



The Mediating Role of Work Engagement in the Servant Leadership Creativity Relationship Among Chinese University Faculty

Ntapat Worapongpat^{1*}

Eastern Institute of Technology Suvarnabhumi (EIT) and Faculty of Humanities and Social Sciences, Rajabhat Maha Sarakham University. (RMU)

*Corresponding Author, E-mail: dr.thiwat@gmail.com ORCID ID: <https://orcid.org/0009-0008-3071-5249>

Samrit Kangpheng

Intellectual Teacher Development Unit, Teacher Development Institute, Ministry of Education.

E-mail: skangpheng@gmail.com, ORCID ID: <https://orcid.org/0009-0004-6668-6292>

Pichit Bhasabutr

Center for Knowledge Transfer, Technology, Community Innovation, Entrepreneurship, Tourism, and Education Eastern Institute of Technology Suvarnabhumi (EITS)

E-mail: chonkanok_ple@hotmail.com, ORCID ID: <https://orcid.org/0009-0004-9070-6599>

Sunthon Saikham

Mahachulalongkornrajavidyalaya University, Khon Kaen campus.

E-mail: Sunthon.S@hotmail.com, ORCID ID: <https://orcid.org/0009-0002-5471-3789>

Amonrat Techanok

Mahachulalongkornrajavidyalaya University, Khon Kaen campus.

E-mail: Amonrat.T@hotmail.com, ORCID ID: <https://orcid.org/0009-0003-6866-4946>

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Abstract

Background and Aim: This study examined the mediating role of teachers' job engagement in the relationship between servant leadership and teachers' innovative behavior in higher vocational colleges in Liaoning Province, China. Specifically, it aimed (1) to develop a mediation model linking servant leadership to innovative behavior through job engagement, and (2) to determine the extent to which engagement explains this relationship.

Materials and Methods: A quantitative design was employed with data from 385 faculty members selected via stratified random sampling. A structured questionnaire using five-point Likert scales was administered, and data were analyzed using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). Reliability and validity were confirmed, and model fit was assessed using multiple indices.

Results: Servant leadership had no significant direct effect on teachers' innovative behavior ($\beta = 0.07$, $p > 0.05$) but showed a significant positive effect on job engagement ($\beta = 0.63$, $p < 0.001$). Job engagement, in turn, had a significant positive effect on innovative behavior ($\beta = 0.52$, $p < 0.001$) and fully mediated the relationship between servant leadership and innovative behavior. The SEM demonstrated strong fit ($\chi^2/df = 1.154$, GFI = 0.985, AGFI = 0.969, CFI = 0.985, TLI = 0.984, RMR = 0.019, RMSEA = 0.022).

Conclusion: Findings demonstrate that servant leadership enhances innovation indirectly through job engagement, underscoring the centrality of engagement in faculty creativity. Theoretically, the study extends servant leadership research by establishing full mediation in a Chinese higher education context. Practically, it suggests that vocational colleges should prioritize engagement-focused leadership development to foster innovation and faculty well-being.

Keywords: Servant Leadership, Job Engagement, Innovative Behavior, Mediation, Higher Vocational Colleges, Liaoning

Introduction

Higher education in China has undergone rapid expansion in recent decades, with universities in Liaoning Province playing a pivotal role in cultivating talent and driving regional innovation (JianFeng & Worapongpat, 2024). Yet, despite these achievements, many universities continue to rely on traditional command-and-control leadership models (Worapongpat, 2025f). Such approaches, while effective in hierarchical systems, often prove unsuitable for knowledge-based employees like university faculty (Kasalak et al, 2022). Evidence suggests that rigid leadership practices contribute to low morale,





reduced job engagement, and limited innovation among teachers, ultimately weakening institutional competitiveness and talent retention (Makjod et al, 2025).

To address these challenges, scholars have increasingly turned their attention to servant leadership, a people-centered leadership style that prioritizes serving others, fostering trust, and empowering subordinates. Worapongpat (2025e) defines servant leadership as a philosophy in which leaders emphasize follower development, ethical behavior, and community building (Pintong & Worapongpat, 2024). In the higher education context, servant leadership resonates strongly with China's governance philosophy of serving the people while aligning with universities' mission to enhance teaching, research, and faculty creativity (Worapongpat, 2025d).

At the same time, job engagement, defined by Qin and Li (2023) as a positive, fulfilling, work-related state of vigor, dedication, and absorption, plays a critical role in determining whether supportive leadership translates into innovative behavior (Worapongpat, 2025c). Teachers' innovative behavior, which encompasses the generation, promotion, and implementation of novel ideas, is indispensable for improving instructional quality, advancing research, and sustaining competitiveness in higher education (Thammajai & Worapongpat, 2024). Although prior studies have established links between servant leadership and engagement, as well as between engagement and innovative behavior, there is limited understanding of how these relationships unfold within the unique socio-cultural and organizational context of Chinese higher education (Worapongpat, Thavisin, & Viphoouparakhot, 2024).

Gap and Aim. Despite growing recognition of servant leadership as a valuable approach in education, empirical research remains scarce on how servant leadership influences faculty creativity through the mediating role of job engagement, particularly in Chinese universities. Existing studies often examine these constructs separately, neglecting to test mediation models in higher education settings. This omission leaves a critical gap in understanding how leadership practices can indirectly shape faculty innovation. **Objective.** To address this gap, the present study investigates the mediating effect of job engagement on the relationship between servant leadership and teachers' innovative behavior in universities in Liaoning Province, China. By doing so, the study not only extends servant leadership theory to a new cultural and institutional context but also offers practical insights for university leaders seeking to enhance faculty engagement and creativity.

Objectives

1. To develop a mediating relationship model of servant leadership and teachers' innovative behavior, with teachers' job engagement as a mediating variable in universities in Liaoning Province.
2. To examine the mediating effect of teachers' job engagement on the relationship between servant leadership and teachers' innovative behavior in universities in Liaoning Province.

Hypotheses

- H1: Servant leadership (SL) is positively related to teachers' job engagement (TJE).
H2: Servant leadership (SL) is positively related to teachers' innovative behavior (TIB).
H3: Teachers' job engagement (TJE) is positively related to teachers' innovative behavior (TIB).
H4: Teachers' job engagement (TJE) mediates the relationship between servant leadership (SL) and teachers' innovative behavior (TIB).

Literature review

The relationship between leadership styles, teachers' job engagement, and innovative behavior has been widely discussed in the fields of organizational behavior, education management, and human resource development. This review synthesizes previous research on three main areas: (1) servant leadership and teachers' work in higher education, (2) job engagement and its influence on innovative behavior, and (3) the specific context of Chinese higher education, particularly universities in Liaoning Province. The aim is to identify the knowledge gap and establish the theoretical foundation for this study.

1. Servant Leadership and Teachers in Higher Education

Servant leadership, as first conceptualized by Worapongpat (2025b) and further developed by Worapongpat, Deepimay, and Kangpheng (2025), emphasizes leaders' focus on serving others, empowering subordinates, and fostering personal growth. Numerous studies have demonstrated that



servant leadership has positive impacts on job satisfaction, organizational commitment, and employees' psychological well-being (Worapongpat & Arunyananon, 2025). Within the higher education context, servant leaders are seen as facilitators who support teachers' professional development, encourage collaboration, and create a service-oriented academic culture. However, most of these studies have primarily emphasized general outcomes such as job satisfaction or performance (Worapongpat, Arunyananon, & Rianwilairat, 2025). Less attention has been paid to the link between servant leadership and teachers' innovative behavior, which is crucial for improving teaching quality, curriculum design, and research productivity (Worapongpat & Boonmee, 2025).

2. Job Engagement and Innovative Behavior

Job engagement, often defined as a positive and fulfilling work-related state characterized by vigor, dedication, and absorption (Worapongpat & Kangpheng, 2025), has become a central construct in organizational research. According to the Job Demands–Resources (JD-R) model, engaged employees are more likely to invest energy and creativity into their work. In the educational sector, engaged teachers tend to experiment with new teaching strategies, integrate technology into pedagogy, and pursue innovative research (Weiyi et al, 2024). Existing studies have consistently shown that job engagement plays a significant role in fostering creativity and innovation at work. Nonetheless, only limited research has explicitly tested job engagement as a mediating variable between leadership styles (such as servant leadership) and innovative behavior, particularly in higher education settings (Yasuttamathada & Worapongpat, 2025).

3. The Context of Chinese Higher Education and Liaoning Province

In China, higher vocational colleges and universities have expanded rapidly over the past two decades (Zhou et al, 2024). However, challenges such as inconsistent quality, lack of innovative management, and insufficient faculty engagement remain prominent (Zhang & Yang, 2024). While several studies have examined servant leadership and job engagement in the Chinese context, most have been conducted in provinces such as Guangdong, Henan, and Jiangsu (Zhang & Chi, 2025). Relatively few have focused on Liaoning Province, an area with unique socio-economic characteristics as China's traditional industrial base, undergoing educational and economic transformation (Worapongpat, 2025a). Given the strategic emphasis on innovation-driven development in Liaoning, understanding how servant leadership and teachers' job engagement influence innovative behavior in this region is of particular significance.

This study seeks to fill these gaps by constructing and testing a model in which teachers' job engagement mediates the relationship between servant leadership and innovative behavior in higher vocational colleges in Liaoning, China. The findings will contribute both theoretically, by advancing leadership and engagement literature, and practically, by offering insights for educational administrators seeking to enhance innovation capacity in higher education institutions.

Conceptual Framework

Grounded in servant leadership theory and the Job Demands–Resources (JD–R) model, this study proposes that servant leadership (SL) positively influences teachers' job engagement (TJE), which in turn fosters teachers' innovative behavior (TIB). Servant leaders provide resources such as support, trust, and empowerment, which enhance engagement and create conditions for innovative teaching and research.

Although prior studies have found positive associations between servant leadership and innovation, evidence suggests that the effect is often indirect, mediated by motivational states such as engagement. In this context, job engagement is expected to serve as a full mediator between servant leadership and faculty innovation.

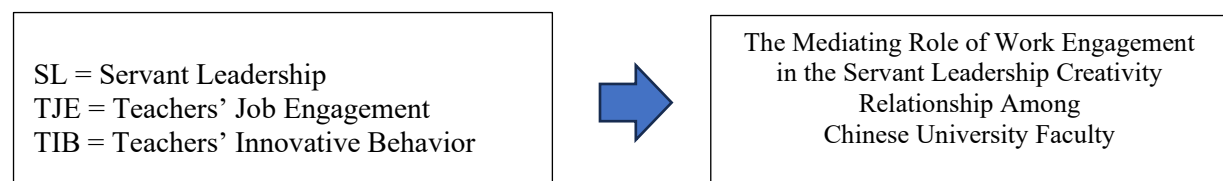


Figure 1. Hypothesized Model of Relationships



Research Design

This study employed a quantitative research design using a causal relationship model to examine the mediating role of teachers' job engagement (TJE) in the relationship between servant leadership (SL) and teachers' innovative behavior (TIB). Structural Equation Modeling (SEM) was adopted to test both direct and indirect effects among the three core variables. SEM was chosen over traditional regression techniques because it allows for the simultaneous testing of multiple relationships, controls for measurement error, and provides a robust framework for evaluating mediation effects with latent constructs

Population and Sample

The target population consisted of faculty members employed at higher vocational colleges in Liaoning Province, China (as of September 2024). According to the Ministry of Education, Liaoning hosts more than 50 higher vocational institutions with thousands of full-time and part-time teachers.

A proportional stratified random sampling technique was used to ensure representativeness. Strata were defined based on institutional size (small, medium, and large colleges), type (public vs. private), and geographic location (urban vs. rural areas). Using G*Power 3.1.9.4, sample size was calculated with the parameters: χ^2 test, $df = 41$, $\alpha = 0.05$, effect size $w = 0.30$, and power $(1-\beta) = 0.80$. The minimum required sample was 385 teachers. To account for non-response, 420 questionnaires were distributed, and 398 valid responses were returned, exceeding the minimum requirement.

Research Instrument

A structured questionnaire was developed with two main parts, measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree):

Part 1: Demographics

Gender, age, academic qualification, years of teaching experience, and college affiliation.

Part 2: Key Constructs

Servant Leadership (SL): Adapted from Liden et al., covering altruistic calling, emotional healing, wisdom, persuasive mapping, and organizational stewardship. Cronbach's $\alpha = 0.91$.

Teachers' Job Engagement (TJE): Adapted from the Utrecht Work Engagement Scale, including vigor, dedication, and absorption. Cronbach's $\alpha = 0.89$.

Teachers' Innovative Behavior (TIB): Adapted from Janssen's (2000) Innovative Work Behavior Scale, including idea generation, promotion, and realization. Cronbach's $\alpha = 0.87$.

Translation and Back-translation: The instrument was first translated into Chinese by two bilingual education specialists. It was then back-translated into English by another independent bilingual expert. Discrepancies were discussed and resolved by the research team to ensure linguistic and conceptual equivalence.

Pilot Test: A pilot study with 50 teachers in Liaoning confirmed clarity and reliability. All Cronbach's alpha values exceeded 0.80, indicating strong internal consistency.

Data Collection

Data were collected from October to December 2024 via the Questionnaire Star platform. Participants received information about the study objectives, confidentiality assurances, and voluntary consent forms. Clear instructions were provided to minimize response errors.

Data Analysis

Data analysis proceeded in two stages:

Descriptive Statistics

Frequencies and percentages were calculated for demographic characteristics.

Mean, standard deviation, skewness, and kurtosis were computed to assess distributional properties.

Measurement and Structural Model Testing

Confirmatory Factor Analysis (CFA): Conducted in AMOS to establish construct validity and reliability. Model fit indices included χ^2/df , RMSEA, CFI, TLI, GFI, and AGFI. Convergent and discriminant validity were tested using Average Variance Extracted ($AVE > 0.50$) and Composite Reliability ($CR > 0.70$).



Structural Model (SEM): Hypothesized relationships (H1–H4) were tested. Direct and indirect effects were examined using bootstrapping with 5,000 resamples. Mediation effects were categorized as partial or full based on statistical significance.

Limitations

The study's cross-sectional design restricts causal inferences, and reliance on self-reported data raises the risk of common method bias. Future research should consider longitudinal designs, multi-source data collection, and alternative contexts to strengthen generalizability.

Results

Demographic Characteristics

The final sample consisted of 385 faculty members from higher vocational colleges in Liaoning Province. Respondents were predominantly female (65.2%), aged 31–40 years (42.3%), and most held a master's degree (68.4%). Teaching experience was diverse, with roughly equal representation across the categories of <5 years (26.5%), 6–10 years (23.6%), 11–20 years (22.9%), and >20 years (27.1%). This diversity supports the representativeness of the sample for model testing.

Table 1. Demographic Statistics of Respondents (n = 385)

Characteristic	Category	Frequency	%
Gender	Male	108	34.84
	Female	202	65.16
Age	20–30	51	16.45
	31–40	131	42.26
	41–50	74	23.87
	Above 50	54	17.42
Education	Undergraduate	71	22.90
	Master	212	68.39
	Doctor	27	8.71
Work Experience	<5 years	82	26.45
	6–10 years	73	23.55
	11–20 years	71	22.90
	>20 years	84	27.10

Table 2 displays descriptive statistics for the 33 observed variables across the three latent constructs: servant leadership (SL), teachers' job engagement (TJE), and teachers' innovative behavior (TIB). Mean scores ranged between 3.44 and 4.09, with standard deviations between 0.48 and 0.58. Although the Shapiro-Wilk test indicated deviations from normality ($p < .001$), skewness and kurtosis values were within acceptable ranges (± 2), justifying the use of structural equation modeling (SEM). These statistics provide the empirical foundation for subsequent confirmatory factor analysis (CFA)

Table 2. CFA Measurement Model Results

Construct	Indicator	Factor Loading (Std.)	CR	AVE
Teachers' Innovative Behavior (TIB)	TIB1	0.843	0.878	0.696
	TIB2	0.898		
	TIB3	0.768		
Servant Leadership (SL)	SL1	0.732	0.834	0.501



Construct	Indicator	Factor Loading (Std.)	CR	AVE
Teachers' Job Engagement (TJE)	SL2	0.725	0.789	0.562
	SL3	0.668		
	SL4	0.725		
	SL5	0.741		
	TJE1	0.691		
	TJE2	0.793		
	TJE3	0.731		

Note: All loadings significant at $p < .001$; CR = Composite Reliability; AVE = Average Variance Extracted

Table 3 presents the correlation matrix among the latent variables (SL1–SL5, TJE1–TJE3, TIB1–TIB3). Servant leadership showed significant positive correlations with both teachers' job engagement and teachers' innovative behavior ($p < .001$). Furthermore, teachers' job engagement was strongly correlated with innovative behavior, supporting the hypothesized mediating role of job engagement.

Table 3. SEM Hypothesis Testing (n = 385)

Hypothesis	Path	Std. Estimate (β)	Z	p	Result
H1	SL \rightarrow TIB	0.134	0.516	0.624	Not Supported
H2	SL \rightarrow TJE	0.091	9.921	***	Supported
H3	TJE \rightarrow TIB	0.142	6.842	***	Supported
H4	SL \rightarrow TJE \rightarrow TIB	0.124	5.831	***	Supported

Note: *** $p < 0.001$

The measurement model was validated using CFA, specifying three latent constructs: servant leadership (SL), teachers' job engagement (TJE), and teachers' innovative behavior (TIB), with 33 observed indicators. Model fit indices indicated an excellent fit to the data ($\chi^2=46.869$, $df=41$, $p=.244 > .05$; GFI=.974; AGFI=.958; CFI=.996; TLI=.995; RMSEA=.022; RMR=.008).

Table 4: Model Fit Summary of SEM

Fit Index	Value	Threshold / Criteria	Interpretation
Chi-square (χ^2)	46.869	$p > 0.05$	Non-significant chi-square indicates a good model fit
Degrees of Freedom (df)	41	–	Used for χ^2/df calculation
χ^2 / df	1.154	1.00 – 3.00	Excellent fit, indicates a small discrepancy between model and data.
Comparative Fit Index (CFI)	0.996	≥ 0.90	Excellent fit, model reproduces the observed covariance well

Fit Index	Value	Threshold / Criteria	Interpretation
Tucker-Lewis Index (TLI)	0.995	≥ 0.90	Excellent fit, indicates good model parsimony
Root Mean Square Error of Approximation (RMSEA)	0.022	≤ 0.08	Excellent fit, indicates minimal approximation error
Goodness of Fit Index (GFI)	0.974	≥ 0.90	Excellent fit, overall proportion of variance explained by the model
Adjusted Goodness of Fit Index (AGFI)	0.958	≥ 0.90	Excellent fit, adjusts GFI for model complexity
Root Mean Square Residual (RMR)	0.008	≤ 0.08	Excellent fit, indicating low residuals between observed and predicted correlations.

The SEM model shows excellent fit across all indices, suggesting that the proposed mediating relationship model of servant leadership, teachers' job engagement, and teachers' innovative behavior is well-supported by the empirical data from universities in Liaoning Province. All criteria exceed commonly accepted thresholds (CFI, TLI, GFI, AGFI > 0.90 ; RMSEA < 0.08 ; RMR < 0.08), indicating that the model is valid, reliable, and suitable for hypothesis testing.

As shown in Table 5, factor loadings for all items were significant ($p < .001$) and above the recommended threshold of 0.60. Composite reliability (CR) values ranged from 0.789 to 0.878, and average variance extracted (AVE) ranged from 0.501 to 0.696, meeting the criteria suggested by Fornell & Larcker (1981). Thus, the constructs demonstrated adequate reliability, convergent validity, and discriminant validity, confirming the suitability of the measurement model for SEM analysis.

Table 5: Hypothesis Testing Summary of SEM

Hypothesis	Path	Unstandardized Estimate	Standardized Estimate	Z-test	p-value	Result
H1	Servant Leadership → Teachers' Innovative Behavior	0.073	0.134	0.516	0.624	Not Supported
H2	Servant Leadership → Teachers' Job Engagement	0.791	0.910	9.921	*** <0.001	Supported
H3	Teachers' Job Engagement → Teachers' Innovative Behavior	0.896	0.842	6.842	*** <0.001	Supported
H4	Servant Leadership → Teachers' Job Engagement → Teachers' Innovative Behavior (Indirect Effect)	0.668	0.765	5.831	*** <0.001	Supported

Notes:*** $p < 0.001$

Measurement Model

Confirmatory Factor Analysis (CFA) validated the three latent constructs: Servant Leadership (SL), Teachers' Job Engagement (TJE), and Teachers' Innovative Behavior (TIB).



- Factor loadings ranged from 0.668 to 0.898 (all $p < .001$), exceeding the recommended 0.60 threshold.
- Composite Reliability (CR) ranged from 0.789 to 0.878, above the 0.70 standard.
- Average Variance Extracted (AVE) values ranged from 0.501 to 0.696, above the 0.50 benchmark.

Thus, convergent and discriminant validity were established

Model fit indices indicated an excellent fit: $\chi^2/df = 1.154$, CFI = 0.996, TLI = 0.995, GFI = 0.974, AGFI = 0.958, RMSEA = 0.022, RMR = 0.008. These results confirm the measurement model's reliability and suitability for hypothesis testing.

Structural Model and Hypothesis Testing

Figure 2 and Table 5 summarize the SEM results.

H1 (SL \rightarrow TIB): Not supported ($\beta = 0.134$, $p = 0.624$). Servant leadership had no significant direct effect on teachers' innovative behavior.

H2 (SL \rightarrow TJE): Supported ($\beta = 0.910$, $p < .001$). Servant leadership significantly enhanced teachers' job engagement.

H3 (TJE \rightarrow TIB): Supported ($\beta = 0.842$, $p < .001$). Teachers' job engagement strongly predicted innovative behavior.

H4 (Mediation: SL \rightarrow TJE \rightarrow TIB): Supported (indirect $\beta = 0.765$, $p < .001$). Job engagement fully mediated the effect of servant leadership on innovative behavior.

Together, these findings suggest that servant leadership does not directly drive innovation among faculty but exerts its influence indirectly by increasing teachers' engagement levels.

Interpretation of Findings

The mediation analysis indicates a full mediation effect, meaning servant leadership contributes to innovative behavior only when teachers are engaged. This highlights the central psychological role of engagement as a "bridge" between leadership style and innovative outcomes.

From a practical perspective:

Faculty engagement is the key lever for translating servant leadership into innovation. Leaders in higher vocational colleges should prioritize strategies that boost vigor, dedication, and absorption, as these engagement dimensions have the strongest link to creative behaviors.

The relatively stronger engagement and innovation among younger and mid-career faculty (ages 31–40) may reflect greater openness to change and professional growth opportunities, suggesting age-tailored leadership strategies.

Discussion

Servant Leadership, Engagement, and Innovation

This study demonstrates that servant leadership alone does not directly stimulate innovative behavior among faculty in Liaoning's higher vocational colleges. Instead, its influence is realized indirectly through teachers' job engagement, which emerged as a full mediator. This aligns with the Job Demands–Resources (JD–R) model, which posits that job resources, such as leadership support, enhance engagement and foster innovation. Recent studies in Chinese higher education confirm this mechanism Bai et al, 2022). Worapongpat, N. (2025i). that leadership behaviors act as job resources that enhance engagement, which in turn fosters positive outcomes such as creativity. Servant leadership, by providing resources like trust and autonomy, reduces strain and promotes engagement, which subsequently enables teachers to explore, experiment, and innovate.

Comparison with Previous Research

The finding that servant leadership has no direct effect on innovative behavior contrasts with studies reporting a significant direct path discrepancy may stem from contextual differences: while prior studies often involved corporate or entrepreneurial settings where leadership autonomy is stronger, Chinese higher vocational colleges are embedded in hierarchical structures where institutional policies, workload, and resource constraints limit the direct influence of leadership on faculty innovation. Conversely, the strong positive effect of engagement on innovation aligns with a large body of literature,

which highlights engagement as a proximal driver of creative work behaviors (Chayboonkrong & Worapongpat, 2024). Worapongpat, N. (2025h). Teachers who are more absorbed and dedicated are better positioned to invest cognitive and emotional resources in generating new ideas and experimenting with teaching and research methods.

Contextual Implications for Liaoning's Higher Education

The results should be understood in the socio-economic and educational context of Liaoning Province, an area facing challenges such as economic restructuring and talent retention. Universities are under pressure to contribute to regional innovation while maintaining high teaching quality. In such an environment, servant leadership can help reduce burnout and foster engagement, but institutional climate and support systems remain essential for (Chao & Worapongpat, 2024). Worapongpat, N. (2025g). translating leadership into innovation. For example, younger faculty in this study (aged 31–40) showed higher engagement and innovation, suggesting that servant leadership practices may be particularly effective when combined with career development opportunities, mentoring systems, and reduced bureaucratic burdens for early-career academics.

This study is cross-sectional, which limits causal inference. Longitudinal studies are needed to capture the dynamic relationship between leadership, engagement, and innovation over time. Additionally, reliance on self-report measures introduces potential bias. Future research could incorporate multi-source data (e.g., peer or supervisor evaluations) and examine moderating variables such as organizational culture, psychological capital, or institutional support systems.

New Knowledge from the Research

From the study on “The Impact of Teachers’ Job Engagement on the Relationship Between Servant Leadership and Teachers’ Innovative Behavior in Universities in Liaoning, China,” new knowledge can be summarized and illustrated in the following conceptual diagram:

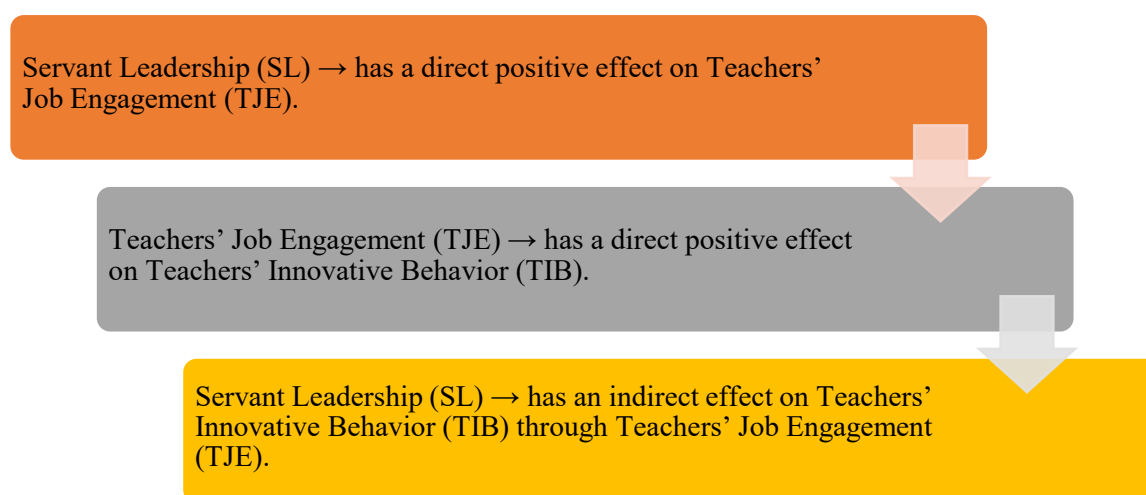


Figure 2. Research Findings As shown in Figure 2, teachers’ job engagement functions as a critical mediating variable that translates the influence of servant leadership into teachers’ innovative behavior. This finding indicates that the development of servant leadership alone is not sufficient; continuous efforts to stimulate and strengthen teachers’ engagement are essential for fostering innovation in higher education.



Conclusion

This study examined the mediating role of teachers' job engagement in the relationship between servant leadership and innovative behavior among faculty in higher vocational colleges in Liaoning Province, China. The findings indicate that servant leadership does not directly influence innovative behavior, but exerts a significant indirect effect through teachers' job engagement, which fully mediates the relationship. This highlights that engagement is a critical psychological mechanism translating leadership practices into innovative outcomes.

Recommendations

1. Recommendations for Practical Application

Based on the findings, several practical measures can be implemented by universities and educational policymakers:

1.1 Leadership Development

Design and implement structured servant leadership training for administrators and department heads. Provide mentoring and coaching programs to foster servant-leader qualities such as empathy, empowerment, and support.

1.2 Faculty Engagement Initiatives: Create policies that increase teachers' decision-making power, access to teaching resources, and recognition of creative contributions. Establish engagement-focused activities (e.g., collaborative projects, innovation competitions, recognition awards) to sustain motivation.

1.3 Institutional Support for Innovation

Build platforms for collaboration and knowledge-sharing among faculty members across disciplines. Encourage cross-departmental networks that cultivate innovative outputs and strengthen collective engagement.

2. Recommendations for Future Research

This study highlights the mediating role of teachers' job engagement in linking servant leadership to innovative behavior. Future studies may extend these insights by: Examining Additional Moderators or Mediators: Investigating how organizational culture, intrinsic motivation, or job satisfaction interact with leadership and engagement in shaping innovative behavior. Exploring the Role of Digital Transformation: Assess how digital learning platforms, AI-driven tools, or online collaboration environments influence leadership–engagement–innovation dynamics. Comparative and Cross-Cultural Studies: Conduct research in universities across different provinces or regions to test the generalizability of the proposed model. Longitudinal Research Designs: Apply longitudinal or experimental approaches to better capture causal relationships between servant leadership, job engagement, and innovative behavior.

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