

## *An Empirical Analysis of Islamic Leadership: Mediating Role of Teacher Well-being*

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### **Abstract**

*Purpose:* This study investigates how Islamic leadership affects teacher well-being, commitment, and performance. Further, this study examines teacher well-being's mediating function in the relationship between Islamic leadership and commitment.

*Design/Methodology/Approach:* Data from 237 teachers at private Islamic schools in the border south of Thailand were gathered via a self-administered survey. This study's data evaluation method utilized SPSS and structural equation model-partial least square (SEM-PLS).

*Findings:* The findings of the path analysis showed that Islamic leadership (ISL) positively affects teacher well-being and commitment. ISL insignificantly affects performance—teacher well-being positively intercourse between commitment. In addition, teacher well-being has mediated Islamic leadership and commitment. Utilizing importance-performance map analysis (IPMA) and SEM-PLS demonstrated that Islamic leadership and commitment are critical factors in determining teacher performance at private Islamic schools. Therefore, Islamic leadership (ISL) encourages teachers' well-being to enhance their performance through commitment to reaching the organization's goals.

*Originality/Value:* This research provides novel insights into the theory and practice of Islamic leadership at private Islamic schools. Furthermore, empirical data is provided to support the proposed paradigm. The study also provides evidence for the teacher's well-being mediation role in Islamic leadership, commitment, and performance.

Keywords: Islamic Leadership, Teacher Well-being, Commitment, Performance

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## **Introduction**

Leadership is crucial in determining the dynamics and results of the organization. Effective leadership is essential in the educational setting for attaining academic achievement and creating a supportive work climate that enhances teachers' performance, commitment, and well-being. A different leadership paradigm that can meet the particular cultural and spiritual requirements of educators in settings where Muslims predominate has recently gained popularity in Islamic leadership. A solid moral compass, a feeling of collective responsibility, and an emphasis on the whole development of the individual define this type of leadership.

A network of Islamic institutions serves the educational and spiritual needs of the community in southern Thailand, home to a sizable Muslim population. These schools are distinctive in offering students a comprehensive education by fusing academic courses with religious teachings. Islamic leaders lead these institutions, create an environment consistent with Islamic beliefs and principles, and oversee academic governance. Islamic leadership strongly emphasizes virtues like justice, integrity, compassion, and consultation since it is based on the teachings of the Quran and the Sunnah. Leaders who uphold these values must be role models, encouraging their organizations and students to pursue greatness and moral integrity. This leadership approach is especially pertinent in Islamic schools, where teachers' professional and spiritual growth are closely linked to their observance of Islamic principles.

The growing complexity of educational settings, especially in Islamic institutions, necessitates leadership that considers teachers' overall well-being in addition to administrative and instructional difficulties. Teachers frequently deal with high levels of stress, task demands, and emotional exhaustion, all of which can harm their well-being and, in turn, their dedication and output. Teachers may feel less engaged, have lower job satisfaction, and perform worse if they do not have effective leadership that meets their emotional, mental, and spiritual requirements.

Islamic leadership provides a leadership approach that may help with these issues because of its focus on moral, ethical, and spiritual principles. However, there is a dearth of empirical data regarding how Islamic leadership affects teachers' well-being and whether or not this well-being improves their dedication and output. In particular, little research has been done on the mediating function of teacher well-being in the connection between Islamic leadership and teacher commitment. This study investigated two queries:

1. How does Islamic leadership influence teacher well-being, commitment, and performance?
2. Does teacher well-being mediate influence Islamic leadership and commitment?

## **Literature Review**

### ***Islamic Leadership***

Islamic leadership is based on the values of Tawhid (the oneness of God), Adl (justice), and Taqwa (piety). It is distinguished by moral behavior, justice, consultation (Shura), and responsibility (Karim et al., n.d.). These guidelines influence how administrators and teachers interact, which affects the school's general climate and organizational culture (Ezzani et al., 2023). Islamic leadership fosters a welcoming atmosphere where educators feel appreciated and respected by strongly emphasizing compassion, justice, and moral integrity. This kind of leadership might lessen stress and burnout, which are frequent problems in the teaching

profession. Research indicates that work happiness and emotional health increase when leaders show concern and care for their teachers (Hoogeveen et al., 2023; Sak et al., 2024). Teachers feel more invested in and committed to the school when they participate in decision-making processes, which is made possible by the *Shura*, or consultation, principle (Abdel-Monem et al., 2020). Studies reveal that dedication to the establishment grows when educators acknowledge and appreciate their opinions (Heidari et al., 2022; Hosseingholizadeh et al., 2023). Islamic leadership places a strong emphasis on *Amanah*, or trustworthiness. This encourages leaders to be open and reliable, motivating educators to devote more time to their jobs (Chaudhary et al., 2023). Effective Islamic leadership could bring higher satisfaction, motivation, performance, positive energy, and organizational loyalty (Karadağ et al., 2020). It can positively influence followers' attitudes by conducting various managerial activities based on ethical standards (Brooks et al., 2020). Therefore, we hypothesized.

- H1: Islamic leadership positively and significantly impacts teacher commitment
- H2: Islamic leadership positively and significantly impacts teacher well-being
- H3: Islamic leadership positively and significantly impacts teacher performance

### **Teacher Commitment**

Teacher commitment indicates the level of commitment and caring a teacher has for their pupils, career, and educational establishment (Abdulaziz et al., 2022). Commitment to the teaching profession, the school, and student success are only a few elements it includes. Committed to their work, they dedicate time, energy, and emotional resources to fulfilling their teacher responsibilities, considering it more than a job (Brooks et al., 2020). Teacher commitment could boost performance and connect it to other organizational phenomena (Van Waeyenberg et al., 2022). An organization's members maintain better performance levels as their levels of commitment rise (Karrasch, 2017; Shu, 2022). Woods (2021) and Al-Maamari and colleagues (2021) revealed that teacher commitment positively influences job performance. In light of this, we developed the following hypothesis.

H4: Teacher commitment directly influences on performance

### **Teacher Well-being**

Teacher well-being encompasses educators' standards for their personal, professional, and interpersonal lives. The emotional component is essential to a teacher's well-being within the educational cycle (Dreer, 2024). Well-being is vital for teachers to effectively educate at various levels since it can encourage creativity and build positive relationships with students, improving students' success (Benevene et al., 2020). Higher levels of well-being among educators are associated with stronger emotional ties to their jobs and organizations. Due to their increased sense of fulfillment and satisfaction in their careers, this attachment encourages loyalty and dedication. Positive feelings like happiness, excitement, and contentment increase the likelihood that teachers will be involved in and committed to their profession (Huang et al., 2019; Thien & Lee, 2022). Teachers who are in good health are more productive in the classroom (Zee & Koomen, 2016). They can create dynamic and exciting courses and improve the learning environment for students when they are in a positive emotional. Teachers who are happy and feel well-supported to teach with passion and inventiveness directly affect students' results and teachers' performance (Cuevas et al., 2018). Teachers' ability to continuously provide high-quality education depends on their well-being, and practical instruction is a significant component of their performance (Carroll et al., 2021; Chen & Chi-Kin Lee, 2022). Thus, we hypothesized.

- H5: Teacher well-being positively and significantly influences teachers' commitment

- H6: Teacher well-being positively and significantly influences performance
- H7: Teacher well-being mediated relationship between Islamic leadership and commitment

## Methodology

### *Participants*

Two hundred thirty-seven teachers' questionnaires were from Islamic private schools in Songkhla and Narathiwat provinces, South Thailand. Based on the analysis, gender has 99 males and 138 females. The range of teachers' ages is 21 to 55 years old. The education background is 189 bachelor's and 48 master's degrees (see Table 1).

Table 1: Demographic Data

		Frequency	Percent
Gender	Male	99	41.8
	Female	138	58.2
Age	21-26	23	9.7
	27-32	64	27.0
	33-38	73	30.8
	39-44	37	15.6
	45-50	15	6.3
	51-55	25	10.5
Education	Bachelor's degree	189	79.7
	Master's degree	48	20.3

### *Data Analysis*

The researchers used two statistical tools, partial least squares (PLS), also known as variance-based SEM via SmartPLS 3.0 software, and descriptive statistics using SPSS to verify the validity and reliability of the current conceptual framework and test its hypothesized relationships. The PLS-SEM modeling procedure consisted of two primary components (Hair Jr. et al., 2020). The first step was evaluating the measurement model to look into the proposed model's psychometric characteristics. After the measurement model was carried out, the structural model was assessed to examine the proposed relationships, and its psychometric qualities were confirmed (Hair Jr. et al., 2020).

## Results

### *Measurement Model*

The measuring model was used to evaluate the psychometric qualities of the current model before the hypothesized model was put to the test. Four factors that made up the measuring model for this study were Islamic leadership (ISL), teacher well-being (TW), commitment (CT), and performance (PF) (Figure 1).

Hair and colleagues (2020) states that factor loadings for each variable and average variance extracted (AVE) for each latent construct, which should be  $>0.60$  and  $>0.5$ , can be used to access the convergent construct validity. Construct reliability can be evaluated by looking up the composite reliability (CR), which needs to be more than 0.7. As shown in Table 2, all of

the constructs in the current investigation had AVE values better than 0.5 and composite reliability values greater than 0.7. As a result, all loadings kept in the model were above the cut-off value (0.60) after eliminating all the problematic elements. The recommended values for AVE and CR were  $>0.50$  and  $>0.70$ , respectively. Thus, there were no problems with the measurement model's reliability or convergent validity in the current investigation.

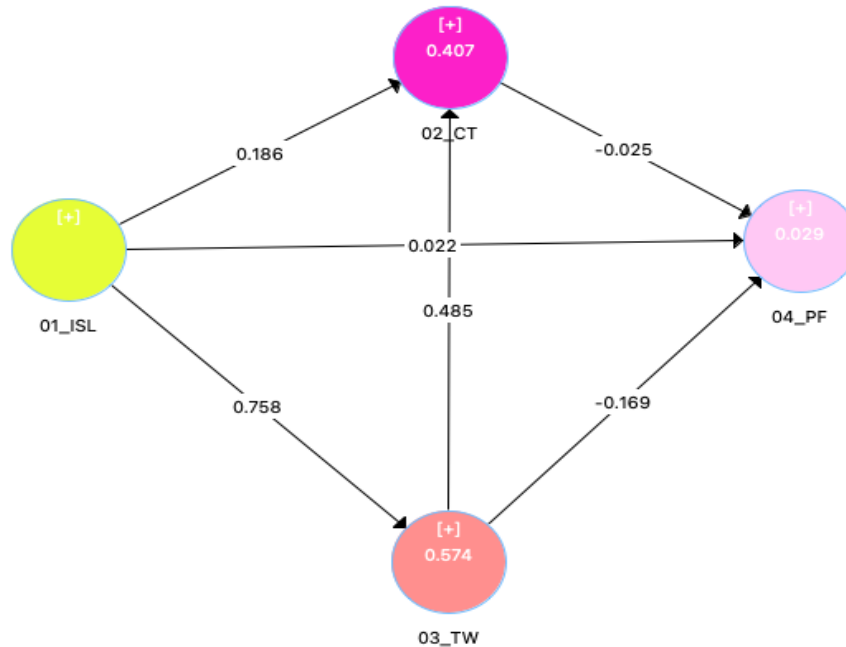


Figure 1: Measurement Model

Table 2: Descriptive Statistics of Variables

Construct	Items	Loading	CR	AVE
Islamic Leadership (ISL)	ISL-01	0.748	0.907	0.709
	ISL-04	0.865		
	ISL-06	0.867		
	ISL-08	0.881		
Teacher Well-Being (TWB)	TW-01	0.883	0.906	0.707
	TW-03	0.903		
	TW-07	0.805		
Teacher Commitment (CT)	CT-01	0.840	0.899	0.748
	CT-02	0.811		
	CT-03	0.831		
	CT-04	0.878		
Performance (PF)	PF-01	0.765	0.910	0.772
	PF-02	0.928		
	PF-03	0.933		

Furthermore, the AVE was checked to determine the divergent validity, a prerequisite for evaluating the measurement model (Hair Jr. et al., 2020). For divergent validity to be

established, the extracted average variance must be higher than the squared correlations. The square root of the AVE was compared with the correlations as an additional method of evaluating the measurement model's discriminant validity (See Table 3). Therefore, given that the requirements were satisfied, the discriminant validity of the current model was guaranteed. The results demonstrated a legitimate and trustworthy measurement model, enabling the researchers to proceed with PLS-SEM's second phase, which involves verifying the proposed model.

Table 3: Discriminant Validity

		ISL	CT	TW	PF
Fornell-Larcker Criterion	ISL	<b>0.842</b>			
	CT	0.554	<b>0.841</b>		
	TW	0.758	0.626	<b>0.865</b>	
	PF	-0.120	-0.119	-0.168	<b>0.879</b>
Heterotrait-Monotrait Ratio (HTMT)	ISL				
	CT	0.626			
	TW	0.879	0.729		
	PF	0.141	0.118	0.181	

Note: The square values for the AVE of each variable are shown in bold.

### **Structural Model**

Examining the structural hypothesized or inner model was the next stage in performing the variance-based SEM analysis. Before analyzing structural links, assess collinearity using the variance inflation factor (VIF) to guarantee objective regression results. Less than three should be the VIF value (Hair Jr et al., 2020). This investigation had no collinearity issue because the VIF value was below the designated level (1.000–2.750) (See Table 4). In addition, the structural model's evaluation criteria comprise effect size ( $f^2$ ) and the coefficient of determination ( $R^2$ ).  $f^2$  is categorized as significant when it exceeds 0.35, medium when it surpasses 0.15, and small when it is less than 0.03 (See Table 5). This allowed one to look at the links suspected by the investigation. Therefore, the researchers proceed to the following phase, employing Smart-PLS version 3 to explore the hypotheses after justifying the psychometric qualities regarding the model's construct reliability and validity. Following Hair and colleagues' (2020) recommendation, a bootstrapping technique with a resample of 10,000 was applied.

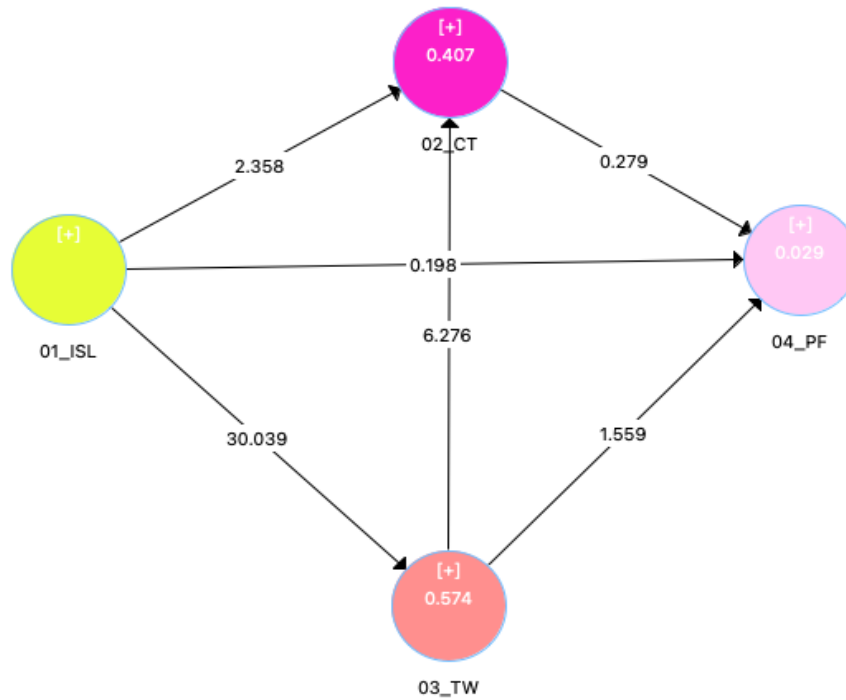


Figure 2: The Structural Model

### Hypothesis Testing

The structural model assessment yields the hypothesis test findings, as Table 4 illustrates. First off, both H1 and H2 were statistically significant ( $p < 0.05$ ) in terms of the variables that directly affect teachers' commitment. H1 is the relationship between Islamic leadership and teachers' commitment ( $\beta = 0.186$ ,  $t = 2.358$ ,  $p < 0.05$ ), while H2 is the intercourse between Islamic leadership and teachers' well-being ( $\beta = 0.758$ ,  $t = 30.039$ ,  $p < 0.05$ ). Islamic leadership positively and insignificantly influences performance ( $\beta = 0.022$ ,  $t = 0.198$ ,  $p > 0.05$ ). Second, all two hypotheses, H4 and H6, were rejected concerning the factors that positively and insignificantly influence performance. H4 is the relationship between teachers' commitment and performance ( $\beta = -0.025$ ,  $t = 0.279$ ,  $p > 0.05$ ), and H6 is the relationship between teacher well-being and performance ( $\beta = -0.169$ ,  $t = 1.559$ ,  $p > 0.05$ ). Third, teacher well-being positively and significantly influences teachers' commitment ( $\beta = 0.485$ ,  $t = 6.276$ ,  $p < 0.05$ ). Thus, H5 was statistically significant. H7 is supported for teacher well-being mediated positively and significantly impacts on Islamic leadership and commitment ( $\beta = 0.368$ ,  $t = 5.790$ ,  $p < 0.05$ ).

Table 4: Hypothesis Result

Hypothesis	Beta ( $\beta$ )	T-value	VIF	P-value	Decision
H1 ISL -> CT	0.186	2.358	2.347	0.018	Yes
H2 ISL -> TW	0.758	30.039	1.000	0.000	Yes
H3 ISL -> PF	0.022	0.198	2.405	0.843	No
H4 CT -> PF	-0.025	0.279	1.686	0.780	No
H5 TW -> CT	0.485	6.276	2.347	0.000	Yes
H6 TW -> PF	-0.169	1.559	2.744	0.119	No
H7 ISL -> TW-> CT	0.368	5.790		0.000	Confirmed

Table 5: Effect's Size ( $f^2$ ) and Coefficient of Determination ( $R^2$ )

	Hypothesis	$f^2$	$R^2$
H1	ISL -> CT	0.031	0.025
H2	ISL -> TW	1.373	1.347
H3	ISL -> PF	0.006	
H4	CT -> PF	0.005	
H5	TW -> CT	0.179	0.169
H6	TW -> PF	0.016	

## IPMA

IPMA was utilized to assess constructs with high significance and performance at an average to low level (Hair Jr. et al., 2020). The significance and performance values for the target constructs of teachers' performance are shown in Table 6. The highest priority for commitment is 0.686, with Islamic leadership coming in second (0.617). In the meantime, both structures perform about average. Because of this, putting Islamic leadership and commitment first is essential for increasing teachers' performance, considering their noteworthy significance despite average performance.

Table 6: IPMA

Teachers' Performance		
Construct	Important	Performance
Islamic Leadership	0.617	72.526
Teacher Well-Being	0.360	77.239
Commitment	0.686	79.213
Performance	-	47.831

## Discussion

The research findings found that Islamic leadership positively correlated with commitment and teacher well-being. Prior studies indicate Islamic ethical principles, commitment (Budur, 2024), instructional leadership (Hallinger et al., 2018), and spiritual leadership are associated with well-being (Binu Raj et al., 2023; Li et al., 2024). Teacher well-being positively mediated Islamic leadership and commitment. Islamic leadership produces an atmosphere where teachers are emotionally and intellectually committed to their jobs and content with their positions (Amaliah et al., 2015; Bibi et al., 2019). Dedicated teachers are more likely to find fulfillment in their work, positively affecting their well-being and mental health. On the other hand, teachers in good health are more likely to remain dedicated to their jobs, perform better, and favorably impact the school's performance. IPMA analysis indicates that Islamic leadership and commitment enhance the performance of teachers.

## Conclusion

Islamic leadership significantly improves the commitment and well-being of teachers. Such leadership strongly emphasizes justice, compassion, and respect for one another by creating a morally sound environment based on Islamic principles. Teachers' commitment to their jobs and obligations is strengthened by this method, which also improves their moral and spiritual well-being. Islamic leadership, teacher well-being, and commitment may not always result in quantifiable gains in teacher performance, but it successfully creates an ethical and encouraging work atmosphere. Other elements, including resources, instructional techniques,



and organizational objectives, may significantly impact performance outcomes. The state of well-being among teachers has a significant effect on commitment. Teachers in a state of well-being are defined as having a good work-life balance, emotional support, and job satisfaction to be dedicated to their jobs. A strong sense of connection to the school is fostered by a positive state of well-being, which increases teachers' commitment and loyalty. This link emphasizes prioritizing teacher well-being to boost commitment, resulting in a more reliable and driven teaching profession.

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## References

- Abdel-Monem, T., Sateemae, M., Sateemae, S., Tayongmat, S., Hoffman, S. J., & DeKraai, M. (2020). Perceptions of Human Security among Islamic School Students, Parents and Teachers in Southern Thailand's Subnational Conflict Zone. *Civil Wars*, 22(2-3), 379-421.
- Abdulaziz, A., Bashir, M., & Alfalih, A. A. (2022). The impact of work-life balance and work overload on teacher's organizational commitment: do Job Engagement and Perceived Organizational support matter. *Education and Information Technologies*, 27(7), 9641-9663.
- Al-Maamari, Q. A., Alkadash, T., Al-Absy, M. S., Nagi, M., & Abdullah, M. A. (2021). The mediation impact of organizational commitment on the total quality management practices and individual readiness for tqm implementation within yemeni oil units. *International Journal for Quality Research*, 15(2).
- Amaliah, I., Aspiranti, T., & Purnamasari, P. (2015). The impact of the values of Islamic religiosity to Islamic job satisfaction in Tasikmalaya West Java, Indonesia, Industrial Centre. *Procedia-Social and Behavioral Sciences*, 211, 984-991.
- Benevene, P., De Stasio, S., & Fiorilli, C. (2020). Well-being of school teachers in their work environment. In (Vol. 11, pp. 1239): Frontiers Media SA.
- Bibi, A., Khalid, M. A., & Hussain, A. (2019). Perceived organizational support and organizational commitment among special education teachers in Pakistan. *International Journal of Educational Management*, 33(5), 848-859.
- Binu Raj, A., Ambreesh, P., Tripathi, N. N., & Ambreesh Kumar, A. (2023). Workplace spirituality and job satisfaction among teachers: influence of well-being and spiritual leadership. *International Journal of Educational Management*, 37(6/7), 1303-1322.
- Brooks, M. C., Brooks, J. S., Mutohar, A., & Taufiq, I. (2020). Principals as socio-religious curators: progressive and conservative approaches in Islamic schools. *Journal of Educational Administration*, 58(6), 677-695.
- Budur, T. (2024). Virtue-based leadership and organizational commitment: a study from Al-Ghazali's perspective. *International Journal of Ethics and Systems*.
- Carroll, A., York, A., Fynes-Clinton, S., Sanders-O'Connor, E., Flynn, L., Bower, J. M., Forrest, K., & Ziaei, M. (2021). The downstream effects of teacher well-being programs: improvements in teachers' stress, cognition and well-being benefit their students. *Frontiers in Psychology*, 12, 689628.
- Chaudhary, A., Islam, T., Ali, H. F., & Jamil, S. (2023). Can paternalistic leaders enhance knowledge sharing? The roles of organizational commitment and Islamic work ethics. *Global Knowledge, Memory and Communication*, 72(1/2), 98-118.

- Chen, J., & Chi-Kin Lee, J. (2022). Teacher resilience matters: a buffering and boosting effect between job driving factors and their well-being and job performance. *Teachers and Teaching*, 28(7), 890-907.
- Cuevas, R., Ntoumanis, N., Fernandez-Bustos, J. G., & Bartholomew, K. (2018). Does teacher evaluation based on student performance predict motivation, well-being, and ill-being? *Journal of school psychology*, 68, 154-162.
- Dreer, B. (2024). Teachers' well-being and job satisfaction: the important role of positive emotions in the workplace. *Educational Studies*, 50(1), 61-77.
- Ezzani, M. D., Brooks, M. C., Yang, L., & Bloom, A. (2023). Islamic school leadership and social justice: an international review of the literature. *International Journal of Leadership in Education*, 26(5), 745-777.
- Hair Jr., J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of business research*, 109, 101-110.
- Hallinger, P., Hosseingholizadeh, R., Hashemi, N., & Kouhsari, M. (2018). Do beliefs make a difference? Exploring how principal self-efficacy and instructional leadership impact teacher efficacy and commitment in Iran. *Educational Management Administration & Leadership*, 46(5), 800-819.
- Heidari, M., HoseinPour, M. A., Ardebili, M., & Yoosefee, S. (2022). The association of the spiritual health and psychological well-being of teachers with their organizational commitment. *BMC Psychology*, 10(1), 55.
- Hoogeveen, S., Sarafoglou, A., Aczel, B., Aditya, Y., Alayan, A. J., Allen, P. J., Altay, S., Alzahawi, S., Amir, Y., Anthony, F.-V., Kwame Appiah, O., Atkinson, Q. D., Baimel, A., Balkaya-Ince, M., Balsamo, M., Banker, S., Bartoš, F., Becerra, M., Beffara, B., ... Wagenmakers, E.-J. (2023). A many-analysts approach to the relation between religiosity and well-being. *Religion, Brain & Behavior*, 13(3), 237-283.
- Hosseingholizadeh, R., Amrahi, A., & El-Farr, H. (2023). Instructional leadership, and teacher's collective efficacy, commitment, and professional learning in primary schools: a mediation model. *Professional Development in Education*, 49(3), 518-535.
- Huang, S., Yin, H., & Lv, L. (2019). Job characteristics and teacher well-being: the mediation of teacher self-monitoring and teacher self-efficacy. *Educational psychology*, 39(3), 313-331.
- Karadağ, M., Altınay Aksal, F., Altınay Gazi, Z., & Dağlı, G. (2020). Effect size of spiritual leadership: In the process of school culture and academic success. *Sage Open*, 10(1), 2158244020914638.
- Karim, A., Bakhtiar, A., Sahrodi, J., & Chang, P. H. Spiritual leadership behaviors in religious workplace: the case of pesantren. *International Journal of Leadership in Education*, 1-29.

- Karrasch, A. I. (2017). Antecedents and consequences of organizational commitment. In *Organizational Commitment in the Military* (pp. 225-236). Psychology Press.
- Li, J., Ju, S.-Y., Kong, L.-K., & Zheng, L. (2024). How spiritual leadership boosts elementary and secondary school teacher well-being: the chain mediating roles of grit and job satisfaction. *Current Psychology*, 43(23), 20742-20753.
- Sak, R., Skutil, M., Şahin-Sak, İ. T., Zikl, P., Nas, E., & Herynková, M. (2024). Czech and Turkish Preschool Teachers' Compassion and Psychological Well-being. *Early Childhood Education Journal*, 52(6), 1165-1179.
- Shu, K. (2022). Teachers' commitment and self-efficacy as predictors of work engagement and well-being. *Frontiers in Psychology*, 13, 850204.
- Thien, L. M., & Lee, H. C. (2022). Is 'the more the better'? Investigating linear and nonlinear effects of school culture on teacher well-being and commitment to teaching across school size. *Studies in Educational Evaluation*, 74, 101176.
- Van Waeyenberg, T., Peccei, R., & Decramer, A. (2022). Performance management and teacher performance: the role of affective organizational commitment and exhaustion. *The International Journal of Human Resource Management*, 33(4), 623-646.
- Woods, P. (2021). Strategies, commitment and identity; making and breaking the teacher role. In *Routledge Library Editions: Education Mini-Set N Teachers & Teacher Education Research 13 vols* (pp. Vol218: 273-Vol218: 292). Routledge.
- Zee, M., & Koomen, H. M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational research*, 86(4), 981-1015.

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