

## RESEARCH ARTICLE

# A study on the influence of teacher leadership, work motivation and colleague trust on teacher professional learning community in kindergartens in Guangdong Province, China

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### ABSTRACT

This study takes kindergarten teachers in the Guangdong Province of China as the research object. It takes learning organization as the theoretical basis to explore the effects of teacher leadership, work motivation, and colleague trust on the teacher professional learning community and the mediating role of teacher work motivation and colleague trust. 620 validated questionnaires were randomly distributed to kindergarten teachers in Guangdong Province, China. The results showed that the leadership of kindergarten teachers in Guangdong Province had a significant positive effect on teachers' work motivation, teacher-colleague trust, and teacher professional learning community. In verifying the mediating effect, teachers' work motivation has no mediating effect between teacher leadership and the teacher professional learning community. Still, the teacher-colleague trust had mediated the effect between teacher leadership and the teacher professional learning community. Our study suggested that attention should be paid to the mediating role of teachers' colleague trust and the cultivation of teachers' group trust, to encourage teachers to communicate and cooperate, actively participate in professional learning, and promote the development of teachers' professional learning community.

**Keywords:** teacher leadership; teacher motivation; teacher colleague trust; teacher professional learning community

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## 1. Introduction

Since the 21st century, teacher education has evolved towards lifelong learning, diversification, and specialization. Establishing a comprehensive training system for kindergarten teachers can significantly enhance their teaching abilities. UNESCO (2015) emphasizes that a highly qualified teaching workforce is crucial for sustainable educational development. In China, the modernization of preschool education is integral to the national education system, with a focus on improving the quality and inclusiveness of early childhood education.

Professional learning communities (PLCs) among teachers enhance their behaviours, feelings, and thought processes, positively influencing performance. This aligns with the Professional Standards for Kindergarten Teachers in China, which advocate for cooperation, resource sharing, and collective growth. Smaller institutions, particularly those with fewer than 350 teachers, are more conducive to developing

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effective PLCs. While research on PLCs has predominantly focused on Western contexts, Asian countries, including China, are increasingly recognizing their significance.

## **2. Literature review and research hypotheses**

### **2.1. Teacher leadership and teachers professional learning communities**

Empirical studies have shown that leadership styles, including teacher leadership, directly affect teacher professional learning communities, and teachers were expected to take on leadership roles and influence the development of teacher professional learning communities in schools<sup>[1]</sup>. Teacher leadership was characterized by decentralization, emphasis on organizational collaboration, emphasis on organizational participation, and stimulation of teacher professional development<sup>[2]</sup>. Teacher leadership emphasized a multi-interactive leadership style, which played an important role in improving the professional ability of colleagues, promoting the improvement and development of professional ability, and has a positive role in promoting the efficiency of the organizational management system and the learning and development of students<sup>[3]</sup>. Expanding leadership opportunities for teachers would facilitate the construction of teachers professional learning teams. In addition, according to the leadership model proposed teacher leadership was one of the antecedent variables for the construction of teachers professional learning community<sup>[4]</sup>. From the perspective of teachers' professional learning communities, teacher leadership enabled teacher leadership to be realized and strengthened the organizational commitment of early childhood teachers<sup>[5]</sup>. Through rich teaching practices, teacher leadership improved the quality of the school, thereby influencing student learning and community development<sup>[6]</sup>. Teacher leadership is directly or indirectly related to teacher professional learning communities<sup>[7]</sup>. Teacher leadership promotes preschool teachers to learn from each other, share and solve problems in a collaborative way, so as to achieve the establishment of a positive and effective professional learning community for teachers<sup>[8]</sup>. Teacher leadership positively influenced the development of teachers' professional learning communities<sup>[5, 59]</sup>. The opportunities for teacher leadership to enhance the benefits of the organization, and then push the individual teacher to positively influence the organization<sup>[6]</sup>. Teacher leadership is the positive impact of teachers' professional quality on group organization in the process of cooperation and interaction<sup>[9]</sup>. In existing educational organizations, teacher leadership has a direct impact on the development of the teacher professional team<sup>[8]</sup>. Kindergartens can positively influence the development of teacher professional learning communities by providing teacher teaching improvement, encouraging teacher participation in leadership, teachers having professional skills in early childhood education, providing leadership beliefs throughout the kindergarten, providing appropriate resources, and providing guidance and appointing teacher leaders<sup>[8]</sup>. Hence, we proposed.

**H1:** Teacher leadership is positively related to teachers professional community

### **2.2. Teacher work motivation and teacher leadership**

With intensive school-wide training, teachers improved their leadership, which in turn improved the motivation and performance of community members. Inhibiting teacher leadership leads to the negativity of teachers' work motivation<sup>[9]</sup>. Reducing teachers participation in leadership opportunities would reduce teachers motivation to work. With higher levels of influence and support from teachers, members tended to adopt more proactive strategies to deal with poor work environments<sup>[10, 58]</sup>. The teachers work motivation was affected and restricted by teachers personal factors, school factors and social factors, and teachers intrinsic and extrinsic motivation could be stimulated by measures to improve social status, changed evaluation methods, established a reasonable management system and appropriately enhanced teachers self-regulation. Compared with other professions, teachers have the right to manage, make decisions and choose

in their work, and can rely on their own strength to complete various tasks. Promoting the positive development of teachers' motivation for achievement led to teachers' leadership.

A study on kindergarten teachers, and the results showed that teachers' perception of group support atmosphere was significantly positively correlated with internal motivation. Top-down structure of leaders and the empowerment behavior made teacher leadership a pre-dependent variable of teachers' work motivation<sup>[12]</sup>. Hence, we proposed.

**H2:**Teacher leadership is directly related to teacher motivation.

### **2.3. Teacher work motivation and teacher professional learning community**

Motivated people are more likely to see their enthusiasm, dedication and dedication in their work, contributing more positively to the overall goals of the community<sup>[11, 57]</sup>. The positive impact of prior knowledge and work motivation on teachers' professional learning<sup>[12]</sup>. The importance of members' intrinsic motivation to the creative activities of the community<sup>[13, 56]</sup>. Individual teacher autonomy and attitudes are important<sup>[14]</sup>. The quality level of the members of the participating community is an important factor in shaping and leading the development of the professional learning community of teachers. It can be seen that the motivation, belief, quality level and autonomy of individual teachers directly affect the development of teachers' professional learning community<sup>[15, 55]</sup>. The job motivation in public service and argue that job satisfaction with the group is the result of job motivation. Besides, the intrinsic motivation was primarily the motivation to do work for one's own sake, because the work itself was interesting, which led to satisfaction with the work oneself and the group with which it worked. On the other hand, argued that motivation for work is goal-oriented and therefore cannot go beyond the common goals of any group, whether public, private or communal. The work motivation can significantly predict group or team movements, and was significantly associated with community. Hence, we proposed.

**H3:** Teacher Work Motivation is positively related to the Teacher Professional Learning Community.

### **2.4. Teacher leadership and teachers trust**

Teacher leadership helped to foster trusting relationships among team members, which in turn influenced member relationships and team development<sup>[16]</sup>. Teacher leaders who demonstrated higher organizational effectiveness were associated with increased job effectiveness and satisfaction, which increased teacher trust<sup>[17]</sup>. The leadership practices would directly affect the trust level of members, and the normators who car, collaborated and created enhancing members' trust. Teacher leadership has a significant predictive power with teacher peer trust<sup>[18]</sup>.The relationship between teacher leadership and teacher trust through a questionnaire survey. The results of the study found that competence, supportiveness, consistency and loyalty of teacher leadership were the main factors in gaining teachers trust, and competence was the most critical factor. Specifically, clear, concrete, contextual goal setting and focus on teaching can improve teacher trust; Inadequate welfare and resource coordination will hinder the generation of trust; The degree of challenge of the goal, the supervision and management authority granted to the teacher, and the evaluation standard of teaching performance will have a dynamic impact on the trust of teachers. Hence, we proposed.

**H4:** Teacher leadership is positively related to teachers' trust.

### **2.5. Teacher trust and teacher professional learning community**

Trust played an important role at all levels of social interaction, and trust was very important between effort and reward. On the basis of teachers' trust, every teacher was willing to cross the barriers of teachers, participate in school public affairs, and find his or her position to influence the organization. If there is trust in school organizational relationships, on the one hand, it will make information transactions more accurate,

broader, and more timely; on the other hand, it will be more receptive to the impact of new policies and new ideas, and at the same time, it will reduce the impact on The control of others can also reduce the uncertainty, complexity, and harm of behavior. Each other is connected by core elements of social capital such as culture, trust, and support, and these core elements affect the tightness and stability of the organizational structure, as well as the practice of action goals<sup>[52, 50]</sup>. Schools where teachers had high trust in their colleagues show higher levels of community learning, higher school commitment, and a stronger spirit of innovation<sup>[19]</sup>. These schools pay more attention to home-school cooperation. Besides, the openness dimension of teachers' trust in colleagues is positively related to the effort dimension of teachers' knowledge sharing, which shows that in order to promote the formation of a school-wide community and the sharing of knowledge, an atmosphere of trust must be built.

Through quantitative empirical research there is a close relationship between teachers professional learning communities and trust among teachers colleagues, which means that teachers professional learning communities can operate effectively only if teachers trust each other<sup>[20, 49]</sup>. Productive teacher professional learning communities can be built through trust<sup>[21, 48]</sup>. The impact of teacher colleague trust on teachers' professional learning community is significantly related<sup>[22]</sup>. Further, the trust among kindergarten teachers colleagues is the basis for teacher group communication, dialogue, sharing and discussion, and is also the basis for the development of teachers professional learning communities. The interaction and trust among members make the teacher professional learning community more vital<sup>[23]</sup>. Teacher trust strengthens communication and sharing within the organization and plays a supporting role in the efficient operation of the organization. Hence, we proposed.

**H5:** Teacher trust is positively related to teacher professional learning community

## **2.6. Mediating effect of teacher work motivation on the relationship between teacher leadership and teachers professional learning community**

Teacher work motivation motivated teachers to change their behavior and strive to sustain their efforts towards a defined goal<sup>[18]</sup>. Teachers' work motivation is significantly correlated with teachers leadership and team functioning<sup>[19]</sup>. Teachers' motivation is one of the channels that can mediate the influence of leadership on various school processes and outcomes<sup>[20]</sup>. Besides, positive motivation promotes the development of teachers' professional teams when they experience difficulties in leadership. In the field of educational research, teachers' work motivation has been verified as an important mediating variable to play a "bridge" role between leadership and groups or teams. Specifically, on the one hand, teacher leadership could effectively predict teacher work motivation<sup>[21, 47]</sup>. On the other hand, teacher leadership played an important role, and the empowered tended to be more innovative and better at guiding and encouraging others<sup>[24, 51]</sup>. Hence, we proposed.

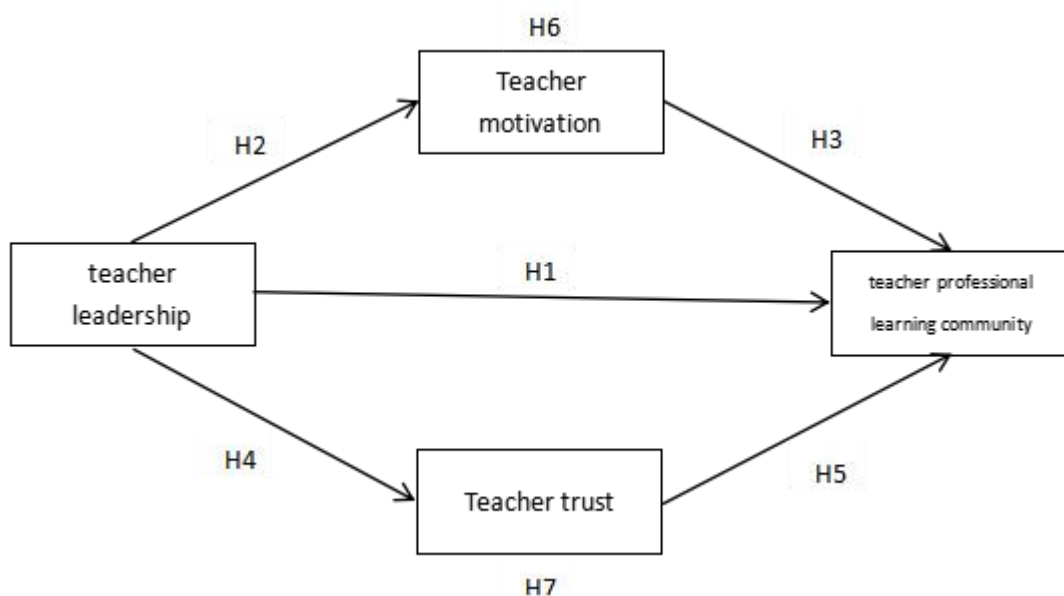
**H6:** Teachers work motivation mediates the relationship between teacher leadership and teachers professional learning community.

## **2.7. Mediating effect of peer teacher trust between teacher leadership and teacher professional learning communities**

As showed in the **figure 1**, the research framework of this study have confirmed the mediating role of teachers' trust in the relationship between leadership and teachers' professional learning community. Trust between teachers, colleagues, and team members had a positive mediating effect on leadership practices, including teacher leadership, and teachers professional learning communities<sup>[25, 46]</sup>. Teacher colleague trust played a positive mediating role in the relationship between leadership practice and various dimensions of teachers' professional learning community (cooperative activities, collective attention to student learning,

collective practice, and reflective dialogue)<sup>[26]</sup>. Also empirically demonstrated that teacher peer trust played an important mediating role between leadership practice and teacher professional learning communities<sup>[27, 45]</sup>. Teacher peer trust had a direct and indirect mediating effect between teacher leadership and teacher professional learning community<sup>[28, 52]</sup>. The influence of teacher leadership on teacher effectiveness in western China through a multi-layer linear model, and found that the three dimensions of teacher leadership were positively correlated with teacher trust, and teacher trust played a mediating role in the relationship between leadership and teacher group effectiveness<sup>[53, 54]</sup>. The research showed that specific instructional leadership practices have an indirect but not direct impact on the effectiveness of the teacher team through teacher trust. Based on the findings, they suggested that schools should demonstrate the interest, sincerity and caring attitude of individual teachers in order to maintain a sense of trust between leaders and teachers and promote the development of professional learning communities for teachers. A study of primary school teachers in Hong Kong, and the results also examined the mediating role of teacher trust in teacher leadership and teacher professional learning communities<sup>[29, 44]</sup>. Hence, we proposed.

**H7:** Teacher trust mediates the relationship between teachers leadership and teachers professional learning community.



**Figure 1.** Showed the research framework of this study.

### 3. Method

#### 3.1. Sample

In total, 700 formal questionnaires were distributed in this study, of which 620 were regarded as effective recovery after screening, with an effective recovery rate of 88.571%. In terms of gender, the number of male teachers was 21 (3.400%), while the number of female teachers was 599 (96.600%). This showed a significantly greater number of female teachers than male teachers. According to the distribution of educational levels, there are 480 (77.400%) teachers for junior college or below, and 140 (22.600%) teachers for undergraduate degrees or above. In terms of teaching years, there are 490 teachers (79%) in 1-5 years, 60 teachers (9.700%) in 6-10 years, and 70 teachers (11.300%) for more than 10 years.

### 3.2. Research tools

#### 3.2.1. Teacher leadership scale

This study used the Kindergarten Teacher Leadership Chart developed by Wang and Xia to measure teacher leadership, and the scale to investigate kindergarten teachers in the context of kindergartens in China<sup>[30]</sup>. The scale includes four dimensions: leadership teaching and professional development, teacher leadership characteristics, participation in whole-school decision-making, diversity and continuous improvement, with a total of 19 items.

#### 3.2.2. Professional learning community scale

This scale was developed by Keung et al. developed a scale to measure the professional learning community of kindergarten teachers, and the scale to conduct surveys in the context of kindergartens in China<sup>[31]</sup>. The scale contains 5 dimensions, including shared sense of mission, collaborative activities, collective attention to children's learning, collective practice and reflective dialogue, with a total of 20 items, including 3 items in the dimension of common mission, 5 items in the dimension of collaborative activities, 4 items in the dimension of collective attention to children's learning, 4 items in the dimension of collective practice, and 4 items in the dimension of reflection and dialogue.

#### 3.2.3. Teacher motivation scale

This Teacher motivation Scale developed by Fatih was used to measure teachers work motivation<sup>[29]</sup>.

#### 3.2.4. Trust scale and survey

This study borrowed the Kindergarten Teacher Colleague Trust Scale borrowed from Yin et al. and the scale to conduct a survey in the field of kindergartens in China<sup>[32, 43]</sup>.

## 4. Results

### 4.1. Common method variance test

We included a validity test for the variable to avoid the pitfalls of common method variance (Podsakoff & Organ, 1986). We first used Harman's single-factor test to examine the common method variance (Podsakoff et al., 2012). Three variables with eigenvalues greater than 1.00 explained 64.69% of cumulative variance. Furthermore, the first variable accounted for 37.39% of the variance (<50%). Therefore, we concluded that the common method variance did not impair validity.

In this study, SPSS and MPlus 8.9 were used for data analysis according to the research structure and the SPSS statistical software was used to perform Structural Equation Modeling (SEM) for hypothesis testing.

### 4.2. Descriptive statistics and correlation

The descriptive statistics of this study has reported in **Table 1**. We found out that all the variables were statistically significant to each other. Besides, there was no correlation for the control variables.

**Table 1.** Mean, Standard Deviation and Correlation Valued Studied.

		Mean	SD	1	2	3	4	5	6
1	Age	1.49	.50	1					
2	Gender	2.87	.63	-0.00	1				

3	Teacher Leadership	3.55	.74	-0.03	.02	1			
4	Teacher Motivation	3.43	.91	.04	-0.01	.34**	1		
5	Teacher Trust	3.47	.76	.08*	-0.02	.36**	.57**	1	
6	Professional Learning Community	3.55	.72	.04	-0.01	.31**	.35**	.35**	1

Note : \*\* $p < .01$ , \* $p < .05$

Table 1. (Continued).

### 4.3. Hypothesis testing

First, Hypothesis 1 proposed that there was a positive relationship between teacher leadership and teacher professional learning community, the result revealed that there was statistically significant for this relationship ( $\beta = .13, p < .05$ ). Further, Hypothesis 2 proposed that teacher work motivation was positively related to teacher leadership. The result showed that this relationship was statistically significant ( $\beta = .30, p < .001$ ). Besides, Hypothesis 3 suggested a positively relationship between teacher work motivation and teacher professional learning community. The result demonstrated that this relationship was statistically significant ( $\beta = .19, p < .001$ ). Additionally, Hypothesis 4 proposed a positive relationship between teacher leadership and teacher trust. The result showed this relationship was statistically significant ( $\beta = .28, p < .001$ ). Last but not least, Hypothesis 5 suggested a positive relationship between teacher trust and teacher professional learning community. The result revealed that this relationship was statistically significant ( $\beta = .12, p < .05$ ).

For meditation, we proposed a mediation effect of teacher motivation on the relationship between teacher leadership and teacher professional learning community. The result revealed that both the direct and indirect effect was statistically significant. Therefore, Hypothesis 6 was supported. Further, we also predicted a mediation effect of teacher trust on the relationship between teacher leadership and teacher professional learning community. The result showed that both direct and indirect effect was statistically significant. Hence, Hypothesis 7 was supported (see Table 2).

Table 2. Result of two mediation (teacher motivation and teacher trust).

Mediation Model	Effect ( $\beta$ )	S.E.	95% CI [LL,UL]
Indirect Effect of Teacher Leadership on Teacher Professional Learning Community (via Teacher Work Motivation) <sup>a</sup>	.05	.02	[.03, .09]
Indirect Effect of Teacher Leadership on Teacher Professional Learning Community (via Teacher Trust) <sup>a</sup>	.03	.01	[.00, .06]
Total Effect of Teacher Leadership on Teacher Professional Learning Community (via Teacher Work Motivation) <sup>b</sup>	.18	.04	[.09, .26]
Total Effect of Teacher Leadership on Teacher Professional Learning Community (via Teacher Trust) <sup>b</sup>	.16	.04	[.06, .23]

Note :  $N = 660$ . CI = confidence interval; LL = lower level, UL = upper level;  $a = X \rightarrow M \rightarrow Y$ ;  $b = X \rightarrow Y$

## **5. Discussion**

### **5.1. The influence of kindergarten teacher leadership on teacher professional learning community in Guangdong Province, China**

According to the findings of this study, kindergarten teacher leadership in Guangdong Province, China has a significant positive impact on teachers' professional learning community, supporting the establishment of hypothesis H1. This finding is partly in line with previous studies<sup>[33, 34]</sup>, which further confirms the importance of teacher leadership for the teacher professional learning community.

### **5.2. The Influence of kindergarten teacher leadership on teacher motivation in Guangdong Province, China**

According to the findings of this study, kindergarten teacher leadership in Guangdong Province, China had a significant positive impact on teacher motivation, so H2 was established. The results are similar to those of Gong and Zhang<sup>[35, 36]</sup> emphasizing the importance of teacher leadership to perceive teachers' work motivation. In the modern educational environment, teacher leadership level and personal professional development are considered crucial elements in educational organizations and play an important role in improving the overall educational quality and reputation of organizations.

### **5.3. The Influence of kindergarten teacher motivation on teacher Professional Learning Community in Guangdong Province, China**

According to the survey results of this study, the motivation of Chinese kindergarten teachers does not have a significant positive impact on the teacher professional learning community, and the motivation of Chinese kindergarten teachers does not play an intermediary role in teacher leadership and teacher professional learning community, so it is assumed that H3 is not established. This result is similar to some extent to the study conducted by Wang and Liu<sup>[37, 65]</sup>.

### **5.4. The influence of kindergarten teacher leadership on teacher trust in Guangdong Province, China**

According to the findings of this study, kindergarten teacher leadership in Guangdong Province, China has a significant positive impact on teacher and colleague trust, supporting the establishment of hypothesis H4. To some extent, this result is consistent with the findings of Liu et al.<sup>[38]</sup> further emphasizing the importance of teacher leadership to the trust of teachers and colleagues. Teacher leaders timely and effectively evaluate whether the implementation of childcare is in line with the preset goals can help teachers grasp the implementation effect, so as to achieve the goal of childcare, and lay a foundation for the trust of teachers and colleagues.

### **5.5. The influence of kindergarten teacher trust on teacher professional learning community in Guangdong Province, China**

According to the findings of this study, the trust of kindergarten teachers and colleagues in Guangdong Province, China had a significant positive impact on the teacher professional learning community, supporting the establishment of hypothesis H5. This is similar to the research conclusion of Yin and Zheng<sup>[39, 64]</sup>, that is, teachers and colleagues trust is a strong driving force for teachers' professional learning community, and teachers' colleagues trust is an important guarantee for the sustainable development of teachers' professional learning community. Teacher and colleagues trust is a harmonious and cooperative relationship on the basis that other personnel are benevolent, reliable, competent, and honest.



### **5.6. The intermediary role of the work motivation of kindergarten teachers in Guangdong Province, China**

According to the findings of this study, the work motivation of kindergarten teachers in Guangdong Province, China does not have an intermediary role between teacher leadership and teacher professional learning community, so assuming H6 is not valid. This is similar to the research conclusion of Aji et al.<sup>[40,63]</sup>, mediating the motivation of teachers in the influence of teacher leadership on teachers' professional learning community.

### **5.7. The intermediary role of the work motivation of kindergarten teachers in Guangdong Province, China**

According to the findings of this study, the trust of kindergarten teachers in Guangdong Province, China played an intermediary role between teacher leadership and teacher professional learning community, supporting the establishment of hypothesis H7. This is similar to the research conclusion of Wang and Sun<sup>[41][42]</sup>. In the influence of teachers' leadership on teachers' professional learning community, the trust of teachers and colleagues plays a positive intermediary role. This indicates that teacher leaders can promote the development of teachers' professional learning community by building the trust between teachers and actively participating in their teaching activities.

## **6. Limitation and recommendation**

Although this study confirms the influence of leadership, work motivation and peer trust on teachers' professional learning community in kindergarten teachers in Guangdong Province, China, and also reveals the mediating influence mechanism, it also has certain limitations. The limitations of this study are as follows:

First, the limitations of the study area, this study only took Guangdong Province of China as the specific research area, and the representativeness and generalizability of kindergarten teachers in China were slightly limited. From the formal sample distribution of the study, it can be seen that nearly 80% of kindergarten teachers with teaching years of 1-5 years are close to 80%, but the number of kindergarten teachers with more than 5 years of teaching experience is small, which means that the inference of the conclusions of this study may be limited<sup>[60]</sup>.

Second, the limitations of the research method, this study only used the questionnaire survey method to explore the impact of kindergarten teachers' leadership on the teachers' professional learning community, and investigated the current work status of kindergarten teachers in Guangdong Province, China, and confirmed that there is a mediating role between teachers' peer trust in teachers' leadership and teachers' professional learning community<sup>[61]</sup>. However, it is not possible to understand the causal relationship between variables. Therefore, in future research, qualitative research such as in-depth interviews can be combined to better understand the causal relationship between various variables, so as to improve the credibility and validity of the research.

Thirdly, due to the limitations of the education stage, this study only focuses on teachers at the preschool education stage, but the educational philosophy, professional requirements and working environment of different education stages may lead to differences in the research results. In the research process, in order to make the research conclusions more representative and generalizable<sup>[62]</sup>, the research stage and scope can be refined in the future research, such as limiting the research stage to universities, applied colleges, new undergraduate colleges or research universities, so as to draw better and more accurate conclusions and form targeted countermeasures and suggestions<sup>[66]</sup>.

Fourthly, the limitations of background variables, the background variables of this study include gender, educational level and teaching years, and the differences between educational level and teaching years on teachers leadership, work motivation, peer trust and teachers professional learning community are analyzed, and the moderating effect of different background variables can be explored in the future. In addition to the background variables of educational level and teaching years, it is also necessary to explore other background variables, such as the nature of kindergartens, marital status, age, professional titles, etc., and analyze the impact of these background variables on the professional learning community of kindergarten teachers and whether they have a moderating effect.

## Conflict of interest

The authors declare no conflict of interest.

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