

RESEARCH ARTICLE

The impact of perceived servant leadership on teachers' voice behavior in Chinese Universities

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ABSTRACT

The study focuses on the impact of perceived servant leadership on teachers' voice behavior in Chinese universities and the mediating role of knowledge sharing and psychological empowerment. Grounded in the Social Exchange Theory, the current study utilized the Perceived Servant Leadership Scale, Knowledge Sharing Behavior Scale, Psychological Empowerment Scale, and Voice Behavior Scale. A questionnaire survey was conducted through convenience sampling in which 547 valid questionnaires were collected. Results indicate that perceived servant leadership, knowledge sharing, and psychological empowerment have significant positive effects on voice behavior. In addition, knowledge sharing and psychological empowerment mediate the relationship between perceived servant leadership and voice behavior.

Keywords: Servant leadership; voice behavior; knowledge sharing behavior; psychological; empowerment

1. Introduction

Innovation in the education department serves as a significant pillar in a country's development and economic transformation, which evidently cannot be overlooked. Therefore, it's pivotal to promote innovation if the country seeks to achieve medium economic development goals through industrialization. Aiming at this, faculty need to actively speak up in their daily work^[1]. According to Hsieh et al.^[2] amid such a competitive and uncertain environment, universities are becoming more dependent on teachers' knowledge and ideas, and their voice behavior has already become an issue of high significance. Faculty's voice behavior contains two dimensions: promotional and prohibitive. Promotional voice means teachers propose suggestions conducive to the organization, while prohibitive voice means teachers point out its deficiencies or potential threats^[3]. Both voices are essential to the organization's efficiency and even its survival because they benefit decision-making, innovation, improvement of work processes, problem correction, and crisis prevention^[4]. It makes sense, especially for universities as knowledge-intensive organizations. Nevertheless, However, teachers generally provide low-quality suggestions and exhibit little motivation to express views. According to Hsieh et al.^[2] as an organizational citizenship behavior, voice behavior seeks to enhance

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university operations and work efficiency. College teachers are supposed to overcome the influence of traditional Chinese culture and the “official-oriented” culture, take active measures to voice their suggestions^[5].

Karakose et al.^[6] pointed out that educational leadership is evolving towards a service-oriented model that emphasises organisational justice and teacher empowerment. College leadership generally refers to those with administrative duties, such as presidents or deans of colleges. How much they pay attention to and how they treat it affects the voice behavior of college faculty^[7]. Karakose et al.^[8] argued that the relationship between leadership and teachers’ constructive behaviour has not been fully explored in previous research, and that a combined investigation of these two aspects could offer deeper insights.

Recently, servant leadership has become a widely discussed leadership approach. In the higher education sector, the quality of servant leadership is cherished, such as the establishment of shared goals, commitments, trust, and cooperation among teachers^[9]. The servant leadership approach can satisfy teachers’ desires to be understood, valued, and cared for in the pursuit of shared benefits^[10]. Alvoid and Black Jr^[11] pointed out that highly efficient school leaders can promote the development of the whole school by meeting the needs of campus organizations and teachers. Washington et al.^[12] argued that servant leadership results from the inversion of the “pyramid” model, in which leaders should position themselves at the bottom and be dedicated to the service of organizations and their members. Regardless of how dominant the authority and their top-down management styles may be, servant leadership in universities creates a style characterized by employee autonomy, which offers individuals significant freedom and independence within the organization^[13].

Knowledge sharing is crucial in changing the nature of voice behavior. It means that employees with it would share a host of positive and negative opinions, while employees without it exchange fewer views with employers^[14]. Knowledge sharing refers to a spontaneous behavior in which employees are willing to share valuable information with others. It can be stimulated by an open and friendly culture and atmosphere in an organization^[15]. According to Sathyamoorthi, managers must adopt servant leadership within the organization to encourage knowledge sharing^[16]. Furthermore, the essential element in voice behavior is that individuals within the organization must be open and exchange opinions with each other^[17]. Therefore, it’s necessary to encourage knowledge sharing to improve employees’ voice behavior. Lee et al.^[18] found that servant leadership creates a sound environment for knowledge-sharing behavior and voice behavior and that employees’ knowledge-sharing behavior can be improved through voice behavior.

The most important feature of servant leadership is empowerment and talent cultivation^[19]. With the main duty of service, servant leaders would consider followers’ needs, and provide chances for them to pursue development^[20,21]. Meanwhile, they respect followers, rather than merely seeking benefits from them. In that way, followers can experience deeper meanings in their work and thus get a feeling of being empowered^[22]. According to Al-Madadha et al.^[23], psychological empowerment refers to an individual’s intrinsic motivation and impetus towards their work and tasks. By surveying Taiwanese university faculty, Hsieh et al.^[2] found that teachers are more willing to provide ideas for school development when they experience sufficient psychological empowerment and the value and meaning of their work.

Although numerous scholars in the educational sector have researched the relationship mechanism between servant leadership and teachers’ voice behavior in the educational sector, there is insufficient empirical research on the potential mediating role of teachers’ knowledge sharing and psychological empowerment between servant leadership and teachers’ voice behavior^[4]. Therefore, based on the Social Exchange Theory, this study, targeted at college teachers in China, aims to explore the influence of servant

leadership on voice behavior and the mediating roles of knowledge sharing behavior and psychological empowerment.

2. Literature review

2.1. Social exchange theory

Homans^[24] first proposed the concept of “social behavior as exchange” in his research and discussed the basic form of it in 1961. Blau^[25] developed the view, proposing the concept of “Exchange and Power”, referring to an individual’s capacity to impact other people’s work capability. The successful exchange will eventually transform an elementary economic exchange relationship into a social exchange relationship^[26]. Lyons and Scott^[27] introduced the view of “isomorphic reciprocity”, meaning that the employees’ capacity to receive help or harm depends on how much he/she is engaged in benefiting and harming. By surveying ten universities, Rashid et al.^[28] found that the majority of work related to teachers’ voice behavior is based on social exchange in universities. In other words, teachers get more chances to put forward their suggestions in an environment of mutual exchange. Therefore, based on the Social Exchange Theory, the research concluded that those teacher followers, who benefit from the active interactions with servant leaders, would engage in voice behavior to prevent schools from getting harmed or to bring them a better future.

2.2. Perceived servant leadership and voice behavior

Social Exchange Theory serves as a useful framework for understanding how to advance teachers’ voice behavior. Liao et al.^[29] proposed that employees reciprocate their servant leaders by engaging in voice behavior beneficial to the leader and the organization. According to the core tenet of Social Exchange Behavior, individuals benefiting from positive social interactions are likely to pay something back^[25]. A study by Melinda and Antonio^[30] examined the uniqueness of servant leadership in universities and highlighted its multidimensionality and personal integrity, which distinguishes it from other leadership models. The study found that two dimensions of servant leadership, namely, ethical behavior and assistance for employees’ growth and success, produce a positive impact on their voice behavior. Investigating how servant leadership advances employees’ voice behavior, Chen et al.^[31] found a positive correlation between servant leadership and employees’ voice behavior, in which a sense of security and the capacity to learn from mistakes partially play a mediating role. It indicates that servant leadership encourages employees to speak up and share their ideas in the organization. Based on the above literature, the following hypothesis is proposed:

H1: Servant leadership in Chinese universities has a significant positive impact on teachers’ voice behavior.

2.3. Servant leadership and knowledge sharing behavior

The research conducted by Amin et al.^[32] discussed the relationship between servant leadership and knowledge sharing among employees in Pakistan’s higher education department. The result suggests that the servant leadership model can promote knowledge sharing and eventually encourage employees to share knowledge. Servant leadership emphasizes responsibility sharing, self-awareness, mutual support, and the balance between service and leadership^[33]. Xue et al.^[34] found that servant leadership is positively related to an individual’s attitude towards knowledge sharing and eventually to their knowledge sharing behavior. Prasetyono et al.^[35] enriched the theory of leadership styles influencing teachers’ knowledge sharing behavior, showing that servant leadership has a significant positive impact on knowledge sharing behavior. Servant leaders, characterized by altruistic calling, wisdom, persuasive mapping, organizational stewardship, emotional healing, humility, vision, and service, can inspire employees or subordinates to cooperate and

share knowledge with others^[36]. Leaders implementing sustainability strategies would serve, care for, and establish rapport with subordinates, enabling them to feel comfortable at work, foster a sense of belonging, and share knowledge with other organization members^[21]. Based on the above literature, the following hypothesis is proposed:

H2: Servant leadership in Chinese universities has a significant positive impact on teachers' knowledge sharing behavior.

2.4. Knowledge sharing and voice behavior

Knowledge sharing is a vital element in higher education institutions because it can effectively advance innovation and aid knowledge-based development initiatives^[37]. Lee et al.^[18] highlighted that the good habit of knowledge sharing among colleagues provides a positive model and momentum for their voice behaviors. The core of knowledge sharing is the process of understanding, transferring, assimilating, and utilizing knowledge among members. Through knowledge sharing, they can have a comprehensive and accurate understanding of team-related information, laying a cornerstone for their voice behavior^[38]. Sathyamoorthi et al.^[16] emphasized the relationship between knowledge sharing and voice behavior and found a significant positive correlation when researching the voice behavior of bank employees. Based on the above literature, the following hypothesis is proposed:

H3: Knowledge sharing in Chinese universities has a significant positive impact on teachers' voice behavior.

2.5. Knowledge sharing, servant leadership, and voice behavior

Knowledge sharing is a spontaneous behavior stimulated by an open and friendly culture and atmosphere in an organization^[3]. Therefore, to encourage knowledge sharing, managers must adopt servant leadership^[16]. Furthermore, the essential element in voice behavior is that individuals within the organization must be open and exchange opinions with each other^[17]. Knowledge sharing is key to changing the nature of voice behavior. It means that workers with knowledge sharing behavior would share a host of positive or negative opinions, while workers without it exchange fewer views with employers^[14]. Therefore, it's necessary to encourage knowledge sharing to improve employees' voice behavior. Furthermore, sustainable development also positively affects knowledge sharing, through which managers can stimulate employees' voice behavior. Therefore, it can be understood that servant leadership creates a conducive environment in which employees' knowledge-sharing behavior can be improved through voice behavior^[18]. Sathyamoorthi et al.^[16] found that servant leadership is positively related to voice behavior, and knowledge sharing plays a mediating role in their relationship. Based on the above literature, the following hypothesis is proposed:

H4: Knowledge sharing in Chinese universities plays a mediating role in the relationship between servant leadership and voice behavior.

2.6. Servant leadership and psychological empowerment

Servant leadership enables subordinates to experience a stronger sense of meaning in their work^[39]. Therefore, servant leaders can enhance their followers' confidence to accomplish creative tasks^[39-41]. Besides, servant leaders likely endow their followers with more autonomy and foster a greater sense of freedom at work, which in turn enhances employees' sense of self-determination^[19,39,42]. Furthermore, by encouraging followers to engage in decision-making, serving, and sharing rights with them, servant leaders can strengthen their sense of psychological empowerment and enable them to find their importance to the organization^[39]. Yang et al.^[22] found that servant leadership produces a significant positive effect on employees' psychological empowerment. Based on the above literature, the following hypothesis is proposed:

H5: Servant leadership in Chinese universities has a significant positive impact on teachers' psychological empowerment.

2.7. Psychological empowerment and voice behavior

Although the aim of voicing their suggestions, opinions, and concerns towards superiors is to solve existing problems and unreasonable organizational operations, there are some risks for employees as the speaker tries to revise the existing rules and processes^[43]. Therefore, they are likely to measure relevant benefits and costs before speaking up. In that sense, psychological empowerment is vital because it guides employees to pay more attention to the potential benefits in the measurement^[44,45]. O'driscoll et al.^[46] argued that when the individual is devoted to work, he/she might show the propensity for speaking up. Employees with psychological empowerment have stronger intrinsic impetus and would seek to improve their work by highlighting relevant issues^[40,45,47,48] and Younas et al.^[49] verified that psychological empowerment positively affects employee voice behavior. Wang et al.^[45] and Frazier and Fainshmidt^[44] indicated a positive correlation between psychological empowerment and employee voice behavior. Based on the above literature, the following hypothesis is proposed:

H6: Psychological empowerment in Chinese universities has a significant positive impact on teachers' voice behavior.

2.8. Psychological empowerment, servant leadership, and voice behavior

Empowerment is seen as another mechanism through which servant leaders affect their followers^[50]. Servant leadership is described as someone who can understand subordinates' need for work meaning, such that subordinates develop self-confidence because of being trusted^[51]. As the leader transparently shares information and listens to subordinates' suggestions when making decisions, subordinates are more likely to experience the meaning and influence of their work and self-efficacy, because they shoulder more responsibility^[52,53]. The most significant feature of servant leadership lies in empowerment and talent cultivation^[19], emphasizing the enhancement of employees' inner motivation through empowerment and the development of their necessary skills.

Empirical evidence shows that empowerment is positively related to followers' commitments, engagement, work efficiency, and performance at both individual and group/team levels^[54]. Psychological empowerment positively affects voice behavior, in which individuals feel more responsible for offering assistance or suggestions for their organizations in a way not explicitly defined in their job descriptions^[44]. Wat and Shaffer^[55] proposed that individuals with more empowerment would be in high-quality social-exchange relations, which helps analyze the relationship they observed between psychological empowerment and employees' voice behavior. Based on the above literature, the following hypothesis is proposed:

H7: Psychological empowerment of China's university teachers plays a mediating role in the influence of servant leadership on voice behavior.

3. Research method

3.1. Research framework

Based on the Social Exchange Theory, the study examines the impact of servant leadership, knowledge sharing behavior, and psychological empowerment on teachers' voice behavior in Chinese colleges, in which servant leadership acts as the independent variable, voice behavior as the dependent variable, and knowledge sharing behavior and psychological empowerment as mediating variables. The research framework is shown in **Figure 1**.

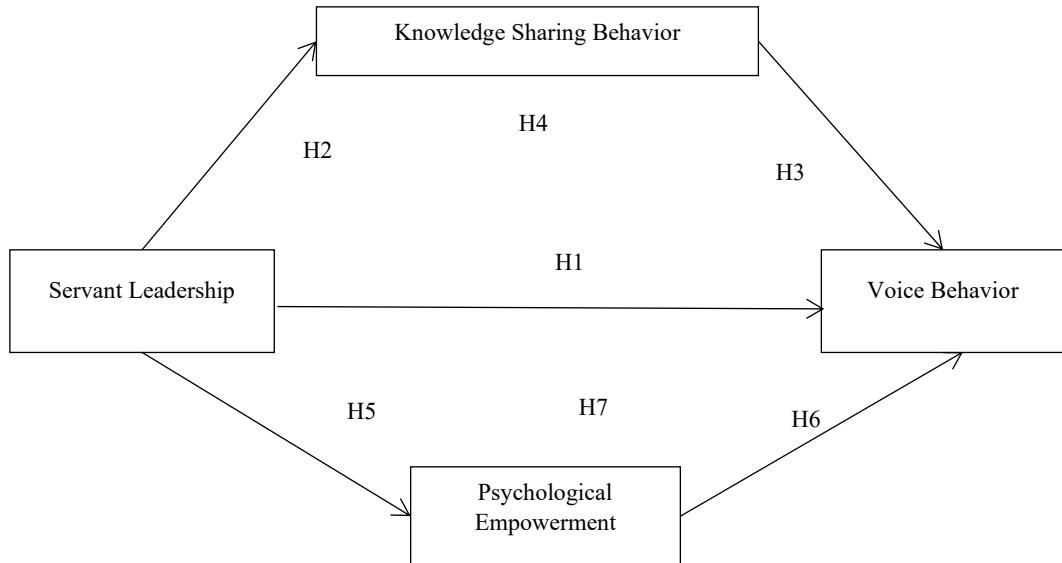


Figure 1. Research framework

3.2. Research subject

This study sampled college teachers in China, defining “leaders” as university presidents and deans. Data collection occurred in two phases: pre-experiment (May 1 to June 16, 2024) and experiment (July 26 to August 8, 2024). During the pre-experiment, convenience sampling was used to select teachers from 3 universities in Shandong Province as research subjects. The study yielded 106 valid questionnaires from 110 distributed (96% validity rate) through Wenjuanxing (an online survey platform in China). Teachers are assured that their responses will be anonymous and confidential. During this stage, we collect 106 valid questionnaires (96% validity rate) with the exclusion of 4 invalid questionnaires (all identical answers). These were used to test questionnaire reliability and validity. In the experiment stage, The study collected 547 valid questionnaires from 600 distributed.

Gender, age, and professional title were considered when conducting the survey. Of 547 respondents, 50.274% (275) were male and 49.726% (272) were female. 21.755% (119) of the respondents' age were between 20 and 29 years, 21.755% (119) of the respondents were between 30 and 39 years old, 26.325% (144) of the respondents were between 40 and 49 years old, 20.840% (114) of the respondents were between 50 and 59 years old, 5.669% (31) of the respondents were between 60 and 69 years old, and only 3.656% (20) of the respondents were over 70 years old. Regarding professional titles, 27.422% (150) of the respondents have no title, 44.058% (241) received the primary title, 17.733% (97) received the middle title, 7.861% (43) received the vice-senior title, and only 2.926% (16) college teachers had the senior title.

This study strictly adhered to the ethical guidelines set by the National Research Council of Thailand^[56]. Informed consent was formally obtained from all participants prior to the distribution of the questionnaire. The research was carried out after the study protocol had been reviewed and approved by the Institutional Review Board (IRB) of Dhurakij Pundit University.

3.3. Research instruments

Perceived servant leadership was measured with shortened version of the Servant Leadership Questionnaire designed by Liden et al.^[57], consisting of seven items. It scored on a 7-point Likert-type scale, where higher scores indicate a higher degree of servant leadership. Pre-experiment results show that Cronbach's alpha was .929, KMO was .936, and Bartlett's test significance is .000.

Knowledge sharing behavior was measured with the Scale designed by Al-Husseini and Elbeltagi^[58], which consists of two dimensions: knowledge donating and knowledge collecting. Both dimensions include four items. It scored on a 5-point Likert-type scale, where higher scores indicate a higher degree of knowledge sharing. Pre-experiment results show that the Cronbach's alpha was .907 in knowledge donating and .913 in knowledge collecting, with the total Cronbach's alpha being .953. KMO in the scale was .936, and Bartlett's test significance was .000.

Psychological empowerment was measured with the questionnaire developed by Spreitzer^[47], which consists of four dimensions: work meaning, self-efficacy, self-determination, and work influence. Three items are included in each dimension, and the entire questionnaire consists of twelve questions. It scored on a 5-point Likert-type scale. Cronbach's Alpha was .884 in work meaning, .888 in self-determination, .890 in self-efficacy, and .881 in work influence, with the total Cronbach's alpha being .968. KMO in the scale was .972, and Bartlett's test significance was .000.

Voice behavior was measured with the scale developed by Liang et al.^[59], which consists of two dimensions: promotional voice and prohibitive voice. It scored on a 5-point Likert-type scale where higher scores indicate a higher degree of voice behavior. Cronbach's Alpha was .931 in promotional voice and .930 in prohibitive voice, .890 in self-efficacy, with the total Cronbach's alpha being .963. KMO in the scale was .965, and Bartlett's test significance was .000.

4. Research results

4.1. Common method bias test

Harman's single-factor test was used to conduct a common method bias test on the collected statistics. The results of the unrotated exploratory factor analysis extracted four factors with eigenvalues greater than 1. The maximum variance explained by a single factor was 39.667% (less than 40%), suggesting no severe common method bias exists. Therefore, it was deemed suitable to conduct subsequent analyses.

4.2. Confirmatory factor analysis

4.2.1. Servant leadership scale

In testing the model fit, this study adopted the recommendations of Hair et al.^[60], evaluating model adequacy from three perspectives: absolute fit indices, incremental fit indices, and parsimonious fit indices. The fit indices for the servant leadership scale were as follows: GFI = .920 and AGFI = .841, both exceeding the recommended threshold of .800; NFI = .932, IFI = .937, TLI = .905, and CFI = .937, all surpassing the .900 benchmark; PNFI = .621 and PCFI = .624, which are above the recommended minimum of .050. These results indicate a satisfactory fit between the data and the theoretical model.

The standardised regression weights (SRW) for the scale ranged from .745 to .814, the composite reliability (CR) was .917, and the average variance extracted (AVE) was .612. These values meet the commonly accepted thresholds: SRW > .500, CR > .700, and AVE > .500^[61].

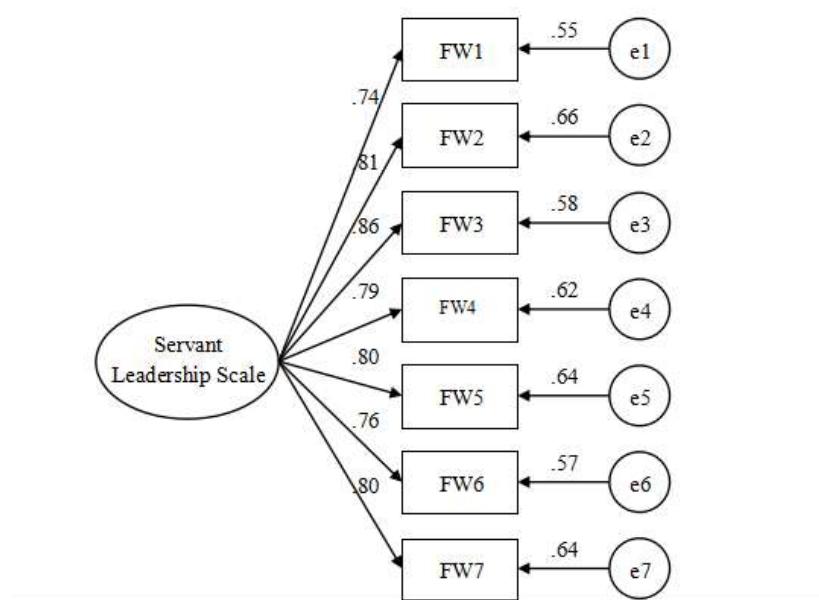


Figure 2. Confirmatory factor analysis model of the Servant Leadership Scale

4.2.2. Knowledge sharing behaviour scale

The fit indices for the Knowledge Sharing Behaviour Scale were as follows: GFI = .912 and AGFI = .833, both exceeding the recommended threshold of .800; NFI = .928, IFI = .934, TLI = .902, and CFI = .933, all above the recommended value of .900; PNFI = .630 and PCFI = .633, both greater than .050. These results indicate a good fit between the data and the theoretical model.

For the knowledge donating dimension, the standardised regression weights (SRW) ranged from .771 to .808, the composite reliability (CR) was .865, and the average variance extracted (AVE) was .615. For the knowledge collecting dimension, the SRW ranged from .710 to .817, CR was .852, and AVE was .591. These values all satisfy the commonly accepted thresholds of SRW > .500, CR > .700, and AVE > .500 [61].

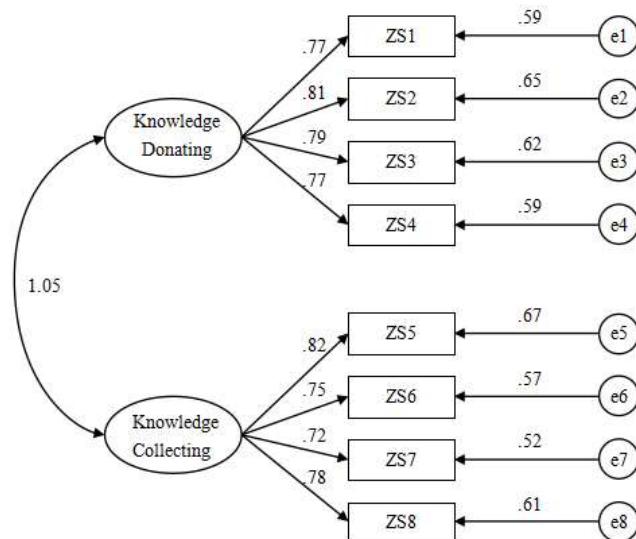


Figure 3. Confirmatory factor analysis model of the knowledge sharing behaviour scale

4.2.3. Psychological empowerment scale

The fit indices for the Psychological Empowerment Scale were as follows: GFI = .904 and AGFI = .844, both exceeding the threshold of .800; NFI = .920, IFI = .929, TLI = .903, and CFI = .929, all above the recommended value of .900; PNFI = .669 and PCFI = .676, both greater than .050. These results demonstrate a good fit between the data and the theoretical model.

For the work meaning dimension, the standardised regression weights (SRW) ranged from .754 to .808, the composite reliability (CR) was .821, and the average variance extracted (AVE) was .604. For the self-determination dimension, SRW ranged from .766 to .793, CR was .824, and AVE was .609. For the self-efficacy dimension, SRW ranged from .745 to .766, CR was .799, and AVE was .570. For the work influence dimension, SRW ranged from .745 to .769, CR was .797, and AVE was .567. All values meet the recommended criteria of SRW > .500, CR > .700, and AVE > .500^[61].

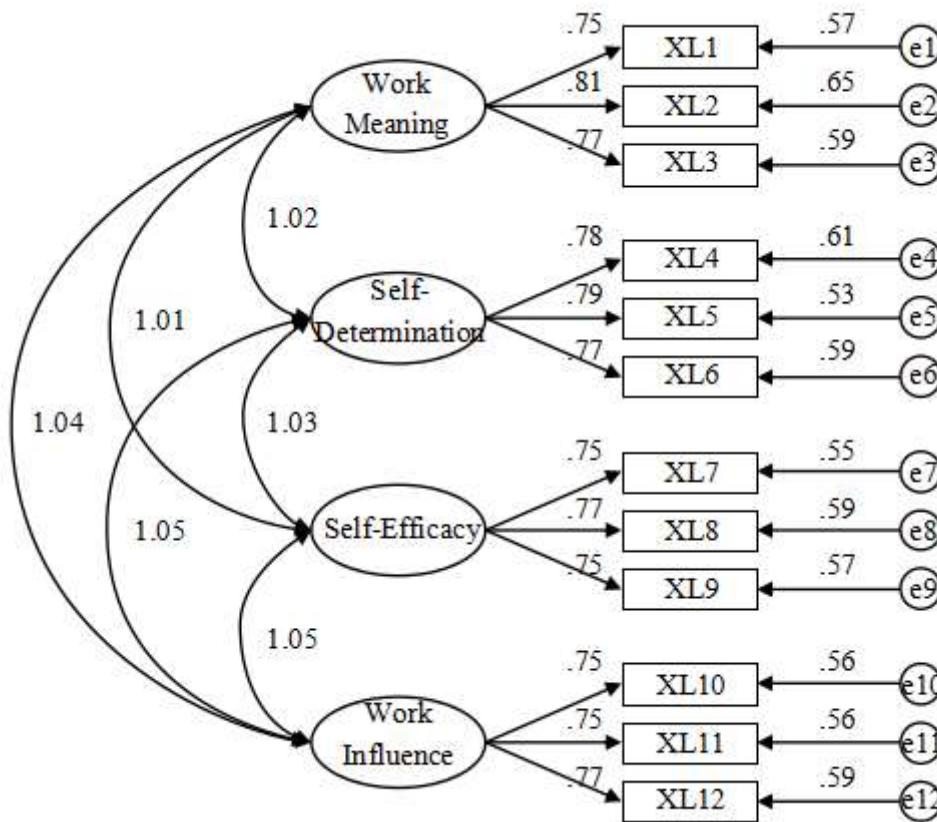


Figure 4. Confirmatory factor analysis model of the psychological empowerment scale

4.2.4. Voice behaviour scale

The fit indices for the Voice Behaviour Scale were as follows: GFI = .897 and AGFI = .833, both exceeding the recommended threshold of .800; NFI = .913, IFI = .921, and CFI = .921, all surpassing the .900 benchmark; PNFI = .690 and PCFI = .696, both greater than .050. These results indicate a good fit between the data and the theoretical model.

For the promotional voice dimension, the standardised regression weights (SRW) ranged from .762 to .783, the composite reliability (CR) was .882, and the average variance extracted (AVE) was .599. For the

prohibitive voice dimension, SRW ranged from .748 to .775, CR was .875, and AVE was .583. These values meet the commonly accepted thresholds of SRW > .500, CR > .700, and AVE > .500^[61].

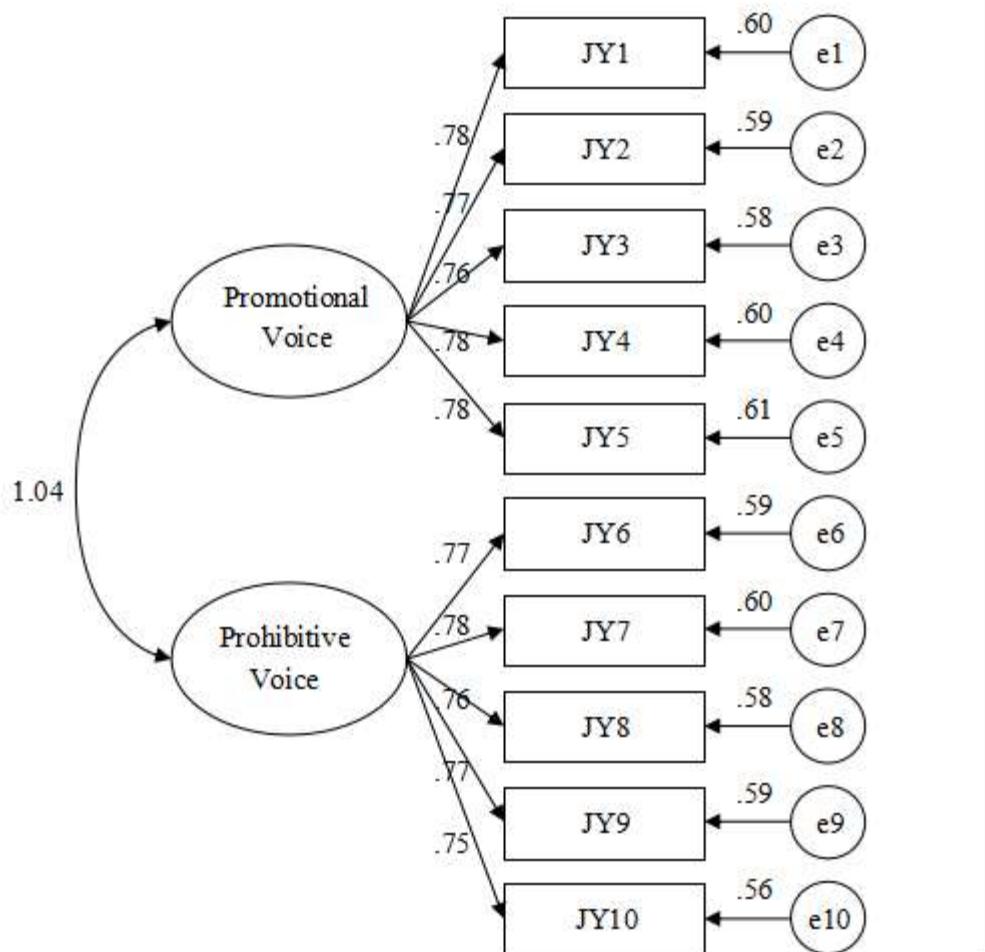


Figure 5. Confirmatory factor analysis model of the voice behaviour scale

4.3. Correlation analysis

In this study, all variables showed significant positive correlations. Servant leadership was moderately correlated with knowledge sharing behavior ($r = .450, p < .001$), psychological empowerment ($r = .474, p < .001$), and voice behavior ($r = .485, p < .001$). Knowledge sharing behavior was moderately correlated with psychological empowerment ($r = .505, p < .001$) and voice behavior ($r = .425, p < .001$). Psychological empowerment was moderately correlated with voice behavior ($r = .476, p < .001$). All correlation coefficients were below .800, indicating no severe collinearity.

Table 1. Correlation analysis

	Servant Leadership	Knowledge Sharing Behavior	Psychological Empowerment	Voice Behavior
Servant Leadership	1			
Knowledge Sharing Behavior	.450***	1		
Psychological Empowerment	.474***	.505***	1	
Voice Behavior	.485***	.425***	.476***	1

Notes: *** $p < .001$.

4.4. Path analysis

4.4.1. The Mediating Role of Knowledge Sharing Behavior and Bootstrap Test

According to the study data, the values of NFI, IFI, CFI, and RFI were shown as .957, .966, .966, and .943, all exceeding the recommended threshold of .900 for incremental fit indices. The parsimonious fit indices PNFI and PCFI were .714 and .720, both bigger than .050, indicating good model fit. As all model fit indices met the recommended standards, path analysis is suitable to conduct.

There are three influence paths in this model, namely, the path from servant leadership to knowledge sharing behavior, from knowledge sharing behavior to voice behavior, and from servant leadership to voice behavior. Servant leadership produced a positive effect on knowledge sharing behavior ($\beta = .333$, C.R. = 10.662, $p < .001$). Knowledge sharing behavior was positively related to voice behavior ($\beta = .255$, C.R. = 5.794, $p < .001$). Servant leadership positively affected voice behavior ($\beta = .271$, C.R. = 8.430, $p < .001$).

Table 2. Direct effects

Path	β	S.E.	C.R.	p
Knowledge Sharing Behavior ← Servant leadership	.333	.031	10.662	.000
Voice Behavior ← Knowledge Sharing Behavior	.255	.044	5.794	.000
Voice Behavior ← Servant leadership	.271	.032	8.430	.000

Bootstrap analysis was conducted with 2000 samples at a 95% confidence level. It indicates a significant indirect effect of .124, with the confidence interval ranging from 0.076 to 0.182 and excluding zero, showing the presence of a mediation effect. The direct effect was .397, with the confidence interval ranging from 0.302 to 0.498 and excluding zero, indicating that knowledge sharing behavior served as a partial mediator. The total effect was .521 (confidence interval [0.440, 0.597]), also excluding zero. This further supports the partial mediating role of knowledge sharing behavior, with its relative effect ratio accounting for 23.800% of the total effect (indirect effect/total effect).

Table 3. Bootstrap test results

Effect	Value of Effect	S.E.	Bootstrap 95% confidence interval	
			Lower Limit	Upper Limit
Indirect Effect	.124	0.027	.076	.182
Direct Effect	.397	0.050	.302	.498
Total Effect	.521	0.041	.440	.597

4.4.2. The mediating role of psychological empowerment and bootstrap test

According to the study data, the values of NFI, IFI, CFI, and RFI were shown as .964, .974, .973, and .954, all exceeding the recommended threshold of .900 for incremental fit indices. The parsimonious fit indices PNFI and PCFI were .766 and .774. As all model fit indices met the recommended standards, path analysis is suitable to conduct.

There are three influence paths in this model, namely, the path from servant leadership to psychological empowerment, from psychological empowerment to voice behavior, and from servant leadership to voice behavior. Servant leadership produced a positive effect on psychological empowerment ($\beta = .337$, C.R. = 11.408, $p < .001$). Psychological empowerment was positively related to voice behavior ($\beta = .325$, C.R. = 7.056, $p < .001$). Besides, Servant leadership positively affected voice behavior ($\beta = .248$, C.R. = 7.762, $p < .001$).

Table 4. Influence path analysis

Path	β	S.E.	C.R.	p
Psychological Empowerment←Servant Leadership	.337	.030	11.408	.000
Voice Behavior←Psychological Empowerment	.325	.046	7.056	.000
Voice Behavior←Servant Leadership	.248	.032	7.762	.000

Bootstrap analysis was conducted with 2000 samples with a confidence level of 95%. It indicates a significant indirect effect of .160, with the confidence interval ranging from 0.108 to 0.220 and excluding zero, showing the presence of a mediation effect. The direct effect was .362, with the confidence interval ranging from 0.264 to 0.461 and excluding zero, indicating that psychological empowerment served as a partial mediator. The total effect was .522 (confidence interval [0.440, 0.596]), also excluding zero. This further supported the partial mediating role of psychological empowerment, with its relative effect ratio accounting for 30.651% of the total effect (indirect effect/total effect).

Table 5. Bootstrap test result

Effect	Value of Effect	S.E.	Bootstrap 95% Confidence Interval	
			Lower Limit	Upper Limit
Indirect Effect	.160	.029	.108	.220
Direct Effect	.362	.050	.264	.461
Total Effect	.522	.040	.440	.596

5. Discussions and conclusions

Thus far, the study has argued that perceived servant leadership has a significant positive impact on teachers' voice behavior in Shandong universities, verifying H1 and aligning with the results of prior research [36]. This suggests that servant leadership might provide a more positive, supportive work environment, stimulating faculty willingness to propose innovative ideas and suggestions. By focusing on faculty needs, providing support, and offering motivation, servant leaders are likely to stimulate teachers' work motivation and sense of belonging, enhancing their group identification and willingness to offer constructive suggestions [31].

Study results show that perceived servant leadership has a significant positive impact on teachers' knowledge sharing behavior in Shandong universities, verifying H2 and aligning with the results of prior research [32,34]. This suggests that servant leadership can positively affect teachers' knowledge sharing behavior. The reason might be that servant leaders create a trusting environment through motivation and support, and thus teachers are more willing to share knowledge and experience [36].

Knowledge sharing behavior has a significant positive impact on teachers' voice behavior in Shandong universities, verifying H3 and aligning with the results of prior research [16,37]. The results demonstrate that knowledge sharing enhances communication and collaboration among teachers, which helps deepen their understanding of teaching and management advancement, and thus speak up more [38]. Through knowledge sharing, teachers engage in communication and exchanges with their colleagues, creating an open environment for voice behavior.

Knowledge sharing behavior not only directly positively affects voice behavior but also plays a mediating role between perceived servant leadership and voice behavior, supporting H4 and aligning with previous studies [14-16]. Servant leadership, focusing on employee needs and offering them support, stimulates

their motivation to share knowledge. Employees receiving such support are more apt to share knowledge with their colleagues, thereby promoting voice behavior^[62].

Servant leadership produces a significant positive impact on psychological empowerment in Shandong universities, supporting H5 and aligning with previous studies^[39-41]. Servant leadership, focusing on employee needs and offering them support, stimulates their motivation to share knowledge. Employees receiving such support are more apt to share knowledge with their colleagues, thereby promoting voice behavior^[62].

Psychological empowerment has a significant positive impact on teachers' voice behavior in Shandong universities, supporting H6 and aligning with the results of previous studies^[44,45]. It indicates that teachers endowed with psychological empowerment would actively speak up. Psychological empowerment enhances their self-efficacy and self-confidence, which enables them to actively propose improvements and innovations.

Psychological empowerment not only positively affects teachers' voice behavior but also plays a mediating role in the relationship between perceived servant leadership and voice behavior, supporting H7 and aligning with previous studies^[39,49]. It indicates the significance of psychological empowerment in organizational behavior, especially in the relationship between leadership style and employees' voice behavior. Sufficient empowerment stimulates a teacher to provide constructive opinions and suggestions. Servant leadership, paying close attention to teachers' personal development and providing necessary support for them, enhances their self-efficacy, which is closely linked to psychological empowerment, thereby improving the confidence and motivation to voice suggestions.

6. Theoretical contribution

Social Exchange Theory originated in the 1920s^[63,64] and has since influenced various disciplines including social psychology, sociology, and anthropology. It has been widely applied in fields such as organisational behaviour, economics, sociology, and education, serving as a theoretical foundation for analysing and understanding human behaviour, motivation, and interaction across different social contexts. However, the domain of voice behaviour has not yet been sufficiently explored. Rashid et al.^[28] suggested that the influence of leadership styles—such as servant leadership—on voice behaviour warrants further investigation.

Building upon existing literature, the present study introduces knowledge sharing behaviour and psychological empowerment as mediating variables to examine the impact of perceived servant leadership on teachers' voice behaviour, thereby enriching the theoretical framework of voice behaviour. The findings contribute to the development of Social Exchange Theory by offering a deeper understanding of the interrelations among these variables and extending its explanatory power.

Moreover, while voice behaviour has been widely researched in broader societal contexts, most existing studies and theories have primarily focused on corporate employees^[65]. This study shifts the lens to higher education, specifically among local university faculty in Shandong, China, offering new insights for university governance and providing a reference point for future research. By applying Social Exchange Theory to the higher education context, this research advances the study and application of servant leadership in educational settings and contributes to the exploration of the theory's applicability across different organisational types. Additionally, the study reviews and analyses the literature on servant leadership, knowledge sharing behaviour, psychological empowerment, and voice behaviour, offering a novel perspective for local university management and a useful foundation for subsequent research.

7. Research recommendations

(1) Enhance Servant Leadership in Line with Its Causal Impact on Voice Behaviour

Given that perceived servant leadership has a significant positive effect on both knowledge sharing behaviour and psychological empowerment, which in turn mediate its influence on teachers' voice behaviour, it is imperative for university administrators to reconceptualise their roles from traditional "managers" to "servant leaders". This transformation entails aligning individual faculty development with broader institutional objectives. Training programmes on servant leadership theory should be prioritised to equip leaders with the knowledge and skills to foster a supportive environment that meets the psychological and professional needs of teachers. When these needs are fulfilled, teachers are more likely to engage in knowledge sharing and to feel empowered, thereby increasing their willingness to speak up constructively. Furthermore, establishing transparent and participatory governance mechanisms—such as faculty advisory committees and regular consultation meetings—can deepen teachers' involvement in decision-making processes, thus strengthening their organisational commitment and trust, which are essential antecedents of voice behaviour.

(2) Promote Knowledge Sharing as a Mechanism of Voice Enhancement

As knowledge sharing mediates the relationship between servant leadership and voice behaviour, fostering a culture of knowledge exchange is not only an end in itself but also a pathway to stimulate constructive expression of ideas. Universities should develop integrated online and offline platforms, such as academic forums, interdisciplinary seminars, and digital resource repositories, to facilitate continuous knowledge flow. Regular cross-disciplinary events and collaborative research teams can further break down knowledge silos. To ensure the effectiveness of these initiatives, leaders must actively dismantle interdepartmental communication barriers and cultivate an organisational climate that values collaboration, openness, and mutual learning. Through these efforts, teachers are more likely to acquire, donate, and apply knowledge in ways that empower them to propose innovative and constructive suggestions.

(3) Strengthen Psychological Empowerment to Foster Proactive Voice Behaviour

Psychological empowerment—comprising meaning, autonomy, competence, and impact—plays a key mediating role in translating servant leadership into voice behaviour. Therefore, enhancing teachers' sense of empowerment should be a strategic goal for educational institutions. Initiatives such as establishing an "Outstanding Voice Award" to acknowledge and reward faculty members who offer valuable suggestions can reinforce their perceived influence and importance within the institution. Additionally, building empowerment requires ongoing, high-quality communication between leaders and staff. One-on-one meetings between leaders and faculty members allow for the identification of specific needs and obstacles, followed by tailored support. For example, universities could introduce a "Faculty Feedback Day" during which teachers can voice their concerns and ideas directly to administrators. When teachers perceive that their contributions are both heard and valued, they are more likely to feel empowered and engaged in organisational development efforts.

8. Limitations and recommendations for future research

This study was limited to data collected from a single region—Shandong Province—and employed convenience sampling, which may result in limited sample representativeness and restrict the external validity and generalisability of the findings. Given the diversity in regional cultures, distribution of educational resources, and institutional management practices, university faculty in different regions may hold varying perceptions of servant leadership, psychological empowerment, knowledge sharing, and voice

behaviour. Therefore, future studies should consider expanding the sample to include a broader range of regions across China, as well as different types of higher education institutions (e.g., vocational colleges, private universities). Furthermore, cross-regional or cross-national comparative studies under different educational systems would allow for a more comprehensive understanding of the relationships among variables, enhance the explanatory power of the data, and strengthen the generalisability of the research outcomes.

This study explored the influence of servant leadership on voice behavior and the mediating role of knowledge sharing and psychological empowerment. For future research, studies should focus on the impact of endogenous and exogenous factors. For instance, studies can explore how faculty voice behavior is affected by their negative emotions like burnout, satisfaction, career development, and establishment of professional communities. Focusing on the relationship among leaders, teachers, and students, studies could also explore how leadership styles affect student academic achievement through teachers.

This study did not consider other leadership styles, which limits the generalisability of the findings. Future research should include comparative analyses of various leadership styles—such as transformational, transactional, or empowering leadership—to examine their differential effects on voice behaviour. Such exploration would deepen theoretical understanding and provide more comprehensive guidance for leadership practice in educational settings, ultimately enhancing the effectiveness of strategies to encourage teachers' constructive input and organisational engagement.

Conflict of interest

The authors declare no conflict of interest.

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