International Journal of TESOL Studies (2026)
Vol. 8 (1) 63-81 https://doi.org/10.58304/ijts.251003

Trends in Research Methods

Relationships among Growth Pragmatic Mindset, Intrinsic Pragmatic Motivation, and Cognitive Pragmatic Engagement: A PLS-SEM Approach

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Received: 01 June, 2025 / Received in revised form:01 October, 2025 / Accepted: 06 October, 2025 / Available online: 29 October, 2025

Abstract
The significance and malleability of learner engagement in second language (L2) learning have prompted L2 researchers to investigate its predictors, such as emotions, cognition, and learning attitudes. However, no prior study has examined the roles of growth language mindset and intrinsic motivation in engagement, particularly in the context of L2 pragmatics learning. To address this lacuna, this study aimed to explore the extent to which growth pragmatic mindset could predict cognitive pragmatic engagement, either directly, indirectly through intrinsic motivation, or both. A total of 262 Indonesian first- and second-year non-English major students consented to participate by completing a questionnaire measuring the three constructs. Partial least squares structural equation modelling (PLS-SEM) analysis revealed that while growth pragmatic mindset did not directly predict cognitive pragmatic engagement, it had a significant indirect effect on intrinsic pragmatic motivation. A significant relationship was also evident between intrinsic motivation and cognitive engagement. Growth pragmatic mindset was found to indirectly predict cognitive engagement through intrinsic motivation, with a large effect size. These findings are discussed in light of mindset meaning system theory and self-determination theory, and pedagogical implications are proposed based on the results.

Keywords
Growth mindset, intrinsic motivation, cognitive engagement, Indonesian learners

1 Introduction

In the context of second language (L2) education, engagement—defined as the degree and quality of students' active involvement in language learning tasks (Hiver et al., 2024)—has garnered significant attention from both scholars and practitioners. This concept is particularly crucial in contemporary

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classrooms, where distractions pose persistent challenges (Mercer & Dörnyei, 2020). Theoretically, engagement is pivotal to L2 learning, so much so that it has been termed "the place where learning happens" (Svalberg, 2009, p. 243). The fact that it is malleable through pedagogical interventions (Aubrey, 2022) further enhances its appeal to researchers and educators alike (Mercer & Dörnyei, 2020).

Given the critical role engagement plays in L2 learning, researchers have extensively examined its antecedents, including contextual factors, emotions, cognition, and learning attitudes (e.g., Derakhshan & Zare, 2024; Gong & Pang, 2025; Guo et al., 2025). More recently, growth language mindset (e.g., Lou et al., 2022; Derakhshan et al., 2024; Teng, 2024; Teng et al., 2024; Liu et al., 2025; Teng & Mizumoto, 2025) and motivation (e.g., Sadoughi et al., 2023; Jiang et al., 2024) have emerged as prominent foci in L2 engagement research. However, as Mercer (2019) noted, studies investigating the interplay of engagement, learner motivation, and psychological factors remain scarce. Notably, to the best of my knowledge, no existing research has investigated the relationships among growth language mindset, intrinsic motivation, and engagement specifically within L2 pragmatic learning.

Pragmatic competence can be defined as the capacity to employ linguistic resources in a contextually appropriate manner (Taguchi & Barón, 2024). Unlike grammatical or lexical errors, pragmatic failures can lead to serious social consequences, such as causing offense, appearing rude, or inviting ridicule (Roever, 2022). Consequently, pragmatic learning potentially represents a psychological minefield for L2 learners. Growth mindset, intrinsic motivation, and engagement are the key psychological factors that enable learners to navigate this minefield.

As has been mentioned above, a substantial body of research has documented the effects of growth mindset and motivation on engagement in general L2 learning. However, findings from this general context may not be directly generalizable to specific sub-domains like L2 pragmatics. Khajavy et al. (2022) demonstrated that L2 reading mindset predicted L2 reading achievement, L2 reading anxiety, and L2 reading enjoyment more strongly than general language mindset. This finding underscores the domain-specific nature of mindsets and motivation. This is particularly critical for L2 pragmatic learning, wherein learners learn not only formal aspects of the L2, but also the social contexts and cultural norms governing their use (Barón et al., 2024). Consequently, a dedicated investigation into the role of pragmatic mindset and intrinsic motivation in L2 pragmatic engagement is not only warranted but essential for a complete understanding of the factors that govern L2 pragmatic competence.

Drawing on mindset meaning system theory (Dweck & Yeager, 2019) and self-determination theory (SDT; Ryan & Deci, 2020), this study aimed to address the above mentioned research gap by investigating the structural relationships among growth pragmatic mindset, intrinsic pragmatic motivation, and cognitive pragmatic engagement. Its contributions are twofold: (1) advancing theoretical understanding of factors shaping L2 engagement, and (2) informing pedagogical strategies to enhance learner engagement in and beyond the classroom. In this paper, cognitive pragmatic engagement is narrowly defined as the quality of learners' mental involvement as they are exposed to communicative input, conducted for the comprehension of pragmatic knowledge in the target language. The data were analyzed using partial least squares structural equation modeling (PLS-SEM). This method is particularly suitable for L2 research as it allows for robust testing of theoretical models despite common methodological constraints in L2 research, such as small sample sizes and non-normal data distributions.

2 Literature Review

2.1 Cognitive engagement in L2 learning

Student engagement plays a pivotal role in L2 education, as low engagement is a significant factor driving course withdrawal (Alamer & Al Fraidan, 2025). While authentic engagement requires the integration of all three dimensions (Mercer, 2019), cognitive engagement appears to be particularly

influential in achieving desired learning outcomes. Wang and Peck (2013) examined the engagement profiles of 1,025 adolescents in Maryland, USA, and found that emotionally disengaged students (i.e., those with low emotional engagement, moderate behavioral engagement, and high cognitive engagement) and highly engaged students (i.e., those high in all three dimensions) had fairly similar GPAs—both notably higher than those of other groups. This finding is echoed in foreign language learning. In a meta-analysis of 64 effect sizes (N = 16,176), Wang and Hui (2025) found that among the three dimensions of engagement, cognitive engagement had the largest correlation with foreign language achievement. Similarly, He et al. (2024) found that the effect of cognitive engagement on English proficiency scores was larger than that of behavioral and emotional engagement. Ebadi et al. (2024) investigated the relationship between L2 learners' engagement and motivation and found that only cognitive engagement was significantly correlated with motivation. In summary, while behavioral and emotional engagement undoubtedly influence foreign language achievement and motivation, cognitive engagement remains the most reliable indicator of meaningful L2 learning. It is noteworthy that no study to date has explored cognitive engagement in the context of L2 pragmatic learning.

2.2 Language mindsets and L2 engagement

Language mindsets are implicit theories that learners develop about the malleability of their language capacity (Oruç, 2025). Fixed language mindsets refer to the belief that language learning ability is innate, while growth language mindsets hold that this skill can be developed through dedication and effective strategies (Zarrinabadi et al., 2025). These mindsets are domain-specific, in the sense that learners may hold different beliefs about their ability across various language skills (Khajavy et al., 2022). These beliefs have important repercussions for motivated action. Learners who hold a fixed language mindset perceive effort as futile and equate it with a deficiency in innate language ability, often seeking to prove their competence through performance outcomes. On the other hand, those with a growth language mindset consider effort a crucial driver of language learning success. Therefore, learners with a growth language mindset tend to engage more intensely in language learning tasks than those with a fixed mindset (Yang & Liang, 2025).

Research on language mindset and L2 engagement reveals a nuanced relationship, with recent studies moving beyond simple direct effects to elaborate complex mediating pathways. Initial evidence (e.g., Sadoughi & Hejazi, 2023) showed a direct positive link between language mindset and academic engagement. Subsequent research has consistently corroborated this direct relationship while also uncovering significant indirect effects through affective and motivational channels. For instance, Zhong et al. (2024) and Jiang et al. (2024) confirmed that language mindset predicted engagement both directly and indirectly through emotions and autonomous motivation, respectively. A more complex picture emerges from studies demonstrating the absence of a direct effect, and the influence is fully mediated. Fan et al. (2024) found that the components of language mindset influenced engagement only indirectly through grit and burnout, a finding echoed by Derakhshan et al. (2024), who identified boredom as a full mediator. Similarly, Yang and Liang (2025) found that language mindset served as a mediator between interaction and engagement. Collectively, this body of work suggests that the power of language mindset lies not only in its direct association with L2 engagement but also, and perhaps more profoundly, in its ability to foster other positive psychological states that ultimately drive student involvement.

Although language mindsets have been established as a significant factor in general L2 acquisition, their application to pragmatic competence remains notably underexplored, with only two studies addressing this intersection. Zarrinabadi et al. (2022) linked mindsets and motivation to pragmatic behavior, and Wang and Ren (2025) investigated the effects of language mindsets and L2 willingness to communicate on pragmatic acquisition. Consequently, the extent to which a growth pragmatic mindset and intrinsic pragmatic motivation can promote L2 pragmatic engagement is a question that remains unaddressed.

2.3 Intrinsic Motivation and L2 Engagement

According to Ryan and Deci (2020), intrinsic motivation involves participating in activities purely because they are inherently interesting and enjoyable. This type of motivation is a consistent predictor of engagement (Ryan & Deci, 2020). To the extent that learners are intrinsically motivated to learn an L2, they "are likely to actively engage in learning and using the language within the classroom and/or in the community" (Noels, 2023, p. 623). Oga-Baldwin and Nakata's (2017) study with elementary students learning EFL in Japan revealed that engagement had a strong positive relationship with intrinsic motivation. Similarly, studies conducted at the college level convergently reported a significant relationship between intrinsic motivation and engagement (Chen & Kraklow, 2015; Noels et al., 2019). Nevertheless, it remains unclear whether this robust relationship holds within the specific context of L2 pragmatics. The existing L2 pragmatic motivation studies have focused on the role of pragmatic motivation in driving pragmatic behaviors (Zarrinabadi et al., 2022) or L2 speech act knowledge (Tajeddin & Malmir, 2024), leaving the specific connection between intrinsic motivation and pragmatic engagement unexamined.

2.4 A PLS-SEM approach

Partial least squares structural equation modeling (PLS-SEM), also called PLS path modeling, is a second-generation multivariate statistical method used to estimate complex models with multiple latent variables (Hair et al., 2022). The main objective of PLS-SEM is to maximize the explained variance of both the endogenous variable in the structural model (R^2) and a construct in the measurement model, i.e., the indicator's communality (Sarstedt et al., 2023), hence classified as variance-based SEM (Mehmetoglu & Venturini, 2021; Hair & Alamer, 2022). As such, PLS-SEM is causal-predictive in nature (Chin et al., 2020), meaning that the method is designed to test a theoretically-grounded, cause-and-effect model through (in-sample) prediction (Sarstedt et al., 2023).

Recently, there is a marked surge in the application of PLS-SEM in L2 research (e.g. Lai & Wang, 2024; Shuwei et al., 2024; Alrabai, 2025; Fu, 2025; Li et al., 2025). This growing popularity is largely attributable to at least three key characteristics of the method which directly address the methodological challenges faced by L2 researchers: its robustness to non-normal data, its effectiveness with smaller sample sizes, and its superior ability to estimate models with formative (or composite) constructs (Hair & Alamer, 2022). Thus, PLS-SEM is a highly appropriate statistical tool for L2 research, particularly when handling complex models with limited sample sizes. Notwithstanding this clear applicability, its use in the specific context of L2 pragmatic learning remains limited. Thus, in addition to testing the hypothesized relationships, this study also aims to contribute to methodological discussions within the L2 domain.

2.5 The present study

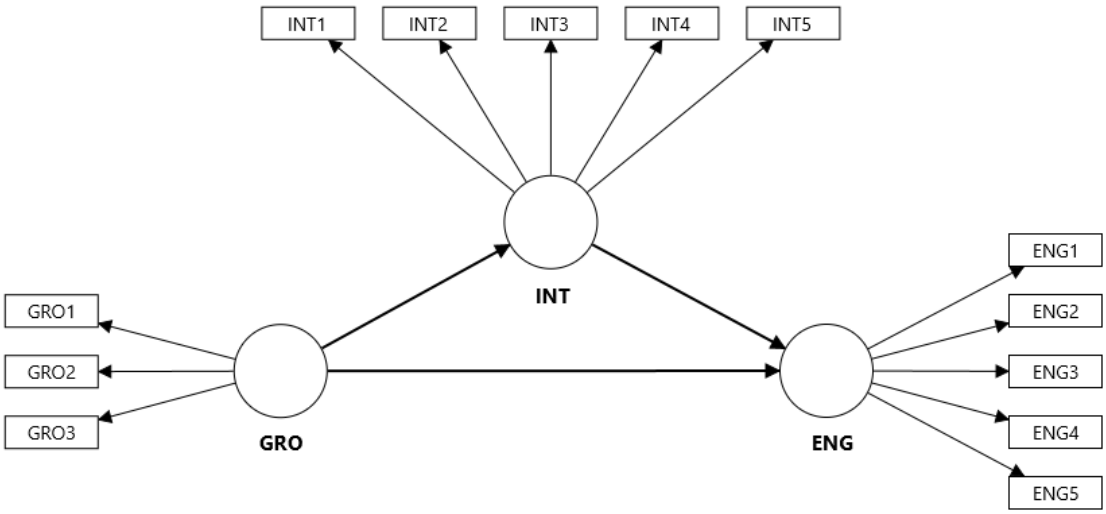
To address the gap identified in the previous section, this study employed PLS-SEM to investigate the structural relationships among growth pragmatic mindset, intrinsic pragmatic motivation, and cognitive pragmatic engagement. The selection of PLS-SEM was motivated by the study's goal of prediction and theory development. PLS-SEM is known to provide robust predictive power, compared to CB-SEM, which is better suited for theory confirmation (Sarstedt et al., 2023). Guided by this methodology, this study sought to answer the following research questions:

1. To what extent does growth pragmatic mindset directly predict cognitive pragmatic engagement?
2. To what extent does growth pragmatic mindset directly predict intrinsic pragmatic motivation?
3. To what extent does intrinsic pragmatic motivation directly predict cognitive pragmatic engagement?

4. To what extent does growth pragmatic mindset indirectly predict cognitive pragmatic engagement through intrinsic pragmatic motivation?

The structural model, outlining the proposed paths between growth pragmatic mindset (GRO), intrinsic pragmatic motivation (INT), and cognitive pragmatic engagement (ENG), is presented in Figure 1 below.

Figure 1
The Hypothesized Structural Model Showing the Relationships Among Growth Mindset GRO), Intrinsic Motivation (INT), and Cognitive Engagement (ENG)



3 Methods

3.1 Participants

A total of 262 first- and second-year students (69.5% female) enrolled in business administration program at a public university located in the central region of Indonesia, consented to participate in this study. They were between 17 and 25 years old (M = 18.98, SD = 0.873). Participants self-rated their English proficiency as beginner (56.1%), intermediate (42%), advanced (1.5%), or native-like (0.4%). At the time of the study, the participants were enrolled in a three-credit business English course, meeting for 150 minutes per week.

3.2 Instrument

The instrument (see Appendix) was an online questionnaire created using Google Forms and employed a six-point Likert scale, with responses ranging from 1 ("strongly disagree") to 6 ("strongly agree"). To ensure clarity and prevent any potential misinterpretations, all questionnaire items were meticulously composed in Bahasa Indonesia, the participants' native language. Pragmatic ability was operationally defined as the capacity to use language appropriately (i.e., politely) according to contexts. The construct validity and reliability indices (Cronbach's α, CR, AVE, HTMT) of the scales are presented in Table 2.

3.2.1. Growth pragmatic mindset scale

To assess participants' growth pragmatic mindset, three items from Lou and Noels (2017) were adapted and further modified. Participants were required to indicate their agreement with the following statements: (i) the ability to use English politely can be enhanced through dedicated learning; (ii) age does not hinder the acquisition of English politeness; and (iii) the ability to use English politely can be

improved by employing appropriate learning strategies. A higher average score on this scale indicates a stronger growth pragmatic mindset.

3.2.2. Intrinsic pragmatic motivation

The construct of intrinsic pragmatic motivation is operationalized as the extent to which participants perceive learning English etiquette as inherently enjoyable and engaging. Five items were meticulously crafted based on Noels et al. (2001) and in strict adherence to the self-determination theory (Ryan & Deci, 2017, 2020). A higher average score on this scale indicates a higher level of intrinsic pragmatic motivation.

3.2.3. Cognitive pragmatic engagement

Five custom-made items based on Zhou et al. (2021)—presented within a context where the participants are listening to English speakers engaged in authentic conversations, e.g., in movies—were used to assess participants' cognitive pragmatic engagement. Higher average scores reflect greater engagement intensity. The items were constructed in strict accordance with Fredricks et al.'s (2004) definition of cognitive engagement.

3.3 Procedure

The data were collected during the fourth week of April 2025. Prior to the actual administration of the questionnaire, a pilot test was conducted with 10 participants who exhibited characteristics similar to those of the target participants. Based on the feedback received from the pilot participants, revisions were implemented. Informed consent was obtained verbally from all participants prior to their participation in the study. Participants were informed about the study's objectives, procedures, their right to withdraw, and confidentiality measures. This information was also provided in the cover letter of the questionnaire, which participants reviewed before consenting to participate. Completion of the questionnaire implies agreement to participate in the study. The link to the questionnaire was distributed to the participants' English teachers via WhatsApp, who subsequently forwarded it to their respective classes via WhatsApp group.

3.4 Data analysis

To address the research questions, partial least squares structural equation modeling (PLS-SEM) was performed in SmartPLS 4.1.1.1. As has been mentioned before, PLS-SEM was selected to align with the study's exploratory nature and its focus on predictive analysis. The analysis used bootstrapping with 10,000 subsamples, 95% bias-corrected and accelerated (BCa) confidence intervals, a one-tailed test ($p < 0.05$), and a fixed random seed for replicability (Hair et al., 2022).

This study adhered to the two-stage analytical procedure for PLS-SEM as outlined by Hair and Alamer (2022), comprising the assessment of the measurement (outer) model followed by the assessment of the structural (inner) model. Given that the three constructs in this study—Growth Pragmatic Mindset, Intrinsic Pragmatic Motivation, and Cognitive Pragmatic Engagement—are modeled as reflective, the measurement model was evaluated against established criteria (Hair & Alamer, 2022). All indicator loadings were required to be .708 or above and statistically significant at $p < .05$. In line with Hair and Alamer (2022). loadings below this threshold were retained provided they were statistically significant and their removal would compromise the content validity of the construct. Internal consistency reliability was assessed using Cronbach's alpha (α) and composite reliability (ρ_C and ρ_A), with values of .70 or higher considered acceptable. Convergent validity was assessed by examining the average variance

extracted (AVE), for which a minimum value of .50 was adopted. Finally, discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio of correlations, applying the more liberal threshold of < .90, as recommended by Hair and Alamer (2022).

Following the confirmation of construct reliability and validity, the analysis proceeded to evaluate the structural model. First, collinearity was assessed using the variance inflation factor (VIF). VIF values below 3 indicated a lack of multicollinearity, while values up to 5 were considered acceptable (Hair & Alamer, 2022). Subsequently, the path coefficients were examined for their statistical significance (based on p-value) and substantive impact, with the effect size evaluated using Cohen's (1988) f^2 guidelines. The model's explanatory power was then assessed using coefficient of determination (R^2), which "reflects the variance in the outcome(s) explained by the predictor constructs" (Hair & Alamer, 2022, p. 8). The R^2 values were interpreted as follows: ≤ .10 (weak), .11 to .30 (modest), .31 to .50 (moderate), and > .50 (strong) (Hair & Alamer, 2022). Finally, the out-of-sample predictive power of the model was evaluated using PLSPredict procedure (Shmueli et al., 2019). Predictive power was considered sufficient when the PLS model's prediction error was lower than that of a naive linear benchmark model.

4 Results

4.1 Preliminary analysis

The dataset[1] was screened for straight-lining response patterns. Two participants were removed at this stage. The remaining dataset (N = 260) was then checked for outliers using z-scores, with values beyond |3.29| classified as extreme (Field, 2024). Five extreme outliers were identified and excluded, resulting in a final sample of 255 cases for further analyses.

4.2 Descriptive statistics and zero-order correlations

Table 1 presents the descriptive statistics and zero-order correlations for growth pragmatic mindset, intrinsic pragmatic motivation, and cognitive pragmatic engagement. Learners exhibited a relatively strong growth pragmatic mindset (M = 5.343, SD = .434). Their intrinsic pragmatic motivation was also high (M = 4.901, SD = 0.621), whereas cognitive pragmatic engagement was comparatively lower (M = 4.683, SD = .665). The skewness and kurtosis values for all three variables fell within the range of −2 to +2, meeting Hair et al. (2022, p. 66) criteria for normal distribution.

In terms of correlations, intrinsic pragmatic motivation and cognitive pragmatic engagement showed a large positive association (r = .651), while growth pragmatic mindset had medium correlations with both cognitive pragmatic engagement (r = .345) and intrinsic pragmatic motivation (r = .493). All correlations were statistically significant (p < .01). Following Cohen (1988, pp. 79-80), the strength of these bivariate correlations was interpreted as small (r = .10 – .29), medium (r = .30 – .49), and large (r ≥ .50).

Table 1
Descriptive Statistics and Zero-order Correlations

	Min	Max	M	SD	Skewness	Kurtosis	1	2	3
1 GRO	4.000	6.000	5.343	.434	-.062	-.462	-	.493**	.345**
2 INT	2.600	6.000	4.901	.621	-.761	1.245		-	.651**
3 ENG	2.20	6.000	4.683	.665	-.668	.901			-

Note: GRO = Growth pragmatic mindset, INT = Intrinsic pragmatic motivation, ENG = Cognitive pragmatic engagement

** Correlation is significant at the .01 level (2-tailed)

4.3 Evaluation of outer model

Table 2 shows the results of the evaluation of outer model. As can be seen from the table, all factor loadings are statistically significant at the .01 level (one-tailed). Moreover, all items except GRO2 and ENG1 had loadings above the recommended threshold (.708; Hair et al., 2022, p. 117). These two items were retained because their removal did not significantly improve internal consistency or validity, and doing so would compromise the content validity of their respective constructs.

For internal consistency, although growth pragmatic mindset had a Cronbach's α below the .70 threshold, its composite reliability (ρ_c) exceeded the threshold (.70). As Hair et al. (2022, p. 119) note, "due to the limitations of Cronbach's alpha, it is technically more appropriate to apply … composite reliability (ρc)." All constructs demonstrated sufficient convergent validity, with AVE values exceeding the .50 threshold. Finally, all HTMT values were below .85 for conservative assessment (Hair & Alamer, 2022), supporting discriminant validity.

Table 2
Factor Loadings, Scales' Internal Consistency and Validity

	Loading	Cronbach's α	ρ_C	ρ_A	AVE		HTMT	
GRO		.593	.782	.640	.550		INT	ENG
GRO1	.834**					GRO	.676	.508
GRO2	.641**					INT		.776
GRO3	.737**					ENG		
INT		.888	.918	.892	.693			
INT1	.823**							
INT2	.847**							
INT3	.861**							
INT4	.781**							
INT5	.846**							
ENG		.804	.864	.816	.563			
ENG1	.659**							
ENG2	.775**							
ENG3	.791**							
ENG4	.727**							
ENG5	.791**							

Note: GRO = growth pragmatic mindset, INT = intrinsic pragmatic motivation, ENG = cognitive pragmatic engagement

** loading is significant at the .01 level (one-tailed)

4.4 Evaluation of inner model

Following Hair et al. (2022), inner (structural) model assessment in this study comprised four steps, namely (i) evaluating collinearity issues, (ii) examining the significance and relevance of structural relationships, (iii) assessing the model's explanatory power, and (iv) testing its predictive power. Collinearity was assessed via variance inflation factor (VIF) values for the predictor variables (growth pragmatic mindset and intrinsic motivation). Both predictors exhibited identical VIF values below 5 (VIF = 1.329), indicating no substantial multicollinearity (Hair et al., 2022). Table 3 shows direct and indirect, as well as total, effects found in this study. As shown in Table 3, growth pragmatic mindset did not significantly predict cognitive pragmatic engagement (β = .049, Cohen's f^2 = .009, p > .05, 95% BCa CI [-.056, .152]). However, it had a large and significant positive effect on intrinsic pragmatic motivation (β

= .498, Cohen's f^2 = .352, p < .05, 95% BCa CI [.400, .575]), which in turn strongly predicted cognitive pragmatic engagement (β = .640, Cohen's f^2 = .578, p < .05, 95% BCa CI [.556, .704]). Effect sizes were interpreted using Cohen's (1988) benchmarks (small = .02, medium = .15, large = .35).

Mediation analysis, performed using consistent PLS-SEM bootstrapping (Gaskin et al., 2023), revealed a statistically significant indirect effect of growth pragmatic mindset on cognitive pragmatic engagement through intrinsic pragmatic motivation, with a large effect size (β = .325, v^2 = .282, p < .05, 95% BCa CI [.251, .381]). Following Gaskin et al. (2023, p. 222), indirect effect sizes (v^2) were categorized as small (.01), medium (.075), and large (.175). The total effect of growth pragmatic mindset on cognitive pragmatic engagement was medium in magnitude (β = .374, Cohen's f^2 = .212, p < 0.05, 95% BCa CI [.556, .704]). The structural model accounted for 44.3% of the variance in cognitive pragmatic engagement (R^2 = .443, Adjusted R^2 = .439). According to the guidelines proposed by Hair and Alamer (2022), this indicates moderate explanatory power, which is acceptable given the complexity of the construct (Reschly & Christenson, 2022).

Table 4 displays the results of assessment of the statistical model's predictive power using PLSpredict (Shmueli et al., 2019). The $Q^2_{predict}$ value of all target endogenous indicators (ENG1 – ENG5) was above zero, suggesting that "PLS-SEM-based predictions outperform the most naïve benchmark" (Shmueli et al., 2019, p. 2329). Since the PLS-SEM prediction errors were not symmetrically distributed, the mean absolute error (MAE) was compared with the linear model's MAE (LM_MAE). The results show that most indicators had lower MAE values than the naïve LM benchmark, suggesting that the model in this study exhibits medium predictive power (Shmueli et al., 2019).

Table 3
Direct and Indirect Effects

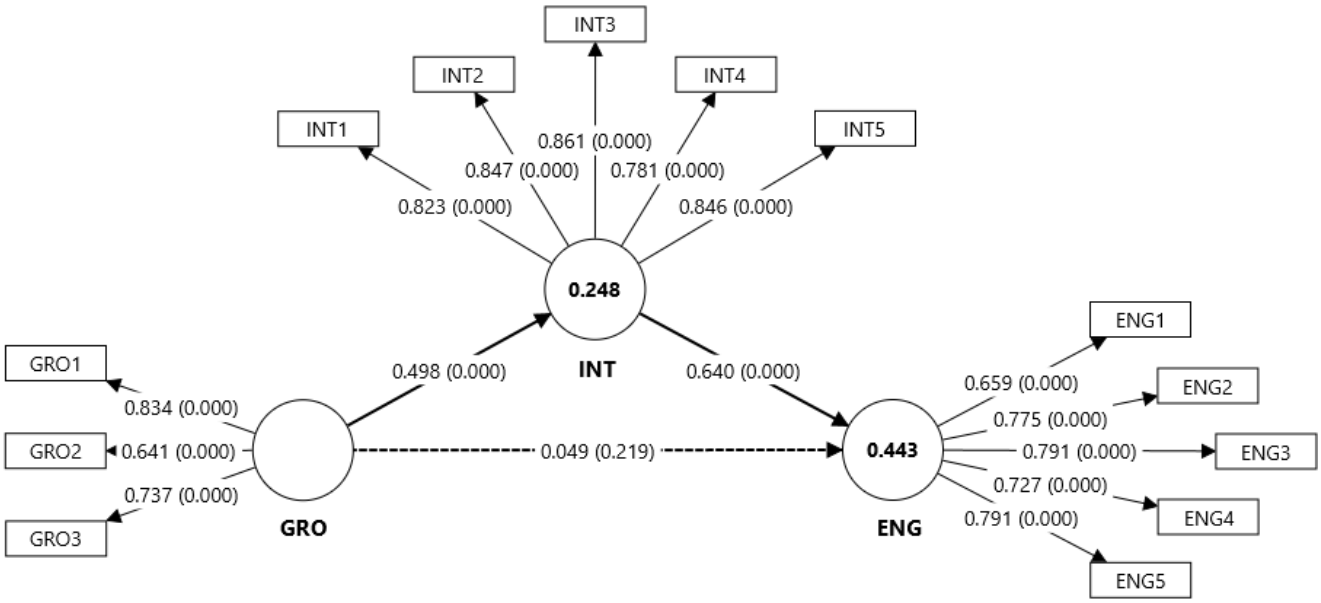
Direct effects				
Path	β	Cohen's f^2	p	BCa 95%CI [lower, upper]
GRO → ENG	.049	.009	.219	[.-.056, .152]
GRO → INT	.498	.352	.000	[.400, .575]
INT → ENG	.640	.578	.000	[.556, .704]
Indirect effect				
Path	β	v^2	p	BCa 95%CI [lower, upper]
GRO → INT → ENG	.325	.282	.000	[.251, .381]
Total effect				
Path	β	Cohen's f^2	p	BCa 95%CI [lower, upper]
GRO → ENG	.374	.212	.000	[.556, 704]

Table 4
PLSpredict MV Summary

	$Q^2_{predict}$	PLS-SEM_MAE	LM_MAE
ENG1	.041	.825	.828
ENG2	.092	.600	.601
ENG3	.077	.579	.574
ENG4	.074	.613	.617
ENG5	.048	.623	.620

Figure 2 presents the study's structural model, illustrating the hypothesized relationships between the variables. The indicator loadings and path coefficients are shown with their corresponding *p*-values (shown in brackets). A dotted line indicates that a path is statistically insignificant.

Figure 2
Results of the Full Structural Model



5 Discussion

The present study aimed to examine the relationships among growth mindset, intrinsic motivation, and cognitive engagement in the context of L2 pragmatic learning, with pragmatic ability operationally defined as the ability to use language politely. The first research question asks to what extent growth pragmatic mindset directly predicts cognitive pragmatic engagement, that is whether the belief in the malleability of the ability to use language politely significantly predicts the extent of mental effort invested in understanding how to use English politely during exposure to communicative input (e.g., movies). It was found that growth pragmatic mindset did not significantly predict cognitive pragmatic engagement. This finding is consistent with previous L2 research (Derakhshan et al., 2024; Lou et al., 2025).

At least two possible explanations may account for this null effect. First, cognitive engagement does not seem to be a proximal outcome of growth mindset in the context of L2 pragmatic learning. According to mindset theory (Yeager & Dweck, 2020, p. 1274), a growth mindset should be associated with learning (mastery) goals, positive effort beliefs, and resilient attributions. It is reasonable to argue these three factors serve as necessary mediators for a growth mindset to lead to desired outcomes (e.g., engagement). If any of these variables are absent, the growth mindset may not effectively produce the expected effect. For instance, if learners do not adopt mastery goals, they may remain less engaged in the learning process regardless of the strength of their growth mindset. Applying this logic to the present finding, the lack of a significant relationship between growth pragmatic mindset and cognitive pragmatic engagement may stem from the absence of one or more of these mediating variables. Without them, growth pragmatic mindset alone may not be sufficiently impactful to influence cognitive pragmatic engagement. As in the words of Yan and Schuetze (2023, p. 211), "Except in rare cases, we have difficulty imagining how changing a belief directly improves academic performance without any intervening change in behavior."

The second possible explanation for the lack of a significant effect of growth pragmatic mindset on cognitive pragmatic engagement may have to do with the learning context of the present study (mindset

x context theory; Yeager & Dweck, 2020). In a study examining the moderating effect of societal mindset norms on the relationship between mindsets and academic performance (mathematics, science, and reading), Lou and Li (2023) found that the effect of a growth mindset was stronger in countries with growth-mindset norms than in those with fixed-mindset norms. Indonesia, the country where the participants of the present study reside, is classified as a country with predominantly fixed-mindset norms (OECD, 2021), making it an unsupportive context for a growth mindset, which likely diminishes the effect growth mindset on engagement. The relatively strong growth pragmatic mindset expressed by learners in this study does not necessarily contradict this claim, given the domain specificity of mindsets (e.g., Mercer & Ryan, 2010; Khajavy et al., 2022). While OECD (2021) measured learners' general intelligence mindset, the current investigation focused specifically on their pragmatic mindset.

The second research question examines the extent to which a growth pragmatic mindset predicts whether learners are motivated to acquire English politeness due to its inherent enjoyment. The finding revealed that growth pragmatic mindset significantly predicted cognitive pragmatic engagement with a large effect size. This suggests that when learners perceive their ability to use English politely as improvable through effort, they are more likely to be motivated to learn such a skill because they find the learning process fun and enjoyable. However, caution needs to be taken in interpreting this finding. Rather than assuming a causal relationship (i.e., endorsing a growth pragmatic mindset causes intrinsic motivation), we should interpret it as correlational. Just because learners hold a growth pragmatic mindset does not necessarily mean their motivation will be intrinsic. A learner may adopt this mindset yet feel motivated by external pressures (e.g., job opportunities). While mindsets reflect beliefs about how an ability develops (Dweck & Yeager, 2020), motivation concerns the forces driving individuals to engage in a behavior (Dörnyei & Ushioda, 2021). The finding of the present study—that growth pragmatic mindset significantly predicts intrinsic pragmatic motivation—may be explained by two interrelated factors associated with growth language mindset, namely positive emotions (e.g., enjoyment; Eerdemutu et al., 2024; Zhong et al., 2024; Lou et al., 2025) and self-regulation (Lou & Noels, 2019; Teng et al., 2024). When learners enjoy learning how to use English politely, chances are that they will feel motivated to learn such a skill due to the pleasure induced by engaging in the learning process. Beyond merely holding a growth pragmatic mindset, these learners may also find mental engagement with pragmatic aspects inherently rewarding. Learners develop self-regulation when they receive autonomy and competence satisfaction and supports (e.g., from teachers) as these satisfaction and supports fulfill the fundamental requirements of intrinsic motivation (Ryan et al., 2019).

The finding pertaining to the third research question revealed a significant positive correlation between intrinsic pragmatic motivation and cognitive pragmatic engagement, with a substantial effect size. This suggests that individuals with a stronger inclination to acquire the ability to use English in a polite manner due to the pleasure derived from participating in the activity are more likely to focus on this pragmatic aspect when exposed to communicative input. When intrinsically motivated to learn, learners tend to put forth greater effort to achieve a deeper understanding of the learning target. This finding highlights the critical role of intrinsic motivation, providing empirical evidence in support of SDT's assertion that greater self-determined motivation fosters higher student engagement (Ryan & Deci, 2020; Noels, 2023). Optimal engagement is a byproduct of interesting and enjoyable activities (Sulis, 2022; Vo et al., 2024). As previously noted, learners' intrinsic motivation is facilitated by the satisfaction of their need for autonomy. In a study which examined the determinants of classroom engagement among Spanish university students, Núñez and and León (2019) found that autonomy need satisfaction significantly predicted engagement.

The final research question examined whether a growth pragmatic mindset indirectly predicts cognitive pragmatic engagement through intrinsic pragmatic motivation. The result revealed a statistically significant indirect effect with a large effect size. In this study, intrinsic pragmatic motivation fully mediated the relationship between growth pragmatic mindset and cognitive pragmatic engagement, suggesting that the effect of mindset on engagement operates entirely through motivation. The full

mediation finding aligns with the mindset meaning system theory, which posits that mindset influences behavior primarily through motivational mechanisms (Dweck & Yeager, 2019). This implies that a growth pragmatic mindset does not directly enhance cognitive engagement unless it first fosters intrinsic motivation. It seems that full mediation is theoretically more plausible than partial mediation in the context of the present study, as simply endorsing a growth mindset may not directly translate into action without an underlying motivational mechanism (see Yan & Schuetze, 2023). This finding also resonates well with SDT (Ryan & Deci, 2020), which posits that intrinsic motivation is a key driver of sustained engagement.

Turning to the methodological approach, the use of PLS-SEM was well-suited to our study's exploratory nature and its aim of predicting key outcome. This method facilitated a robust analysis of the relationship between growth pragmatic mindset, intrinsic pragmatic motivation, and cognitive pragmatic engagement. While the absence of global goodness-of-fit indices (e.g., CFI, RMSEA) precludes claims about the model's overall fit (Hair & Alamer, 2022; Sarstedt et al., 2023), the PLS-SEM approach successfully revealed a significant network of relationships among a growth pragmatic mindset, intrinsic pragmatic motivation, and cognitive pragmatic engagement.

6 Conclusion

The present study provided empirical evidence pertaining to the relationships among growth pragmatic mindset, intrinsic pragmatic motivation, and cognitive pragmatic engagement. Although growth pragmatic mindset did not significantly predict cognitive pragmatic engagement directly, it demonstrated a significant indirect effect through intrinsic pragmatic motivation, with the mediation analysis revealing a large effect size. In the context of L2 pragmatics learning, cognitive engagement necessitates more than mere endorsement of a growth mindset. Rather, the development of intrinsic motivation appears essential to translate mindset into actual engagement with pragmatic aspects of the language.

The findings of the present study should be interpreted with caution due to at least two limitations. First, although the sample size (N = 255) far exceeded the minimum size (N = 45) required for this study calculated using the inverse square root method (Kock & Hadaya, 2018), the use of a convenience sampling approach may limit the generalizability of the results. Second, the cross-sectional design of this study precludes causal inferences. Future research should employ longitudinal designs with random sampling to strengthen the validity of the findings.

Notwithstanding these limitations, the findings carry important pedagogical implications. Specifically, L2 teachers should prioritize cultivating a growth mindset when teaching pragmatic competence. Practical approaches may include explicit growth mindset training or feedback emphasizing that pragmatic skills can improve with effort and persistence. For instance, teachers might use process praise (e.g., 'Your consistent effort really helps your request strategy') rather than trait praise (e.g., 'You're so good at learning politeness'). Additionally, fostering intrinsic motivation is essential. To achieve this, instruction should incorporate activities designed to satisfy students' basic psychological needs of competence and autonomy (Ryan & Deci, 2020). This can be realized by designing instructional materials and activities that ensure students feel capable of completing tasks while retaining agency over their learning.

Ethics Approval

This is an observational study, and the study procedures posed minimal risk to participants, and ethics approval was not required by The Institute for Research and Community Service of Politeknik Negeri Bali.

Informed Consent

Informed consent was obtained verbally from all participants prior to their involvement in the study. Participants were informed of the study's purpose, procedures, their right to withdraw, and confidentiality measures. This information was also provided in the cover letter of the questionnaire, which participants reviewed before agreeing to participate.

Data Availability

The data set and research instrument can be accessed via the following link: https://osf.io/tnhuk/files/osfstorage

Funding

The research leading to this paper was funded by The Institute for Research and Community Service, Politeknik Negeri Bali (Grant No. 04395/PL8/AL.04/2025)

Acknowledgement

The authors thank the students of Politeknik Negeri Bali for their participation and the English teachers for their assistance in distributing the questionnaire. We would also like to express our sincere gratitude to the anonymous reviewers for their insightful comments and constructive suggestions, which have significantly improved the quality of this paper. We also extend our thanks to the editor, Professor Mark Feng Teng, for his guidance throughout the review process.

Appendix (Research Instrument)

Growth Pragmatic Mindset (GRO)

GRO1. Saya yakin dengan belajar yang tekun saya dapat meningkatkan kemampuan dalam menggunakan bahasa Inggris secara santun. (*I am sure by learning diligently I can improve my ability in using English politely*)

GRO2. Berapa pun usia kita, kita tetap masih bisa meningkatkan kemampuan kita dalam menggunakan bahasa Inggris secara santun, asalkan kita belajar dengan tekun. (*No matter how old we are, we can still improve our ability in using English politely*)

GRO3. Saya yakin dengan strategi belajar yang tepat saya akan dapat meningkatkan kemampuan saya dalam menggunakan bahasa Inggris secara santun. (*I am sure by appropriate learning strategies we can improve our ability to use English politely*)

Intrinsic Pragmatic Motivation (INT)

INT1. Belajar bagaimana menggunakan bahasa Inggris secara sopan merupakan aktivitas yang menyenangkan. (*Learning how to use English politely is an enjoyable activity*)

INT2. Belajar bagaimana menggunakan bahasa Inggris secara sopan adalah kegiatan yang menarik. (*Learning how to use English politely is an interesting activity*)

INT3. Saya merasa enjoy ketika belajar bagaimana menggunakan bahasa Inggris secara sopan. (I enjoy learning how to use English politely)

INT4. Saya merasa antusias dalam belajar bagaimana menggunakan bahasa Inggris secara sopan. (*I feel anthusiastic in learning how to use English politely*)

INT5. Saya merasa bersemangat ketika belajar bagaimana menggunakan bahasa Inggris secara sopan. (*I feel excited when I learn how to use English politely*)

Cognitive Pragmatic Engagement (ENG)

ENG1. Ketika saya mendengarkan orang berbicara dalam bahasa Inggris, saya memperhatikan apakah ucapan yang disampaikan sopan atau tidak. (*When I listen to someone speaking in English I pay attention to whether the utterances are polite or not*)

ENG2. Ketika saya menonton film dalam bahasa Inggris, saya mempelajari bagaimana menggunakan bahasa Inggris secara santun (*When I watch English movies I learn how to use English politely*).

ENG3. Ketika saya mendengarkan orang berbicara dalam bahasa Inggris, saya memperhatikan bagaimana orang tersebut menyampaikan pesan secara santun. (*When I listen to someone speaking in English I pay attention to how that person is delivering the message politely*)

ENG4. Ketika saya mendengarkan orang berbicara dalam bahasa Inggris, saya mencoba untuk menghubungkan dengan apa yang saya ketahui sebelumnya terkait kesopanan dalam berbahasa Inggris. (*When I listen to someone speaking in English I try to connect what I have known about politeness in using English*)

ENG5. Ketika saya mendengarkan orang berbicara dalam bahasa Inggris, saya mencoba untuk membuat kesimpulan terkait bagaimana menggunakan bahasa Inggris secara santun. (*When I listen to someone speaking in English I try to draw a conclusion related to how to use English politely*)

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