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Learning Engagement as the Primary Catalyst for Transforming Social Support into Rural Teaching Commitment Among Prospective Teachers

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Abstract: This study aims to analyze the prediction of social support role on rural teaching commitment (RTC), with learning engagement as a mediator. The study involved 350 prospective teachers at the undergraduate and professional teacher education (PPG) levels in Indonesia. Data were analyzed using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) approach. The results showed that the majority of respondents had moderate levels of social support, learning engagement, and RTC. Specific findings indicate that emotional support is the most fundamental social support item in forming engagement. The PLS-SEM analysis confirmed the prediction that learning engagement functions as a strong partial mediator. Although social support contributes directly to teaching commitment in remote areas, its influence becomes even more significant when mediated by learning engagement, namely vigor, dedication, and absorption. However, the current RTC component remains dominated by the normative aspect (obligation), indicating a risk of low teacher retention. This study concludes that teacher placement policies cannot rely solely on administrative and normative approaches; they must integrate strengthening the basic capital within prospective teachers with a conducive school and community environment to create a sustainable commitment in rural areas of Indonesia. Furthermore, this study highlights the need for curriculum reform in both undergraduate teacher education and professional teacher education programs. These curricula should be deliberately designed to internalize key dimensions such as social support, learning engagement, and long-term teaching commitment. This can be achieved by integrating structured learning experiences, including community-based teaching practices, reflective activities, mentoring systems, and immersion programs in rural contexts. Such initiatives are expected to not only enhance prospective teachers' adaptive capacities but also strengthen their emotional attachment, sense of purpose, and resilience in undertaking teaching assignments in underserved areas.

Keywords: learning engagement, social support, rural teaching commitment, pre-service teacher, PLS-SEM.

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INTRODUCTION

Equal education is one of the challenges faced by developing countries (Burhan et al., 2025; Hua, 2025). Providing access to education is always linked to infrastructure, facilities, and the availability of professional teachers across all regions. The opportunity to provide equal educational services across regions faces various

challenges, including varying teaching quality (Chinhara & Kuyayama, 2024), minimal teacher training (Rusdiansyah et al., 2025), and low teaching commitment (Wang et al., 2025). Placing teachers in rural/remote/3T (underdeveloped, outermost, and foremost) areas in the Indonesian context presents its own challenges, requiring prospective teachers to be willing to be placed in all regions, even when they are far from the city or their original residence.

Commitment consists of three components, namely affective, continuance, and normative, which together reflect an individual's psychological attachment to an organization or profession. (Meyer & Allen, 2004; Noraazian & Khalip, 2016; Stark et al., 2025). Affective commitment refers to a person's emotional attachment that motivates them to continue participating because they are strongly committed to the profession. Continuation commitment is related to rational considerations of the costs or losses that will be incurred if they leave, so that individuals remain because they see this as necessary. Meanwhile, normative commitment arises from a feeling of moral obligation or responsibility to stay because one feels one should. This three-component model provides a comprehensive framework for understanding how and why someone chooses to remain in an organization or profession, including prospective teachers willing to be placed in various regions to support educational equality.

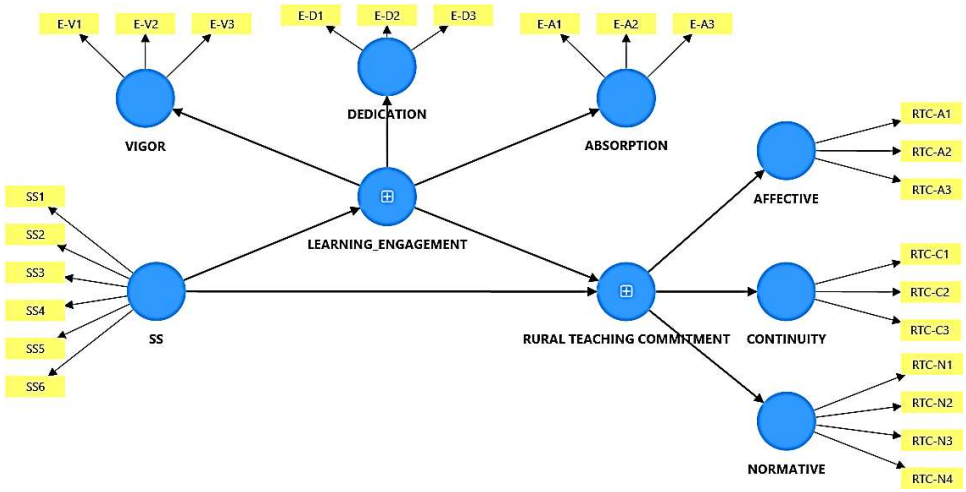

Figure 1. Proposed model

The figure illustrates a structural model linking social support (SS) to learning engagement and rural teaching commitment. Learning engagement is constructed along three main dimensions: vigor, dedication, and absorption, which serve as mediators of commitment to teaching in rural areas. Furthermore, rural teaching commitment is reflected through three components: affective, continuity, and normative.

Data show that the number of teachers nationally is sufficient, at around 3,057,552 (state teachers: 2,212,988; private teachers: 844,564). However, the distribution is uneven. Teachers tend to be concentrated in urban areas or on Java Island (around 44.1% of the national teacher population), while the 3T (underdeveloped, frontier, and outermost) regions, including eastern Indonesia, experience a shortage of teaching staff. For example, Highlands Papua has only around 7,100 teachers, far fewer than the number of students.

The teacher-to-school ratio (R-G/Sek) in the 3T region is significantly higher than the

national average of 18.41. In the outermost regions, for example, R-G/Sek varies from a low of 10.29 in Sangihe Islands Regency to a high of 28.56 in Sabang City. Of the total 20 regencies/cities, only five regions (25%) exceed the national figure, namely Bengkalis, Aceh Besar, Jayapura, Dumai, and Sabang, while the remaining 75% are at or below the national average. Similar conditions are seen in the frontier regions, with a range of 7.69 in Southwest Maluku Regency to 21.70 in Belu Regency. Meanwhile, in underdeveloped regions, the disparity is even more pronounced, with the lowest ratio of 5.78 in Lanny Jaya Regency and the highest of 28.79 in Bima Regency. This variation demonstrates that while the number of teachers is relatively sufficient nationally, their distribution across the 3T (frontier and remote) regions remains far from proportional, affecting the quality of educational services in these areas. Therefore, it is crucial to consider the level of teaching commitment of prospective teachers and the factors that influence

Various factors, both personal and environmental, influence teachers' commitment to teaching in remote areas. Several internal factors that influence the desire and commitment to teaching in remote areas are professional identity, teaching internships, self-efficacy, and pedagogical skills (Anselimus & Lazaro, 2025), spiritual well-being (Wijaya & Wati, 2025), earning engagement, and moral obligation (Doulabi et al., 2025) These factors influence simultaneously, both directly and indirectly.

Several external factors influence a person's commitment to working in remote (rural) areas. Economic factors and traditional societal expectations reduce resilience/commitment, while social networks (social connections) between teachers and the community increase commitment and resilience to continue teaching in rural areas (Doulabi et al., 2025; Miller et al., 2026; Rodríguez et al., 2025). Several other factors, including work environment expectations and government policies, play an important role in building commitment(Graham et al., 2025), organizational fit (Hudson, 2025), social support (Damilola & Cishe, 2025) and leadership (Klar et al., 2025).

Social support is an important factor in increasing commitment (Kokubun et al., 2026; van der Wiel et al., 2018; Zhang et al., 2021) and engagement (Jayaraman et al., 2025; Oh et al., 2025; Zhai, 2025). Social support from coworkers, superiors, mentors, the surrounding environment, and professional communities acts as a psychosocial resource that helps individuals cope with work demands, reduces stress, and strengthens a sense of belonging to the organization and profession. This social support can influence a person's social and emotional behavior at work and in school (Minsih et al., 2025). In the context of the teaching profession, especially among those working in resource-limited areas, the presence of social support can increase psychological resilience, self-confidence in carrying out professional roles, and the perception that their efforts are appreciated and meaningful. (Dewi & Susilowati, 2025) added that communication and collaboration are important factors in job readiness. This condition ultimately encourages the formation of a stronger commitment and higher work engagement, both affectively (feeling emotionally attached), cognitively (involvement in problem-solving and decision-making), and behaviorally (willingness to contribute more). Furthermore, social support functions as a protective mechanism that reduces the intention to leave the profession because individuals feel they are not facing challenges alone but rather as part of a mutually supportive social network (Diao et al., 2025; van der Heijden et al., 2010).

Learning Engagement is an important factor in increasing commitment. This aspect consists of three components, namely vigor, dedication, and absorption (Rodríguez-Izquierdo, 2020). The

combination of energy levels and mental resilience (vigor), dedication, and inspiring work wholeheartedly (absorption) is predicted to provide broad determination towards the commitment to teaching of prospective teachers in remote areas and their readiness to face any challenges that may arise (Hakanen et al., 2006; Hasanuddin & Risky Islianty, n.d.; W. B. Schaufeli et al., 2002; W. B. Schaufeli & Bakker, 2004). Engagement has also been proven to increase a person's performance at work (Ibrahim et al., 2026; Ribeiro e Silva & Carneiro Pinto, 2024).

Increasing prospective teachers' commitment to teaching is a strategic step toward addressing disparities in educational quality across Indonesia, particularly in remote areas. The theoretical contribution of this study is grounded in the integration of several established frameworks, particularly Self-Determination Theory (SDT), the Job Demands–Resources (JD-R) model, and the Componential Theory of Creativity and Motivation. First, drawing on Self-Determination Theory, this study conceptualizes social support as a contextual factor that fulfills individuals' basic psychological needs (relatedness, competence, and autonomy), thereby fostering higher levels of learning engagement. In this sense, learning engagement represents the internalization process through which externally provided support is transformed into self-determined motivation.

Commitment does not develop instantly, but is thought to be fueled by the synergy between strong social support and high levels of learning engagement. Social support serves as a crucial external resource for mitigating environmental pressures in underdeveloped areas. This emotional and mental engagement, in turn, strengthens their determination and resilience in the face of geographical challenges and limited resources, thus fostering enduring professional loyalty to teaching across the country. The research hypotheses are formulated as follows:

H1: Social support (SS) has a positive effect on learning engagement (LE).
H2: Learning engagement (LE) positively affects rural teaching commitment (RTC).
H3: Social support (SS) has a positive effect on rural teaching commitment (RTC).
H4: Learning engagement (LE) mediates the relationship between social support (SS) and rural teaching commitment (RTC).

METHOD

Participants

The respondents for this study were 350 (19 – 21 years old) prospective teachers from undergraduate and professional teacher education programs in Indonesia, with 57 males and 293 females from Universitas Muhammadiyah Surakarta (235) and Universitas Negeri Semarang (115).

Table 1. Participants distribution

Field	Study Program	Total
Humanities	Indonesian Language and Literature Education	7
Humanities	English Language Education	11
Profession	Teacher Professional Education	37
Science	Informatics Engineering Education	7
Science	Mathematics Education	4
Science	Biology Education	6
Social	Accounting Education	194
Social	Geography Education	3
Social	Primary School Teacher Education (PGSD)	64

Social	Early Childhood Teacher Education (PGPAUD)	4
Social	Physical Education	3
Social	Pancasila and Civic Education	10
	Total	350

Research Design and Procedures

This study adopted an explanatory research design to investigate the relationships between exogenous and endogenous variables. According to (Creswell, 2012) Explanatory research seeks to determine the extent to which two or more variables covary, wherein changes in one variable are associated with corresponding changes in another. The statistical method applied in this study is Structural Equation Modeling (SEM).

This study employed Partial Least Squares Structural Equation Modeling (SEM-PLS) as the primary analytical approach for several methodological reasons. SEM-PLS is particularly suitable for predictive and exploratory research aimed at examining complex relationships among latent constructs, such as social support, learning engagement, and rural teaching commitment. Second, this method is robust in handling relatively small to medium sample sizes and does not require strict assumptions of multivariate normality, making it appropriate for the data characteristics in this study.

Instrumentation and Data Collection

The instrument was developed using the adaptation and adoption method from previously existing instruments. The measurement of social support used the instrument developed by Zimet et al. (1988), namely, the Multidimensional Scale of Perceived Social Support. The measurement of teaching commitment used the TCM Employee Commitment Survey instrument (Meyer & Allen, 2004). Meanwhile, the learning engagement instrument adopted the Utrecht Work Engagement Scale for Students (UWES-9S) instrument (Carmona-Halty et al., 2019). The translation process was conducted by an English lecturer who is also a colleague of the researchers and has expertise in academic writing. This ensured that the translated version maintained both linguistic accuracy and conceptual equivalence with the original instrument. The reliability analysis follows:

Overall, these results suggest that all constructs are measured consistently and are suitable for further analysis. The validity of each

Table 2. Reliability analysis

No	Construct	Cronbach's Alpha	Indicators	Sample Questions
1.	Social Support	0.807	Family, friends, and others' support	1. There is a special person who is around when I am in need 2. My family is willing to help me make decisions 3. I can talk about my problem with my friends
2.	Learning Engagement	0.895	Vigor, Dedication, and Absorption	1. When I get up in the morning, I feel like going to class 2. My studies inspire me 3. I am proud of my studies
3.	Rural Teaching Commitment	0.918	Affective, Continuance,	1. Teaching in a school in a village or city will have a

	and Normative	deep meaning for me. 2. I will continue to teach even if I am placed in a rural area/far from the city. 3. I am willing to be placed in all regions of Indonesia when I become a teacher.

instrument was assessed through the outer loading values obtained from the PLS-SEM analysis, where each indicator's loading factor reflects its ability to represent the underlying construct. The sampling technique employed was convenience random sampling, in which participants were recruited based on their accessibility and willingness to participate. Data were collected through a self-administered online questionnaire distributed via Google Forms. The data collection process was conducted over three months, from December 2025 to February 2026.

Ethical considerations were carefully addressed in this study. An informed consent statement was included at the beginning of the questionnaire, allowing participants to voluntarily decide whether to proceed with the survey. Participants were informed that their responses would remain confidential and be used solely for research purposes. Furthermore, the study protocol was reviewed and approved by the university's ethics committee, ensuring compliance with established ethical standards.

Data Analysis Technique

The data was analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with the help of SmartPLS 4 software using the criteria provided by (Hair et al., 2010). The data analysis using SEM-PLS was conducted through a systematic two-stage approach, consisting of evaluating the measurement model (outer model) followed by the structural model (inner model). In the first stage, the measurement model was assessed to ensure the reliability and validity of the constructs. This included examining indicator reliability through outer loadings, internal consistency reliability using Cronbach's alpha, and composite reliability, convergent validity through average variance extracted (AVE), and discriminant validity using criteria such as the Fornell–Larcker criterion and cross-loadings.

In the second stage, the structural model was evaluated to test the proposed hypotheses. This involved assessing collinearity, examining path coefficients and their significance via bootstrapping, and evaluating the coefficient of determination (R^2) to assess the model's explanatory power. Additionally, effect size (f^2) and predictive relevance (Q^2) were analyzed to further assess the model's strength and predictive capability. Mediation analysis was also conducted to examine the indirect effects among variables, particularly the mediating role of learning engagement in the relationship between social support and rural teaching commitment.

Table 3. Data analysis criteria

Evaluation Stage	Assessed Aspect	Indicator / Criteria	Cut-off Value / Interpretation
Outer Model	Convergent Validity	Outer Loading	≥ 0.70
		AVE (Average Variance Extracted)	≥ 0.50
	Discriminant Validity	Fornell–Larcker Criterion	√AVE > inter-construct correlations

		HTMT (Heterotrait–Monotrait Ratio)	< 0.90
	Construct Reliability	Composite Reliability	≥ 0.70
		Cronbach's Alpha	≥ 0.70
Inner Model	Coefficient of Determination	R^2	0.75 (strong), 0.50 (moderate), 0.25 (weak)
	Effect Size	f^2	0.35 (large), 0.15 (medium), 0.02 (small)
	Predictive Relevance	Q^2	> 0 (has predictive relevance)
	Multicollinearity	VIF	< 5.00
Hypothesis Testing	Path Significance	t-statistic	> 1.96 (α = 5%, two-tailed)
		p-value	< 0.05
	Direction of Relationship	Path Coefficient (β)	In accordance with the hypothesized direction (positive/negative)

The table summarizes the evaluation criteria used in Partial Least Squares Structural Equation Modeling (PLS-SEM), covering the outer and inner models, as well as hypothesis testing. It presents key indicators of validity, reliability, and model quality, along with their commonly accepted cut-off values. These criteria help ensure that the measurement model is sound and the structural relationships are statistically meaningful.

■ RESULT AND DISCUSSION

Data Description

Data collected through online self-assessment using a 1-5 Likert scale revealed the profile of each construct for the respondents.

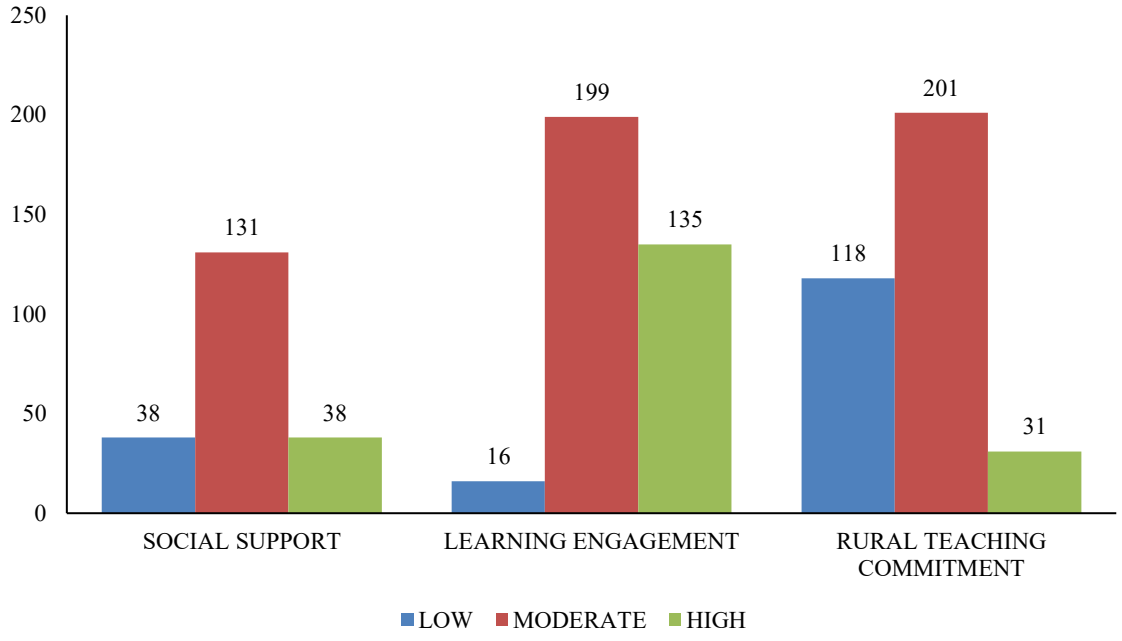

Figure 2. SS, LE, and RTC respondent's profile

Figure 2 describes the respondent profile based on the three constructs studied: social support, learning engagement, and rural teaching commitment. Learning engagement appears to be the strongest, as indicated by a relatively large high category and a very small low category. This reflects that respondents are generally quite active and motivated in the learning process. Meanwhile, the social support aspect shows a distinct pattern, with equal numbers of respondents in the low and high categories, indicating that some respondents feel strongly supported, while others feel less supported. A crucial finding is the sharp contrast between high learning engagement and low teaching commitment in rural areas. Although many respondents demonstrated high learning engagement, this did not translate into a willingness to teach in rural areas, and the group with low commitment was quite large. This phenomenon may be explained by the distinction between engagement and career-related decision-making, in which being actively involved in learning does not necessarily imply readiness to accept challenging work contexts, such as rural placements. One possible reason is the presence of structural and contextual barriers, including limited infrastructure, geographical isolation, lack of professional support, and restricted career advancement opportunities in rural areas, which may outweigh the positive effects of engagement. This indicates that academic motivation does not automatically correlate with readiness or interest in serving in rural areas.

Partial Least Squares – SEM (PLS-SEM) Analysis

PLS-SEM analysis was conducted to predict the relationships among constructs, both first- and second-order.

Figure 3 illustrates the structural model (SEM/PLS) depicting the relationship between Social Support (SS), Learning Engagement, and

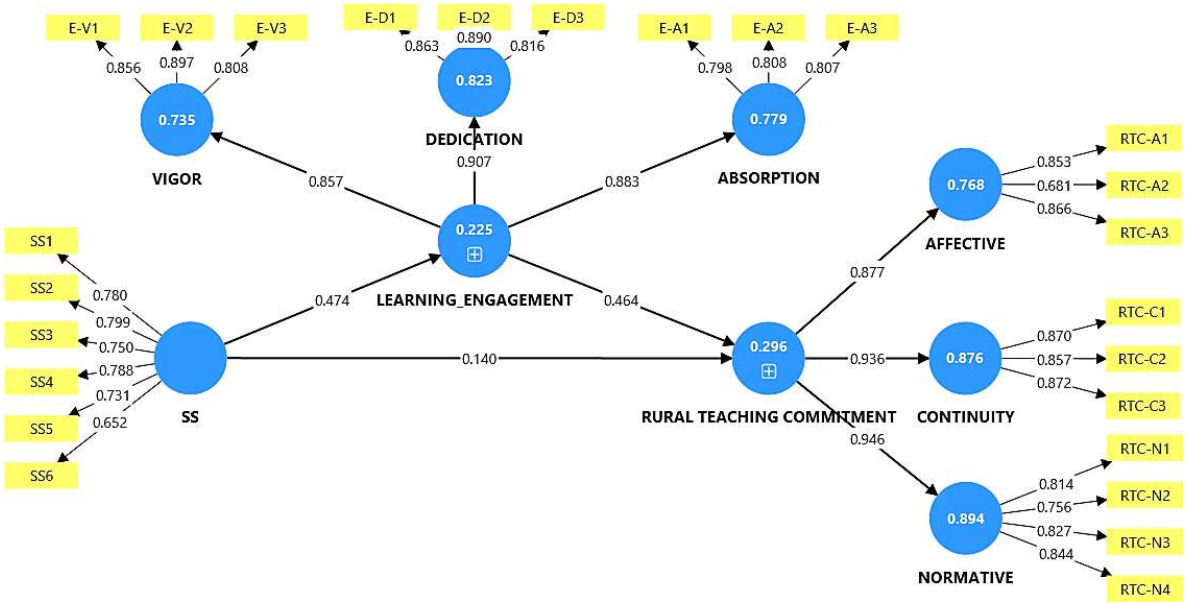

Figure 3. Second-order PLS-SEM rural teaching commitment

Rural Teaching Commitment, along with their dimensions. Learning engagement is shaped by three main constructs: Vigor, Dedication, and Absorption, each with adequate factor loadings (generally above 0.70). Social support is also measured through several indicators (SS1–SS6) with sufficient loadings. Meanwhile, Rural Teaching Commitment is shaped by three

dimensions: Affective, Continuity, and Normative, each with very high loadings (around 0.88–0.95), indicating that these three dimensions strongly represent commitment to teaching in rural areas.

Structurally, rural teaching commitment is predicted to be strongly influenced by learning engagement (â = 0.464) and directly by social support (â = 0.140), with an R^2 of 0.296 (the model explains 29.6% of the variation in teaching commitment in rural areas). An important finding is that the influence of learning engagement on teaching commitment in rural areas is much stronger than the direct influence of social support, indicating that social support is more effective at increasing rural commitment when it first encourages student learning engagement.

Measurement Model Analysis (Outer Model)

The quality of the research instrument was evaluated through tests of convergent validity and reliability to ensure measurement accuracy. Table 4.1 presents the results of the statistical analysis, which indicates that all constructs met the required internal consistency criteria. These results confirm that each indicator has a strong correlation in measuring the intended variables.

Table 4. Convergent validity and reliability results (first-order)

Second-Order Construct	First-Order Construct	Indicator	Loading	AVE	CR
-	Social Support	SS1	0.780	0.565	0.886
		SS2	0.799		
		SS3	0.750		
		SS4	0.788		
		SS5	0.731		
		SS6	0.652		
Learning Engagement	Vigor	E-V1	0.856	0.731	0.916
		E-V2	0.897		
		E-V3	0808		
	Dedication	E-D1	0.863	0.734	0.892
		E-D2	0.890		
		E-D3	0.816		
	Absorption	E-A1	0.879	0.647	0.846
		E-A2	0.808		
		E-A3	0.807		
Rural Teaching Commitment	Affective	RTC-A1	0.853	0.647	0.845
		RTC-A1	0.681		
		RTC-A3	0.866		
	Continuity	RTC-C1	0.870	0.750	0.900
		RTC-C2	0.857		
		RTC-C3	0.872		
	Normative	RTC-N1	0.814	0.657	0.885
		RTC-N2	0.756		
		RTC-N3	0.827		
		RTC-N4	0.844		

Table 4 presents the results of measurement model testing, indicating that all constructs meet the criteria for convergent validity and internal reliability. The indicators for each construct have factor loadings above 0.70, with several items still within acceptable limits (e.g., SS6 = 0.652

and RTC-A2 = 0.681), so overall the indicators are worth retaining. The AVE values for Social Support (0.565), Vigor (0.731), Dedication (0.734), Absorption (0.647), Affective (0.647), Continuity (0.750), and Normative (0.657) all exceed the threshold of 0.50, indicating that the constructs can explain more than 50% of the variance in their indicators. Furthermore, the Composite Reliability (CR) values for all constructs were above 0.70 (range ±0.845–0.916), indicating that the instrument's internal consistency was in the good to excellent category.

An interesting finding was that the Continuity component of Rural Teaching Commitment had the strongest measurement quality (AVE = 0.750; CR = 0.900), indicating that the sustainability aspect of teaching commitment in rural areas is an important factor for prospective teachers. Conversely, although Social Support had the lowest AVE (0.565) and one indicator with the smallest relative loading (SS6 = 0.652), this construct still met the criteria for feasibility and high reliability (CR = 0.886). This pattern indicates that the measure of learning engagement was the most robust, whereas the measure of social support relatively heterogeneus.

Second-Order Construct Analysis

Table 4.2 presents the results of the path coefficient analysis for the second-order constructs in the structural model, tested using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. These path coefficients indicate the direction and strength of influence among the latent constructs, particularly the relationship between learning engagement and rural teaching commitment, as well as its sub-constructs.

Table 5. Path coefficients of second-order constructs

Second-Order Construct	First-Order Construct	VIF	β (original sample)	t-Value	p-Value
-	Social Support	-	-	-	-
Learning Engagement	Vigor	1.000	0.857	47.471	0.000
	Dedication	1.000	0.907	100.926	0.000
	Absorption	1.000	0.883	66.549	0.000
Rural Teaching Commitment	Affective	1.000	0.887	65.302	0.000
	Continuity	1.000	0.936	121.436	0.000
	Normative	1.000	0.946	135.528	0.000

The results of the second-order construct test showed that all subconstructs had a positive and highly significant influence on their respective latent constructs (p-value = 0.000). Within the Learning Engagement construct, the Vigor (β = 0.857; t = 47.471), Dedication (β = 0.907; t = 100.926), and Absorption (β = 0.883; t = 66.549) dimensions contributed strongly and significantly. These results also indicated that Dedication was the most dominant dimension. This indicates that dedication is the primary factor in shaping learning engagement, compared to energy (vigor) or absorption.

Within the Rural Teaching Commitment construct, all dimensions also demonstrated strong contributions: Affective (β = 0.887; t = 65.302), Continuity (β = 0.936; t = 121.436), and Normative (β = 0.946; t = 135.528). The analysis revealed that Normative Commitment was the strongest dimension in shaping teaching commitment in rural areas, followed by Continuity.

The analysis revealed that Normative Commitment was the strongest dimension in shaping teaching commitment in rural areas, followed by Continuance Commitment. This finding may reflect the strong influence of socio-

cultural values in Indonesia, where teaching is often perceived as a moral duty and a form of social service, particularly in underserved areas. Such cultural expectations, reinforced through teacher education curricula that emphasize professional ethics, character building, and dedication to national development, may foster a sense of obligation among prospective teachers, thereby strengthening their normative commitment.

However, this result should be interpreted with caution, as it appears to conflict with empirical evidence that many prospective teachers remain reluctant to be placed in rural areas. This discrepancy suggests a potential gap between internalized values (what individuals believe they ought to do) and actual behavioral intentions or decisions (what individuals are willing to do in practice). While normative commitment may be relatively high at the attitudinal level, it may not be sufficiently strong to overcome structural and contextual challenges, such as limited facilities, geographical isolation, lack of professional support, and restricted career development opportunities in rural settings.

In this regard, the relatively strong role of continuance commitment may indicate that pragmatic considerations such as job security, financial incentives, and the scarcity of alternative employment also influence commitment. Nevertheless, when such incentives are perceived as inadequate compared to the perceived costs of rural placement, prospective teachers may still choose to avoid these assignments. Therefore, these findings highlight that strengthening rural teaching commitment requires not only the internalization of professional and moral values but also the provision of tangible support systems and conducive working conditions that align with those values.

Affective Commitment remained significant but relatively lower than the other two dimensions. This suggests that normative motivation (a sense of moral obligation/responsibility) and sustainability considerations are more influential in determining teaching commitment in rural areas than affective aspects alone. Furthermore, a VIF of 1.000 across all paths indicates no multi collinearity, ensuring reliable coefficient estimates.

After evaluating the measurement model, the next step was to conduct a structural model test to test the research hypotheses and the mediating effects between variables. Table 4.3 presents a summary of the path analysis results, including path coefficients, significance values, and the mediation analysis results for the second-order model. Furthermore, this table presents the total effect of each variable on the outcome, providing a comprehensive understanding of the model's influence structure.

Table 6. Structural model results, mediation analysis of the second-order model, and total effect

Hypothesis	Path	β	t-Value	p-Value	Result
H1	SS to RTC	0.140	2.308	0.021	Supported
H2	SS to LE	0.474	11.763	0.000	Supported
H3	LE to RTC	0.464	8.046	0.000	Supported
Mediation Analysis	SS to LE to RTC	0.220	5.926	0.000	Partial mediation
Total Effect	SS to LE to RTC	0.360	6.846	0.000	Supported

Table 6 describes the results of hypothesis testing on the structural equation model. The predicted direct effect of SS on RTC proved significant (â = 0.140; p = 0.021), although the effect size was relatively small. Conversely, the effect of SS on LE was strong and significant, with a â = 0.474 ($p < 0.00$). The predicted relationship between LE and RTC also showed

a strong effect, with a beta of 0.464 and a significance level of 0.001. These findings indicate that SS is more effective at increasing LE than at directly influencing RTC, and that LE is an important determinant of changes in RTC. In other words, an increase in SS will be sharper on RTC if it first drives an increase in LE.

Mediation analysis shows that LE partially mediates the relationship between SS and RTC, with a significant indirect effect (â = 0.220; p < 0.001) and a significant total effect (â = 0.360; p < 0.001). Important findings indicate that the indirect effect of SS on RTC through LE exceeds its direct effect, positioning LE as the underlying mechanism by which SS increases RTC. This partial mediation pattern indicates that the relationship between variables is complex and non-linear, thus providing an important theoretical contribution by confirming the strategic role of LE as a key lever variable in the proposed model. The findings from the structural path and mediation effect tests are further supported by the Coefficient of Determination (R^2) and Model Predictive Power (PLS predict – CVPAT) analyses in Table 4.4, which show the extent to which the exogenous variables in the model explain variation in the endogenous variables' predictive power.

Table 7. Coefficient determination and model predictive power (PLS predict – CVPAT)

Endogenous Construct	Exogenous Construct	R^2	PLS Loss	LM Loss	Average Loss Difference	t-value	p-value	Predictive Power
LE	SS	0.225	0.468	0.469	-0.002	0.236	0.814	Adequate
RTC	SS and LE	0.296	0.643	0.649	-0.006	0.638	0.524	Adequate

Based on the analysis results, the LE construct had an R2 of 0.225, meaning that 22.5% of the variance in LE is explained by SS, while the remainder is explained by other factors. The loss function comparison results showed a slightly lower MAE (Mean Absolute Error) for the PLS-SEM model (0.468) compared to the LM model (0.469). The average error difference (Average Loss Difference) was recorded at -0.002. However, statistical testing using CVPAT showed that this difference was not statistically significant (t = 0.236, p = 0.814).

For the RTC construct, the R2 value was 0.296, indicating that 29.6% of RTC variance was explained by SS and LE, with the remainder explained by other factors. Consistent with the findings on LE, the MAE for PLS-SEM (0.643) is lower than that of the LM model (0.649), with an Average Loss Difference of -0.006. The results of the significance test show t = 0.638 and p = 0.524. Given that most manifest-level (MV) indicators show lower errors in the PLS-SEM model than in LM, the predictive power for LE and RTC is categorized as Adequate.

The results of this study focus on two constructs predicted to influence prospective teachers' commitment to rural teaching. The problem of equal distribution of teacher quality in Indonesia is not only a matter of budget, infrastructure, and teacher quality (Rahmi & Rassanjani, 2025), but also related to the reluctance of prospective teachers to be placed throughout Indonesia (Marziana et al., 2025; Utomo et al., 2019). Providing access to quality education across all regions of Indonesia depends, among other things, on prospective teachers' willingness to be placed in remote areas.

H1: Social support (SS) has a positive effect on learning engagement (LE)

The analysis results for the social support construct indicate that, in this aspect, item SS2 has the highest factor loading. This item indicates that respondents have someone to share their

happiness and sadness with. This is part of emotional support, which shows that the closeness factor of individuals who can share is a very important form of social support. Emotional support is the most fundamental form of social support that functions as a stress buffer, especially in emotionally demanding work contexts, and can protect individuals from the negative effects of academic/emotional pressure (Alya & Muslima, 2025; Cohen & Wills, 1985). Meanwhile, the item with the lowest factor loading is SS6, which is related to discussing problems with peers. Although it is considered low, this aspect does not mean it is unimportant. However, personal and emotional closeness is the most important social support. Emotional support includes opportunities to confide (to express feelings), which fosters deep interpersonal closeness, distinct from ordinary problem-solving conversations with peers (Thomas & Hodges, 2025).

The findings support the first hypothesis, indicating that social support (SS) positively affects learning engagement (LE). This suggests that students who perceive higher levels of emotional support tend to be more actively involved in their learning processes (V. Bernil, 2024). Emotional support, such as having someone to share happiness and difficulties with, plays a crucial role in fostering a sense of belonging and psychological safety, which in turn enhances motivation, persistence, and participation in academic activities. In line with the stress-buffering hypothesis, social support helps individuals cope with academic pressures, allowing them to maintain focus and engagement even in demanding learning environments (Cohen & Wills, 1985; Delfin et al., 2024). Therefore, meaningful interpersonal relationships not only provide emotional comfort but also strengthen students' commitment and active involvement in learning, reinforcing the significant positive relationship between social support and learning engagement.

H2: Learning engagement (LE) has a positive effect on rural teaching commitment (RTC)

Learning Engagement is a construct that is an adapted part of work engagement, consisting of vigor, dedication, and absorption (Bakker & Bal, 2010; Bakker & Demerouti, 2008; W. B. Schaufeli, 2012; Schaufeli W & Bakker A, 2004; W. Schaufeli & De Witte, 2017a, 2017b). hese three aspects have been consistently proven to be factors forming engagement. In this study, all items have factor loadings greater than 0.70, with most exceeding 0.80. Vigor, which is mental resilience at work, is an important factor in maintaining teachers' resilience to continue teaching in remote areas. This is supported by strong dedication and absorption, namely, the difficulty of detaching oneself from work due to high focus and involvement. Resilience in teachers can be fostered by the intellectual, social, and organizational environment in which teachers work and live, not only emerging from naturally determined personal traits (Day & Gu, 2014; Thomas & Hodges, 2025).

The findings support the second hypothesis, indicating that learning engagement (LE) positively affects rural teaching commitment (RTC). This suggests that students who demonstrate higher levels of vigor, dedication, and absorption are more likely to develop a strong commitment to teach in rural or remote areas (Ahakwa, 2024; Murphy et al., 2026; Wu et al., 2025). Engaged individuals tend to possess greater energy and persistence (vigor), a strong sense of purpose and enthusiasm toward their professional roles (dedication), and deep concentration in their activities (absorption), all of which contribute to sustained motivation in challenging work contexts. In rural teaching settings, where environmental and professional demands are often higher, such engagement becomes a crucial psychological resource that strengthens individuals' willingness to remain committed. Consistent with the work

engagement framework, high engagement fosters resilience and meaningful involvement in professional tasks, which in turn enhances long-term commitment to the teaching profession, including in less desirable or resource-limited areas (Angelini et al., 2024).

H3: Social support (SS) has a positive effect on rural teaching commitment (RTC)

The findings support the third hypothesis, indicating that social support (SS) positively affects rural teaching commitment (RTC). This means that support from family, friends, and significant others plays a crucial role in encouraging individuals to choose and remain in rural teaching positions over the long term (Fazio et al., 2017; Liao et al., 2022). Family support, such as emotional encouragement and acceptance of placement in remote areas, can strengthen teachers' confidence and reduce feelings of doubt. Support from friends and peers provides a space to share experiences and cope with challenges, while support from significant others helps maintain emotional stability (Safitri Lestari et al., 2022) despite physical distance and demanding conditions (Shen et al., 2026). Together, these forms of support make teachers feel valued and not alone, which increases their willingness to stay, adapt, and remain committed to teaching in rural areas over an extended period.

H4: Learning engagement (LE) mediates the relationship between social support (SS) and rural teaching commitment (RTC)

The analysis results show that learning engagement plays a strong partial mediator between social support and rural teaching commitment. These results support previous research indicating that work engagement is a partial mediator of teacher performance (Yolanda & Said, 2021). Although social support can directly increase rural teaching commitment, the changes are not as significant as when prospective teachers have high learning engagement. Based on the Job Demands–Resources (JD–R) Model, social support serves as a psychosocial resource that increases learning engagement (vigor, dedication, absorption) by strengthening individuals' motivation and adaptive capacity in the face of the demands of the rural context (Bakker & Demerouti, 2017). This suggests that social support, both emotional and material, from the surrounding environment is an important factor in increasing commitment. Research shows that a good school culture supports teacher resilience in remote areas of Indonesia (Dahlan R et al., 2025). However, prospective teachers need to have strong enthusiasm (vigor), dedication to equitable education in Indonesia, and a sense of belonging that makes it difficult for them to leave their students, even in remote areas.

The findings of this study confirm that increasing the teaching commitment of prospective teachers in remote areas cannot simply rely on a normative approach based on placement obligations. Although social support directly contributes to rural teaching commitment, its influence becomes much more significant when mediated by learning engagement. Social support functions as a psychosocial resource that strengthens energy (vigor), dedication to the mission of equitable education (dedication), and deep involvement in the teaching and learning process (absorption). Therefore, teacher placement policies in remote areas need to focus on strengthening structured social support (emotional and material), fostering a supportive school culture, and implementing mentoring programs that can foster psychological resilience in prospective teachers from the pre-placement phase through the adaptation period in the field.

Furthermore, the dominance of the normative component in rural teaching commitment indicates a retention risk if commitment does not develop into emotional attachment and career sustainability. The policy

implications emerging from these findings are the importance of designing placement schemes that not only encourage compliance with policies but also facilitate the internalization of the meaning of service, the formation of meaningful relationships with schools and local communities, and the establishment of a clear career development path for teachers serving in remote areas. Theoretically, these results reinforce the role of learning engagement as a key psychological mechanism that transforms social support into medium- and long-term commitment. Longitudinal research and examination of the role of contextual factors (e.g., school culture and community support) as moderators or mediators are expected to deepen understanding of how engagement-based strategies can sustainably strengthen teacher retention in remote areas.

This study has several limitations that should be acknowledged. First, the sample was dominated by respondents from the Accounting Education program (55%), which may limit the generalizability of the findings. This imbalance could introduce bias in the representation of perspectives across study programs, thereby affecting the study's external validity. Therefore, the results should be interpreted with caution, particularly when extending the findings to broader populations. Future research is recommended to involve a more proportionally distributed sample across various academic disciplines to enhance the robustness and generalizability of the findings.

CONCLUSION

This study concludes that prospective teachers' rural teaching commitment (RTC) in Indonesia is significantly influenced by social support and learning engagement, with learning engagement acting as a strong partial mediator in this relationship. These findings indicate that social support has a more meaningful impact on RTC when prospective teachers have high levels of vigor, dedication, and absorption. The respondent profile, characterized by moderate levels of social support, learning engagement, and RTC, along with a high proportion of low RTC, indicates gaps in prospective teacher development policies and practices that require immediate attention. The dominance of normative commitment over continuity and affective commitment also emphasizes that obligation-based commitment risks becoming unsustainable if not balanced with strengthening emotional attachment and career sustainability. The implications are that efforts to improve the quality of education in remote areas in Indonesia cannot rely solely on obligation-based placement policies but need to focus on strategies that strengthen the ecosystem of social support and prospective teachers' learning engagement from the pre-placement stage through the adaptation period in the field. A psychosocial resource-based approach has the potential to increase teacher retention in remote areas by strengthening vigor, internalizing the meaning of educational equity (dedication), and forming emotional bonds with students and the school community (affective). These findings provide an empirical basis for formulating more sustainable teacher placement policies that are oriented towards the psychosocial well-being of educators.

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DECLARATION OF GENERATIVE AI USAGE IN THE WRITING PROCESS

The authors used a generative AI tool to assist in language refinement and translation during the writing process of this manuscript. Following the use of this tool, the authors carefully reviewed and revised the content as necessary and accept full responsibility for the final content of the article.

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