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**RESEARCH ARTICLE** **OPEN ACCESS**

# The Effect of Perceived Principal's Instructional Leadership on the Occupational Well-being among Rural Elementary and Middle School Teachers

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**Abstract:**

***Background:*** Occupational well-being as an important factor affecting the stability of the rural teacher team is not only the endogenous driver for the revitalization of rural education but also the source of a good life pursued by teachers. In order to promote the improvement of teachers occupational well-being and further explore its influencing factors. this research explores the effects of perceived principal's instructional leadership on rural elementary and middle school teachers, teachers instructional efficacy, and teacher awareness of professional development on their occupational well-being.

***Methods:*** Simple random sampling was conducted on rural elementary and middle school teachers from Henan and Shandong provinces in China. Furthermore, using a quantitative approach, a total of 609 valid questionnaires were collected. A structural equation model was applied to validate and analyze the data collected.

***Results:*** The results show that the higher the teachers perceived principal's instructional leadership, the higher their occupational well-being, and teaching efficacy and professional development awareness pay a mediating effect between perceived principal's leadership and occupational well-being.

***Conclusion:*** The principals practices and reflection on instructional leadership should be encouraged, and the teachers self-understanding ability and professional development awareness should be promoted in order to enhance their occupational well-being.

**Keywords:** Rural teachers, Perceived principal's instructional leadership, Teacher occupational well-being, Teaching efficacy, Professional development awareness, Structural equation model.

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## 1. INTRODUCTION

The disparities in economic and societal life between rural and urban areas stemming from rapid social development have gained significant attention towards rural development [1]. However, rural education is not inherently problematic, nor should it be viewed as an obstacle to overcome or an area where urban development models can eventually be applied [2]. On the contrary, rural education operates within a complex social space where a surplus model with appropriate development conditions is more appropriate. Rural teachers are central to school education [3] they are primary resources for high-quality education development, and their well-being is the driving force behind educational progress [4].

Occupational well-being among teachers is fundamental for effective educational work because it reflects excellent qualities such as hope, resilience, and optimism, all of which benefit teaching research and output [5].

However, the generally low occupational well-being among rural teachers is a major reason for unsustainable work passion [6]. Negative factors such as stress, emotional exhaustion, burnout, and health disorders, which have long existed in the education and teaching industry, restrict teachers psychological health and well-being [7]. Impaired teacher well-being significantly affects classroom performance and teaching quality [8]. The monotonous lifestyle of rural areas diminishes the passion of many rural teachers within a few years after their induction [9].

Studies have suggested that the instructional leadership of rural school principals can convey uplifting emotional experiences, such as a high sense of mission and enthusiasm to teachers through earnest attitudes, values, and behaviours [10]. When such effective management is perceived, teachers tend to focus more on their career development and aspirations, thereby increasing their professional development awareness [11]. Schools are places where teachers belong, and their well-being can be sustainable only if their needs are met, their potentials are realised, and their strengths are enhanced [12]. Principals with strong instructional leadership pay more attention to teacher performance, strengthen collective rural emotions, build confidence in instructional leadership, and foster a united vision of purpose and a sincere campus atmosphere, thereby stimulating teachers enthusiasm for their work [13] and enhancing their career satisfaction [14].

Moreover, teachers are more likely to enjoy a pleasant teaching experience when they perceive the involvement of administrative authority, flexible and convenient leadership approaches, substantial support from managers, open communicative channels, a campus atmosphere of mutual under- standing, and encouraged participation [15]. Therefore, enhancing teachers occupational well-being is an effective approach to improving rural education.

In summary, the promotion and enhancement of teachers occupational well-being can be achieved through positive emotions such as joy, a sense of achievement in pursuing goals, and improved interpersonal relationships facilitated by leadership. This can be achieved by integrating the five core elements of the PERMA theoretical model (Positive emotion, Engagement, Relationship, Meaning, and Accomplishment). Specifically, principals can promote teachers focus and innovation in teaching by providing positive support and resources, enhancing cooperation and trust among colleagues, and helping teachers understand the importance and mission of their professional roles. This, in turn, enhances their sense of achievement and professional satisfaction. Through the relationship between these five core elements, a virtuous cycle of enhancing the occupational well-being of rural teachers can be achieved.

In conclusion, the inherent complexity of rural education [16], coupled with teachers educational stress and negative emotions [17], restricts the occupational well-being of rural teachers. Therefore, this research explores the effect of perceived principal leadership on rural teachers instructional efficacy, professional development awareness, and occupational well-being to improve teachers occupational well-being, drawing attention to rural teachers and promoting the development of rural education.

## 2. LITERATURE REVIEW

### 2.1. The PERMA Model

Building upon the theory of positive psychology, Seligman proposed the PERMA (Positive-emotion Engagement Relationship Meaning Accomplishment) model [18], suggesting that positive emotions such as pleasure and enjoyment [19] engagement reflected by full attentiveness in activities, experiential smoothness and commitment [20] relationship highlighted by good interpersonal relations and social connections [21] meaning involves the pursuit of goals and the sense of purpose in life [22] and accomplishment reflected by the experience of completing tasks and making achievements [23] are key factors constituting a fulfilling, meaningful and happy life. Specifically, these positive emotions help individuals to live in the present by focusing on an extremely difficult task and increase their heart flow, that is, engagement in things that are sources of a meaningful life, including good interpersonal relationships with family, groups, and organizations [24] positive emotions developed or gained are primary indicators of energetic individuals and happiness [25], and the sense of meaning is also an intermediate agent of thought and target, which facilitates individuals to make efforts towards their goals and obtain mastery, competence, and achievements, thereby giving rise to a strong sense of accomplishment [26].

### 2.2. The Relationship between Perceived Principal's Instruction Leadership among Teachers and Teacher Well-being

A positive principal's leadership is particularly important for teachers occupational well-being as the former helps create positive working environments for teachers and develop positive emotional values such as happiness, pleasure, and satisfaction [27], interest and pride, and facilitating building positive inter-teacher relationships [28]. In the meantime, a principal's instructional leadership serves as an educational synergy when a principal defines the school's educational goals, builds a good teaching atmosphere on campus, stimulates teachers learning motivation, and improves learning efficacy among teachers and students [29, 30] Banoğlu *et al*. [31] combine the theory of learning organization with the teaching leadership of principals as a positive and cooperative form of leadership, which requires team learning, shared vision, and systems thinking disciplines as standard. Bada *et al*. [32] focused the theoretical model of teaching leadership on improving the overall teaching effectiveness of schools through curriculum planning, teaching quality monitoring, and teacher professional development. It is believed that the more obvious the positive effects of such leadership, the more leadership teachers perceive.

On the one hand, a principal's instructional leadership ensures the teaching and learning objectives are clear and definitive to allow teachers to have a greater sense of focus and direction and better understand a school's educational vision and mission [33], thereby providing teachers with assistance in terms of curriculum management and teaching. On the other hand, with the principal's support and interactions, teachers feel valued and recognized [14]. These all facilitate the accumulation of positive emotional experiences that promote teachers mental health and contribute to their occupational well-being [34]. As such, the following hypothesis [H1] is proposed:

A teacher's perception of the principal's instructional leadership has a significant positive effect on the teacher's occupational well-being.

### 2.3. The Relationship between Teachers Instructional Efficacy and Well-being

The teachers' instructional efficacy refers to the teachers belief in their instructional capabilities and whether they are capable enough to facilitate students to get a sense of accomplishment through classroom instruction [35]. Such a sense of belief and accomplishment affects teachers psychological health and well-being [36]. After completing their work tasks or seeing students' academic progress, teachers easily perceive that their efforts eventually pay off and thus gain a sense of satisfaction and well-being [37, 38]. Given the higher residential density and community nature in rural areas [39], teachers maintain more intimate neighborhood relations with students [40], and students academic progress causes a higher sense of satisfaction and accomplishment, as well as well-being among teachers [41]. As such, the following hypothesis is proposed [H2]: Teachers instructional efficacy has a significantly positive effect on teachers occupational well-being.

### 2.4. The Relationship between the Teachers Professional Development Awareness and Teacher Well-being

The teachers professional development awareness is a positive attitude by which teachers strive to improve their quality of teaching, professional knowledge, skills, attitudes, and interpersonal communication through approaches like self-awareness and self-regulation under their understanding of subjects self-development [42]. Teachers with a higher professional development awareness are more likely to put more energy into educational activities, which helps them find deeper satisfaction and obtain a pleasant emotional experience from educational work [43, 44]. Additionally, rural teachers well-being also involves the realization of their ideals, and the emotional experience of satisfaction and well-being can be promoted through constantly pursuing and exploring better-reaching results, improving their professional development awareness [45]. As such, the following hypothesis is proposed [H3]: The teachers professional development awareness has a significantly positive effect on teachers occupational well-being.

### 2.5. The Mediating Effect between Teachers Instructional Efficacy and Teachers Professional Development

A positive and constructive perspective should be adopted when viewing and evaluating matters to produce more pleasant and positive emotional feelings, and such behavior may guide the development of subjects [46]. Principals guide teachers instructional directions in a constructive manner by setting teaching objectives, providing teaching resources, and integrating the development plans of faculties [47]. Helping teachers to improve and maintain their instructional beliefs convinces them that they are capable of advancing students [48], and thus makes them more willing to develop their teaching ability from a subjective point of view [49]. As such, the following hypothesis is proposed [H4]: The perceived principal's instructional leadership among teachers has a significantly positive effect on their instructional efficacy.

On the other hand, when teachers perceive more sophisticated teaching objectives, reasonable task initiatives, and hopeful visions and innovations externally guided by principles, they are more likely to generate positive work emotions [50]. With such guidance, teachers are able to construct growth-related awareness like self-directed learning and continuous understanding of practices, thus facilitating them to reflect on their professional competence in teaching and achieving constant self-development and growth [51]. As such, the following hypothesis [H5] is proposed: The teachers perception of the principal's instructional leadership has a significant positive effect on teachers occupational well-being.

Hence, the more the principal's leadership is perceived, the more likely that the teacher will experiment with new teaching strategies, techniques, and approaches [52]. These approaches and strategies will have a positive effect on teaching, thereby further enhancing teachers instructional beliefs [53]. In return, such a belief also supports teachers to explore and apply new teaching concepts in their professional development and improve their teaching quality and effectiveness [54]. In the meantime, the process also helps teachers build sufficient confidence and facilitates them to understand their professional achievements, making them more motivated and active to engage themselves in teaching [55]; this also provokes teachers enthusiasm for teaching and improves their sense of well-being in instructional work [56]. As such, the following hypothesis is proposed [H6]: The teachers' instructional efficacy and professional development awareness play a mediating effect between the perceived principal's instructional leadership and teacher occupational well-being.

## 3.. MATERIALS AND METHOD

### 3.1. Research Framework

Based on the literature review, the objectives, and the problem of the research, a research framework is compiled and plotted, as shown in Fig. (**1**). In this

framework chart, the principal's instructional leadership is the independent variable, teacher occupational well-being is the dependent variable, instructional efficacy, and professional development awareness are mediating variables. On the basis of the PERMA theory, the effect of perceived principals's instructional leadership among teachers on the teachers' occupational well-being is explored, with teachers instructional efficacy and professional development awareness as mediating effects.

### 3.2. Research Subjects

The subjects of this research are elementary and middle school teachers in rural areas. Rural teachers are an indispensable and significant part of rural education [57]. Shandong and Henan are among the largest provinces in China in terms of population bases for education, characterized by fierce competition, large proportions of rural education, heavy workloads for rural teachers, and a pressing need to improve teachers occupational well-being [58]. This is consistent with the purpose of this research, which is to improve teachers occupational well-being. Hence, in this research, teachers from 12 rural schools from 3 areas in Shandong (Jinan, Dezhou, and Jining) and 3 areas in Henan (Zhumadian, Luoyang and Zhengzhou) were surveyed.

A questionnaire-based survey method was applied. According to recommendations, 300 or more valid samples should be obtained from a survey [59]. Moreover, to ensure samples are distributed evenly and meet the requirements of this research, a random sampling technique was applied through online distribution. A total of 660 questionnaires were distributed to teachers from the 12 rural schools, with 55 for each school. Fifty-one invalid questionnaires were ruled out, and a total of 609 valid questionnaires were collected.

### 3.3. Research Tools

The questionnaire on the principal's instructional leadership was developed by Liu and Hallinger [60], and consists of 3 dimensions, namely, school objectives, instructional management plan, and creation of a positive school atmosphere. For example, "The principal can formulate the school's teaching goals based on students' academic performance data" and "The principal encourages teachers to try new educational concepts and teaching methods in the classroom." These are reflected in 22 items. The Cronbach's Alpha coefficient of the scale is 0.83. The Cronbach's Alpha coefficients of each dimension are: .869, .754, .833. A Cronbach's Alpha larger than 0.7 denotes that the scale has fairly high stability and accuracy [61]. The overall KMO (Kaiser-Meyer-Olkin) value of the questionnaire is .882, and Bartlett's sphericity test: $p<.001$, reaching the significant level, so it is suitable for factor analysis. The overall explanatory variable of the three dimensions is 45.70%, and the factor loading range is 0.42-0.78. Hence, the questionnaire's factor loading is larger than 0.4, and the cumulative variance contribution reaches 40%, indicating a good structural validity [62]. the fitness indexes of the model are $\chi 2/df=1.71$, RMSEA=0.04, IFI=0.91, TLI=0.90, and CFI=0.91, respectively. According to the model validation indicators, the $\chi 2/df$ is smaller than 5, the RMSEA is smaller than 0.7, and IFI, TLI, and CFI are larger than 0.9, indicating the model has a fairly good fitness [63].

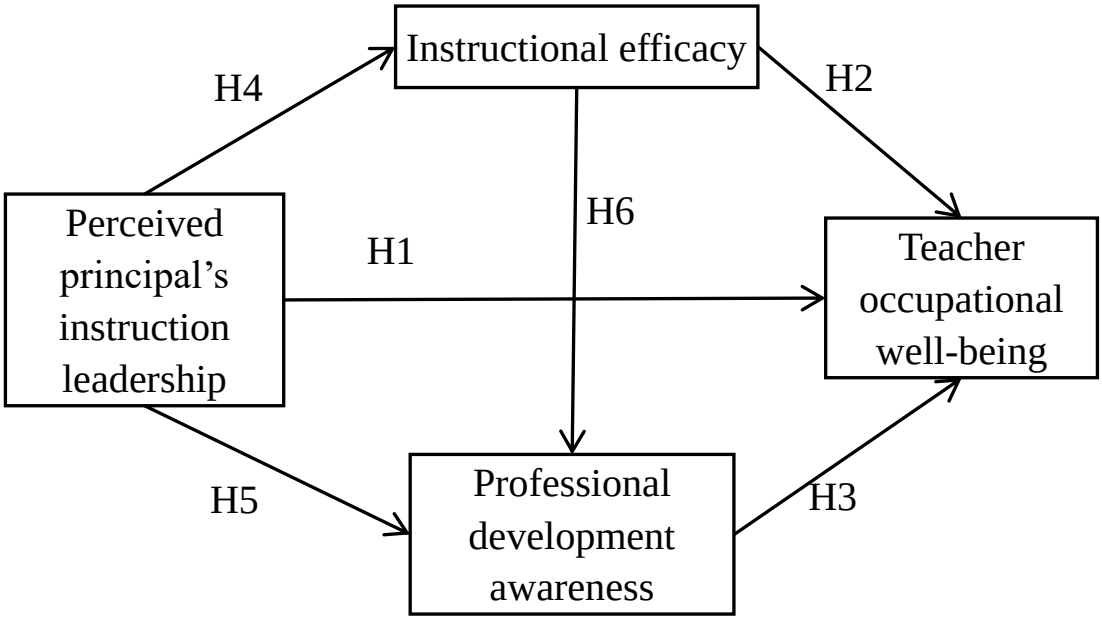


**Fig. (1).** Research framework.
Data source: Compilation of this research.

The teacher occupational well-being questionnaire compiled by Van Horn *et al*. consists of mainly 5 dimensions, namely, emotional well-being, professional well-being, cognitive well-being, physical and mental well-being, and social support. For example: "I am very looking forward to my working hours every day" and "I am able to concentrate very well on my work." *etc*. which are reflected by 24 items [64]. The overall Cronbach's Alpha coefficient of the scale is 0.935. The Cronbach's Alpha coefficients of each dimension are .838, .868, .811, .830, .878. The overall KMO (Kaiser-Meyer-Olkin) value of the questionnaire is .883. Bartlett's sphericity test: p<.001, reaching a significant level, therefore, the scale has high stability and accuracy and is suitable for factor analysis. The overall explanatory variable of the 5 dimensions is 46.81%, the factor loading falls in 0.56-0.82, and the fitness indexes of the model are $\chi 2$/df=1.88, RMSEA=0.03, IFI=0.91, TLI=0.91, and CFI=0.91, respectively.

The instructional efficacy questionnaire compiled by Gibson and Dembo consists of mainly two dimensions, namely, general educational efficacy and personal instructional efficacy. For example: "I can help students solve problems encountered in their studies." and "I will use multiple teaching methods to improve the effectiveness of teaching." *etc*. which are reflected by 19 items [65]. The Cronbach's Alpha coefficient of the scale is 0.91. The Cronbach's Alpha coefficients of each dimension are: .931, and .915 respectively. The overall KMO (Kaiser-Meyer-Olkin) value of the questionnaire is .901. Bartlett's sphericity test: p<.001, reaching the significant level, so this scale has high stability and accuracy and is suitable for factor analysis.The overall explanatory variable of the two dimensions is 47.62%, the factor loading falls in 0.71-0.84, and the fitness indexes of the model are $\chi 2$/df=2.62, RMSEA=0.03, IFI=0.90, TLI=0.99 and CFI= 0.99, respectively.

The teacher professional development awareness questionnaire compiled by Xiao mainly consists of three dimensions, namely, self-recognition, self-regulation, and behavioral initiative, for example: "I am very familiar with the new curriculum standards and new textbooks for primary and secondary schools", "I often think about how to enrich subject teaching knowledge", *etc*. reflected in 16 items [66]. The Cronbach's Alpha coefficient of the scale is 0.895. The Cronbach's Alpha coefficients of each dimension are: .866, .835, and .831 respectively. The overall KMO (Kaiser-Meyer-Olkin) value of the questionnaire is .856. Bartlett's sphericity test: p<.001, reaches the significant level. The scale has high stability and accuracy and is suitable for factor analysis. The overall explanatory variable of the three dimensions is 43.61%, the factor loading falls in 0.55-0.74, and the fitting indexes of the model are $\chi 2$/df=1.79, RMSEA=0.02, IFI=0.95, TLI=0.94, and CFI=0.94, respectively.

Hence, all questionnaires used in this research meet various requirements and are suitable for this study.

## 4. RESULTS

### 4.1. Sample Description and Analysis

The demographic characteristics of data collected are as follows: 319 male respondents, accounting for 52.217%, and 291 female respondents, accounting for 47.783%; the numbers of respondents aged 25 and lower, 26-35, 36-46, 46-55 and 56 and over are 108, 174, 222, 87 and 18, accounting for 17.734%, 28.571%, 36.453%, 14.286% and 2.956%, respectively.

### 4.2. Structural Model Validation

Based on the research framework and theory, a structural equation model is constructed, as shown below: Through the goodness of fit test of the model, the overall goodness of fit indexes are compiled, as shown in Table **1**, with the absolute fit index as follows: The $\chi 2/df$ is 1.906, smaller than 5.00; GFI is .961, and AGFI is .940, both larger than .900; SRMR is .018, RMSEA is .047, both smaller than .080; the incremental fit index are: NFI is .977, RFI is .970, CFI is .989, IFI is .989, all larger than .900; the parsimonious fit index are: PNFI is .736, PGFI is .623, and PCFI is .748, all larger than .50, indicating that the overall model fits the measured data.

**Table 1. Overall goodness-of-fit test of the model.**

| Overall Goodness-of-fit | Item | Goodness-of-fit Index | Value | Goodness-of-fit of the Model |
|---|---|---|---|---|
| Absolute Fit Index | $\chi 2/df$ | < 5 | 1.906 | Fit |
| | GFI | > .900 | .961 | Fit |
| | AGFI | > .900 | .940 | Fit |
| | SRMR | < .080 | .018 | Fit |
| | RMSEA | < .080 | .047 | Fit |
| Incremental Fit Index | NFI | > .900 | .977 | Fit |
| | RFI | > .900 | .970 | Fit |
| | CFI | > .900 | .989 | Fit |
| | IFI | > .900 | .989 | Fit |
| Parsimonious Fit Index | PNFI | > .50 | .739 | Fit |
| | PGFI | > .50 | .623 | Fit |
| | PCFI | > .50 | .748 | Fit |

**Note:** Data source: Compilation of this research.

### 4.2.1. Analysis of Overall Model Path Coefficient

From the analysis of the overall model paths, the standardized path coefficients of different variables are shown in Table 2. The coefficient of the path of "perceived principal's instruction leadership → occupational well-being" is .266, with a significance of $p < 0.001$, which reaches the significance level and shows that H1 is valid, that is, perceived principal's instruction leadership significantly positively affects occupational well-being; the path of "instructional efficacy → occupational well-being" is .398 with a significance of $p < 0.001$, which reaches the significance level and shows that H2 is valid, that is, instructional efficacy significantly positively affects occupational well-being; the coefficient of the path "professional development awareness → occupational well-being" is .338, with a significance of $p < 0.001$, which reaches the significance level and shows that H3 is valid, that is, professional development awareness significantly positively affects occupational well-being. The coefficient of the path of "perceived principal's instruction efficacy" is .743, with a significance of $p < 0.001$, which reaches the significance level and shows that H4 is valid, that is, the perceived principal's instruction leadership significantly positively affects instructional efficacy; the coefficient of the path of "perceived principal's instruction leadership→ professional development awareness" is .332 with a significance of $p < 0.001$, which reaches the significance level and shows that H5 is valid, that is, the perceived principal's instruction leadership significantly positively affects professional development awareness.

**Table 2. Overall model path coefficients.**

| Path | Path Coefficient | *p* | Whether Significant |
|---|---|---|---|
| Perceived principal's instruction leadership → instructional efficacy | .743 | < 0.001 | Significant |
| Perceived principal's instruction leadership → professional development awareness | .332 | < 0.001 | Significant |
| Perceived principal's instruction leadership → occupational well-being | .266 | < 0.001 | Significant |
| Instructional efficacy → occupational well-being | .398 | < 0.001 | Significant |
| Professional development awareness → occupational well-being | .338 | < 0.001 | Significant |

**Note:** Data source: Compilation of this research.

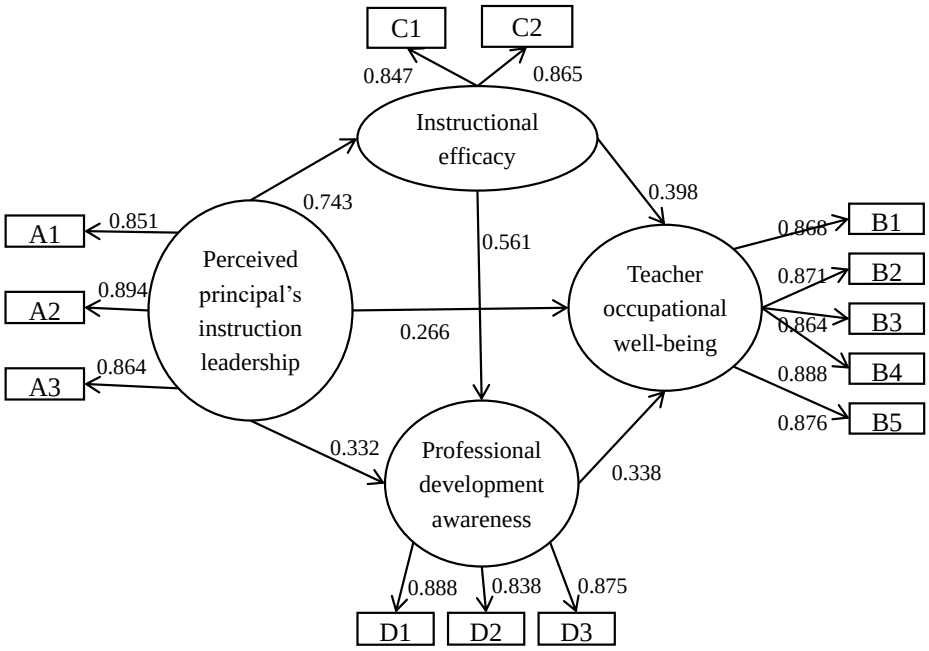


**Fig. (2).** Overall model paths.
Note 1: The regression coefficients of different dimensions all reached the confidence level of p< 0.001;
Note 2: School objectives - A1, teaching management plan -A2, creation of a positive school atmosphere - A3, emotional well-being - B1, professional well-being -B2, cognitive well-being - B3, physical and mental well-being - B4, social support - B5, general instructional efficacy - C1, personal instructional efficacy - C2, self recognition-D1, self regulation-D2, behavioral initiative-D3;
Data source: Compilation of this research.

#### *4.2.2. Test of the Co-intermediating Effect of Instructional Efficacy and Professional Development Awareness*

The intermediating effect test of teachers instructional efficacy and professional development awareness between perceived principal's instruction leadership and occupational well-being was conducted using the normal approximation Bootstrap method, which can effectively reduce the occurrence of errors [67]. In this intermediating effect analysis, repeated sampling was conducted 5,000 times, and the confidence interval of the intermediating effect was set as 95%. If the 95% confidence interval of an influencing path does not include 0 and the z value is larger than 1.96, then it indicates a significant intermediating effect [68].

As shown in the structural equation model in Fig. (**2**), the coefficient of each path falls within 0.266-0.743, completely reaching a significant level; the factor loading falls within 0.838-0.888, which is entirely larger than 0.4, indicating the basic criteria for the validity of the model are met.

The specific results are shown in Table **3**. For the intermediary path [perceived principal's instruction leadership → instructional efficacy → professional development awareness → occupational well-being], z=3.805, larger than 1.96, and the 95% confidence interval falls between .076 and .214, excluding 0. Hence, instructional efficacy and professional development awareness both have a significant intermediating effect, and teachers perceived principal's instruction leadership affects their occupational well-being through their instructional efficacy and professional development awareness. In the meantime, for the direct effect [perceived principal's instruction leadership → occupational well-being], z=4.8 87, smaller than 1.96, and the 95% confidence interval falls in .151 and .358, excluding 0. This indicates that the teachers perceived principal's instruction leadership has a significant effect on occupational well-being. The overall effect z=15.860, larger than 1.96, and the 95% confidence interval falls in .702 and .892, excluding 0, indicating that the teachers instructional efficacy and professional development awareness play an intermediating effect between perceived principal's instruction leadership and occupational well-being. Hence, H8 is valid.

## 5. DISCUSSION

### 5.1. The Relationships between Perceived Principal's Instruction Leadership, Teaching Efficacy, Professional Development Awareness, and Occupational Well-being

As can be known from the results of this research, the perceived principal's instruction leadership among rural teachers has a significantly positive effect on occupational well-being, thus, H1 is valid. The previous studies have also demonstrated similar results [69-71]. This shows that teachers benefit from effective principal's leadership, such as perceived accurate school objectives, rational teaching plan, and positive school atmosphere, which promotes their instructional work and increases their experience of success in meeting expectations.

Rural teachers instructional efficacy has a significantly positive effect on their occupational well-being, and thus, H2 is valid, which is consistent with the results of precedent studies [72, 73]. This shows that higher instructional efficacy helps teachers adapt themselves to the work environment, regulate their emotions, maintain physical and mental health, promote educational and student-related work and their own growth, increase their confidence, provoke their passion for work, and eventually add to their occupational well-being.

Rural teachers professional development awareness has a significantly positive effect on their occupational well-being, and thus, H3 is valid, which is consistent with the results of precedent studies [74]. This shows that professional development awareness facilitates teachers in pursuing their personal and occupational goals, and in upgrading their subject-related knowledge and instructional skills. When teachers achieve success in occupational activities, they achieve occupational goals and generate a sense of accomplishment, which promotes the emotional experience of success and increases their occupational well-being.

**Table 3. Test of intermediating effect.**

| Path | Point Estimate | Product of Coefficients | | Normal Approximation Test | |
|---|---|---|---|---|---|
| | | se | z≥1.96 | lower | upper |
| Direct effect | - | - | - | - | - |
| Perceived principal's instruction leadership → occupational well-being | 0.266 | 0.053 | 4.887 | .151 | .358 |
| Indirect effect | - | - | - | - | - |
| Perceived principal's instruction leadership →instructional efficacy→ occupational well-being | 0.288 | 0.054 | 5.333 | .191 | .409 |
| Perceived principal's instruction leadership → professional development awareness → occupational well-being | 0.109 | 0.034 | 3.205 | 0.054 | 0.190 |
| Perceived principal's instruction leadership →instructional efficacy→ professional development awareness → occupational well-being | 0.137 | 0.036 | 3.805 | 0.076 | 0.214 |
| Total effect | 0.793 | 0.050 | 15.860 | .702 | .892 |

**Note:** Data source: Compilation of this research.

Perceived principal's instruction leadership among rural teachers has a significantly positive effect on instructional efficacy, and H4 is valid, which is consistent with the results of precedent studies [75, 76]. Further more, by leading and supporting teachers instructional causes, they can perceive an institutional recognition of their contributions and values, provoking a sense of meaning towards their work and thus helping them build a more positive instructional efficacy.

The perceived principal's instruction leadership among rural teachers has a significantly positive effect on professional development awareness, and H5 is valid, which is consistent with the results of precedent studies [77, 78]. In a context where teachers can perceive clearer school development goals and vision and the principal coordinates with relevant courses to advance innovation and development of education and teaching, the teachers motives to explore and reform can be provoked, thereby improving their professional development awareness.

The rural teachers instructional efficacy and professional development awareness are co-intermediating variables between perceived principal's instruction leadership and occupational well-being. This is similar to previous studies [79], and H6 is valid. This suggests that while perceived principal's instruction leadership among teachers has a significantly positive effect on occupational well-being, it also affects teachers instructional efficacy and thus affects their professional development awareness, thereby increasing their occupational well-being.

In addition, as shown in the results of the structural equation model, the point estimate of the intermediating effect path "perceived principal's instruction leadership → instructional efficacy→ occupational well-being" is higher than the intermediating effect path "perceived principal's instruction leadership → professional development awareness→ occupational well-being," which may be attributed to the fact that teachers instructional efficacy is directly related to instructional practices. This is consistent with the results of precedent studies [80], that is, when teachers believe that their teaching can effectively promote students' learning, they will be more likely to perceive occupational satisfaction and well-being. Specifically, on the one hand, when the teachers observe that their teaching can promote students' learning and improve their academic results, the teachers are more likely to perceive a sense of accomplishment in their work and thus improve their occupational satisfaction [81]. On the other hand, an improvement in efficacy is usually reflected by feedback in a short time [82]. Furthermore, because teachers can bolster their teaching confidence by observing their students' performance and receiving positive feedback on the classroom environment, therefore, it has a more instant and direct impact on their self-confidence [83].

## 5.2. Suggestions

### *5.2.1. Encouraging Principals' Practices and Reflection Over Instructional Leadership*

Rural principals should actively improve their instructional leadership practices to enhance the direct effect of perceived principal leadership among teachers. The principals should consider the relationship between the development of teachers, schools, and rural areas and understand which factors are crucial for improving teachers occupational development [84], such as integrating school objectives, teaching management plan, creating a positive school atmosphere, and include these factors into the development plan of instructional leadership. Meanwhile, it is recommended that rural principals should consciously learn or receive guidance and training benefiting the development of their instructional leadership [85].

### *5.2.2. Improving Teachers Self-recognition and Cultivating their Professional Development Awareness*

The teachers' professional development awareness is mainly influenced by their self-recognition, self-regulation, and behavioral initiative. The level of teachers self-recognition affects their attitudes towards the educational cause and professional development [86]. Self-regulation ability helps teachers to better adjust themselves to different professional development stages. The behavioral initiative involves positive and active behaviors adopted in professional development, such as seeking learning opportunities, participating in educational training, and communicating with peers [87]. It is recommended that rural teachers should actively learn about national policies [88], clearly understand the social status of rural teachers and the importance of rural education [89], earnestly learn professional knowledge to enrich themselves [90], actively participate in internship activities to improve their cognitive abilities [91], and find a professional development path suited to their specific interests and characteristics. They should also develop a sense of occupational mission and responsibility, realize the crucial role of rural teachers in facilitating rural growth, stimulate their behavioral initiative, and improve their professional development awareness, thereby promoting their occupational well-being.

## 5.3. Contributions and Shortcomings

### *5.3.1. Contributions*

By incorporating the PERMA model from positive psychology into the realm of education, this study focuses on the effect of a principal's instructional leadership on teachers occupational well-being and, in the meantime, guides the priorities toward individual psychological states and professional development to advocate a healthier and more dynamic educational environment. Thus, the study offers a new theoretical perspective, helping to explain and advance studies of teachers occupational well-being.

On the other hand, rural schools are a special educational environment. With restrictions of other objective factors like educational resources and geographic factors ruled out [92]. The special rural culture and social background, as opposed to those in urban areas, are all very important for school management and teachers instructions [93]. Furthermore, by examining the influencing mechanism of perceived principal's instruction

leadership among rural teachers and their occupational well-being [94], one may exploit these factors appropriately to improve teachers occupational well-being. In addition, this research provides empirical evidence that may help promote the development of educational research, including interdisciplinary studies and educational techniques and innovations, offering implications and directions for future research.

### *5.3.2. Shortcomings*

On one hand, this study is limited by its research topic and only considers researchable factors within the scope of this research and limited conditions, such as the effects of perceived principal's instruction leadership, teachers instructional efficacy, and professional development awareness on their occupational well-being, without incorporating objective influencing factors such as environmental influence, regional cultural and individual difference into the model, which may cause an incomplete understanding of influencing factors on teachers well-being [95]. The generalization of regional culture entailing campus culture and rural customs is restricted by differences in regional cultures [96, 97], and individual differences among teachers, including personality, experience, and instructional competence, may also serve as potential disturbance variables in research results [98].

On the other hand, this study is limited by the survey conditions. Firstly, future research can investigate the influences from different countries and regions, which may increase diversity [99]. Secondly, due to the many unstable factors of rural teachers, cross-sectional research is an effective research method for rural teachers, but longitudinal research is the main way to explore the long-term impact of occupational well-being, so this can be improved in future research [100]. Finally, qualitative data collection methods, such as interviews, are also helpful for an in-depth understanding of the factors affecting rural teachers' occupational well-being [101], so it is anticipated that future research will consider this type of research.

## CONCLUSION

According to the results, rural teachers' teaching efficacy and professional development awareness play a mediating role in the impact of perceived principal's instructional leadership on occupational well-being. Although the PERMA theory can explain this mediating effect, this study shows that the point estimate of the mediating effect path of rural teachers' teaching efficacy is higher than that of professional development awareness, so this can enrich the application of PERMA theory in rural teachers. In addition, by proving the mediating effect, it can be concluded that in practice, we should focus on the cultivation and improvement of teachers' teaching efficacy and professional development awareness, increase teachers' self-belief in teaching, and enable teachers to establish autonomous learning and continuous understanding of practice growth cognition, so as to improve teachers' occupational well-being and rural education, which provides more theoretical basis for the research on teacher occupational well-being. Therefore, it is recommended that rural principals should actively enhance and improve the practice of principals' teaching leadership to enhance the direct impact on perceived principals' instructional leadership and continue to pay attention to the cultivation and improvement of teachers' teaching efficacy and professional development awareness.

## AUTHOR'S CONTRIBUTION

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

## LIST OF ABBREVIATIONS

| | | |
|---|---|---|
| $\chi 2$ | = | chi-square |
| Df | = | degree of freedom |
| GFI | = | Goodness of Fit Index |
| AGFI | = | Adjusted Goodness of Fit Index |
| SRMR | = | Standardized Root Mean Square Residual |
| RMSEA | = | Root Mean Square Error of Approximation |
| NFI | = | Normed Fit Index |
| RFI | = | Relative Fit Index |
| CFI | = | Comparative Fit Index |
| IFI | = | Incremental Fit Index |
| PNFI | = | Parsimonious Normed Fit Index |
| PGFI | = | Parsimonious Goodness of Fit Index |
| PCFI | = | Parsimonious Comparative Fit Index |
| PERMA | = | Positive-emotion Engagement Relationship Meaning Accomplishment |

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The ethical approval for this study was obtained from the University Research Ethics Board with Dhurakij Pundit University, Thailand (Protocol Code: 6309. FB 6.1/1/2564).

## HUMAN AND ANIMAL GUIDELINES

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

## CONSENT FOR PUBLICATION

All participants provided informed consent forms for this survey.

## STANDARDS OF REPORTING

STROBE guidelines were followed.

## AVAILABILITY OF DATA AND MATERIALS

The research data supporting the findings of this study will be available upon request from the corresponding author [W.M].

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None.

## CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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