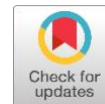


Additive, not conditional: Text difficulty, self-efficacy, and classroom climate as predictors of reading anxiety in Indonesian EFL higher education

Eva Faliyanti^{a,b,1*}, Risma Margaretha Sinaga^{a,2}, Rabiyyatul Adawiyah Siregar^{a,3}, Budi Kadaryanto^{a,4}, Irma Lusi Nugraheni^{a,5}



^a Universitas Lampung, Jln. Prof. Dr. Sumantri Brojonegoro No. 1, Gedong Meneng, Kecamatan Rajabasa, Kota Bandar Lampung, Lampung 35145, Indonesia

^b Universitas Muhammadiyah Metro, Jl. Ki Hajar Dewantara No.116, Iringmulyo, Kec. Metro Tim., Kota Metro, Lampung 34112, Indonesia

¹ evafaliyanti@ummetro.ac.id, ² risma.margaretha@fkip.unila.ac.id, ³ faizehsan@fkip.unila.ac.id, ⁴ budi.kadaryanto@fkip.unila.ac.id,

⁵ irma.nugraheni@fkip.unila.ac.id

*Corresponding author

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ABSTRACT

Foreign language reading anxiety (FLRA) is a persistent affective barrier in EFL contexts, yet research in Indonesia has remained largely descriptive, ranking the sources of anxiety without testing whether they predict FLRA inferentially or whether learner and classroom resources alter their impact. This study addressed both questions through moderated multiple regression with 178 EFL undergraduates (semesters 3–6) at a university in Lampung, Indonesia, using six adapted instruments. The central finding was not the one anticipated. Neither reading self-efficacy nor classroom supportive climate moderated any relationship between text difficulty and FLRA (all $p \geq .53$; $\Delta R^2 = .002$), and a sensitivity analysis confirmed that the design could detect interactions of $f^2 \geq .045$, so conditional effects of practical magnitude can be excluded although smaller ones cannot. Instead, both resources operated additively rather than conditionally, reducing FLRA directly and uniformly (self-efficacy $b = -0.221$; classroom climate $b = -0.188$) and adding 10.4% of explained variance. Among the predictors, performance worry dominated ($b = 0.389$, $f^2 = .350$), outweighing vocabulary difficulty and topic familiarity; together the three explained 46.4% of FLRA variance. Confidence and a supportive climate therefore appear to lower the anxiety baseline without blunting specific text-difficulty triggers. Indonesian EFL instruction should reduce the evaluative stakes of reading tasks directly rather than relying on affective resources to buffer them.



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1. Introduction

Reading in a foreign language is rarely a neutral cognitive act. For many English as a foreign language (EFL) learners, it is an experience layered with uncertainty, self-doubt, and affective tension that can significantly undermine both the process and product of comprehension. This affective dimension, variously described as reading apprehension, comprehension worry, or linguistic insecurity, constitutes foreign language reading anxiety (FLRA), a construct-specific form of anxiety that arises during the act of reading in a non-native language (Saito et al., 1999). Unlike general academic anxiety, FLRA is triggered by features of the reading task itself, including unfamiliar words, culturally distant content, and

the pressure of being evaluated. These triggers can activate a cycle of avoidance and disengagement that compounds over time.

The literature on FLRA has grown considerably over the past two decades, particularly in Asian EFL contexts. Researchers working in Jordan, Turkey, Indonesia, and Taiwan have consistently documented that a majority of EFL learners experience moderate to high levels of reading anxiety, with unfamiliar vocabulary and performance-related concerns emerging as the most frequent sources (Ahmad et al., 2013; Muhlis, 2017; Özer & İşpınar Akçayoğlu, 2021). In Indonesia, Fitrawati et al. (2023) reported that 67% of EFL university students in Padang experienced moderate reading anxiety, with vocabulary difficulty ranked as the primary contributing factor, followed by concerns about reading performance.

Despite this growing body of evidence, a review of the FLRA literature published between 2019 and 2024 reveals a methodological plateau. Of the peer-reviewed studies focusing on Indonesian EFL learners, the overwhelming majority have employed descriptive survey designs that identify the factors most commonly associated with reading anxiety (Muhlis, 2017; Al Faruq, 2019; Kamil & Fitrawati, 2022; Fitrawati et al., 2023). While such approaches establish prevalence, they cannot answer the three questions that matter most for intervention: Do these factors independently predict FLRA variance when they co-occur? Which factor contributes the most unique predictive weight? And do any individual or contextual resources meaningfully alter these relationships? These questions require inferential, multivariate methodology; however, to the authors' knowledge, no published study has applied moderated multiple regression to test text-difficulty factors and affective moderators simultaneously within an Indonesian EFL university sample.

Two moderators were selected on theoretical grounds. Reading self-efficacy, or one's belief in one's capacity to comprehend and complete reading tasks in a foreign language, is a well-established regulator of anxiety-related responses in achievement settings (Bandura, 1997; Prat-Sala & Redford, 2010). Students with high self-efficacy tend to reframe difficulty as a challenge rather than a threat, which should attenuate the anxiety triggered by demanding reading tasks. A classroom supportive climate, that is, the perceived degree to which teachers and peers create a psychologically safe environment, has similarly been shown to buffer language anxiety in interactive contexts (Jin et al., 2021; Toyama & Yamazaki, 2021).

The Indonesian EFL context provides a particularly illuminating setting for this investigation. Students in collectivist societies consistently report higher levels of foreign language anxiety than those in more individualist contexts; this pattern was empirically established by Toyama and Yamazaki (2022) across 35 countries. In collectivist classrooms, public performance has face-saving implications: making errors in front of peers is not merely an academic setback but a social one, intensifying the evaluative dimension of reading anxiety. Dang (2024) further demonstrated that reading anxiety correlates with oral performance, test results, and multiple language skills, confirming that the consequences of FLRA extend beyond reading.

Against this backdrop, the present study pursues three research questions: (1) Do vocabulary difficulty, topic familiarity, and performance worry significantly predict FLRA among EFL undergraduates after controlling for demographic variables? (2) Does reading self-efficacy moderate the relationships between text-difficulty factors and FLRA? (3) Does classroom supportive climate moderate the relationship between performance worry and FLRA? By addressing these questions within a single integrated model, this study contributes a rigorous inferential test of text-difficulty factors as simultaneous predictors of FLRA, moving beyond the descriptive ranking approach that has dominated the field, and provides the first examination of moderated effects in an Indonesian EFL university sample.

1.1. Foreign Language Reading Anxiety

The conceptual foundation for studying FLRA is Horwitz, Horwitz, and Cope's (1986) seminal model of foreign language classroom anxiety, which identified a unique affective syndrome characterized by communication apprehension, test anxiety, and fear of negative evaluation. Saito et al. (1999) were the first to operationalize reading-specific anxiety by developing the Foreign Language Reading Anxiety Scale (FLRAS) and demonstrating that FLRA is distinguishable from general foreign language anxiety, although moderately correlated with it. Subsequent research has confirmed the debilitating consequences of elevated FLRA. Limeranto and Subekti (2021) found a significant negative correlation between FLRA scores and reading performance among Indonesian theology students, whereas Mikami (2023) noted that most anxiety in L2 reading is debilitating rather than facilitative, and Mardianti et al. (2021) reported a

comparable negative association between reading anxiety and comprehension among Indonesian ESP learners. Within the Indonesian EFL context, Muhlis (2017) found that more than half of senior high school students experienced moderate reading anxiety, and Fitrawati et al. (2023) replicated this pattern at the university level, with 87% of participants reporting either moderate or high anxiety, underscoring reading anxiety as a systemic feature of EFL learning in Indonesia. Whether the three-dimensional structure Saito et al. (1999) proposed replicates outside Anglophone and East Asian samples remains an open psychometric question (Hamada & Takaki, 2019), one to which the present study returns in the measurement model.

1.2. Text-Based Difficulty Factors as Predictors of FLRA

Ahmad et al. (2013) proposed a widely adopted taxonomy of FLRA sources, dividing them into text-feature factors (unfamiliar vocabulary, unfamiliar topics, and unfamiliar culture) and personal factors (worry about reading effects and fear of making errors). This framework anchors the selection of the three predictors in the current model.

Vocabulary difficulty (X1) occupies a particularly prominent position in FLRA research. When learners encounter lexical items they cannot decode, cognitive resources are redirected from meaning construction toward word-level problem solving, a shift that imposes both cognitive and affective costs (Nassaji, 2003). Fitrawati et al. (2023) reported that the unfamiliar vocabulary theme yielded the highest total response rate (71.17%) among all FLRA-contributing factors, consistent with earlier work by Muhlis (2017) and Al-Shboul et al. (2013). Topic familiarity (X2) operates through schema theory: when readers encounter texts on familiar subjects, background knowledge activates anticipatory frameworks that reduce uncertainty and allow lexical gaps to be bridged through contextual inference (Carrell & Eisterhold, 1983). Dang (2022) provided empirical support for this mechanism, demonstrating that topic familiarity inversely predicted FLRA in a controlled experimental design. Performance worry (X3) captures the evaluative dimension of reading anxiety, the fear of being judged negatively by teachers or peers during assessed reading activities. Horwitz et al. (1986) identified fear of negative evaluation as a core component of foreign language classroom anxiety, and Perrodin (2022) confirmed that performance-related anxiety persists even among adult professionals working in international organizations.

1.3. Reading Self-Efficacy as a Proposed Moderator

Bandura's (1997) self-efficacy theory posits that domain-specific beliefs about one's capability predict not only performance outcomes but also the affective states associated with challenging tasks. Prat-Sala and Redford (2010) operationalized reading self-efficacy as a multidimensional construct encompassing task confidence, comprehension confidence, and persistence efficacy. Özer and İspınar Akçayoğlu (2021) found self-efficacy beliefs to be among the strongest predictors of academic achievement in EFL students, partly through their negative association with language anxiety, and Valizadeh (2021) demonstrated that reading strategy instruction, an intervention that implicitly strengthens reading self-efficacy, reduced FLRA scores. What this literature establishes, however, is a main effect. The moderating prediction is stronger and follows from the appraisal logic of the theory: if efficacy beliefs govern whether a demanding task is construed as challenge or threat, then the same level of vocabulary difficulty should provoke less anxiety in a high-efficacy reader than in a low-efficacy one. This is a claim about slopes rather than levels, and it has not been tested in an EFL reading context.

1.4. Classroom Supportive Climate as a Proposed Moderator

The social environment of the language classroom has long been recognized as a context variable that shapes learners' affective experiences. Trickett and Moos (1973) identified teacher support and peer involvement as central dimensions of classroom climate. Jin et al. (2021) demonstrated through a positive psychology intervention that improvements in perceived teacher empathy and peer acceptance produced significant reductions in overall FLA, and Toyama and Yamazaki (2021), reviewing 27 intervention studies, found consistent evidence that low-stakes, supportive classroom arrangements reduced language anxiety across diverse EFL contexts. Here too the established finding is a main effect. The moderating prediction is that if the evaluative stakes of reading performance are lower in a classroom where errors are treated as learning opportunities, then the association between performance worry and FLRA should itself be weaker there. This is a distinct and considerably stronger claim than the documented average reduction.

1.5. Conceptual Framework and Research Hypotheses

Taken together, these two literatures make a common structural claim that has not been tested directly: that the impact of text difficulty on reading anxiety is conditional on the psychological and social resources available to the reader. Both bodies of work have established main effects convincingly; neither has established the interaction that their theoretical logic implies. The model specified below makes these conditional paths explicit so that they can be tested against the alternative, namely that these resources act on the anxiety baseline independently of the triggers.

Drawing on the preceding review (Figure 1), the present study proposes a moderated regression model in which three text-difficulty predictors (X1: vocabulary difficulty; X2: topic familiarity; and X3: performance worry) predict FLRA (Y), with relationships moderated by reading self-efficacy (Z1) and classroom supportive climate (Z2). Seven hypotheses were tested:

H1: Vocabulary difficulty (X1) positively and significantly predicts FLRA (Y).

H2: Topic familiarity (X2) negatively and significantly predicts FLRA (Y).

H3: Performance worry (X3) positively and significantly predicts FLRA (Y).

H4: Reading self-efficacy (Z1) moderates the X1→Y relationship, such that the effect of vocabulary difficulty on FLRA is weaker for students with higher self-efficacy.

H5: Reading self-efficacy (Z1) moderates the X3→Y relationship, such that the effect of performance worry on FLRA is weaker for students with higher self-efficacy.

H6: Classroom supportive climate (Z2) moderates the X1→Y relationship, such that the effect of vocabulary difficulty on FLRA is weaker in more supportive classroom environments.

H7: Classroom supportive climate (Z2) moderates the X3→Y relationship, such that the effect of performance worry on FLRA is weaker in more supportive classroom environments.

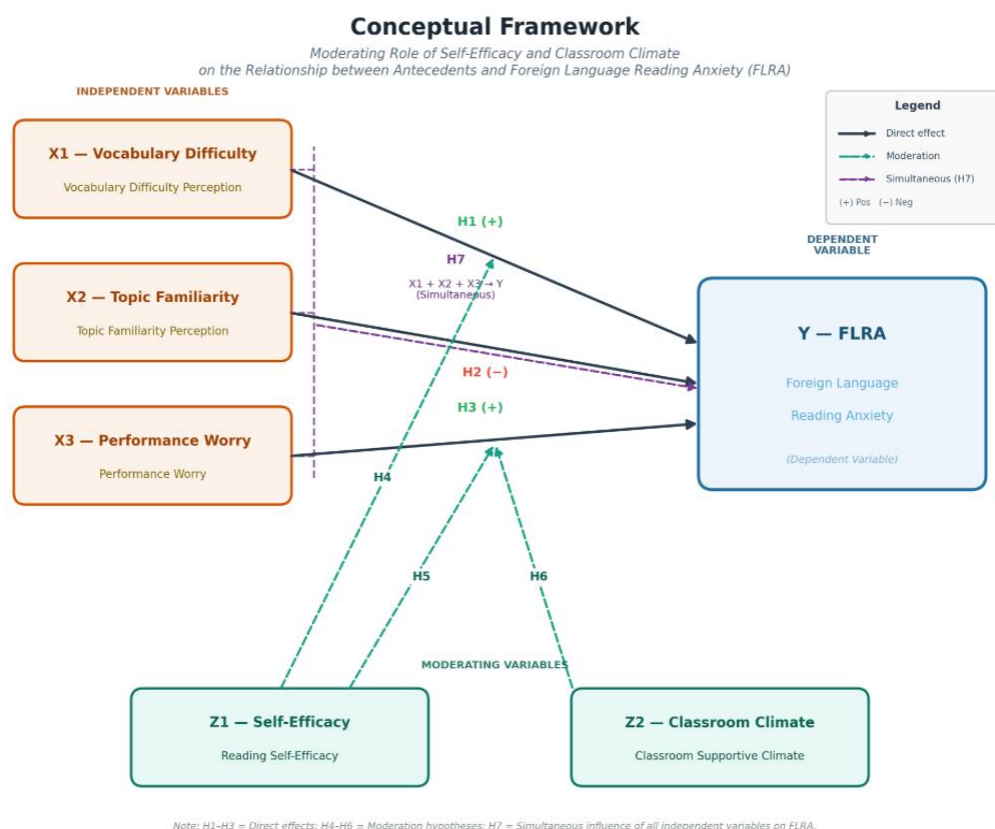


Figure 1. Conceptual framework of the study

2. Method

2.1. Research Design

This study employed a quantitative, non-experimental cross-sectional design and operationalized a moderated multiple regression framework (Aiken & West, 1991; Hayes, 2018) to test whether text-difficulty factors significantly predict FLRA and whether self-efficacy and classroom climate moderate those relationships. All data were collected at a single time point using self-report questionnaires distributed through Google Forms, and all analyses were conducted in Stata 18.

2.2. Participants and Sampling

The participants were 178 undergraduate students enrolled in the English Language Education Department at a university in Lampung, Indonesia, during the 2024/2025 academic year. Sampling was restricted to students in the intermediate exposure phase (semesters 3–6), in which reading anxiety is most theoretically expected to manifest (Horwitz et al., 1986; Kamil & Fitrawati, 2022). The sample size was determined a priori using G*Power 3.1 for the main-effects model ($f^2 = 0.15$, $\alpha = .05$, power = .80, seven predictors), yielding a minimum of $N = 103$, which the final sample of 178 exceeded. We note explicitly that this calculation addressed main effects only. Interaction effects in observational cross-sectional designs are typically far smaller than main effects and require substantially larger samples to detect (Aguinis et al., 2005; Baranger et al., 2023); the present design was therefore adequately powered to test H1–H3 but not to rule out small conditional effects in H4–H7, a constraint quantified in Section 3.5. We further note in advance that recruitment from a single institution and a single programme may compress variance on the moderator variables, a form of indirect range restriction with known consequences for interaction detection, to which we return in Sections 3.1 and 4.2. Stratified random sampling ensured proportional representation by semester and gender. The final sample comprised 118 female (66.3%) and 60 male (33.7%) students across semesters 3–6. The survey platform did not record response duration, so completion time could not be computed; given the 64-item length we estimate approximately 12 to 15 minutes, and we record the absence of this measure as a limitation. All participants provided informed digital consent, and the study was conducted in accordance with the institutional research ethics guidelines.

2.3. Instruments

Six instruments were employed, all using a five-point Likert format (1 = strongly disagree; 5 = strongly agree) and adapted into Indonesian through a forward-backward translation procedure involving two bilingual specialists with complementary expertise, each with more than ten years of professional experience. The forward translation from English into Indonesian was performed by a lecturer in English language education who is also a teacher educator and a certified Indonesian language teacher; this profile was selected so that target-language naturalness and classroom register would be judged by someone familiar with both Indonesian language pedagogy and the EFL population under study. The back-translation into English was performed independently, without access to the original instruments, by a linguist holding a doctorate in linguistics, who was responsible for semantic and conceptual equivalence between the source items and their Indonesian renderings. The pairing was deliberate, since adapting an affective instrument of this kind requires both linguistic precision and direct pedagogical familiarity with the target population, and neither specialist worked from linguistic training alone. The original and back-translated versions were then compared item by item, and discrepancies were resolved through discussion between the two translators until consensus was reached, with priority given to conceptual rather than literal equivalence. Foreign language reading anxiety (Y) was measured using the Foreign Language Reading Anxiety Scale (FLRAS; Saito et al., 1999), adapted to 20 items across three dimensions: reading apprehension, comprehension worry, and cultural-linguistic difficulty. Vocabulary difficulty (X1) was assessed using an eight-item scale adapted from Al-Shboul et al. (2013). Topic familiarity (X2) was measured with six items adapted from Dang (2022) and treated as unidimensional. Performance worry (X3) was based on Horwitz et al. (1986), yielding eight items across oral reading fear and negative evaluation fear. Reading self-efficacy (Z1) was operationalized using 12 items adapted from Prat-Sala and Redford (2010), across task confidence, comprehension confidence, and persistence efficacy. Classroom supportive climate (Z2) was measured with 10 items adapted from Trickett and Moos (1973) and updated in light of Jin et al. (2021), covering teacher support and peer safety. The full questionnaire comprised 64 items. All measurement items, grouped by variable, are presented in the Appendix.

2.4. Measurement Model Validation

Because the questionnaire comprised 64 items, responses were first screened for careless and fatigued responding using three standard indices (Meade & Craig, 2012). No respondent produced a within-person standard deviation of zero across items, and the minimum observed was 0.717 ($M = 0.992$, $SD = 0.138$), with no respondent falling below the 0.50 threshold conventionally used to flag invariant responding. The longstring index, the longest run of identical consecutive responses, averaged 4.69 (maximum = 10); retaining or excluding the single case that reached a run of 10 did not alter any reported coefficient. Finally, the three reverse-scored items correlated positively with their respective scale composites after recoding ($Y7_r$, $r = +.51$; $Y20_r$, $r = +.47$; $X1_8_r$, $r = +.28$), indicating that respondents attended to item polarity rather than responding automatically. The instrument did not include embedded attention-check items, a design limitation recorded here.

Confirmatory factor analysis (CFA) was then conducted using maximum likelihood estimation in Stata 18. The full measurement model (13 first-order factors across 64 items, $N = 178$) demonstrated acceptable fit: $\chi^2(1874) = 2194.57$, $p < .001$, CFI = 0.910, TLI = 0.903, RMSEA = 0.031 (90% CI [0.025, 0.036]), SRMR = 0.061, following Hu and Bentler (1999) thresholds. We note that this model estimates a large number of parameters relative to N and that these indices should therefore be read as indicative rather than definitive. Item trimming following Hair et al. (2019) removed two items: $X3_1$ ($\lambda = 0.473 < 0.50$) and $Z1_10$ ($\lambda = 0.525$; substantial cross-loading). The final model comprised 62 items with all loadings $\lambda = 0.503\text{--}0.694$ (all $p < .001$). Cronbach's alpha for the full scales ranged from .770 to .911.

Discriminant validity was assessed using the heterotrait-monotrait ratio of correlations (HTMT), which is less biased than the Fornell-Larcker criterion when AVE is low (Henseler et al., 2015). All HTMT values fell below the conservative .85 threshold, the highest being between FLRA and performance worry (HTMT = .681; Table 1), confirming that the six constructs are empirically distinguishable.

Table 1. Heterotrait-Monotrait (HTMT) Ratios of Correlations ($N = 178$)

	Y	X1	X2	X3	Z1	Z2
Y - FLRA	–					
X1 - Vocabulary Difficulty	.549	–				
X2 - Topic Familiarity	.414	.293	–			
X3 - Performance Worry	.681	.307	.231	–		
Z1 - Reading Self-Efficacy	.515	.182	.310	.288	–	
Z2 - Classroom Climate	.459	.296	.172	.186	.312	–

Note. HTMT = heterotrait-monotrait ratio of correlations (Henseler et al., 2015). All values fall below the conservative .85 criterion; the maximum was .681 (Y–X3).

Convergent validity was weaker, and we report it without mitigation. Average variance extracted ranged from .291 to .400, below the .50 criterion across all thirteen dimensions, and composite reliability fell below .70 in four dimensions (CompBreak = .645, OralFear = .576, NegEval = .673, PersEff = .629). Because the tolerance for $AVE < .50$ described by Fornell and Larcker (1981) is conditional on $CR > .70$, it does not extend to these four dimensions. Item pruning was considered but rejected, since reaching $AVE \geq .50$ would have required removing roughly half the items from several dimensions, sacrificing the content coverage of validated instruments for a psychometric index. Low convergent validity at the dimension level is therefore recorded as a measurement limitation that constrains the precision, though not the direction, of the effects reported below.

Two further results bear on the measurement model. The three FLRA subdimensions exhibited inter-correlations approaching unity ($r = .972\text{--}.984$), and the three self-efficacy subdimensions produced an inadmissible solution (inter-factor correlations of 1.034–1.080), indicating that the hypothesised subdimensional structures were not empirically recoverable in this sample. We did not anticipate this outcome and do not claim theoretical grounds for it. The most defensible interpretation is that the adapted FLRAS functioned here as a single general factor rather than the three-dimensional structure proposed by Saito et al. (1999), and may therefore be indexing general reading distress rather than differentiated FLRA subtypes. This is not unprecedented: Hamada and Takaki (2019), in a psychometric replication study, questioned the cross-contextual stability of the scale's dimensionality. Composite mean scores were accordingly used for Y and Z1, and the resulting loss of dimensional resolution is treated as a limitation of the present measurement model rather than as a finding about the construct.

2.5. Analytical Strategy

All predictor and moderator variables were mean-centered prior to analysis (Aiken & West, 1991; Hayes, 2018), thereby reducing non-essential multicollinearity between main-effect terms and their cross-product interaction terms. Hierarchical multiple regression was conducted in four sequential blocks: demographic controls (Block 1), text-difficulty predictors (Block 2, testing H1–H3), moderator main effects (Block 3), and four interaction terms (Block 4, testing H4–H7). Regression assumptions were verified through Shapiro-Wilk normality testing, Breusch-Pagan and White homoscedasticity tests, variance inflation factors (VIF), and Ramsey RESET. Cohen's f^2 effect sizes were computed for each predictor. Simple slope and Johnson-Neyman procedures were conducted for all moderation hypotheses. Three robustness checks were performed: replication on the semester 5–6 subsample ($n = 106$), replication by gender subgroup, and re-estimation using HC3 heteroscedasticity-consistent standard errors.

3. Findings

3.1. Descriptive Statistics and Preliminary Analyses

Descriptive statistics for all study variables are presented in Table 2. The mean FLRA score was $M = 3.12$ ($SD = 0.62$), indicating moderate-to-elevated reading anxiety; 57.9% of participants fell in the moderate range, 26.4% in the high range, and 15.7% in the low range. Among the predictors, vocabulary difficulty yielded the highest mean ($M = 3.17$, $SD = 0.66$), followed by performance worry ($M = 3.09$, $SD = 0.64$); topic familiarity was the only predictor below the midpoint ($M = 2.97$, $SD = 0.73$). Both moderators scored above the midpoint: reading self-efficacy ($M = 3.28$, $SD = 0.68$) and classroom climate ($M = 3.30$, $SD = 0.69$). All variables exhibited near-normal distributions (skewness: -0.11 to $+0.14$; kurtosis: 2.46 to 2.73). One-way ANOVA and an independent-samples t test confirmed no significant FLRA differences across semesters, $F(3, 174) = 1.34$, $p = .264$, or by gender, $t(176) = -0.924$, $p = .357$.

Both moderators were concentrated in the moderate-to-high range of the scale (self-efficacy: $M = 3.28$, $SD = 0.68$; classroom climate: $M = 3.30$, $SD = 0.69$), with few respondents reporting low self-efficacy or an unsupportive classroom. This distributional feature bears directly on the moderation tests reported in Section 3.5, since detecting an interaction requires variance on the moderator, and indirect range restriction of this kind reduces the statistical power to detect conditional effects (Franco-Martínez et al., 2023; Miciak et al., 2016).

Table 2. Descriptive Statistics of Study Variables ($N = 178$)

Variable	M	SD	Min	Mdn	Max	Skew	Kurt
Y — FLRA	3.12	0.62	1.60	3.13	4.70	−0.05	2.53
X1 — Vocab Diff.	3.17	0.66	1.50	3.13	4.75	+0.01	2.52
X2 — Topic Fam.	2.97	0.73	1.33	3.00	4.83	+0.14	2.73
X3 — Perf. Worry	3.09	0.64	1.43	3.07	4.57	+0.03	2.68
Z1 — Self-Efficacy	3.28	0.68	1.73	3.27	4.82	−0.01	2.46
Z2 — Class. Climate	3.30	0.69	1.80	3.40	4.80	−0.11	2.48

Note. All variables measured on a 1–5 Likert scale. Y = dependent variable; X1–X3 = predictors; Z1–Z2 = moderators.

3.2. Bivariate Correlations

Pearson's correlation coefficients are presented in Table 3. FLRA was significantly positively correlated with vocabulary difficulty ($r = .471$, $p < .001$) and performance worry ($r = .570$, $p < .001$) and significantly negatively correlated with topic familiarity ($r = -.348$, $p < .001$). Both moderators were significantly and negatively correlated with FLRA: reading self-efficacy ($r = -.462$, $p < .001$) and classroom climate ($r = -.407$, $p < .001$). The only non-significant correlation was between topic familiarity and classroom climate ($r = .144$, $p = .055$). VIF values ranged from 1.03 to 1.26 (mean VIF = 1.13), ruling out multicollinearity.

Table 3. Pearson Correlation Matrix (N = 178)

Variable	1	2	3	4	5	M	SD
1. Y — FLRA	—					3.12	0.62
2. X1 — Vocab Diff.	.471***	—				3.17	0.66
3. X2 — Topic Fam.	-.348***	-.231**	—			2.97	0.73
4. X3 — Perf. Worry	.570***	.247**	-.178*	—		3.09	0.64
5. Z1 — Self-Efficacy	-.462***	-.153*	.260***	-.240**	—	3.28	0.68
6. Z2 — Class. Climate	-.407***	-.250***	.144	-.155*	.271***	3.30	0.69

Note. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed). All predictors and moderators were mean-centered.

3.3. Assumption Testing

All regression assumptions were satisfied. The residuals were normally distributed (Shapiro-Wilk $W = 0.994$, $p = .720$). Homoscedasticity was confirmed by Breusch-Pagan ($\chi^2(1) = 0.01$, $p = .927$) and White tests ($\chi^2(53) = 40.66$, $p = .893$). All VIF values were below 1.30 (mean = 1.13; minimum tolerance = 0.79). The Ramsey RESET test yielded $F(3, 165) = 0.79$, $p = .500$, supporting the adequacy of the linear specification. Cook's Distance analysis identified ten moderate leverage points (maximum $D = 0.045$) but no substantively influential outliers.

3.4. Hierarchical Regression Analysis

Table 4 presents the full hierarchical regression results. The four demographic controls (Model 1) explained a non-significant 2.7% of the FLRA variance, $F(4, 173) = 1.20$, $p = .315$. Model 2 introduced the three text-difficulty predictors, producing a large and highly significant increment: $\Delta R^2 = .464$, $\Delta F(3, 170) = 51.71$, $p < .001$, with the model accounting for 49.1% of the total FLRA variance. H1 was supported (vocabulary difficulty: $b = 0.292$, $SE = 0.056$, $p < .001$), H2 was supported (topic familiarity: $b = -0.168$, $SE = 0.049$, $p < .001$), and H3 received the strongest support (performance worry: $b = 0.442$, $SE = 0.056$, $p < .001$). Model 3 added the two moderator variables as main-effect predictors, yielding a further significant increment ($\Delta R^2 = .104$, $\Delta F(2, 168) = 21.58$, $p < .001$), with the model accounting for 59.5% of the FLRA variance. Reading self-efficacy emerged as a significant negative predictor ($b = -0.221$, $f^2 = .118$), as did classroom climate ($b = -0.188$, $f^2 = .091$). Academic semester was the only demographic variable to reach significance across models ($b = 0.065$, $p = .029$).

Table 4. Hierarchical Regression Results: Predictors of FLRA (N = 178)

Predictor	M1 b	M1 SE	M2 b	M2 SE	M3 b	M3 SE	M4 b	M4 SE
Gender	.083	.098	.092	.072	.002	.066	.006	.069
Semester	.076	.044	.043	.033	.065*	.030	.065*	.030
GPA	-.179	.219	-.018	.161	-.006	.145	-.015	.148
Reading Freq.	.001	.058	.050	.043	.011	.039	.008	.040
X1 — Vocab Diff.			.292***	.056	.222***	.052	.227***	.054
X2 — Topic Fam.			-.168***	.049	-.105*	.045	-.105*	.045
X3 — Perf. Worry			.442***	.056	.389***	.051	.389***	.052
Z1 — Self-Efficacy					-.221***	.050	-.222***	.051
Z2 — Class. Climate					-.188***	.048	-.183***	.049
X1 × Z1 (H4)							.038	.075
X3 × Z1 (H5)							.036	.087
X1 × Z2 (H6)							.006	.072
X3 × Z2 (H7)							-.053	.083
R ²	.027		.491		.595		.597	
Adj. R ²	.004		.470		.574		.565	
ΔR^2	—		.464***		.104***		.002	
AIC	339.57		230.15		193.45		200.0	

Note. b = unstandardized regression coefficient; SE = standard error. All predictors were mean-centered. * $p < .05$; ** $p < .01$; *** $p < .001$.

3.5. Moderation Analysis (H4–H7)

Model 4 introduced all four hypothesized interaction terms simultaneously. The addition produced a negligible and non-significant increment: $\Delta R^2 = .002$, $\Delta F(4, 164) = 0.19$, $p = .942$. The AIC increased

from 193.45 (Model 3) to 200.62 (Model 4), and the adjusted R^2 declined from .574 to .565, indicating that the interaction terms added parameter complexity without improving model fit. Table 5 presents the individual interaction coefficients.

Table 5. Moderation Analysis: Interaction Effects on FLRA (Model 4, N = 178)

H	Interaction Term	b	SE	t	p	95% CI	f ²	Decision
H4	X1 × Z1 (Vocab × Self-Efficacy)	.038	.075	0.51	.610	[-.110, +.187]	.0016	Not Supported
H5	X3 × Z1 (Worry × Self-Efficacy)	.036	.087	0.42	.674	[-.134, +.207]	.0011	Not Supported
H6	X1 × Z2 (Vocab × Climate)	.006	.072	0.08	.933	[-.137, +.149]	.0000	Not Supported
H7	X3 × Z2 (Worry × Climate)	-.053	.083	-0.63	.528	[-.217, +.111]	.0024	Not Supported

Note. b = unstandardized coefficient. All variables are mean-centered. f² = Cohen's effect size. None of the interactions reached statistical significance (all p ≥ .53).

None of the four hypothesized interactions reached statistical significance, and joint significance tests confirmed these null findings: Z1 as a moderator, $F(2, 164) = 0.28$, $p = .758$; Z2 as a moderator, $F(2, 164) = 0.20$, $p = .818$. The simple slopes analysis for H4 revealed that the marginal effect of vocabulary difficulty on FLRA was slightly larger, not smaller, at higher levels of self-efficacy ($b = 0.252$ at +1SD Z1 vs. $b = 0.199$ at -1SD Z1). Robustness checks confirmed the stability of the findings across the semester 5–6 subsample ($n = 106$), gender subgroups, and HC3 standard error estimation.

To contextualise these null findings, a sensitivity power analysis was conducted in G*Power 3.1 (F test, linear multiple regression, R^2 increase; $\alpha = .05$, power = .80, $N = 178$, 13 predictors). With one tested predictor, the smallest detectable effect was $f^2 = .045$ ($\Delta R^2 \approx .018$); for the joint test of two interactions per moderator, $f^2 = .055$; and for the four-interaction block, $f^2 = .069$. The observed interaction effects ($f^2 = .0000$ –.0024) were therefore approximately nineteen times smaller than the minimum detectable threshold, and achieved power for a conventionally small interaction effect ($f^2 = .02$; Cohen, 1988) was only .47. Detecting an effect of that magnitude at power .80 would have required $N = 395$. The null results for H4–H7 should accordingly be read as inconclusive with respect to small conditional effects rather than as evidence of their absence, although the observed coefficients are sufficiently close to zero that any true conditional effect would have to fall below the smallest magnitude this literature conventionally treats as meaningful.

4. Discussion

This study tested the relative predictive weight of text-difficulty factors on FLRA and examined whether psychological and contextual resources could meaningfully alter those relationships. The results answered all three research questions, although not always in the anticipated direction.

4.1. Text Difficulty Drives Reading Anxiety but Not Equally

The three predictors together explained nearly half of the FLRA variance in a single model step ($\Delta R^2 = .464$), a substantial contribution for a behavioral study of this kind. A clear hierarchy emerged with important implications for how EFL educators prioritize their anxiety-reduction efforts.

Performance worry (X3) emerged as the dominant predictor by a considerable margin ($b = 0.389$, $f^2 = .350$, approaching Cohen's large threshold). Horwitz et al. (1986) first identified fear of negative evaluation as a defining feature of foreign language classroom anxiety, and Zhang's (2019) meta-analysis confirmed the persistent association between foreign language anxiety and lower language performance. The effect of performance worry on FLRA was approximately three times larger than that of topic familiarity and roughly 1.75 times that of vocabulary difficulty.

This prominence invites a cultural interpretation, and we offer one as a hypothesis rather than as an explanation of our data. Toyama and Yamazaki (2022), in a country-level analysis, found that learners in more collectivist contexts report higher foreign language anxiety than those in more individualist ones. In Indonesian EFL classrooms, where oral reading is routinely evaluated before peers, it is plausible that errors carry social as well as academic consequences, raising the evaluative stakes of reading performance specifically. We emphasise, however, that the present study provides no evidence for this mechanism.

We measured neither self-construal nor face-related concern, and the instruments employed (Saito et al., 1999; Horwitz et al., 1986) are generic rather than culturally specified. The dominance of performance worry observed here is consistent with a cultural amplification account, but it is equally consistent with performance worry being the strongest FLRA predictor generally. Distinguishing the two requires either a cross-cultural design or the direct measurement of cultural orientation alongside FLRA, which we recommend as a priority for subsequent work.

Vocabulary difficulty (X1) contributed a significant and meaningful unique effect ($b = 0.222$, $f^2 = .109$), consistent with Fitrawati et al. (2023). Its effect persisted after partialling out performance worry and topic familiarity, confirming that vocabulary-related anxiety is not merely a proxy for other concerns but a distinct predictor. Topic familiarity (X2) produced the smallest unique effect ($b = -0.105$, $f^2 = .033$), and its significance was not robust to the semester 5–6 subsample ($p = .113$), suggesting that it operates more as a contextual moderator of comprehension difficulty than as a strong independent driver of reading anxiety, which aligns with Dang's (2022) finding that the familiarity effect is most pronounced when language proficiency is low.

4.2. Direct Rather Than Conditional Effects of Self-Efficacy and Classroom Climate

Neither self-efficacy nor classroom climate buffered the effects of text difficulty on FLRA in this sample. All four interaction terms produced negligible effect sizes ($f^2 < .003$) and non-significant results (all $p \geq .53$), and the joint incremental contribution of all interactions to explained variance was $\Delta R^2 = .002$, essentially zero. The AIC increased and the adjusted R^2 decreased when interactions were included, indicating that the moderation model was not preferred on parsimony criteria.

We frame what follows as a provisional main-effects account rather than as evidence for an additive model of FLRA, for the reason the sensitivity analysis makes explicit: the design could detect interactions of $f^2 \geq .045$, and conditional effects below that threshold cannot be excluded. What the data support is the weaker but still substantive claim that self-efficacy and classroom climate produce large, consistent direct effects and no conditional effects large enough to be practically consequential in this population. Both moderators exerted strong direct effects on FLRA, adding 10.4 percentage points to explained variance beyond the text-difficulty predictors. On this reading, self-efficacy and classroom climate lower the general anxiety baseline without altering the specific conditions under which text-difficulty triggers operate.

Several converging lines of evidence are consistent with this interpretation. A meta-analysis of 43 effect sizes from 37 studies involving 26,589 FL learners demonstrated a strong negative link between FL anxiety and FL self-efficacy ($r = -.704$) that remained invariant across school levels, FL anxiety types, measurement tools, language distance, gender, and national income (Zhou et al., 2023). Xu and Xu (2025), using serial mediation with 540 EFL learners, found that self-efficacy reduces language anxiety through a direct pathway independent of specific linguistic demands. Li et al. (2025) reported that self-efficacy, mindfulness, and resilience each contributed independently to FL anxiety prediction among 323 Chinese EFL learners ($\beta_{SE} = -.442$) without significant interactions among them, Cong and Li (2022) showed that self-efficacy and emotional intelligence function through parallel pathways in EFL communication apprehension, and Bailey and Almusharraf (2022), using structural equation modelling with 647 EFL learners, found FL anxiety to exert stable main effects on learning outcomes rather than effects that varied conditionally. These findings align with Bandura's (1997) account of efficacy beliefs influencing performance and affect through largely task-independent mechanisms, and with Dewaele and MacIntyre's (2014) demonstration that foreign language anxiety and enjoyment operate as distinct dimensions rather than as opposite poles of a single continuum. We note, however, that none of these studies tested the specific interactions examined here, so their consistency with a main-effects reading is suggestive rather than confirmatory.

It is equally important to set this against evidence that conditional effects in this domain are detectable under the right conditions. Chen et al. (2025), in a moderated mediation study of 1,877 Chinese secondary school students, found that English academic self-concept significantly moderated the path from social support to foreign language anxiety ($B = -0.058$, $\beta = -.063$, 95% CI $[-.100, -.016]$, $t = -3.03$, $p < .01$), attenuating the predictor's effect on anxiety in precisely the buffering pattern our H4–H7 anticipated. The contrast is instructive rather than contradictory. Converted to the metric used here, their interaction corresponds to approximately $f^2 = .005$, roughly one-eighth of the smallest effect our design could detect; the present sample would have had approximately 16% power to identify an effect of that size, and detecting it at power .80 would have required $N \approx 1,480$. Conditional effects of self-efficacy-like

resources on foreign language anxiety therefore appear to be real but very small, and our null results delimit the conditions under which they can be resolved rather than establishing that they do not exist.

The range restriction noted in Section 3.1 compounds this constraint. Miciak et al. (2016) showed through simulation that indirect range restriction necessitates sample size increases of 32%–71% to achieve statistical power equivalent to that of unrestricted samples, and Baranger et al. (2023) demonstrated that variable reliability and restricted variance jointly and substantially reduce power to detect interactions in cross-sectional designs. Given the low convergent validity reported in Section 2.4, both mechanisms plausibly operated here. The null moderation results are therefore best attributed to a combination of small true effect size, restricted moderator variance, and measurement error, rather than to a demonstrated absence of conditional effects in the population (Aguinis et al., 2005; Baranger et al., 2023).

a) *Motivated reader vulnerability*

One result ran opposite to the buffering hypothesis and merits closer attention. The simple slopes analysis showed that the marginal effect of vocabulary difficulty on FLRA was larger among high-self-efficacy readers ($b = 0.252$ at $+1$ SD) than among low-self-efficacy readers ($b = 0.199$ at -1 SD). The interaction was not significant, so this pattern is descriptive rather than inferential, but its direction is theoretically informative because a buffering account predicts the opposite sign.

We propose a mechanism we term motivated reader vulnerability, grounded in expectancy violation. Self-efficacy beliefs function as predictions about one's own processing: a high-efficacy reader approaches a text expecting comprehension to proceed smoothly. When an unfamiliar word interrupts that flow, it constitutes a discrepancy between expected and actual processing. A low-efficacy reader, who expects difficulty, experiences the same lexical gap as confirmation of an existing expectation and therefore as less informative and less affectively charged. On this account, the anxiety provoked by a specific lexical obstacle scale not with the obstacle's objective difficulty but with the magnitude of the expectancy violation it produces, which is greatest precisely for readers whose baseline expectation is fluency.

This is consistent with Hayasaki and Ryan's (2022) argument that highly engaged language learners are more responsive to affective disruption, because investment renders departures from smooth processing more salient, and with the focus-group evidence of Mouhoubi-Messadh and Khaldi (2022), whose participants reported speaking freely when topic knowledge and vocabulary were secure. It also reframes the relationship between global and local anxiety: protection from general reading anxiety and heightened sensitivity to specific disruptions may be parallel consequences of an invested reading orientation rather than opposing forces. The account yields a prediction the present design cannot evaluate: if the mechanism is expectancy violation rather than difficulty as such, then experimentally manipulating readers' expectations of text difficulty while holding actual difficulty constant should attenuate the anxiety response among high-efficacy readers specifically. We offer this as a hypothesis for experimental work rather than as a conclusion from our data.

4.3. Implications for EFL Reading Pedagogy

If performance worry is the dominant driver of FLRA, with an effect roughly 1.75 times that of vocabulary difficulty, then the highest-yield intervention is not textual but structural: reducing the public, evaluated character of reading tasks. Interventions that target reading texts without addressing the evaluative context are missing the primary source of the problem. We propose four concrete substitutions, each replacing a common practice in Indonesian EFL classrooms with a lower-stakes equivalent that preserves the pedagogical function.

First, public oral reading can be replaced with private audio submission. Rather than calling on students to read aloud before the class, instructors can ask students to record a passage as a voice note submitted through WhatsApp or Google Classroom. Pronunciation and fluency remain fully assessable, but the audience shrinks from thirty peers to one instructor, removing the peer-evaluative component without removing the task. Second, comprehension checks can be made anonymous. Whole-class questioning, in which a wrong answer is publicly visible, can be replaced with anonymous digital polling that displays aggregate results only. The instructor obtains better diagnostic information, because every student answers rather than only the confident ones, while no individual error is attributable. Third, exposure can be staged through small groups. Rehearsing a passage in pairs or triads before any whole-class activity allows errors to occur first in a low-audience setting, and rotating group composition

prevents fixed status hierarchies from forming. Fourth, first attempts can be decoupled from grades. Two-stage assessment, comprising an ungraded first attempt with feedback followed by a graded revision, separates the moment of difficulty from the moment of evaluation. Relatedly, the public announcement or ranking of reading scores, still common in Indonesian classrooms, directly instantiates the evaluative threat these findings identify and should be discontinued.

These recommendations follow from the data in a specific sense: they target the predictor carrying the largest unique effect. Their efficacy for reading anxiety has not been tested here, and the supporting evidence comes from an adjacent domain. Wang (2025) demonstrated that formative assessment, specifically peer assessment and teacher conferencing, reduced second-language writing anxiety across a 17-week implementation, lowering evaluation apprehension in particular. Whether this transfer to reading holds is an empirical question we recommend for direct testing.

The second implication concerns vocabulary. Pre-reading vocabulary instruction, explicit training in contextual inferencing strategies, and accessible glossaries directly reduce the lexical anxiety load, with a unique effect size of $f^2 = .109$, a small-to-medium effect that is pedagogically meaningful in a reading classroom. Third, the direct negative effects of self-efficacy and classroom climate carry substantial pedagogical value despite not operating as moderators. Aldubaikhi (2023), in a regression-based study of 403 Saudi EFL learners, found that instructor strategies targeting self-confidence building, mentorship, discouraging unhealthy competition, and demonstrating personal care were each independently and negatively associated with FL anxiety. Huang and Liu (2025), reviewing 99 empirical studies of technology-mediated language learning, identified psychological safety as one of two primary mechanisms through which instructional environments reduce learner anxiety. Systematic investment in classroom climate, through explicit norms that normalize errors and through non-evaluative reading activities, will lower the anxiety floor for all learners regardless of the texts they encounter.

5. Conclusion

This study tested whether text-difficulty factors predict foreign language reading anxiety among Indonesian EFL undergraduates, and whether reading self-efficacy or classroom supportive climate condition those relationships. Vocabulary difficulty, topic familiarity, and performance worry each predicted FLRA independently, with performance worry substantially the strongest. Both self-efficacy and classroom climate reduced FLRA, but directly and uniformly rather than by altering the effect of any text-difficulty trigger.

This conclusion is bounded in three ways. The design was powered to detect conditional effects of $f^2 \geq .045$ and cannot exclude smaller ones, and evidence from larger samples indicates that genuine conditional effects in this domain may be an order of magnitude below that threshold (Chen et al., 2025). The FLRA subdimensions could not be empirically separated, so moderation operating on a single dimension would have been averaged away by the composite; self-efficacy might plausibly moderate comprehension worry, where the relevant belief is directly about comprehension capability, without moderating reading apprehension or cultural-linguistic difficulty. Bifactor modelling, which partitions a general factor from orthogonal specific factors, offers a principled route to testing this, and would require a sample substantially larger than the present $N = 178$. Finally, the cultural mechanism invoked interpretively was not measured, and the cross-sectional design precludes causal inference. Whether the sources of FLRA differ by gender, as distinct from its overall level, which did not differ here, also remains untested; the present sample (66.3% female) was too imbalanced to support subgroup comparison.

For teachers, the practical implication is specific. Do not rely solely on building confidence or goodwill to shield students from difficult texts. Confidence and a supportive climate lower the overall anxiety baseline, but they do not diminish the particular sting of an unfamiliar word or of being asked to read aloud in front of peers. Those triggers must be addressed directly, by reducing the evaluative stakes of the reading task itself.

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