators' transformational leadership on teachers work performance: Mediated by teachers' quality of work life and work Engagement at universities in Shenyang, Liaoning Province.

Wang Zhenghao, Peerapong Tipanark and Pornthep Muangman

Bankokthonburi University

Email: 6263210062.edu@bkkthon.ac.th

Abstracts

The objectives of this research were to: (1) propose a Structural Equation Model (SEM) demonstrating the effects of administrators' transformational leadership on teachers' work performance (TWP), mediated by teachers' Quality of Work Life (QWL) and Work Engagement (WE) at universities in Shenyang, Liaoning Province, and (2) analyze how transformational leadership, QWL, and WE collectively influence teachers' work performance. This research employed a quantitative methodology with a stratified sampling method used to select 433 art teachers from public universities in Shenyang, Liaoning Province, China. Data were collected using a self-developed questionnaire, and analysis involved descriptive statistics, Confirmatory Factor Analysis (CFA), and SEM. The findings revealed that: (1) the proposed SEM showed an excellent fit with the empirical data (χ^2(91) = 180.002, χ^2/df = 1.978, GFI = 0.957, AGFI = 0.950, CFI = 0.957, TLI = 0.982, RMR = 0.034, and RMSEA = 0.049). (2) Transformational leadership had a direct positive effect on teachers' work performance (β = 0.279, $p < 0.001$), with QWL (β = 0.334, $p < 0.001$) and WE (β = 0.267, $p < 0.001$) also showing positive effects. Transformational leadership also had indirect positive effects on work performance via QWL (β = 0.188, $p = 0.011$) and WE (β = 0.097, $p = 0.020$), indicating that improved QWL and engagement enhance performance outcomes.

Introduction

In higher education, effective leadership is essential for enhancing faculty performance, job satisfaction, and institutional effectiveness. Transformational leadership, in particular, is

recognized for fostering environments that promote academic and personal growth, engagement, and performance excellence. This study examines the impact of administrators' transformational leadership on teacher performance—mediated by QWL and WE—within universities in Shenyang, Liaoning Province.

In China, heightened competition, evolving pedagogical standards, and increasing expectations necessitate effective leadership approaches. Transformational leadership—characterized by vision, inspiration, intellectual stimulation, and individualized support—has shown potential in empowering educators, fostering innovation, and addressing organizational challenges (Bass, 1985; Leithwood & Jantzi, 2005). However, the mechanisms by which transformational leadership influences teacher performance, especially through QWL and WE, remain underexplored in Chinese universities.

Research Problem: Teacher performance in higher education is multidimensional, encompassing teaching quality, research productivity, and community engagement. Universities are thus exploring strategies to create supportive work environments and enhance faculty engagement. There is a need to understand how transformational leadership can shape these performance areas directly and through improved QWL and WE—factors known to influence motivation, satisfaction, and productivity (Bakker & Demerouti, 2007; Sirgy et al., 2001).

This study aims to (1) propose an SEM illustrating the direct and indirect effects of transformational leadership on teacher performance and (2) analyze the mediating roles of QWL and WE. By examining these pathways, this study seeks to enhance our understanding of leadership dynamics in academic settings, providing actionable insights for improving teacher effectiveness and institutional success.

Research Objectives

1. To propose an SEM demonstrating the effects of administrators' transformational leadership on teachers' work performance, mediated by teachers' QWL and WE at universities in Shenyang.

2. To analyze how transformational leadership, QWL, and WE collectively influence teachers' work performance.

Research hypotheses

H1: Administrators' transformational leadership has a direct effect on teachers' work performance.

H2: Administrators' transformational leadership has a direct effect on teachers' QWL.

H3: Administrators' transformational leadership has a direct effect on teachers' WE.

H4: Teachers' QWL has a direct effect on teachers' work performance.

H5: Teachers' WE has a direct effect on teachers' work performance.

H6: Transformational leadership indirectly affects work performance through QWL.

H7: Transformational leadership indirectly affects work performance through WE.

Literature Review and concepts

1. **Transformational Leadership in Education**, Transformational leadership, as conceptualized by Bass (1985), motivates followers to exceed expectations through inspiration, intellectual stimulation, and support. In education, transformational leaders empower teachers, promote professional growth, and foster a collaborative environment. Key dimensions include:

1) Idealized Influence: Leaders act as ethical role models, earning respect and trust (Avolio & Bass, 2004).

2) Inspirational Motivation: Leaders communicate a compelling vision, aligning teachers with organizational goals (Leithwood & Jantzi, 2005).

3) Intellectual Stimulation: Leaders encourage innovative thinking, challenging norms and inviting new solutions (Hallinger, 2003).

4) Individualized Consideration: Leaders provide personalized support, recognizing each teacher's needs and potential.

5) Creating a Shared Vision: Leaders work with teachers to establish a cohesive direction (Wang Wenjun, 2015).

2. **Quality of Work Life (QWL)**, QWL encompasses conditions that enhance satisfaction, motivation, and well-being (Sirgy et al., 2001). Key dimensions include:

1) Fair and Adequate Compensation: Competitive benefits are crucial in enhancing commitment (Dreher, 2020).

2) Environment & Hygiene Safety: A safe, supportive environment promotes well-being and productivity.

3) Development Ability: Growth opportunities sustain motivation and enhance teaching capabilities (Zhao Xiang, 2022).

4) Progress and Job Stability: Job security fosters long-term commitment and lowers turnover (Zhu Ziwei, 2021).

3. **Work Engagement (WE),** WE, defined by Schaufeli and Bakker (2004), involves vigor, dedication, and absorption. Key dimensions include:

1) Vigor: Teachers with high energy are more resilient in meeting role demands (Christian et al., 2011).

2) Dedication: Teachers feel inspired and committed to their work.

3) Absorption: Teachers are deeply engaged in their tasks, enhancing concentration and satisfaction.

4. **Work Performance (TWP)**, TWP in higher education includes teaching quality, research productivity, and community service:

1) Research Performance: Teachers contribute to research through publications and studies (Wu Fan, 2015).

2) Teaching Performance: Effective teaching supports student learning and development (Chen Weiyan, 2016).

3) Social Service Performance: Teachers' community engagement enhances societal impact (Mo Yanan, 2021).

Research Methodology

Research Design

This study adopts a quantitative, explanatory design aimed at analyzing causal relationships through Structural Equation Modeling (SEM). SEM was chosen for its capacity to assess complex relationships among observed and latent variables, making it ideal for examining the effects of transformational leadership on teacher performance mediated by QWL and WE.

Population and Sampling

The population comprises 10,206 teachers from seven public universities in Shenyang, Liaoning Province. A sample of 433 teachers was selected using G*Power software, with parameters set for an effect size of 0.3, degrees of freedom of 91, a significance level of 0.05, and power of 0.95. Proportional stratified sampling ensured the sample was representative of the population across the seven institutions.

Data Collection

Data were collected through a structured questionnaire employing a five-point Likert scale, assessing transformational leadership, QWL, WE, and teacher performance. Validity and reliability checks yielded satisfactory results, with item-objective congruence (IOC) exceeding 0.67 and Cronbach's alpha scores above 0.80 for all sections.
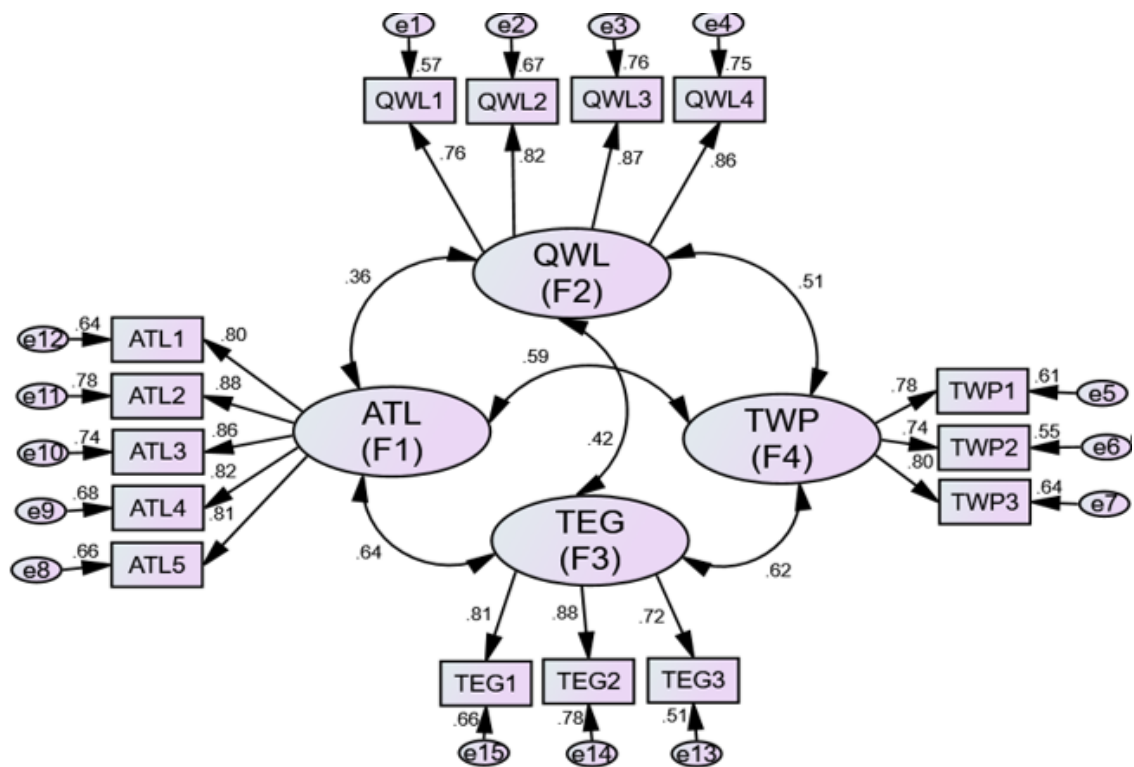
Data Analysis

Data were analyzed using SPSS for descriptive statistics and AMOS for Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). SEM was applied to test the hypothesized model, assessing direct and indirect effects, model fit indices, and path coefficients.

Research Results

1. To Propose a Structural Equation Model (SEM) that demonstrating the effects of administrators' transformational leadership on teachers' work performance, mediated by teachers' quality of work life and work Engagement

      1. Analysis of Measurement model to propose the model

Chi-square = 180.002, p = .000, df = 91, Relative Chi-square = 1.978, GFI = .957. AGFI = .950, CFI = .957.TLI = .982, RMR = .034, RMSEA = .049

Figure 1 Measurement Model of the study

From Figure 1 above, indicate that the model has an excellent fit with the empirical data (χ^2 = 180.002, p = 0.000, df = 91, χ^2/df = 1.978, GFI = 0.957, AGFI = 0.950, CFI = 0.957, TLI = 0.982, RMR = 0.034, and RMSEA = 0.049). These indices confirm that the proposed SEM accurately represents the relationships among transformational leadership, QWL, WE, and work performance. Include, this model showed the appropriate of validity, reliability, and discriminant value (AVE: Average Variance Attraction > 0.50; CR: Composite Validity > 0.70, and MSV: Maximized Share Variance < AVE) within the criteria of Fornell, C., & Larcker, D. F. (1981), Hair et.al. (2010), Kline, R. B. (2015). The detail of statistics value as show in Table 2
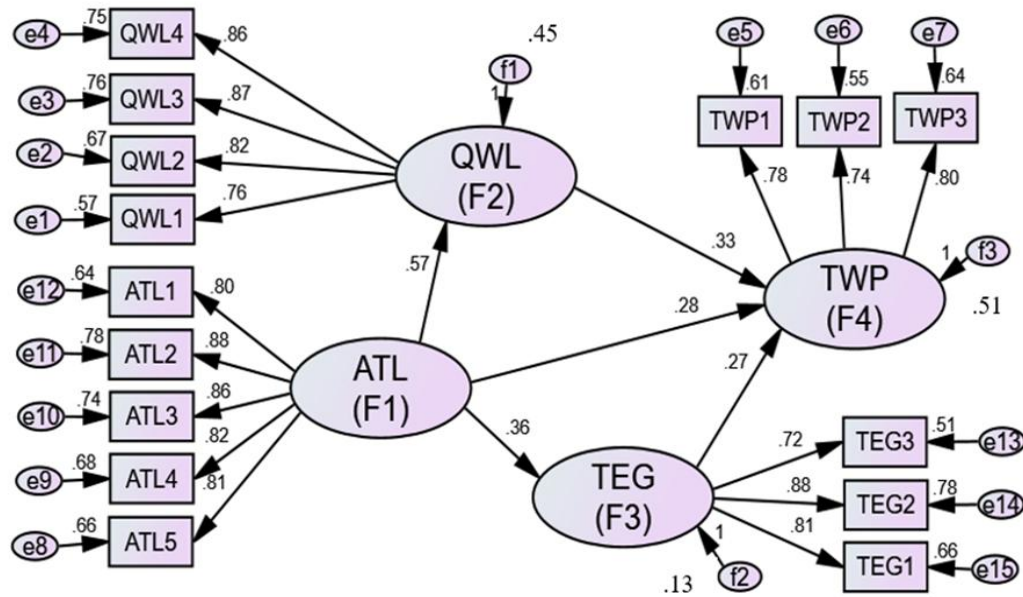
Table 1 Estimate factor loading estimate value and important statistics of the CFA measurement model

Latent/Observed variable	Factor loading	z-test	p	R^2	CR	AVE	MSV
ATL (F1)					0.921	0.702	0.412
ATL1 <--- ATL	0.802	18.692	***	0.643			
ATL2 <--- ATL	0.884	21.481	***	0.781			
ATL3 <--- ATL	0.861	-	***	0.741			
ATL4 <--- ATL	0.825	19.964	***	0.681			
ATL5 <--- ATL	0.815	19.341	***	0.664			
QWL (F2)					0.898	0.691	0.412
QWL1 <--- QWL	0.760	17.968	***	0.575			
QWL2 <--- QWL	0.821	19.882	***	0.674			
QWL3 <--- QWL	0.873	20.687	***	0.762			
QWL4 <--- QWL	0.867	-	***	0.752			
TEG (F3)					0.847	0.653	0.257
TEG1 <--- TEG	0.814	16.794	***	0.662			
TEG2 <--- TEG	0.885	-	***	0.783			
TEG3 <--- TEG	0.720	13.439	***	0.515			
TWP (F4)					0.729	0.574	0.389
TWP1 <--- TWP	0.784	14.998	***	0.615			
TWP2 <--- TWP	0.743	-	***	0.552			
TWP3 <--- TWP	0.80	16.346	***				

Note: *** $p < 0.001$.

2. To Analyse transformational leadership, teachers' quality of work life, and work engagement collectively influence teachers' work performance at universities in Shenyang, Liaoning province on Structural Equation Model (SEM)

This model provides a comprehensive structural understanding of how transformational leadership impacts teacher performance, both directly and indirectly. The detail of statistics value from this analyzed show in Figure 2

Chi-square = 180.002, p = .000, df = 91, Relative Chi-square = 1.978, GFI = .957. AGFI = .950, CFI = .957.TLI = .982, RMR = .034, RMSEA = .049

Figure 2 Structural Equation Model of the study

Direct effect: According from SEM analyzed displayed in Figure 2, the statistics of hypotheses testing were showed in Table 3

Table 2 Statistical hypotheses testing of direct effect between variable

Effects	Standardized	S.E.	Z-test	p	Hypothesis
TWP <--- ATL	0.279	0.043	6.488	***	H1: accepted
QWL<--- ATL	0.568	0.051	11.137	***	H2: accepted
TEG <--- ATL	0.359	0.045	7.978	***	H3: accepted
TWP <--- QWL	0.334	0.054	6.185	***	H4: accepted
TWP <--- TEG	0.267	0.045	5.933	***	H5: accepted

Note: *** $p < 0.001$.

Indirect effects analysis

Table 3 Decomposition of the indirect effects of administrator's transformational leadership through quality of work life and work engagement of the teachers

Effects	Standardized	Lower	Upper	p	Hypothesis
TWP <---QWL<--- ATL	0.188	0.012	0.346	0.011	H1: accepted
TWP <---TEG<--- ATL	0.097	0.013	0.195	0.020	H2: accepted

The bootstrap method was used to test the mediating effect of the model. As be seen in Table 4, the significance results of administrator's transformational leadership had indirect effect on Teacher's work performance through quality of work life and teacher' s work engagement (P values at 0.01, and 0.02 respectively). Therefore, the two hypotheses stated were accepted

Hypotheses Testing

1. H1: Administrators' transformational leadership has a direct effect on teachers' work performance. This hypothesis was supported, with transformational leadership showing a significant direct positive effect on work performance ($\beta = 0.279$, $p < 0.001$). Administrators who exhibit transformational leadership directly enhance teachers' teaching, research, and community engagement.

2. H2: Administrators' transformational leadership has a direct effect on teachers' quality of work life.   This hypothesis was supported, with transformational leadership having a strong positive effect on quality of work life ($\beta = 0.568$, $p < 0.001$). Transformational leaders foster a supportive and fair work environment, which improves teachers' perceptions of their quality of work life.

3. H3: Administrators' transformational leadership has a direct effect on teachers' work engagement. Supported by the data, transformational leadership was found to positively influence work engagement ($\beta = 0.359$, $p < 0.001$). This shows that transformational leaders increase teachers' engagement, including their vigor, dedication, and absorption in their roles.

4. H4: Teachers' quality of work life has a direct effect on teachers' work performance. This hypothesis was confirmed, with quality of work life positively impacting work performance ($\beta = 0.334$, $p < 0.001$). Teachers who perceive a higher quality of work life are more motivated and capable in their roles, leading to better performance outcomes.

5. H5: Teachers' work engagement has a direct effect on teachers' work performance. Supported by the analysis, work engagement positively affects work performance ($\beta = 0.267$, $p < 0.001$). Engaged teachers perform better, indicating that engagement is a crucial factor in academic effectiveness.

6. H6: Administrators' transformational leadership has an indirect effect on teachers' work performance through teachers' quality of work life. Transformational leadership had a significant indirect effect on work performance through quality of work life ($\beta = 0.188$, $p = 0.011$). This indicates that transformational leadership enhances teacher performance by improving their quality of work life, showing the importance of a supportive work environment in driving performance.

7. H7: Administrators' transformational leadership has an indirect effect on teachers' work performance through teachers' work engagement. The analysis revealed a significant indirect effect of transformational leadership on work performance through work engagement ($\beta = 0.097$, p = 0.020). This demonstrates that transformational leadership indirectly improves work performance by fostering higher engagement among teachers.

Summary of Findings

The study's results support all seven hypotheses, illustrating that administrators' transformational leadership has both direct and indirect positive effects on teachers' work performance. The SEM analysis reveals that transformational leadership not only impacts work performance directly but also significantly influences quality of work life and work engagement, which in turn positively affect teachers' performance. These findings underscore the role of transformational leadership in fostering a supportive and engaging work environment that enables teachers to excel in their professional roles.

Research Discussion

This study examined the effects of administrators' transformational leadership on teachers' work performance, specifically focusing on how quality of work life (QWL) and work engagement (WE) serve as mediators in this relationship. The discussion interprets the results in the context of each research objective and related hypotheses.

First objective aimed to develop and validate an SEM illustrating how transformational leadership influences teacher work performance, both directly and indirectly through QWL and WE. The model demonstrated an excellent fit with the empirical data, confirming the relevance of transformational leadership and mediating variables in shaping teacher performance. This finding aligns with transformational leadership theory, which emphasizes that leaders who inspire, intellectually stimulate, and support their employees foster environments conducive to high performance (Bass, 1985; Leithwood & Jantzi, 2005).

The model's fit indices ($\chi^2/df = 1.978$, CFI = 0.957, RMSEA = 0.049) confirm that the hypothesized relationships are consistent with the observed data, underscoring the utility of transformational leadership as a framework for improving teacher performance in the university context. This is consistent with prior research indicating that transformational leadership enhances performance by creating supportive and engaging work conditions (Podsakoff et al., 1990; Shuck et al., 2014).

Second objective aimed to analyzed, transformational leadership, teacher' quality of work life (QWL), and work engagement (WE) collectively influence teacher work performance.

Direct Effects

1. Transformational Leadership and Work Performance (H1): The results demonstrated that transformational leadership has a significant direct positive effect on teacher work performance ($\beta = 0.279$, $p < 0.001$). This aligns with prior studies (Leithwood et al., 2008; Hallinger, 2003), which suggest that transformational leaders enhance their followers' performance by articulating a clear vision, encouraging innovation, and providing individualized support. In the academic context, this leadership style helps foster an environment where teachers feel motivated to improve their teaching, research, and service performance, confirming the importance of transformational leadership in the university setting.

2. Transformational Leadership and Quality of Work Life (H2): Transformational leadership also significantly impacted QWL ($\beta = 0.568$, $p < 0.001$). This supports existing research showing that transformational leaders contribute to high-quality work environments by fostering fairness, growth opportunities, and a collaborative culture (Sirgy et al., 2001; Dreher, 2020). In this study, administrators' supportive and visionary leadership behaviors likely helped improve teachers' perceptions of job stability, safety, and professional development opportunities, thereby enhancing their overall quality of work life.

3. Transformational Leadership and Work Engagement (H3): The positive effect of transformational leadership on WE ($\beta = 0.359$, $p < 0.001$) corroborates previous findings that transformational leaders drive engagement by challenging, motivating, and valuing their followers (Schaufeli et al., 2009). By setting meaningful goals and fostering intellectual growth, transformational leaders encourage teachers to invest more energy and dedication into their roles. This is particularly relevant in the academic setting, where high engagement translates to improved teaching and research outputs (Christian et al., 2011).

4. Quality of Work Life and Work Performance (H4): The direct effect of QWL on work performance ($\beta = 0.334$, $p < 0.001$) emphasizes the importance of favorable work conditions in driving teacher productivity. The results align with Sirgy et al. (2001) and Zhang et al. (2020), who argue that employees' perceptions of job security, fairness, and growth potential significantly influence their motivation and effectiveness. The finding suggests that when teachers feel supported in their roles, they are more committed to their responsibilities, which in turn improves their performance.

5. Work Engagement and Work Performance (H5): The study confirmed a significant direct effect of WE on work performance ($\beta = 0.267$, $p < 0.001$), supporting the Job Demands-Resources (JD-R) model, which proposes that engaged employees are more productive due to increased energy, commitment, and focus (Bakker & Demerouti, 2007). This finding is consistent with research by Schaufeli and Bakker (2004), who identified engagement as a key predictor of performance. The study results reinforce the value of fostering teacher engagement to promote better academic outcomes.

Indirect Effects

Quality of Work Life (H6): The significant indirect effect of transformational leadership on work performance via QWL ($\beta = 0.188$, $p = 0.011$) suggests that transformational leaders enhance teacher performance by improving the quality of work life. This aligns with literature indicating that transformational leadership positively impacts employee outcomes by creating supportive work environments (Shuck et al., 2014). In the university context, administrators who foster fair compensation, job stability, and a safe work environment indirectly boost teacher performance by improving their overall work experience.

6. Transformational Leadership's Indirect Effect on Work Performance through Work Engagement (H7): The indirect effect of transformational leadership on work performance via WE ($\beta = 0.097$, $p = 0.020$) highlights the role of engagement as a mediator in the relationship between leadership and performance. Transformational leaders who inspire, intellectually stimulate, and support their teachers help to enhance engagement levels, which in turn improves performance. This finding supports Schaufeli et al. (2009), who noted that leaders could increase employee engagement by offering a vision and setting challenging goals. Engaged teachers, motivated by visionary leadership, are more committed to their work, ultimately leading to better academic outcomes.

Implications for Practice

The findings suggest several practical recommendations for enhancing teacher performance through transformational leadership, improved quality of work life, and engagement:

1. Leadership Development Programs: Universities should prioritize training administrators in transformational leadership, focusing on behaviors that inspire, motivate, and support teachers. Such programs can help administrators become more effective in fostering positive work conditions and engagement among their staff.

2. Enhancing Quality of Work Life: Creating policies that support fair compensation, safety, and professional growth will contribute to better work-life quality for teachers.

Universities should institutionalize these policies to foster a supportive and motivating work environment.

3. Promoting Teacher Engagement: Universities should actively promote engagement through recognition, collaborative work opportunities, and meaningful challenges. Engaged teachers are more likely to be productive and committed, leading to better performance outcomes.

Research Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance leadership effectiveness, teacher performance, and overall organizational success in universities in Shenyang, Liaoning Province. These are organized under three areas: policy setting, practical implementation, and future research directions.

1 Recommendations for Policy Setting

1.1 Institutionalize Transformational Leadership Development Programs: University policies should prioritize transformational leadership development as part of core leadership training. Policies should formalize leadership practices that focus on articulating vision, intellectual stimulation, individualized support, and creating a supportive environment, which directly and indirectly improves teacher performance. Regular assessments and continuous training should reinforce these transformational qualities across university management.

1.2 Enhance Policies for Quality of Work Life (QWL): Policies should be designed to create positive working conditions, including fair compensation, mental health and safety support, and opportunities for career growth. Regular policy updates and reviews should address evolving needs in teaching, research, and service, fostering a positive, consistent environment that supports teachers' QWL across universities.

1.3 Promote Teacher Engagement: University policies should actively support teacher engagement through structured recognition programs, opportunities for collaboration, and flexible work policies. Regular engagement surveys and teacher feedback loops will help monitor and maintain high engagement levels, crucial for sustained performance.

2. Recommendations for Practice

2.1 Implement Leadership Development Programs: Universities should provide administrators with practical, skills-based workshops on transformational leadership. Programs should focus on vision communication, individualized faculty support, and promoting innovation. Consistent follow-up sessions will ensure these practices are effectively integrated.

2.2 Strengthen Teacher Support Systems: Universities should enhance support for teachers through resources like updated facilities, mentoring programs, peer networks, and wellness services. Establishing a professional development fund will enable teachers to stay current in their fields, positively impacting their teaching and research outcomes.

2.3 Foster Teacher Engagement through Collaboration and Recognition: To improve engagement, universities should encourage collaborative work through cross-departmental teams and teaching forums. Recognition programs celebrating achievements in teaching, research, and service will help keep teachers motivated and engaged.

2.4 Establish Feedback Mechanisms: Universities should regularly gather teacher input on work conditions and leadership practices through surveys, focus groups, and individual meetings with administrators. Addressing feedback promptly fosters a responsive, supportive leadership culture that enhances teacher engagement.

3. Recommendations for Further Study

3.1 Explore Additional Mediating Variables: Future studies could examine other mediators, such as job satisfaction, organizational commitment, and teacher autonomy, to provide more detailed insights into how transformational leadership impacts teacher performance.

3.2 Conduct Longitudinal Studies on Leadership Impact: Longitudinal research could assess the extended influence of transformational leadership on outcomes such as teacher retention, career development, and organizational adaptability over time.

3.3 Compare Different Institutional Contexts: Comparative studies across regions or types of universities (e.g., public vs. private, research vs. teaching-focused) could reveal contextual variations in the impact of transformational leadership, helping tailor recommendations to different educational settings.

3.4 Investigate Digital Leadership in Higher Education: As technology plays a growing role in education, future research could explore how digital leadership influences teacher performance, particularly in digitally dynamic environments. Integrating digital strategies with transformational leadership may reveal new insights for leadership development.

3.5 Examine Cross-Cultural Influences on Leadership Effectiveness: Given this study's focus on Shenyang, further research could explore how cultural factors affect leadership effectiveness. Insights into cultural influences on leadership styles and teacher performance can help develop culturally nuanced leadership training programs.

Reference

Avolio, B. J., & Bass, B. M. (2004). Multifactor leadership questionnaire: Manual and sampler set (3rd ed.). Mind Garden, Inc.

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. Journal of Managerial Psychology, 22(3), 309–328. https://doi.org/10.1108/02683940710733115

Bass, B. M. (1985). Leadership and performance beyond expectations. Free Press.

Byrne, B. M. (2010). Structural equation modeling with AMOS: Basic concepts, applications, and programming (2nd ed.). Routledge.

Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. Personnel Psychology, 64(1), 89–136. https://doi.org/10.1111/j.1744-6570.2010.01203.x

Dreher, G. F. (2020). Compensation and employee engagement. Springer.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis (7th ed.). Pearson.

Leithwood, K., & Jantzi, D. (2005). A review of transformational school leadership research 1996–2005. Leadership and Policy in Schools, 4(3), 177–199. https://doi.org/10.1080/15700760500244769

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. Journal of Organizational Behavior, 25(3), 293–315. https://doi.org/10.1002/job.248

Sirgy, M. J., Efraty, D., Siegel, P., & Lee, D. J. (2001). A new measure of quality of work life (QWL) based on need satisfaction and spillover theories. Social Indicators Research, 55(3), 241–302. https://doi.org/10.1023/A:1010986923468

Schumacker, R. E., & Lomax, R. G. (2010). A beginner's guide to structural equation modeling (3rd ed.). Routledge.