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INVESTIGATING THE RELATIONSHIPS BETWEEN PRINCIPAL INSTRUCTIONAL LEADERSHIP AND TEACHERS' AFFECTIVE COMMITMENT THROUGH COLLECTIVE TEACHER EFFICACY IN MALAYSIAN RURAL AND URBAN PRIMARY SCHOOLS

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ABSTRACT

The challenge of achieving equitable educational quality was the motivation behind this study to examine the effects of instructional leadership on collective teacher efficacy, and teachers' affective commitment across rural and urban schools. This study employed a cross-sectional quantitative survey design. Data were collected from 728 primary school teachers in Malaysia, which were analysed using partial least squares structural equation modelling (PLS-SEM). Findings revealed that principal instructional leadership had a significant direct effect on teachers' affective commitment, and a significant but indirect effect through collective teacher efficacy. However, there was no moderating effect of school location on the relationship between principal instructional leadership and teachers' affective commitment. The findings imply a need to develop professional dialogue and collegiality among teachers.

Keywords: **Collective Teacher Efficacy, Instructional Leadership, Teachers' Affective Commitment, School Context**

INTRODUCTION

Within the UNESCO 2030 agenda, school leadership has been identified as a crucial focus for enhancing educational quality in line with Sustainable Development Goal 4 (SDG4) (Ghamrawi, 2023). In this regard, instructional leaders play a significant role in facilitating teaching and learning development (Adams et al., 2019; Li et al., 2023), and school improvement (Liu & Hallinger, 2022). Instructional leadership is primarily characterised as a task-oriented leadership, whereby setting specific goals, coordinating the instructional programmes, and monitoring teaching methods and student achievement are the priorities (Hallinger & Wang, 2015; Shaked, 2021). Developing countries in Southeast Asia, including Malaysia (Adams et al., 2022), and Thailand (Piyaman et al., 2017), have also recognised the importance of the principal's instructional leadership, and integrated it into local educational research, policy, and practice.

However, in these developing societies, there are barriers encountered when school principals, whose role has traditionally been that of 'administrator', are expected to become an 'instructional leader' (Hallinger et al., 2018). Principals often encounter extreme difficulties and challenges in practising instructional leadership while maintaining their personal core beliefs and values amidst heavy workloads, and national expectations (Harris et al., 2017). According to Adams et al. (2022), high-performing primary school principals in Malaysia show strong instructional leadership skills in certain areas but bear the burden of personal responsibility and accountability for their school's performance.

In light of this concern, it is essential to understand the implications of instructional leadership on the school (Adams, 2018; Hallinger & Kulophas, 2020). Scholars have identified that effective instructional leaders have the potential to strengthen collective teacher efficacy at the school level (Hallinger et al., 2018; Harris et al., 2019). This is achieved through an emphasis on articulating inspiring visions of learning for the school, setting attainable goals, and developing positive school climates for student learning (Adams et al., 2022). Subsequently, collective teacher efficacy, in turn, could further enhance teachers' affective commitment by involving them in the decision making (Adams et al., 2022).

Collective teacher efficacy has been extensively examined as a significant mediator in the relationship between instructional leadership and teachers' affective commitment across various educational settings and levels, including primary and secondary schools, as demonstrated in studies conducted in Oman (Al-Mahdy et al., 2018), Iran (Hallinger & Hosseingholizadeh, 2019), and Malaysia (Thien et al., 2021a, 2021b; Thien et al., 2023). Nevertheless, there is a notable research gap in the comprehensive exploration of this research area, particularly in the context of rural and urban schools in a developing country like Malaysia.

In Malaysia, there are challenges in achieving equitable student outcomes across different school locations (Thien, 2016). Unlike urban schools, some rural schools in the region are in remote areas, accessible only through limited means of transportation, such as the river transport system. According to the Malaysian Education Blueprint 2013-2025 (Ministry of Education, 2013), on average, states with a higher number of rural schools tend to achieve lower academic performance compared to states with a higher number of urban schools. This educational quality gap in rural areas in developing countries have compelled researchers to investigate the impact of school location (Piyaman et al., 2017). While the financial and physical resources available to rural and urban schools have been identified as the common key factors in explaining this difference in student achievement (Kantabutra & Tang, 2006), it can also be argued that principal leadership may actually better explain this phenomenon (Piyaman et al., 2017).

This assertion thus motivated the current study's investigation into the relationships among principal instructional leadership, collective teacher efficacy, and teachers' affective commitment in rural and urban primary schools in Malaysia. It invaluably contributes a broader range of empirical findings to the literature. These findings serve to enhance our understanding of educational leadership within the context of rural and urban schools within a

developing society that practises a centralised education system like Malaysia. This, in turn, adds to the development of new theoretical insights in the field.

LITERATURE REVIEW

Principal Instructional Leadership

Principal instructional leadership (PIL) lies at the core of the conceptual model for this study. PIL was first conceptualised by Hallinger and Murphy (1985) in the USA. It encompasses three dimensions: defining the school mission, managing the instructional programme, and developing a positive school learning climate (Hallinger & Murphy, 1985; Hallinger & Wang, 2015). Defining the school mission denotes the principal's duty to articulate and communicate the school's direction for learning, in addition to "building support for enacting the mission in the life of the school" (Hallinger et al., 2018, p. 5). Managing the instructional programme refers to the principal's leadership practices that develop, direct, and supervise the quality of the teaching and learning. Developing a positive school learning climate describes the principal's role in creating an environment that motivates teachers, and reinforces support for both students and teachers, hence enhancing teaching and learning. Notably, over 500 studies have utilised this PIL framework, and its associated instrument, the Principal Instructional Management Rating Scale (PIMRS) (Hallinger & Wang, 2015).

Principal Instructional Leadership and Teachers' Affective Commitment

Organisational commitment can be defined as a person's affective engagement with the values, aspirations, and activities of an organisation (Hallinger & Lu, 2014). A large body of research has examined the relationship between principal leadership and teacher commitment, and has concluded that the leadership can yield positive effects on teachers' organisational commitment (Cansoy et al., 2020; Hallinger et al., 2018; Hallinger & Lu, 2014).

Organisational commitment is conceptualised as an attitude characterised by a strong psychological connection or affinity with a specific organisation (Bogler & Berkovich, 2022). This connection can be influenced by internal factors, such as identification, or external pressures, such as that to conform to the norm. Organisational commitment manifests in actions aligned with the goals and interests of the organisation.

Meyer and Allen (1991) proposed a three-dimensional view of organisational commitment. The first is (1) affective commitment, involving an emotional bond with the organisation. It encompasses identification with the organisation, active involvement in its activities, and deriving satisfaction from being a member of the organisation. The other two are (2) normative commitment, pertaining to the sense of obligation stemming from perceived normative pressures on employees to conform to the organisation's goals, and to remain with the organisation, and (3) continuance commitment, which is rooted in an awareness of the costs and consequences associated with leaving the organisation. The literature supports the fact that, in an organisational context, affective commitment has a stronger impact on the success of change when compared to the other two dimensions (Cunningham, 2006). This is the rationale behind the current study's restriction to examining only teachers' affective commitment and excluding the other two.

As highlighted by Arar et al. (2022), one of the most extensively researched relationships in the realm of instructional leadership is teacher commitment, based on a meta-narrative review of 109 quantitative studies spanning 25 years, conducted by Boyce and Bowers (2018). School principals that show appreciation to teachers, focus on their professional development, and foster cooperation among teachers have a positive impact on teacher commitment (Cansoy et al., 2020; Hallinger & Wang, 2015). Furthermore, a recent study by Zhan et al. (2023) in the Central and Western regions of China provides evidence that principals' instructional leadership has a significantly positive effect on teachers' affective commitment (β = 0.323, p < .001).

In addition, empirical studies have indicated a relationship between collective teacher efficacy and teacher commitment (Cansoy et al., 2020; Hosseingholizadeh et al., 2020; Thien et al., 2021b). Therefore, a positive

relationship is expected to exist among principal instructional leadership, collective teacher efficacy, and teachers' affective commitment. However, whether this relationship is applicable to both the rural and urban school settings is still unknown. Hence, the following hypotheses were proposed:

H1: There is a positive effect of principal instructional leadership on teachers' affective commitment.
H2: There is a positive effect of principal instructional leadership on collective teacher efficacy.
H3: There is a positive effect of collective teacher efficacy on teachers' affective commitment.
H4: School location (rural versus urban schools) moderates the relationship between principal instructional leadership and teachers' affective commitment.
H5: School location (rural versus urban schools) moderates the relationship between principal instructional leadership and collective teacher efficacy.
H6: School location (rural versus urban schools) moderates the relationship between collective teacher efficacy and teachers' affective commitment.

Instructional Leadership, Collective Teacher Efficacy, and Teachers' Affective Commitment

Self-efficacy is described as the outcome of a cognitive process in which individuals construct beliefs about their abilities to perform at a certain level of competency (Bandura, 1986). In an education setting, teachers with high self-efficacy tend to set challenging goals for themselves whereas teachers with low self-efficacy are more likely to dwell on their shortcomings (Tschannen-Moran & Hoy, 1998). On the other hand, collective teacher efficacy (CTE) refers to the teachers' belief in their abilities to positively impact student learning, and school improvement (Tschannen-Moran & Barr, 2004).

This study aimed to examine the mediating role of collective teacher efficacy in the relationship between principal instructional leadership and teachers' affective commitment. This is because school principals' behaviours affect both the interactions among teachers, and teacher commitment (Cansoy et al., 2020; Liu & Hallinger, 2018). While there are existing empirical studies in educational leadership and management on principal instructional leadership, collective teacher efficacy, and teacher commitment (Hallinger et al., 2018), there has been increasing evidence that teachers' affective commitment can be enhanced if principals demonstrate positive efficacy beliefs, and achievement-directed behaviours (Hoy, 2008; Adams et al., 2022). However, the direct and indirect relationships between these variables, especially in the context of rural and urban schools, remain unclear. Thus, this study also attempted to investigate the following hypothesis:

H7: There is a significant indirect effect of instructional leadership on teachers' affective commitment through collective teacher efficacy.

Conceptual Model

The conceptual model for this study is put forward in Figure 1, which illustrates the hypothesised direct and indirect relationships between principal instructional leadership, collective teacher efficacy, and teachers' affective commitment, based on the theoretical foundation and literature discussed above.

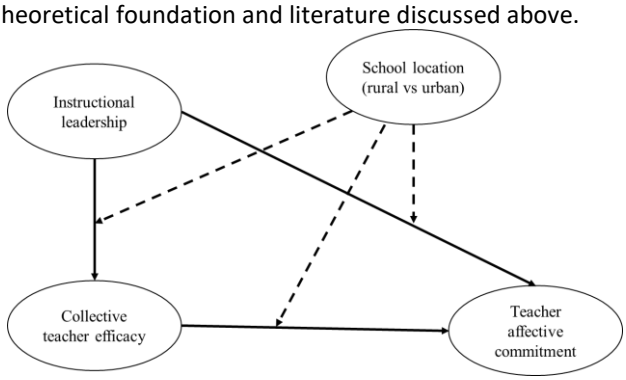

Figure 1. Conceptual Model

METHODOLOGY

Participants

This study utilised a cross-sectional quantitative survey research design and employed online survey data collection (*Google Form*) during the COVID-19 pandemic. The target population for this study was primary school teachers in Penang, Perak, and Sarawak. However, the study did not include a principal sample as most of the selected school principals declined to participate due to their busy schedules in managing their schools during the pandemic. Instead, they offered their schoolteachers as potential participants. Despite this limitation, the teachers' perceptions of their respective principal's leadership might actually offer a more reliable and valid measurement compared to self-rating (Hallinger & Kulophas, 2020; Adams et al., 2022). In fact, the principals are likely to rate their own leadership practices more favourably compared to the actual practices (Bellibas & Gümüs, 2021).

This study used a stratified sampling procedure. The primary schools from each selected state were categorised into urban and rural schools. According to Table 1, the majority of the teacher participants were female (83.0%) while the remaining were male (17.0%). This gender ratio corresponds to data from the Malaysian Educational Statistics Quick Fact 2018, which reported that female teachers comprised more than 70% of the total number of primary and secondary school teachers (Ministry of Education, 2022). About 53% of the teachers worked in urban schools whereas 47% of them worked in rural schools. The majority of primary school teachers were from Sarawak (68.1%), followed by Penang (19.6%), and Perak (12.3%). About 25% of the teachers had a teaching experience of 10 years or less in their current schools, while about 42% had between 11 to 20 years, and the remaining 33% had over 21 years of experience.

Table 1. Demographic Background

Demographic	Frequency	Percentage(%)
Gender		
Male	124	17.0
Female	604	83.0
State		
Penang	143	19.6
Perak	89	12.3
Sarawak	496	68.1
Location		
Rural	345	47.4
Urban	383	52.6
Years of Teaching (Current School)		
5 years and below	48	6.6
6-10 years	135	18.5
11-15 years	170	23.4
16-20 years	133	18.3
21 years and above	242	33.2

Instrumentation

In this study, two experts in the field of educational leadership and management were consulted to assess the appropriateness of the original scales used to measure principal instructional leadership, collective teacher efficacy, and teachers' affective commitment. Consequently, three of the original items were modified. For example, the item 'Inform teachers of the school's performance results in written form (e.g., in a memo or newsletter)' from the Principal Instructional Management Rating Scale (PIMRS) was revised to 'Inform teachers of the school's

performance results in a *panitia* meeting', whereby *panitia* refers to the panel of teachers teaching a particular subject, making it better suited to the Malaysian school context. No items from the original scale were excluded during this phase.

Subsequently, both forward and backward translation methods (Brislin, 1970) were employed to translate the items. The original items in English were first translated into the Malay language by the two authors. Following this, the Malay version underwent a thorough review by two experts who were university lecturers specialising in educational management and leadership and were proficient in both Malay and English. The items were then refined and enhanced based on the valuable feedback and suggestions provided by these experts. Following this initial review, a backward translation process was initiated, using the same procedure. The purpose of this backward translation was to ensure that the items consistently retained their original conceptual meaning from the English language version.

The short form of the PIMRS teacher version (Hallinger & Wang, 2015) was used in this study to measure the three instructional leadership dimensions: (a) defining a school mission (5 items), (b) managing the instructional programme (7 items), and (c) developing a positive school learning climate (10 items). The PIMRS used a five-point Likert scale to assess the frequency of instructional leadership behaviours performed by the principals.

This study used Leithwood and Jantzi's (2008) 9-item collective teacher efficacy scale to measure collective teacher efficacy. The scale utilised a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). A sample item included was 'Most of our students come to school ready to learn'. On the other hand, teacher affective commitment was measured with a 6-item scale (Meyer & Allen, 2004) that used five Likert response categories ranging from 1 (not at all) to 5 (very extensive). Prior to administering the survey, the researchers of this study secured the necessary permissions from the original authors of these scales in order to utilise them.

This study confirmed the model fit for each of these scales in the Malaysian primary school context using the Mplus 7.0 software (Muthen & Muthen, 2017). Both the Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) for instructional leadership, collective teacher efficacy, and teachers' affective commitment were above the threshold values of 0.90 (Hu & Bentler, 1999). The chi-square tests for all the three variables were significant at p <.001, which was expected due to their sensitivity to sample size (Hu & Bentler, 1999). However, the norm chi-square index was between 1 and 10 for the three variables. The Root Mean Square Error of Approximation (RMSEA) value was below the threshold of 0.10 (Browne & Cudeck, 1993) for instructional leadership and collective teacher efficacy. However, this was not the case for teachers' affective commitment. Kenny, Kaniskan, and McCoach (2014) contended that employing a threshold of 0.10 for the point estimate of RMSEA (Browne & Cudeck, 1993) may lack meaningful significance, particularly when the model had limited degrees of freedom (*df*), as was the case with the teachers' affective commitment variable in this study.

Data Collection Procedure

Prior to survey administration, this study secured human ethics approval from the university (USM/JEPeM/20020077), and educational authority at the ministry level [KPM.600-3/2/3-eras(10487)] to conduct the online survey. There were two reasons for using an online survey. First, the data were collected from August to November 2021 during the COVID-19 pandemic, making the online questionnaire a more practical alternative. Second, the online survey allowed the researchers to collect a larger volume of data within a shorter timeframe compared to a hard copy version (Follmer et al., 2017). The URL link to the *Google Form* survey was sent to the respondents via various social media applications, including *WhatsApp*, *Telegram*, and the *Teacher Education Facebook Group,* with the consent of the respective school leaders. Participation in the online survey was strictly anonymous and confidential.

Data Analysis Procedure

As principal instructional leadership, and collective teacher efficacy are school-level variables whereas teachers'

affective commitment is a teacher-level variable, it was necessary to first determine whether multilevel analysis was appropriate for the current research data by examining the intraclass correlation coefficients (ICCs). ICCs indicate the proportion of variance in teacher commitment that is present between teachers [ICC(1)] and between schools [ICC(2)]. This study referred to Cohen (1988), whereby a multilevel approach is considered suitable if the ICC(1) and ICC(2) are higher than 0.05 and 0.70 respectively. In this study, although ICC(1) was 0.901, which was above the required threshold, ICC(2) was far below at 0.094. Hence, the researchers decided to proceed with single-level analysis using partial least squares structural equation modelling (PLS-SEM) with SmartPLS 4.0 software (Ringle et al., 2022).

This study employed PLS-SEM approach for analysis due to its advantages in simultaneously assessing first-order and second-order constructs in both the measurement and structural models (Hair et al., 2019). In this study, instructional leadership consisted of three first-order constructs: (a) defining a school mission, (b) managing the instructional programme, and (c) developing a positive school learning climate. On the other hand, instructional leadership, collective teacher efficacy, and teachers' affective commitment were the second-order constructs.

The analysis followed the two-step approach for model testing suggested by Anderson and Gerbing (1988). The analysis began with an assessment of the measurement model, followed by the structural model (Hair et al., 2019). The purpose of assessing the measurement model was to establish convergent and discriminant validity, which was done by first assessing the first-order constructs, followed by the second-order constructs. Next, the structural model for hypotheses testing was assessed using 10,000 bootstrap resampling. Subsequently, product indicator approach (Chin et al., 2003) was used to analyse the moderating effect of school location on the relationships between principal instructional leadership, collective teacher efficacy, and teachers' affective commitment.

RESULTS

Common Method Variance

To reduce the threat of the potential issue of common method variance (Podsakoff & Organ, 1986), Harman's single-factor test was employed. The analysis showed that the first factor accounted for only 24.43% of the variance in the sample, less than half of the total variance. Hence, common method bias was not an issue in this study. Additionally, the variance inflation factors (VIF) were all below 3, indicating the absence of multicollinearity in the data.

Assessment of Measurement Model (First-Order Constructs)

Table 2 shows that, for the overall as well as rural and urban datasets, the loading values for all first-order constructs were above the threshold of 0.70 (Hair et a1., 2019). Similarly, the composite reliability (CR) and average variance extracted (AVE) values in the datasets exceeded the thresholds of 0.80 and 0.50 respectively for all the first-order constructs. Hence, convergent validity for the first-order constructs was established. In Table 3, the heterotrait-monotrait ratio (HTMT) values are shown to be below 0.10. Based on complete bootstrapping, the 90% bootstrap confidence interval of HTMT did not contain the value of one (Franke & Sarstedt, 2019). These findings confirmed the discriminant validity of the first-order constructs.

Item	Overall (N=728)				Rural (*n*=345)				Urban (*n*=383)			
	Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE
DE		0.960	0.960	0.863		0.960	0.960	0.863		0.957	0.957	0.853
DE1	0.928				0.921				0.932			
DE2	0.916				0.921				0.911			
DE3	0.943				0.937				0.949			
DE4	0.923				0.904				0.938			
DE5	0.935				0.934				0.934			

Item	Overall (N=728)				Rural (*n*=345)				Urban (*n*=383)			
	Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE
MA		0.873	0.875	0.798		0.873	0.875	0.798		0.863	0.866	0.785
MA2	0.876				0.864				0.883			
MA4	0.907				0.904				0.911			
MA7	0.896				0.890				0.898			
PC		0.941	0.941	0.772		0.941	0.941	0.772		0.957	0.957	0.853
PC2	0.869				0.856				0.873			
PC3	0.887				0.877				0.894			
PC4	0.896				0.885				0.898			
PC5	0.901				0.879				0.913			
PC9	0.843				0.837				0.842			
PC10	0.874				0.861				0.876			
CTE		0.861	0.863	0.705		0.861	0.863	0.705		0.847	0.849	0.686
CTE1	0.844				0.829				0.855			
CTE2	0.833				0.830				0.835			
CTE3	0.855				0.845				0.861			
CTE4	0.826				0.809				0.837			
TCOM		0.948	0.950	0.794		0.948	0.950	0.794		0.941	0.944	0.772
TCOM1	0.884				0.892				0.875			
TCOM2	0.915				0.904				0.922			
TCOM3	0.867				0.843				0.882			
TCOM4	0.892				0.872				0.903			
TCOM5	0.879				0.858				0.896			
TCOM6	0.907				0.900				0.910			

Note. DE=defining a school mission, MA=managing the instructional programme, PC=developing a positive school learning climate, CTE=collective teacher efficacy, TCOM=teachers' affective commitment, CR=composite reliability, AVE=average variance extracted.

Table 3. $HTMT_{.90}$ (First-Order Constructs)

Overall	CTE	DE	MA	PC	TCOM
CTE					
DE	0.647				
MA	0.677	0.943			
PC	0.652	0.909	0.970		
TCOM	0.746	0.732	0.768	0.762	
Rural	CTE	DE	MA	PC	TCOM
CTE					
DE	0.624				
MA	0.649	0.936			
PC	0.628	0.909	0.970		
TCOM	0.716	0.669	0.724	0.712	

Urban	CTE	DE	MA	PC	TCOM
CTE					
DE	0.659				
MA	0.691	0.946			
PC	0.661	0.909	0.968		
TCOM	0.762	0.775	0.793	0.789	

Assessment of Measurement Model (Second-Order Constructs)

For the assessment of measurement model of second-order constructs, Table 4 shows that all the loadings of first-order constructs are above the threshold of 0.70. The AVE and CR values for all datasets were above the thresholds of 0.50 and 0.80 respectively. Likewise, Table 5 shows the HTMT values for the overall, and rural and urban school datasets, which satisfied the minimum of 0.10 based on complete bootstrapping with 5,000 resampling (Franke & Sarstedt, 2019). Furthermore, the lower and upper bounds of the confidence interval of the HTMT ratio did not contain the value of one. These findings indicated the establishment of convergent and discriminant validity of the second-order constructs for the three datasets.

Table 4. Assessment of Measurement Model (Second-Order Constructs)

2nd order	1st Order	Overall				Rural				Urban			
		Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE	Loading	Alpha	CR	AVE
IL			0.956	0.957	0.919		0.954	0.955	0.915		0.957	0.957	0.921
	DE	0.957				0.951				0.957			
	MA	0.971				0.968				0.971			
	PC	0.951				0.951				0.951			

Note. IL=instructional leadership, DE=defining a school mission, MA=managing the instructional programme, PC=developing a positive school learning climate, CR=composite reliability, AVE=average variance extracted.

Table 5. $HTMT_{.90}$ (Second-Order Constructs)

Overall	CTE	IL	TCOM
CTE			
IL	0.681		
TCOM	0.746	0.78	
Rural	CTE	IL	TCOM
CTE			
IL	0.658		
TCOM	0.716	0.728	
Urban	CTE	IL	TCOM
CTE			
IL	0.69		
TCOM	0.762	0.812	

Hypothesis Testing

In Table 6, principal instructional leadership was found to have significant direct effects on both teachers' affective commitment (β = 0.473, p < .001) and collective teacher efficacy (β = 0.590, p < .001) at a significance level of 0.05, thus supporting H1 and H2. Similarly, there was a significant direct effect of collective teacher efficacy on teachers' affective commitment (β = 0.353, p < .001). Hence, H3 was supported. Furthermore, the effects of instructional leadership on collective teacher efficacy and teachers' affective commitment were considered moderate, with effect sizes of 0.243 and 0.171 respectively. However, with an effect size of only 0.094, the effect of collective teacher efficacy on teachers' affective commitment was considered small.

In contrast, there was no significant moderating effect of school location on the relationships between instructional leadership and collective teacher efficacy (β = 0.050, p = .439), instructional leadership and teachers' affective commitment (β = 0.096, p = .274), and collective teacher efficacy and teachers' affective commitment (β = -0.011, p = .894). As a result, H4, H5, and H6 were not supported. On the other hand, collective teacher efficacy had a significant but moderate mediating effect on the relationship between instructional leadership and teachers' affective commitment (β = 0.208, p < .001, effect size = 0.208), thus supporting H7.

Table 6. Hypothesis Testing

Hypothesis	β	SE	t-values	p-values	PCI LL	PCI UL	f^2	Supported
H1: IL→ TCOM	0.473	0.069	6.899	<.001	0.338	0.607	0.171	Yes
H2: IL → CTE	0.590	0.048	12.426	<.001	0.489	0.676	0.243	Yes
H3: CTE→ TCOM	0.353	0.056	6.315	<.001	0.245	0.464	0.094	Yes
H4: IL*Location → CTE	0.050	0.064	0.775	0.439	0.001	-0.071	0.001	No
H5: IL*Location → TCOM	0.096	0.088	1.093	0.274	-0.001	-0.074	0.004	No
H6: CTE*Location→ TCOM	-0.011	0.071	0.159	0.874	0.002	-0.154	0.001	No
H7: IL → CTE→ TCOM	0.208	0.034	6.17	<.001	0.143	0.276	0.208	Yes

Note. PCI LL=percentile confidence interval lower limit, PCI UL=percentile confidence interval upper limit, f^2=effect size, IL=instructional leadership, TCOM=teachers' affective commitment, CTE=collective teacher efficacy.

The study found that instructional leadership and collective teacher efficacy contributed about 63% of the variance in teachers' affective commitment while instructional leadership contributed about 38% of the variance in collective teacher efficacy. This is shown in Figure 2 below.

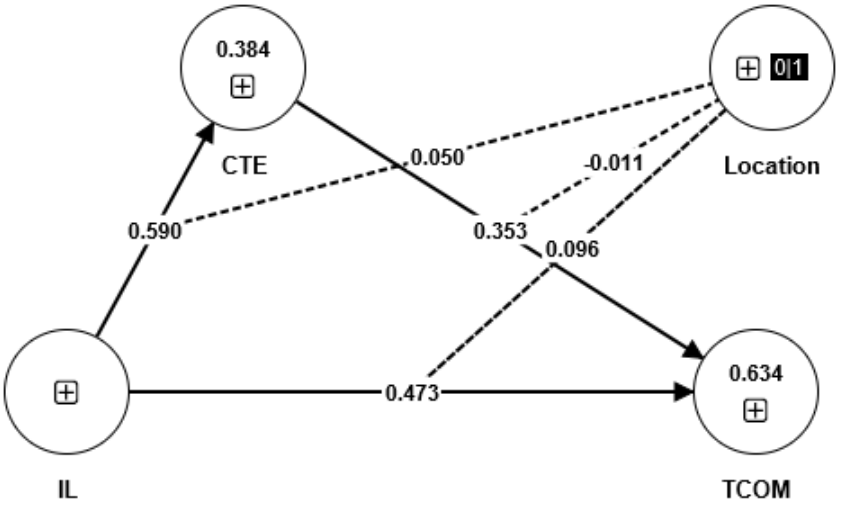

Figure 2. Structural Model

DISCUSSION

This study aimed to investigate the relationships among principal instructional leadership, collective teacher efficacy, and teachers' affective commitment across Malaysian urban and rural primary schools. While the findings were consistent with recent research (Hallinger & Liu, 2016; Hallinger & Lu, 2014; Piyaman et al., 2017; Adams et al., 2022), this study specifically focused on the school-level factors, particularly in the urban and rural school contexts, which represent an underexplored domain (Fred & Bishen Singh, 2021; Piyaman et al., 2017). This approach is a response to the call for empirical investigations in educational leadership and management on the role of 'context' in the enactment of leadership for sustainable school improvement (Hallinger & Liu, 2016).

First, this study's findings indicate that the principal's instructional leadership has a direct effect on teachers' affective commitment. This is consistent with past studies, which have shown that instructional leaders who direct and focus on teaching and learning stimulate a positive learning climate in schools. This, in turn, fosters the teachers' commitment to their schools (Cansoy et al., 2020; Hallinger et al., 2018; Hallinger & Lu, 2014; Thien et al., 2021b). Second, the findings also confirm that principal instructional leadership has a significant effect on collective teacher efficacy, which is consistent with previous empirical studies that have shown positive correlations between the two (Cansoy et al., 2020; Hallinger et al., 2018). This is expected as instructional leaders convey the inspiring visions for learning in the school, set realistic goals, and develop a positive climate for student learning in schools by promoting collaboration among the teachers, thus improving collective teacher efficacy (Tschannen-Moran & Barr, 2004).

Additionally, the current findings show evidence of a positive and significant relationship between collective teacher efficacy and teachers' affective commitment. These findings have further extended previous empirical studies, which have indicated that teachers who are collectively high in efficacy are committed to improving both their own teaching, and student learning (Cansoy et al., 2020; Hosseingholizadeh et al., 2020; Thien et al., 2021b). Furthermore, collective teacher efficacy has been proven to enhance teachers' affective commitment through the teachers' participation in decision-making processes (Thien et al., 2021b).

However, when the data were divided into samples of urban and rural teachers, this study revealed no moderating effect of school context on the relationships among principal instructional leadership, collective teacher efficacy, and teachers' affective commitment. The results indicate that the processes through which instructional leaders positively affect teachers' affective commitment are quite similar in both urban and rural schools. These results offer further evidence that the 'educational quality gap' between urban and rural schools in Malaysia is unlikely to diminish over time, as lower academic achievement is often associated with rural schools (Piyaman et al., 2017). These present study results contribute to existing international research by uncovering how principal instructional leadership interacts to shape collective teacher efficacy and teachers' affective commitment (Hallinger et al., 2018; Walker & Slear, 2011) in both rural and urban schools.

This study has also revealed the presence of an indirect relationship between principal instructional leadership and the teachers' affective commitment, with collective teacher efficacy being a significant mediator between instructional leadership and teachers' affective commitment. These results reprise earlier findings, which have consistently supported collective teacher efficacy as a significant mediator between principal instructional leadership and teachers' affective commitment (Cansoy et al., 2020; Liu & Hallinger, 2018; Hallinger et al., 2018; Thien et al., 2021b). Collective teacher efficacy fosters the sharing of experiences, the discovery of solutions to problems, improved instructional quality, increased teachers' affective commitment, and enhanced student learning (Cansoy et al., 2020; Fancera & Bliss, 2011).

CONCLUSION

This study has contributed to the literature by examining the relationships among principal instructional leadership, collective teacher efficacy, and teachers' affective commitment across Malaysian urban and rural primary schools. It has theoretical implications, proposing a conceptual model in predicting teachers' affective commitment from the perspective of principal instructional leadership and collective teacher efficacy, in the context of rural and urban schools in a developing society. This finding can be validated with further research to determine its applicability to different research contexts (Hallinger & Liu, 2016).

Moreover, the current findings hold important implications for policymaking in terms of future principal preparation programmes. Principal preparation programmes should emphasise the integration of the principals' instructional leadership into the school's daily management routines as it can enhance teachers' affective commitment. In addition, both practising and aspiring principals should be equipped to develop the professional dialogue and collegiality among their teachers (Hosseingholizadeh et al., 2020; Thien et al., 2021b).

The findings also offer practical implications for the roles of both principals and teachers in order to foster teachers' affective commitment within schools. Principals may enhance their instructional leadership practices by formulating practical actions based on the school's academic mission, supporting and inspiring their teachers, and developing the curriculum programmes (Hallinger & Wang, 2015). This could, as a result, boost teachers' self-efficacy, and thus motivate their commitment to both their schools, and their teaching.

Limitations and Future Studies

This study is limited in its scope of investigation since the selected variables are latent variables, without specifying their respective dimensions. Apart from that, it did not take into consideration certain demographic factors, such as gender, and years of teaching experience. To mitigate this, future studies could consider using purposive sampling techniques, for example, to address the unequal number of male and female teachers in the sample, and examine the structural model of principal instructional leadership, collective teacher efficacy, and teachers' affective commitment while considering these demographic factors.

Moreover, due to this study's quantitative cross-sectional nature, its ability to generalise findings to a broader context is limited. Thus, future studies could adopt a longitudinal research design to enhance the generalisability and stability of the findings. More importantly, such studies would provide deeper insights into the dynamic pathways among these three selected variables within the school context.

Overall, this study brings novelty to the field by investigating the relationships among these variables within both the rural and urban school contexts in a Southeast Asian developing country. It is hoped that the current study serves as a foundational empirical study, propelling the academic discourse on principal instructional leadership, teachers' affective commitment, and collective teacher efficacy to a global scale.

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Ethical Approval

This study secured human ethnic approval from the university (USM/JEPeM/20020077) and educational authority at ministry level (KPM.600-3/2/3-eras(10487)) to conduct the online survey.

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