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Multivariate Differences in Linguistic Risk-Taking and Communicative Dispositions Across Gender and Academic Year among Vietnamese EFL Undergraduates

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Abstract
Linguistic risk-taking constitutes a central behavioral mechanism through which learners engage in second language communication, yet evidence on its variation across learner groups in Vietnamese tertiary education remains limited. This study examined whether linguistic risk-taking and related communicative dispositions differ across gender and academic year among Vietnamese university EFL learners. Using a quantitative cross-sectional design, data were collected from 350 non-English-major undergraduates enrolled in English-speaking courses at a private international university in Vietnam. Five dependent variables were operationalized as composite scores: linguistic risk-taking, willingness to communicate, foreign language anxiety, L2 self-efficacy, and tolerance of ambiguity. A two-way factorial multivariate analysis of variance (MANOVA) was conducted with gender and year of study as fixed factors. The results revealed a statistically significant multivariate effect of year of study (Wilks' Λ = .861, $F(15, 933.47) = 3.47$, $p < .001$, partial $\eta^2 = .049$), whereas the multivariate effect of gender and the interaction between gender and year were not significant. Follow-up analyses indicated that year of study significantly influenced linguistic risk-taking, willingness to communicate, and L2 self-efficacy, with Year 3 and Year 4 students reporting higher linguistic risk-taking than Year 1 students. These findings indicate that linguistic risk-taking develops progressively across undergraduate study and reflects accumulated communicative experience rather than demographic differences, supporting its interpretation as a developmentally sensitive behavioral outcome in tertiary EFL contexts.

Keywords: Linguistic Risk-Taking, Willingness to Communicate, L2 Self-Efficacy, Tolerance of Ambiguity, Foreign Language Anxiety, EFL Learners, Vietnamese Higher Education

1. Introduction

Despite extended exposure to English instruction, many university students in English continue to avoid active participation in spoken communication. This pattern cannot be attributed solely to linguistic proficiency constraints. Rather, it reflects learners' readiness to accept the inherent uncertainty of language use and their willingness to engage despite the possibility of making errors. Within contemporary second language acquisition research, linguistic risk-taking has therefore been conceptualized as a behavioral expression of learner agency, representing the extent to which learners actively position themselves as participants in communicative interaction (Griffiths & Slavkov, 2021; Slavkov, 2023) [10, 30]. Because oral communication requires learners to operate under conditions of incomplete control over linguistic form, those who demonstrate higher levels of linguistic risk-taking are more likely to initiate speech, experiment with unfamiliar structures, and benefit from interactional feedback that supports language development.

Emerging empirical evidence indicates that linguistic risk-taking is systematically associated with learners' affective and cognitive dispositions. Among these, self-efficacy plays a central role by strengthening learners' confidence in their capacity to perform communicative tasks, thereby increasing their readiness to engage in challenging language use (Heidari, 2024; Wang *et al*., 2025) [11, 34]. In contrast, foreign language anxiety has been consistently linked to avoidance behavior and reduced communicative participation, as anxious learners tend to minimize exposure to situations involving potential negative evaluation (Lin *et al*., 2025; Xu & Xie, 2024) [19, 35]. Tolerance of ambiguity also represents a critical factor, as learners who

are more comfortable dealing with uncertain or incomplete input are better able to sustain engagement in communicative situations that require linguistic approximation (Lin *et al*., 2023; Xue & Yu, 2023) [18, 36]. Closely related to these variables is willingness to communicate, which reflects learners' situational readiness to use the target language and has been repeatedly associated with increased communicative engagement and language performance (Peng, 2024; Zhang *et al*., 2025) [24, 38]. Taken together, these findings indicate that linguistic risk-taking emerges from the interaction of multiple affective and cognitive dispositions rather than from a single underlying trait.

At the same time, learners' risk-taking behavior is shaped not only by individual characteristics but also by classroom and sociocultural conditions. Instructional environments that explicitly encourage experimentation and frame errors as part of the learning process have been shown to promote greater communicative engagement and learner confidence (Sadoughi & Hejazi, 2024; Slavkov, 2023) [28, 30]. However, sociocultural norms may exert a constraining influence. In many Asian educational contexts, including Vietnam, classroom participation is influenced by cultural expectations related to error avoidance and the preservation of social harmony, which may discourage learners from engaging in potentially face-threatening communicative behavior (Le, 2024) [16]. These contextual influences indicate that linguistic risk-taking should be understood as a context-dependent behavioral outcome shaped by both psychological and sociocultural factors.

Although linguistic risk-taking has attracted growing attention in international research, empirical evidence from Vietnamese tertiary education remains limited. This gap is particularly important given the distinctive sociocultural and instructional characteristics of Vietnamese classrooms, where communicative participation is often constrained by affective and cultural factors. Previous research has shown that Vietnamese university students frequently experience anxiety and communication apprehension in English classes, which reduces their willingness to participate in oral interaction (Ho & Truong, 2022; Le, 2023) [12, 15]. However, linguistic risk-taking itself has rarely been examined as a separate behavioral construct within this population. As a result, current understanding of communicative engagement in Vietnamese EFL contexts remains incomplete.

A further limitation in existing literature concerns the lack of integrated multivariate examination of linguistic risk-taking and related learner variables. Contemporary SLA research emphasizes that communicative behavior emerges from the interaction of multiple psychological factors rather than from isolated influences (Dewaele *et al*., 2023; Portugal-Toro *et al*., 2025) [6, 25]. Nevertheless, prior empirical work has typically examined variables such as anxiety, self-efficacy, and willingness to communicate independently, without investigating how they vary collectively across learner groups. This fragmented analytical approach limits the ability to identify meaningful psychological profiles associated with linguistic risk-taking.

In addition, demographic variation in linguistic risk-taking remains insufficiently understood. Evidence from research on related constructs suggests that gender and academic experience may influence learners' affective dispositions and communicative engagement (Li *et al*., 2021; Lin *et al*., 2025) [17, 19]. However, whether similar group differences exist in linguistic risk-taking has not been adequately examined, particularly in Vietnamese university contexts. Without systematic multivariate investigation, it remains unclear whether linguistic risk-taking reflects stable individual differences or patterns shaped by educational experience.

In response to these gaps, the present study examines linguistic risk-taking as a multidimensional behavioral construct in Vietnamese tertiary EFL education. By investigating linguistic risk-taking alongside willingness to communicate, foreign language anxiety, L2 self-efficacy, and tolerance of ambiguity, the study reflects contemporary SLA perspectives emphasizing the interdependence of affective and cognitive factors in shaping learner behavior (Dewaele *et al*., 2023; Lin *et al*., 2023) [6, 18]. Furthermore, by examining variation across gender and academic experience, the study provides context-specific evidence that may contribute to both theoretical development and pedagogical practice. Understanding how linguistic risk-taking varies across learner groups may inform instructional strategies aimed at promoting communicative engagement and reducing barriers to participation in Vietnamese university classrooms.

Accordingly, the study addresses the following research questions:

RQ1. Do linguistic risk-taking, willingness to communicate, foreign language anxiety, L2 self-efficacy, and tolerance of ambiguity differ significantly across gender?

RQ2. Do these variables differ significantly across years of study?

RQ3. Is there a significant multivariate interaction effect between gender and year of study on linguistic risk-taking and related learner variables?

2. Literature Review

2.1 Conceptualizing linguistic risk-taking in L2 learning

Linguistic risk-taking (LRT) is typically discussed as learners' readiness to participate in second language communication when outcomes are uncertain, linguistic resources are incomplete, and errors remain possible. The construct has early roots in work that framed risk-taking as decision-making under uncertainty, where individuals choose among alternatives with different costs and benefits (Beebe, 1983) [3]. In more recent applied linguistics scholarship, LRT has been repositioned as a classroom-relevant instantiation of learner agency, expressed through attempts to use the target language in unrehearsed, demanding, or socially exposed situations (Griffiths & Slavkov, 2021; Slavkov, 2023) [10, 30]. This reconceptualization moves the construct away from a fixed personality disposition and toward a situated behavioral tendency that is sensitive to interactional norms, task demands, and classroom climate.

Within communicative classrooms, uncertainty is not incidental but constitutive of oral interaction. Risk-taking therefore becomes visible through behaviors such as initiating turns, volunteering responses, attempting unfamiliar forms, and continuing to speak despite partial understanding. Such behaviors entail a trade-off between potential learning gains and potential social or evaluative costs. Recent discussions further underline that LRT is context-dependent and can be shaped by instructional ecology, including how errors are framed, how peer response is managed, and how participation is valued

(Griffiths & Slavkov, 2021; Slavkov, 2023) [10, 30]. In inclusive or vulnerability-sensitive contexts, risk-taking may also be constrained by learners' perceptions of safety, competence, and interpersonal exposure, suggesting that the same learner may exhibit different levels of LRT across classrooms and tasks (Schick & Rohde, 2025) [29].

A further refinement in the literature is the recognition that LRT is rarely driven by a single affective state. Instead, it is embedded in fluctuating emotional and cognitive appraisals that co-occur during interaction. Work informed by affective dynamics in SLA indicates that enjoyment, anxiety, and boredom can jointly shape communicative engagement patterns, making risk-taking more plausible under some affective constellations than others (Dewaele *et al*., 2023) [6]. In this respect, LRT is increasingly treated as a behavioral outcome emerging at the intersection of emotion, appraisal, and social positioning rather than a stand-alone trait. (see Figure 1).

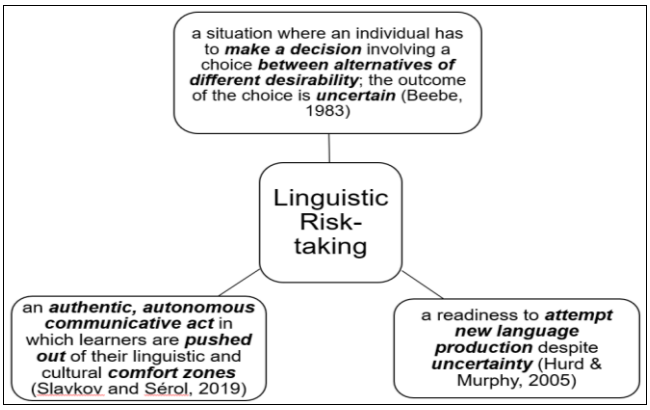

Fig 1: Definitions of Linguistic Risk-taking

2.2 Linguistic risk-taking in relation to adjacent learner variables

Recent scholarship has tended to map LRT onto a cluster of theoretically distinct, empirically interrelated constructs that jointly organize learners' communicative behavior. Four constructs recur with particular frequency in discussions of classroom participation and communicative engagement: willingness to communicate (WTC), foreign language anxiety (FLA), L2 self-efficacy, and tolerance of ambiguity (ToA). The analytical value of this cluster lies in its capacity to represent complementary mechanisms: readiness to act (WTC), perceived threat (FLA), perceived capability (self-efficacy), and comfort with uncertainty (ToA) (Peng, 2024; Lin *et al*., 2023; Xu & Xie, 2024; Wang *et al*., 2025) [24, 18, 35, 34].

2.2.1 Willingness to communicate

WTC is commonly defined as a situational readiness to initiate L2 interaction, shaped by both enduring dispositions and immediate contextual cues. Contemporary accounts emphasize that WTC is sensitive to classroom affordances, task demands, and learners' momentary confidence, thereby functioning as a proximal determinant of communicative engagement (Peng, 2024; Zhang *et al*., 2025) [24, 38]. Although WTC and LRT often co-occur in classroom discourse, recent conceptual work treats them as non-identical. WTC foregrounds the intention to communicate, whereas LRT foregrounds the decision to communicate under uncertainty and potential loss of face. This distinction matters because a learner may report readiness to communicate in principle while still avoiding high-exposure moves such as volunteering an answer, initiating a new topic, or attempting an untested structure.

Digital contexts add further nuance. A growing body of research suggests that informal digital learning and technology-mediated interaction can influence WTC through changes in perceived competence and reduced interpersonal threat (Zadorozhnyy & Lee, 2023; Tai & Chen, 2023) [37, 32]. However, because technology-mediated interaction may reduce immediate social exposure, increased WTC in digital environments does not necessarily imply an equivalent rise in classroom risk-taking, particularly where face-to-face evaluation remains salient.

2.2.2 L2 self-efficacy

L2 self-efficacy concerns learners' beliefs about their capability to carry out language tasks successfully. Recent evidence indicates that self-efficacy is robustly associated with language achievement and sustained engagement, partly because efficacy beliefs shape effort allocation, persistence, and coping responses in challenging conditions (Goetze & Driver, 2022; Wang *et al*., 2022) [9, 33]. This mechanism has direct relevance to risk-taking because risk-taking presupposes a judgment that the task is manageable even when performance is not guaranteed. When efficacy beliefs are stronger, communicative difficulty is more likely to be construed as surmountable rather than threatening, thereby increasing the likelihood of engagement.

Self-efficacy is also frequently positioned as a mediating or enabling belief system within broader motivational and self-regulatory processes. Structural modeling work has linked efficacy to self-regulation and communicative behavior, indicating that efficacy beliefs can channel learners toward more active participation patterns rather than avoidance (Wang *et al*., 2025) [34]. In classroom terms, self-efficacy provides a plausible account of why some learners engage in public language use despite uncertainty, while others retreat to low-exposure strategies.

2.2.3 Tolerance of ambiguity

Tolerance of ambiguity denotes learners' capacity to cope with incomplete information, novelty, and indeterminacy without disproportionate threat appraisal. Classic formulations treat intolerance of ambiguity as a personality-linked tendency to perceive ambiguous situations as threatening (Budner, 1962) [4], while later psychometric work elaborates ToA as a stable style in processing complex or unfamiliar information (Furnham, 1994) [8]. In SLA discussions, ambiguity is ubiquitous: unknown vocabulary, partial comprehension, indeterminate pragmatic intent, and competing linguistic options are routine features of L2 communication. ToA therefore becomes relevant not only to comprehension but also to production, where learners must often proceed without full certainty.

Recent empirical work underscores ToA's association with engagement-related outcomes in EFL settings. For example, evidence from higher education suggests that ToA can relate to learners' collaboration and perceived learning effectiveness, particularly when interaction requires negotiation and interpretive flexibility (Lin *et al*., 2023) [18]. In parallel, ToA has been discussed as intertwined with anxiety processes; learners with greater tolerance tend to remain engaged when input is incomplete, whereas learners with low tolerance may experience heightened threat and withdraw (Huang, 2022) [14]. These patterns make ToA conceptually adjacent to LRT while remaining analytically

distinct: ToA concerns comfort with uncertainty, whereas LRT concerns the behavioral choice to act under uncertainty.

2.2.4 Foreign language anxiety

FLA has long been treated as a salient emotional barrier in language learning, particularly when learners face public performance demands. Contemporary research continues to document its multifaceted sources and its consequences for participation, self-perception, and communicative behavior (Özdemir & Seçkin, 2025; Xu & Xie, 2024) [23, 35]. Recent work suggests that anxiety is not reducible to proficiency deficits alone; rather, it reflects interactions among exposure, cognitive control, evaluative pressure, and classroom norms (Xu & Xie, 2024) [35]. In classroom interaction, anxiety may redirect attention toward self-monitoring and fear of negative evaluation, thereby reducing willingness to attempt novel forms and increasing avoidance.

Evidence also indicates strong links between anxiety and communication-related outcomes. Studies in EFL contexts have shown that higher anxiety is associated with lower willingness to communicate, and that this relationship can remain substantial even when accounting for other learner resources (Lin *et al*., 2025; Fujii, 2021) [19, 7]. Beyond face-to-face settings, online speaking anxiety has attracted increasing attention, with research indicating that digital contexts may mitigate or reconfigure anxiety while not necessarily eliminating it (Bárkányi & Brash, 2025) [2]. Collectively, this literature positions anxiety as a plausible inhibitor of risk-taking moves that involve visibility, evaluation, and uncertainty.

2.3 Demographic and proficiency-related variation in communicative profiles

2.3.1 Gender

Evidence on gender differences in communication-related learner variables remains mixed. In the WTC literature, some studies report gender differences in communicative readiness, whereas others find negligible or inconsistent effects across contexts and measures (Cheng & Xu, 2022; Mahdi Mutar *et al*., 2024) [5, 21]. A similar pattern appears in anxiety research. For instance, research addressing speaking anxiety and gender has yielded findings that do not consistently support a stable directional difference across males and females, suggesting that context and classroom norms may be more explanatory than gender alone (Alamri & Qasem, 2024) [1]. In short, gender may operate as a background variable whose effects are contingent on sociocultural expectations, instructional practices, and participation norms rather than as a uniform determinant.

2.3.2 Years of study

Academic seniority has been discussed as a potential source of variation in affective and communicative variables, yet findings are not linear. Some work suggests that experience and repeated exposure to classroom demands may reduce anxiety over time, while other evidence points to fluctuations in confidence and engagement across academic stages rather than monotonic improvement (Alamri & Qasem, 2024; Maretha & Waluyo, 2022) [1, 22]. These inconsistencies may reflect changes in course difficulty, assessment pressures, peer comparison, and shifting expectations for oral performance, particularly in higher education settings.

2.3.3 Proficiency

Proficiency is frequently associated with more favorable affective profiles, including lower anxiety and stronger efficacy beliefs, although the strength and stability of these relationships vary by context and operationalization (Alamri & Qasem, 2024; Maretha & Waluyo, 2022) [1, 22]. Importantly, proficiency does not uniformly determine communicative readiness. Some evidence suggests that willingness to communicate can remain weakly tied to proficiency when contextual and motivational factors are salient, indicating that linguistic resources alone do not guarantee participation (Cheng & Xu, 2022) [5]. This pattern strengthens the argument for examining learner variables as multivariate profiles rather than as isolated outcomes.

2.4 Instructional and contextual work on linguistic risk-taking

A separate but complementary strand of literature addresses risk-taking through pedagogical designs that legitimize error, promote experimentation, and create structures that reward engagement. The Linguistic Risk-Taking Initiative developed in a bilingual university setting is frequently cited as a concrete operationalization of risk-taking as a set of achievable communicative challenges, accompanied by tracking tools and reflective elements (Slavkov & Séror, 2019; Rhéaume *et al*., 2021) [31, 26]. Later work extended this approach into pedagogical programming and broader research agendas, positioning risk-taking as both an instructional principle and an empirical construct requiring clearer measurement and contextual interpretation (Slavkov, 2023) [30]. Work on gamification likewise frames risk-taking as a behavior that may be elicited through challenge structures, feedback systems, and goal-oriented participation, although design quality and context remain decisive (Roodi & Slavkov, 2022) [27].

Across these pedagogical strands, a recurring implication is that risk-taking is shaped by perceived safety, social norms, and the management of evaluative pressure. Such claims converge with broader affective research showing that classroom emotions and engagement are co-produced by learner dispositions and contextual affordances (Dewaele *et al*., 2023) [6]. In Southeast Asian higher education, sociocultural norms tied to face-saving and classroom silence have been argued to influence participation, suggesting that risk-taking must be interpreted with attention to local interactional cultures (Le, 2024) [16]. This regional lens is reinforced by Vietnam-focused evidence documenting the salience of anxiety and participation constraints in university English learning environments (Ho & Truong, 2022; Le, 2023) [12, 15].

2.5 Research gaps related to LRT

There are three gaps across the literature. First, LRT is often discussed conceptually as a bridge between intention to communicate and actual communicative behavior, yet empirical operationalizations remain heterogeneous, ranging from brief self-report indices to intervention-linked participation counts (Griffiths & Slavkov, 2021; Slavkov, 2023) [10, 30]. Second, adjacent constructs such as WTC, anxiety, self-efficacy, and ToA have been extensively studied, but their joint patterning as multivariate learner profiles is less consistently examined in relation to risk-taking behavior (Lin *et al*., 2023; Wang *et al*., 2025; Xu &

Xie, 2024) [18, 34, 35]. Third, the Vietnam and wider Southeast Asian higher education context remains underrepresented in LRT research, despite credible reasons to expect that local classroom norms and affective climates may shape risk-taking and participation (Ho & Truong, 2022; Le, 2024) [12, 16].

2.6 Conceptual framework

Figure 2 presents the conceptual framework of the study.

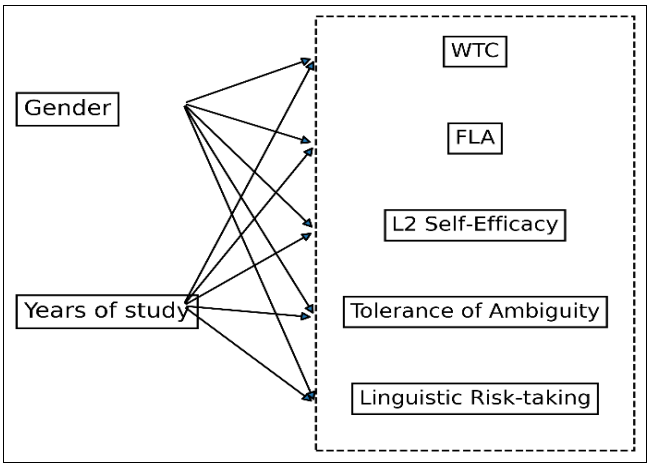

Fig 2: Conceptual framework of the study

The conceptual framework conceptualizes linguistic risk-taking, willingness to communicate (WTC), foreign language anxiety (FLA), L2 self-efficacy, and tolerance of ambiguity as a multivariate set of learner-related outcomes that reflect communicative engagement in second language classrooms. Linguistic risk-taking represents learners' readiness to engage in communication despite uncertainty and potential error (Griffiths & Slavkov, 2021) [10], while WTC captures their situational readiness to initiate interaction (MacIntyre *et al*., 1998; Peng, 2024) [20, 24]. In contrast, foreign language anxiety reflects an affective constraint on communication (Horwitz *et al*., 1986; Xu & Xie, 2024) [13, 35], whereas L2 self-efficacy represents learners' perceived communicative capability (Bandura, 1977; Wang *et al*., 2025 [34]). Tolerance of ambiguity reflects learners' cognitive acceptance of uncertain linguistic input, which supports sustained communicative engagement (Furnham, 1994; Lin *et al*., 2023) [8, 18].

Within this framework, gender and years of study are specified as grouping variables that may account for systematic variation across this multivariate outcome set. Gender has been associated with differences in affective and communicative variables in EFL contexts, although findings remain inconsistent (Li *et al*., 2021; Lin *et al*., 2025) [17, 19]. Years of study represent accumulated academic and communicative experience, which may influence learners' psychological readiness and communicative behavior over time. The framework also allows for the possibility of interaction effects between gender and years of study, recognizing that demographic influences may operate jointly rather than independently across learner development.

3. Methodology

3.1 Research design

The study employed a quantitative cross-sectional design using a two-way multivariate analysis of variance (MANOVA). This design was selected because it allows simultaneous examination of group differences across multiple related dependent variables while controlling Type I error inflation. Gender and years of study were treated as fixed independent variables. The dependent variable set consisted of linguistic risk-taking, willingness to communicate, foreign language anxiety, L2 self-efficacy, and tolerance of ambiguity. This multivariate design enables examination of main effects and interaction effects across learner groups.

3.2 Research participants

This study was conducted at Saigon International University (SIU), Vietnam, between April and November 2025. SIU was selected due to its relevance as an English-medium higher education environment where non-English-major students are required to complete English Speaking modules as part of their curriculum. These modules are taught entirely in English and emphasize communicative competence, classroom interaction, and learner participation. Each Speaking course meets three times per week for 90 minutes, providing regular opportunities for oral communication and interaction in structured classroom settings. This instructional context provides an appropriate setting for examining group differences in communicative and affective learner variables.

The participants were non-English-major undergraduate students enrolled in Speaking modules at SIU. A convenience sampling approach was used due to practical access considerations. Eligibility criteria included current enrollment in a Speaking course and voluntary agreement to participate. A total of 350 students completed the questionnaire. Participants represented multiple year levels and both genders. Participation was voluntary, and students were informed that responses were anonymous and would not affect their academic standing. This sample size exceeded recommended minimum requirements for MANOVA, ensuring adequate statistical power for detecting multivariate group differences.

3.3 Research instruments

Data were collected using a structured self-report questionnaire consisting of 31 Likert-scale items and demographic questions. Responses were recorded on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire measured five constructs:

- Willingness to communicate (6 items), adapted from MacIntyre *et al*. (1998) [20]
- Foreign language anxiety (8 items), adapted from Horwitz *et al*. (1986) [13]
- L2 self-efficacy (6 items), adapted from Piniel and Csizér (2013)
- Tolerance of ambiguity (5 items), adapted from Ely (1995)
- Linguistic risk-taking (6 items), adapted from Slavkov and Griffiths (2021)

The instrument was translated into Vietnamese using forward–backward translation procedures to ensure semantic equivalence. A pilot study with 35 students confirmed clarity and internal consistency. Cronbach's alpha coefficients exceeded .70 for all scales, indicating acceptable reliability.

The composite mean scores were calculated for each construct and used in subsequent analysis.

3.4 Data collection and data analysis procedure

Data collection was conducted following approval from the Faculty of Foreign Languages and the institutional research committee at Saigon International University. Participants were recruited through general course announcements in Speaking classes. Students were informed of the purpose of the study and were assured that participation was voluntary, anonymous, and would not affect their academic standing or course evaluation. Those who agreed to participate accessed the questionnaire through an online survey link distributed via course communication channels.

The questionnaire was administered using Google Forms to facilitate efficient and anonymous data collection. This online format was selected due to its accessibility and compatibility with students' routine academic communication platforms. Participants completed the questionnaire independently outside class time, and the average completion time was approximately 15–20 minutes. The data collection period lasted approximately two weeks during the final stage of the semester, ensuring that participants had sufficient exposure to classroom interaction before reporting their perceptions and experiences. Upon completion of the data collection period, responses were downloaded and prepared for statistical analysis.

All statistical analyses were conducted using IBM SPSS Statistics version 27. Prior to inferential analysis, the dataset was screened to ensure completeness and suitability for multivariate analysis. Cases with incomplete responses were removed. Descriptive statistics, including means, standard deviations, skewness, and kurtosis values, were examined to assess the distribution of each variable. Internal consistency reliability for each scale was evaluated using Cronbach's alpha, with coefficients of .70 or higher considered acceptable. Composite mean scores were calculated for linguistic risk-taking, willingness to communicate, foreign language anxiety, L2 self-efficacy, and tolerance of ambiguity, and these scores were used as dependent variables in subsequent analyses.

To address the research questions, a two-way multivariate analysis of variance (MANOVA) was conducted. Gender and years of study were entered as fixed independent variables, and the five learner variables were treated as the multivariate outcome set. Wilks' Lambda was used as the primary multivariate test statistic to evaluate overall group differences. Where statistically significant multivariate effects were observed, follow-up univariate analyses of variance (ANOVAs) were performed to identify which specific dependent variables contributed to the overall effect. Effect sizes were reported using partial eta squared (η^2) to indicate the magnitude of group differences.

4. Results

4.1 Descriptive analysis

The analytic sample consisted of 350 non-English-majored undergraduates. Because the focal analyses compare psychological profiles across gender and year of study, we first inspected group sizes to ensure there were no extreme imbalances that could distort multivariate estimates. As shown in 1, the gender split was close to even (171 vs. 179), and the four year cohorts were similarly represented (n = 80–94 per cohort), providing a suitable basis for factorial MANOVA. Gender was coded as 1 and 2, corresponding to male and female, respectively, and year of study was coded from 1 to 4.

Table 1: Demographic information

Gender

Category (code)	Frequency	Percent	Valid percent	Cumulative percent
1	171	48.9	48.9	48.9
2	179	51.1	51.1	100.0

Year of study

Category (year)	Frequency	Percent	Valid percent	Cumulative percent
1	94	26.9	26.9	26.9
2	83	23.7	23.7	50.6
3	80	22.9	22.9	73.4
4	93	26.6	26.6	100.0

The item-level descriptive statistics are reported in Table 2 below.

Table 2: Descriptive statistics for observed items (N = 350)

Item	Min	Max	Mean	SD	Skewness	Kurtosis
WTC1	1	5	3.34	0.984	-0.192	-0.492
WTC2	1	5	3.31	0.939	-0.121	-0.381
WTC3	1	5	3.31	0.947	-0.048	-0.377
WTC4	1	5	3.28	0.935	-0.063	-0.460
WTC5	1	5	3.28	0.943	-0.022	-0.386
WTC6	1	5	3.31	0.915	-0.147	-0.276
FLA1	1	5	3.03	0.943	0.020	-0.302
FLA2	1	5	3.02	0.936	0.050	-0.231
FLA3	1	5	3.05	0.947	0.112	-0.363
FLA4	1	5	3.04	0.934	-0.010	-0.166
FLA5	1	5	3.00	0.936	0.021	-0.273
FLA6	1	5	3.03	0.974	0.098	-0.331
FLA7	1	5	3.03	0.962	0.065	-0.464
FLA8	1	5	3.04	0.925	0.035	-0.368
SE1	1	5	3.24	0.963	-0.238	-0.408
SE2	1	5	3.21	0.968	-0.079	-0.509
SE3	1	5	3.26	0.968	-0.198	-0.423
SE4	1	5	3.24	0.918	-0.113	-0.310
SE5	1	5	3.25	0.993	-0.115	-0.440
SE6	1	5	3.24	0.982	-0.210	-0.491
TOA1	1	5	3.09	0.889	0.183	-0.361
TOA2	1	5	3.12	0.906	0.069	-0.395
TOA3	1	5	3.07	0.882	-0.053	-0.399
TOA4	1	5	3.07	0.917	0.015	-0.115
TOA5	1	5	3.11	0.945	-0.107	-0.325
LRT1	1	5	3.25	0.944	-0.118	-0.293
LRT2	1	5	3.19	0.918	0.013	-0.371
LRT3	1	5	3.27	0.918	0.007	-0.326
LRT4	1	5	3.27	0.920	-0.039	-0.369
LRT5	1	5	3.27	0.972	-0.083	-0.457
LRT6	1	5	3.24	0.952	-0.122	-0.276

Table 2 reveals that all items were rated on five-point Likert scales (1 = strongly disagree to 5 = strongly agree). Across the WTC items, mean scores were consistently above the scale midpoint (M = 3.28–3.34), suggesting a moderate level of self-reported readiness to use English. FLA items clustered tightly around the midpoint (M = 3.00–3.05), indicating moderate anxiety rather than pronounced avoidance. For SE, means ranged from 3.21 to 3.26, reflecting moderately positive perceived capability. ToA item means (3.07–3.12) similarly pointed to a moderate tolerance for linguistic uncertainty. LRT items ranged from 3.19 to 3.27, indicating that risk-taking behaviours were present but not strongly endorsed.

To evaluate distributional adequacy for subsequent parametric analyses, we inspected skewness and kurtosis at the item level. Values were small in magnitude (skewness = −0.24 to 0.18; kurtosis = −0.51 to −0.12), indicating no substantive departures from approximate normality in this dataset.

4.2 Scale reliability

Internal consistency reliability was assessed to determine whether the items within each scale measured their intended construct coherently and could therefore be aggregated into composite scores for multivariate analysis. Cronbach's alpha was used as the reliability coefficient, given its widespread application in applied linguistics and psychological measurement for evaluating internal consistency (Zakariya, 2022) [39]. Table 3 presents the reliability statistics for the willingness to communicate scale.

Table 3: Reliability statistics for willingness to communicate (WTC)

Cronbach's alpha	Number of items
0.826	6

As shown in Table 3, the willingness to communicate scale demonstrated strong internal consistency, with a Cronbach's alpha coefficient of .826 across six items. This value exceeds the commonly accepted minimum threshold of .70 for research instruments, indicating that the items consistently reflect a common underlying construct. The magnitude of this coefficient suggests that the scale provides a reliable measure of students' readiness to engage in spoken English communication.

Table 4 reports the internal consistency reliability of the foreign language anxiety scale.

Table 4: Reliability statistics for foreign language anxiety (FLA)

Cronbach's alpha	Number of items
0.759	8

As indicated in Table 4, the foreign language anxiety scale yielded a Cronbach's alpha of .759 across eight items, indicating acceptable internal consistency. Although this coefficient is lower than those observed for some other constructs, it remains above the recommended threshold for research use. This result suggests that the scale provides a sufficiently reliable representation of students' anxiety related to English language use.

Table 5 presents the reliability statistics for the L2 self-efficacy scale.

Table 5: Reliability statistics for L2 self-efficacy (SE)

Cronbach's alpha	Number of items
0.849	6

As shown in Table 5, the L2 self-efficacy scale demonstrated the highest level of internal consistency among the five constructs, with a Cronbach's alpha of .849 across six items. This coefficient indicates strong coherence among the items and suggests that they consistently capture learners' perceived capability in using English. The high reliability of this scale supports its use as a stable indicator of perceived communicative competence in subsequent multivariate analysis.

Table 6 presents the reliability statistics for the tolerance of ambiguity scale.

Table 6: Reliability statistics for tolerance of ambiguity (ToA)

Cronbach's alpha	Number of items
0.804	5

As indicated in Table 6, the tolerance of ambiguity scale achieved a Cronbach's alpha of .804 across five items, indicating good internal consistency. This coefficient suggests that the items function cohesively in capturing learners' comfort with linguistic uncertainty and incomplete knowledge. The reliability level supports the aggregation of item scores into a composite measure for inferential analysis.

Finally, Table 7 presents the reliability statistics for the linguistic risk-taking scale, which represents the primary behavioral construct examined in this study.

Table 7: Reliability statistics for linguistic risk-taking (LRT)

Cronbach's alpha	Number of items
0.748	6

As shown in Table 7, the linguistic risk-taking scale yielded a Cronbach's alpha of .748 across six items, indicating acceptable internal consistency. Although this coefficient is slightly lower than those observed for other constructs, it remains above the minimum threshold for research reliability. This result suggests that the items provide a coherent measure of learners' willingness to engage in linguistically uncertain or challenging communicative behavior. Overall, all five scales demonstrated adequate to strong internal consistency, supporting the computation of composite mean scores and their use in subsequent factorial MANOVA.

4.3 MANOVA analysis

Before conducting the factorial MANOVA, preliminary diagnostic tests were performed to evaluate whether the data satisfied the assumptions required for multivariate analysis. Table 8 summarizes the results of these assumption checks, including tests of multivariate normality, homogeneity of covariance matrices, and homogeneity of variances.

Table 8: Assumption tests

Assumption	Test	Statistic	df	p
Multivariate normality	Skewness	−0.24 to 0.18	—	—
Multivariate normality	Kurtosis	−0.51 to −0.12	—	—
Homogeneity of covariance matrices	Box's M	42.817	45	.176
Homogeneity of variances	Levene's test (WTC)	1.274	7, 342	.268
	Levene's test (FLA)	0.984	7, 342	.441
	Levene's test (SE)	1.562	7, 342	.145
	Levene's test (ToA)	1.193	7, 342	.307
	Levene's test (LRT)	1.438	7, 342	.191

Inspection of skewness and kurtosis values indicated no substantial deviations from multivariate normality. Box's M test was not statistically significant ($p > .05$), indicating that the covariance matrices were homogeneous across groups. Similarly, Levene's tests for each dependent variable were non-significant, confirming homogeneity of variances.

Taken together, these results support the appropriateness of factorial MANOVA for the present dataset.

Multivariate tests

Table 9 presents the multivariate test statistics evaluating the effects of gender, year of study, and their interaction on the combined dependent variables (Mean_WTC, Mean_FLA, Mean_SelfEfficacy, Mean_ToA, Mean_LRT). Wilks' Lambda was selected as the primary test statistic because of its robustness and widespread use in applied linguistics research.

Table 9: Multivariate tests for gender, year of study, and interaction effects

Effect	Wilks' Λ	F	Hypothesis df	Error df	p	Partial η^2
Gender	0.973	1.874	5	338	.098	0.027
Year of study	0.861	3.474	15	933.471	< .001	0.049
Gender × Year	0.979	0.489	15	933.471	.947	0.007

The multivariate analysis revealed a statistically significant overall effect of year of study on the combined psychological outcome profile, Wilks' $\Lambda = .861$, $F(15, 933.471) = 3.474$, $p < .001$, partial $\eta^2 = .049$. This effect size indicates that approximately 4.9% of the multivariate variance in the combined dependent variables was associated with academic year. In contrast, the multivariate main effect of gender was not statistically significant, Wilks' $\Lambda = .973$, $F(5, 338) = 1.874$, $p = .098$, partial $\eta^2 = .027$. Similarly, the interaction between gender and year of study was not significant, Wilks' $\Lambda = .979$, $F(15, 933.471) = 0.489$, $p = .947$, partial $\eta^2 = .007$. These findings indicate that academic year, but not gender, was associated with systematic variation in the overall psychological profile.

Univariate follow-up analyses

To identify which specific dependent variables contributed to the significant multivariate effect of year of study, follow-up univariate ANOVAs were conducted. Table 4.10 presents the results of these analyses.

Table 10: Tests of between-subjects effects

Dependent variable	Source	df	F	p	Partial η^2
Mean_WTC	Year	3, 342	4.821	.003	0.041
Mean_FLA	Year	3, 342	0.106	.956	0.001
Mean_SelfEfficacy	Year	3, 342	6.252	< .001	0.052
Mean_ToA	Year	3, 342	0.929	.427	0.008
Mean_LRT	Year	3, 342	7.047	< .001	0.058

The results indicate that year of study had statistically significant effects on willingness to communicate, L2 self-efficacy, and linguistic risk-taking. Specifically, year of study accounted for 4.1% of variance in willingness to communicate, 5.2% of variance in self-efficacy, and 5.8% of variance in linguistic risk-taking. In contrast, year of study did not significantly affect foreign language anxiety or tolerance of ambiguity.

No significant main effects of gender or interaction effects were observed for any individual dependent variable (all $p > .05$).

Post hoc comparisons

Because year of study showed significant effects for Mean_WTC, Mean_SelfEfficacy, and Mean_LRT, Bonferroni-adjusted pairwise comparisons were conducted to identify specific group differences. Table 11 presents the statistically significant comparisons.

Table 11: Bonferroni-adjusted post hoc comparisons for year of study

Outcome	Comparison	Mean difference	SE	p	95% CI
Mean_WTC	Year 4 vs Year 1	0.385	0.123	.011	[0.059, 0.710]
Mean_SelfEfficacy	Year 3 vs Year 1	0.455	0.130	.003	[0.109, 0.801]
	Year 3 vs Year 2	0.378	0.134	.031	[0.022, 0.735]
	Year 4 vs Year 1	0.414	0.125	.006	[0.081, 0.747]
Mean_LRT	Year 3 vs Year 1	0.471	0.126	.001	[0.137, 0.805]
	Year 4 vs Year 1	0.482	0.121	< .001	[0.161, 0.802]

The post hoc results indicate that senior students reported significantly higher levels of willingness to communicate, self-efficacy, and linguistic risk-taking compared with first-year students. The largest and most consistent differences were observed for linguistic risk-taking and self-efficacy, where both Year 3 and Year 4 students scored significantly higher than Year 1 students.

5. Discussions

5.1 Multivariate differences across gender

The first research question examined whether linguistic risk-taking and its associated psychological variables differed across gender. The multivariate analysis indicated that gender did not exert a statistically significant effect on the combined outcome profile, and follow-up univariate analyses confirmed the absence of gender differences across all individual dependent variables. This pattern indicates that male and female students displayed comparable levels of willingness to communicate, foreign language anxiety, self-efficacy, tolerance of ambiguity, and linguistic risk-taking.

This finding suggests that linguistic risk-taking, as a behavioral manifestation of communicative engagement, is not inherently structured by gender differences within this instructional context. Rather than reflecting demographic variation, risk-taking behavior appears to be more closely aligned with experiential and contextual factors. This interpretation is consistent with contemporary SLA perspectives that conceptualize communicative behavior as emerging from learners' interactional histories and classroom experiences rather than stable demographic characteristics. In practical terms, the absence of gender effects indicates that pedagogical interventions aimed at promoting communicative engagement can be designed without gender-specific differentiation, as both male and female learners appear to operate within similar psychological readiness profiles.

From a theoretical perspective, this result reinforces the view that linguistic risk-taking should be conceptualized as a situationally mediated behavioral outcome rather than a trait-like disposition anchored in demographic identity. In classroom contexts where learners are exposed to similar instructional practices, task demands, and evaluation norms, gender alone does not appear to produce systematic divergence in communicative risk behavior.

5.2 Multivariate differences across year of study

The second research question examined whether linguistic risk-taking and related psychological constructs differed across academic years. The MANOVA results revealed a statistically significant multivariate effect of year of study, indicating that students at different academic levels exhibited distinct overall psychological profiles. Follow-up univariate analyses demonstrated that year of study significantly influenced willingness to communicate, L2 self-efficacy, and linguistic risk-taking, whereas foreign language anxiety and tolerance of ambiguity remained statistically stable across cohorts.

The post hoc comparisons further clarified the developmental pattern underlying these differences. Specifically, students in Years 3 and 4 reported significantly higher levels of linguistic risk-taking and self-efficacy than those in Year 1, while willingness to communicate was also higher in Year 4 compared with Year 1. This pattern indicates that linguistic risk-taking increases as learners progress through the university program, particularly after the initial stages of instruction. The absence of significant differences between adjacent academic years suggests that this development is gradual rather than linear, with more pronounced changes emerging after sustained instructional exposure.

These findings support the interpretation that linguistic risk-taking develops as a function of accumulated learning experience rather than reflecting fixed individual differences. As learners advance through the academic program, repeated exposure to communicative tasks, increased familiarity with classroom interaction, and greater perceived competence likely contribute to increased willingness to engage in uncertain communicative situations. The parallel increase observed in self-efficacy strengthens this interpretation, as perceived communicative capability is closely linked to learners' readiness to initiate and sustain interaction despite uncertainty.

In contrast, the absence of year-related differences in foreign language anxiety and tolerance of ambiguity suggests that these constructs may function as relatively stable psychological dispositions over the time span examined. This pattern indicates that increased linguistic risk-taking does not necessarily require reductions in anxiety or changes in ambiguity tolerance. Instead, learners appear to become more capable of engaging in communicative behavior despite persistent affective constraints. This distinction is theoretically important, as it suggests that linguistic risk-taking reflects behavioral adaptation rather than the elimination of psychological barriers.

5.3 Multivariate interaction between gender and year of study

The third research question examined whether the effect of academic experience differed between male and female students. The MANOVA results indicated that the interaction between gender and year of study was not statistically significant, either at the multivariate level or in follow-up univariate analyses. This finding indicates that the developmental pattern observed across academic years was consistent across gender groups.

This result suggests that the increase in linguistic risk-taking and related constructs over time reflects a general developmental trajectory associated with instructional progression rather than a gender-specific pathway. In other words, both male and female learners appear to benefit similarly from accumulated academic experience in terms of communicative readiness and perceived competence. This consistency strengthens the interpretation that instructional exposure and learning experience, rather than demographic characteristics, represent the primary drivers of variation in linguistic risk-taking.

Taken together, the MANOVA findings provide a coherent account of how linguistic risk-taking varies across learner groups. The absence of gender effects indicates that communicative risk behavior is not structured by demographic differences. In contrast, the significant multivariate effect of academic year demonstrates that linguistic risk-taking, willingness to communicate, and self-efficacy increase as learners progress through their university program. Importantly, this developmental pattern occurs without corresponding reductions in anxiety or changes in ambiguity tolerance, suggesting that learners become more willing to act despite persistent psychological uncertainty.

These findings support the conceptualization of linguistic risk-taking as a developmental behavioral outcome shaped by instructional experience and perceived communicative capability. Rather than reflecting a fixed personality trait, risk-taking appears to emerge through repeated engagement in communicative contexts that gradually strengthen learners' confidence and willingness to participate. This interpretation aligns with contemporary views of communicative behavior as an emergent product of learner–context interaction, in which behavioral readiness evolves over time through sustained participation in language use.

5.4 Implications

Theoretical implications

The present findings refine the conceptualization of linguistic risk-taking by demonstrating that it varies systematically with academic experience but not with gender. The significant multivariate effect of year of study indicates that linguistic risk-taking, willingness to communicate, and self-efficacy develop progressively as learners advance through university. This pattern supports the interpretation of linguistic risk-taking as a developmental behavioral outcome shaped by accumulated communicative experience rather than a fixed dispositional trait. In contrast, the absence of significant year effects for foreign language anxiety and tolerance of ambiguity suggests that increased communicative engagement does not necessarily depend on reductions in affective constraints. Instead, learners appear to become more willing to act despite persistent uncertainty. This distinction contributes to theoretical clarity by positioning linguistic risk-taking as an adaptive behavioral response associated with perceived communicative capability and experiential familiarity rather than as a direct function of affective stability.

Furthermore, the multivariate analytical approach highlights

the importance of examining communicative engagement as a multidimensional psychological profile. The simultaneous variation of linguistic risk-taking, willingness to communicate, and self-efficacy across academic years indicates that these constructs develop in parallel and should be conceptualized within an integrated framework. This supports contemporary SLA perspectives that emphasize the interaction between cognitive and behavioral dimensions of learner engagement.

Pedagogical implications

The findings have clear implications for instructional practice in tertiary EFL contexts. The observed developmental pattern suggests that communicative risk-taking increases through sustained exposure to classroom interaction and communicative tasks. This underscores the importance of creating instructional environments that encourage active participation and normalize communicative experimentation. Structured speaking tasks, scaffolded interaction, and progressive task difficulty may help learners gradually develop confidence and behavioral readiness to engage in communication.

The close association between academic progression and increased self-efficacy further suggests that instructional practices should prioritize strengthening learners' perceived communicative competence. Providing frequent opportunities for successful communicative performance may facilitate the development of risk-taking behavior. In contrast, the stability of foreign language anxiety across academic years indicates that reducing anxiety alone may not be sufficient to promote communicative engagement. Instead, instructional interventions should focus on enabling learners to participate effectively despite persistent uncertainty.

The absence of gender differences indicates that communicative engagement develops similarly across male and female learners. This suggests that pedagogical interventions designed to promote communicative participation can be implemented at the cohort level without the need for gender-specific instructional differentiation.

Within the Vietnamese tertiary EFL context, the findings indicate that communicative readiness develops gradually across the undergraduate years. This suggests that early-stage learners may require additional instructional support to facilitate communicative participation. Integrating structured communicative practice earlier in the curriculum may help accelerate the development of linguistic risk-taking and support more effective language learning outcomes.

6. Conclusion

This study examined linguistic risk-taking as a multidimensional behavioral construct within tertiary EFL education by analyzing its variation across gender and academic year using factorial MANOVA. The findings provide clear evidence that linguistic risk-taking, willingness to communicate, and L2 self-efficacy differ significantly across academic years, whereas foreign language anxiety and tolerance of ambiguity remain stable. Specifically, learners in later years reported higher levels of communicative readiness, perceived communicative competence, and willingness to engage in linguistically uncertain interaction than first-year learners. In contrast, gender did not exert a significant multivariate or univariate effect, and no interaction between gender and year of study was observed. These results indicate that linguistic risk-taking is more strongly associated with accumulated academic experience than with demographic characteristics.

From a theoretical perspective, the findings support the interpretation of linguistic risk-taking as a context-sensitive behavioral tendency that develops through sustained engagement in communicative learning environments. The parallel increase of linguistic risk-taking, willingness to communicate, and self-efficacy across academic years suggests that communicative engagement emerges from the gradual strengthening of learners' perceived communicative capability rather than from reductions in affective constraints. The stability of foreign language anxiety and ambiguity tolerance further indicates that increased communicative participation reflects learners' improved ability to act despite uncertainty rather than the elimination of uncertainty itself.

Pedagogically, the results underscore the importance of sustained communicative exposure in fostering learners' readiness to engage in spoken interaction. The developmental pattern observed suggests that instructional practices emphasizing progressive communicative practice and confidence-building opportunities may facilitate the emergence of risk-taking behavior. Within the Vietnamese tertiary EFL context, these findings highlight the need for instructional approaches that actively promote communicative engagement from the early stages of university education.

Several limitations should be acknowledged. The cross-sectional design does not permit causal inference or direct observation of developmental trajectories. In addition, the study was conducted within a single institutional context, which may limit generalizability. Future research should employ longitudinal designs and broader institutional samples to examine how linguistic risk-taking evolves over time and across different educational environments.

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