

Investigating Public Speaking Anxiety among Undergraduates

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Abstract

Public speaking anxiety (PSA) has become a growing concern that affects learners in higher education, particularly in non-native English-speaking contexts. There are 3 indicators of PSA, which are cognitive, behavioral, and physiological factors. Despite the alarming concern, PSA is heavily underexplored in the Malaysian educational context, particularly ones that apply a comprehensive, multi-dimensional framework. This study aims to gauge the learners' perception of their public speaking anxiety and determine the relationship between all indicators. This quantitative study adapted the instrument developed by Bartholomay and Houlihan (2016), and it consists of 4 sections: demographic, cognitive, behavioral, and physiological. Data was collected via a purposive sampling method, with 446 undergraduates participating in the survey. The study revealed several key findings. Firstly, learners' cognitive experiences of PSA are marked by fear of verbal breakdown, social judgment, and self-monitoring. Secondly, observations of learners reveal subtle behavioral factors, such as shaky hands, trembling, and avoiding eye contact. Thirdly, students mostly exhibit internal physical symptoms such as nervousness and a racing heart. The study also has proven that a strong, positive, and significant relationship was observed among all PSA indicators. Collectively, the study verifies several theories, such as Bartholomay and Houlihan's (2016) three-factor model and Social Cognitive Theory (SCT), especially in theoretical and pedagogical viewpoints. With properly designed initiatives based on these models, educators and institutions can understand better and mitigate public speaking anxiety in students.

Keywords: Social Cognitive Theory (SCT), Public Speaking Anxiety, Cognitive Factor, Behavioral Factor, Physiological Factor

Introduction*Background of Study*

Public speaking anxiety (PSA), often referred to as glossophobia, is a widespread psychological barrier affecting learners in higher education. This is particularly true for undergraduates in non-native English-speaking contexts, where PSA can hinder oral communication and academic success. PSA typically manifests through cognitive symptoms such as fear of negative evaluation, behavioral reactions like avoidance or reduced participation, and physiological responses including sweating, accelerated heartbeat, and voice tremors (Gallego et al., 2022).

In Malaysia, several studies have reported moderate to high levels of PSA among undergraduates, especially in English oral presentations. Dellah et al. (2020) found that factors such as peer pressure, perceived language incompetence, and fear of negative judgment significantly contributed to students' speaking anxiety during classroom presentations. In a more recent investigation, Zabidin et al., (2023) observed that test-related speaking scenarios produced greater anxiety than interpersonal communication, further highlighting the depth of the problem in academic settings.

At the international level, research has increasingly examined PSA from an affective and cognitive standpoint within second language learning. Dewaele and Li (2020) highlighted that students' emotional states, including anxiety, boredom, and enjoyment, are closely tied to classroom dynamics such as teacher support and classroom atmosphere. These emotional experiences influence learners' willingness to speak and participate. Prentiss (2021), in the context of online learning during the COVID-19 pandemic, reported a significant emotional toll among students when delivering virtual presentations, calling for proactive institutional support. Similarly, Dewaele, Botes, and Greiff (2023) analyzed the complex interplay between anxiety, enjoyment, and boredom, reinforcing the view that PSA is shaped by learners' psychological and contextual experiences.

As these studies illustrate, PSA is not a unidimensional phenomenon. It encompasses interrelated cognitive, behavioral, and physiological elements. Consequently, international research increasingly adopts multi-method approaches to assess PSA comprehensively. Gallego et al. (2022), for instance, emphasized that self-report, physiological, and behavioral measures reflect distinct components of PSA and should not be treated as interchangeable. Ebrahimi et al. (2019), in a recent meta-analysis, concluded that interventions tend to be more effective on self-reported anxiety compared to physiological or behavioral outcomes. The authors thus recommended that future research align with Lang's tripartite model, which conceptualizes PSA across cognitive, behavioral, and physiological domains.

Despite such advancements globally, Malaysian PSA research has remained largely confined to the cognitive and emotional domains through self-report surveys. Studies such as Long et al. (2019) used the Public Speaking Class Anxiety Scale (PSCAS) to evaluate communication apprehension, test anxiety, and fear of negative evaluation among undergraduates. Similarly, Yazi et al. (2023) administered adapted anxiety questionnaires to diploma students in online learning contexts. While informative, these studies do not incorporate objective behavioral observations or physiological measures, limiting the understanding of PSA to learners' perceptions.

In short, there is a clear research gap. International literature explicitly recommends the inclusion of all three assessment domains: cognitive, behavioral, and physiological, whereas Malaysian studies rely solely on self-reported data (Gallego et al., 2022; Ebrahimi et al., 2019). To date, no published Malaysian study has investigated PSA using a comprehensive, multi-dimensional framework. This discrepancy between international best practices and local research approaches underscores the need for Malaysian-based studies that capture PSA in a more holistic and empirically rigorous manner.

This study adopts a tripartite approach by defining cognitive anxiety as fear-related thoughts, behavioral anxiety as visible avoidance or speech disruption, and physiological anxiety as bodily stress responses. By integrating these domains, the research aims to provide a nuanced understanding of PSA among Malaysian undergraduates and contribute evidence-based insights for improving language instruction, assessment design, and student support systems in higher education.

Statement of Problem

Public speaking anxiety (PSA) has become a notable issue among undergraduate students in contexts where clear communication is vital for academic achievement and career progression. Despite the broad acknowledgement of the importance of public speaking, many students nevertheless encounter considerable nervousness when tasked with addressing an audience. In the Malaysian context, a study conducted by Zulida et al. (2024) indicates that nearly 97% of Malaysian undergraduates, irrespective of their academic background or level, experience at least a moderate degree of anxiety when it comes to public speaking.

Additionally, evidence from both local and international studies indicates that this issue is widespread and influenced by several factors. For example, gender differences consistently show that female students report higher PSA levels than males (Linter & Belovecová, 2024; Hashim & Musa, 2025). Moreover, beyond demographic factors, personal experiences like restricted involvement in group speaking activities and adverse self-perception have been demonstrated to influence public speaking anxiety. A study by Ch'ng et al. (2025) identified "fear of negative evaluation" as the main factor affecting PSA in ESL undergraduates in Malaysia. Moreover, although these students expressed a moderate level of confidence in their English proficiency, their anxiety regarding public speaking was closely associated with the perception of being evaluated. This suggests that simple linguistic skills or substantial education may be inadequate to resolve the deeper cognitive and emotional challenges they faced.

Recent studies point out the need for a comprehensive evaluation of the interactions among specific dimensions contributing to PSA, despite heightened awareness of these factors. Hashim and Musa (2025) highlighted the need for further investigation into the interplay of cognitive, behavioral, and physiological factors in the development of learners' experiences of PSA over time. Based on prior studies on this topic, Malaysia has not yet performed a thorough investigation of these factors, especially from the students' viewpoint (Ebenezer et al., 2022; Azhar et al., 2022). This discrepancy highlights the need for research that confirms the existence of PSA and examines the specific factors that affect it, along with how learners perceive and interpret these characteristics. Addressing the gap is crucial in order to develop

tailored interventions and support systems that will allow students to manage PSA and succeed in both their academic and professional lives in the future.

Objective of the Study and Research Questions

This study is done to explore the perception of learners' fear of public speaking. Specifically, this study is done to answer the following questions:

- How do learners perceive their cognitive factor in public speaking anxiety?
- How do learners perceive their behavioral factor in public speaking anxiety?
- How do learners perceive their physiological factor in public speaking anxiety?
- Is there a relationship between all factors that cause public speaking anxiety?

Literature Review

Theoretical Framework

Social Cognitive Theory (SCT) and Public Speaking Anxiety

Social Cognitive Theory (SCT) demonstrates that an individual's behavior, cognitive and environmental factors are constantly influencing each other to boost organizational functioning (Bandura, 1988). This theory proposes that humans are not merely passive recipients of environmental influences, but they actively engage in self-regulated behavior (Stajkovic & Sergent, 2019). This can be exemplified in a study by Almulla and Al-Rahmi (2023), which found that inquiry learning methods and critical reflection practices directly influence social learning factors while improving cognitive skills that ultimately affect academic achievement. Fundamentally, in order to achieve desired outcomes, SCT suggests that individuals actively navigate life by analyzing their cognitive factors, environmental factors, and behavioral factors.

In understanding the cognitive factors, intellectual performance depends not just on knowledge and logic but also on self-regulation, motivation, and social-emotional factors, all of which are central to human agency in SCT (Bandura, 1993). Specifically, self-efficacy refers to people's conviction in their capacity to successfully perform targeted actions that produce desired outcomes and serves as a critical driver of performance (Bandura, 1997). This relationship can be supported in a study by Harrison et al. (1997), who found that higher computer task performance correlated strongly with greater self-efficacy, while lower performance linked to reduced self-efficacy, reinforcing Bandura's theoretical claims.

While cognitive processes like self-efficacy shape individual capability, Social Cognitive Theory equally emphasizes the role of environmental factors such as mastery modeling, where individuals develop competencies by observing and imitating experts (Bandura, 1988). While age similarity helps observers judge behavioral appropriateness, actual learning is driven more by perceived model competence (Ryan, 2012). When the model is younger but skilled in comparison, children prioritize competence, and observing similar peers' success can boost self-efficacy by fostering beliefs in their own capability

Acknowledging behavioral factors by practicing self-directedness and self-motivation is how individuals exercise agency to achieve desired outcomes (Bandura, 1988). Individuals can establish internal standards, monitor their behavior, and self-regulate via incentives and evaluative feedback to align actions with goals when practicing self-directedness and self-motivation. Khudzari et al. (2019) has found that students' failure in their bachelor's program

was substantially influenced by personal factors, particularly the ability to cope with course loads, organize study time, and demonstrate competency across various assessment formats.

SCT can be applied in studying factors that influence a student's public speaking ability. Public speaking is an essential but anxiety-provoking skill for students, and overcoming this fear is crucial before entering professional life, as it requires strong confidence and volition. Public speaking anxiety can be influenced by both internal factors (nervousness) and external factors (audience size) (Ibrahim et al., 2022). Self-motivation arises not from personal standards alone, but from the anticipated satisfaction of meeting valued goals and dissatisfaction with poor performance, which trigger self-assessment processes and motivate goal-directed behavior (Bandura, 2001). SCT thus frames public speaking anxiety as a product of reciprocal influences among low self-efficacy, behavioral avoidance patterns, and intimidating external contexts.

Importance of Public Speaking for University Students

Public speaking's integration into higher education has evolved into an area of growing interest due to its correlated nature to students' academic achievement, emotional self-regulation, and career readiness. However, public speaking anxiety (PSA) can be a psychological barrier for many learners. Within a Social Cognitive Theory (SCT) context, PSA is developed from an individual's own cognitive beliefs, observed behavior, and social environment under stressful conditions, such as an academic presentation context.

Ibrahim et al. (2022) emphasized the importance of public speaking in students' ability to demonstrate language competency. More research is needed on their fear of public speaking in order to understand the sources of PSA in Malaysian undergraduates. The researchers found that a series of situational, cognitive, and behavioral factors, including fear of negative evaluation, difficulty with maintaining fluency, and pressure from an audience, combine to exacerbate levels of anxiety. Students who engaged in self-regulated behaviors, such as self-correction or rehearsal, reported less anxiety, an aspect that aligns with SCT's belief that self-efficacy contributes to behavior and behavior change. Similarly, Bawinda Sri Lestari et al. (2021) confirmed that students with higher levels of self-efficacy were less significantly affected by the behavior of the audience and performed better on the oral task at hand. This directly supports SCT's argument that perceived capability (self-efficacy) informs how an individual copes with stressful tasks like public speaking.

Fathikasari et al. (2022) also found that EFL learners indicated high levels of PSA when they were unwittingly placed in a speaking task and were unprepared or unsure of their message. Importantly, the study emphasized that PSA can be managed through structured exposure and through the principles of goal-setting consistent with SCT's behavior learning and cognitive learning pathways.

Collectively, the studies indicate that public speaking is more than an academic requirement, as it is a skill of transformation based on self-regulation, social interaction, and mental preparation. In using Social Cognitive Theory's scope to understand public speaking anxiety, we are able to identify the foundational application of experiential learning, feedback, and emotional resilience in public speaking. University students who learn public speaking using

SCT-based techniques not only perform better in presentations but also develop confidence, flexibility, and long-term communication skills.

Public Speaking Anxiety

Lang's (1968) Tripartite Model of Fear, which conceptualizes anxiety as comprising three interrelated response systems—cognitive, physiological, and behavioral—provides the theoretical foundation for this research. The cognitive component involves anxious thoughts, negative self-evaluation, and fear of failure; the physiological component includes somatic symptoms such as increased heart rate, trembling, or sweating; and the behavioral component entails avoidant or escape behaviors (Lang, 1968). This model has been extensively employed in studies of public speaking anxiety (PSA) to explain how different manifestations of anxiety interact during oral performance (Bodie, 2010; Dwyer & Davidson, 2012). Its utility has also been demonstrated in clinical research, such as Ollendick et al. (2011), who examined the concordance and discordance of cognitive, physiological, and behavioral responses in children with specific phobias using the behavioral approach test.

However, as the current research focuses on PSA in an ESL context, Lang's general psychological model is complemented by Horwitz et al.'s (1986) Foreign Language Classroom Anxiety (FLCA) theory. FLCA identifies communication apprehension, test anxiety, and fear of negative evaluation as central to the anxiety experienced in language learning environments. These constructs closely mirror Lang's tripartite dimensions but are grounded specifically in second language acquisition, thus providing a contextual lens that enhances the explanatory power of the tripartite model for the current study.

By integrating these two frameworks, the present study, which examines the manifestations and sources of PSA among Malaysian ESL undergraduates during English oral presentations, captures both the psychological complexity of anxiety and the sociolinguistic challenges that arise in ESL speaking tasks. The FLCA theory provides a conceptual bridge between general PSA and language-related communication apprehension, particularly salient in Malaysian classrooms where English is a second language and speaking proficiency varies widely (Dellah et al., 2020; Naser & Isa, 2021).

Furthermore, meta-analytic evidence supports the theoretical relevance of combining these models. For instance, Ebrahimi et al. (2019) highlight how psychological interventions targeting cognitive and physiological domains significantly reduce PSA, especially when culturally adapted. Similarly, Horwitz et al. (1986) emphasize the role of context-specific factors such as classroom dynamics, peer judgment, and language proficiency, all of which are pertinent in Malaysian higher education settings. As such, synthesizing Lang's physiological and behavioral insights with Horwitz et al.'s contextual and communicative dimensions creates a robust analytical framework for examining ESL learners' speaking anxiety in oral academic settings.

Past Studies

Social Cognitive Theory

A study was done by Frey and Vallade (2018) to evaluate public speaking and writing self-efficacy by using Social Cognitive Theory (SCT) as the framework. The participants were 380 undergraduates at a Southeastern institution, and they were assessed two times, within

the first and the last two weeks of the semester. The instrument used for assessing writing self-efficacy was a 9-item writing self-efficacy scale constructed by the composition and communication faculty, and a 19-item scale by Warren (2011) was used to assess public-speaking self-efficacy. Both competencies' grades were determined using the evaluation score given by the instructor of the respective skills. Findings revealed that there is greater self-efficacy for both competencies at the end of the course, and those who achieved good results on the two projects associated it with positive feelings about their capabilities. The implication of the study is it confirms that integrated courses boost students' self-efficacy in writing and public speaking, particularly with structured reflection and meaningful feedback. It highlights the importance of accurate grading, students' reflection, and the emphasis that learning is a process rather than focusing on outcomes only.

Another study was conducted by Widodo and Astuti (2024) to provide a critical analysis of Social Cognitive Theory in an elementary school context and to explore the challenges and potential implementations in an educational context. It used a literature study method by searching keywords such as 'social cognitive learning theory' and 'critical analysis' in academic databases such as Google Scholar and PubMed. Key findings revealed several ways to implement the theory in elementary schools, which are modeling by the teacher, peer modeling and collaborative learning, positive reinforcement and reward systems, social cognitive aspects in curriculum, and instructional differentiation approach. The challenges found are individual differences of the students and the diverse social contexts in the class, resistance to change, and limited resources. This study could lead to more innovative teaching methods, better learning outcomes, and enhanced social skills for the students.

Public Speaking Anxiety

A quantitative study was conducted by Ibrahim et al. (2022) to investigate causes of fear in public speaking among 171 undergraduates through Social Cognitive Theory. The instrument used for the survey was adapted from the speaking part of the Oral Communication Strategy Inventory (OCSI) developed by Nakatani (2006), and it was comprised of 4 sections: demographic profiles, situation, cognitive, and behavioral factors. This study identified several key findings. Firstly, it revealed that situational factors are significant contributors to public speaking anxiety, with nervousness being the primary internal cause while the audience size is the most significant external factor. Secondly, for cognitive factors, participants employed accuracy-oriented strategies by frequently self-correcting during speeches. The most common social-affective strategy involved striving to make a positive impression on the audience. For message reduction, orientation, and non-verbal strategies, speakers tended to simplify their message through familiar vocabulary. Thirdly, behavioral factors. To maintain fluency, they focused carefully on pronunciation, worked to sustain conversational flow, and allocated extra time to articulate their thoughts clearly. When facing comprehension challenges, they provided additional examples to clarify unclear points. With these findings, teachers can design better lessons and approaches to address students' fear of public speaking more effectively.

Next, Mohd Naser and Mat Isa (2021) explored the level of public speaking anxiety of 150 UiTM Shah Alam undergraduates and the relationship between their anxiety and oral presentation class performance. This study adapted the instrument by Yaikhong and Usaha (2012), which was the Public Speaking Classroom Anxiety Scale (PSCAS). It consisted of 17

closed-ended statements that used a 5-point Likert scale. The study revealed two key findings. Firstly, by using the procedures suggested by Yaikhong and Usaha (2012) to calculate the data obtained, it was revealed that the level of fear of public speaking among UiTM Shah Alam undergraduates is medium. Secondly, SPSS analysis using Pearson correlation showed that there is a significant relationship between public speaking anxiety and learners' performance. The findings help learners understand and manage speaking anxiety while serving as a reference for researchers and educators to improve language education quality in Malaysia.

Cognitive Factor

A study by Fooladvand et al. (2017) was conducted to investigate the effect of cognitive and metacognitive strategies on students' academic achievement in Iran and other countries by using a systematic literature review. The selected articles were 20 studies released from 2000 to 2014 that were related to the objective of the study. Research databases and valid keywords were used to assist with the data collection. The findings showed that the academic achievement of the students will be maximized if cognitive and metacognitive strategies, such as self-reflecting, evaluating self-performance, and processing information, are used, as they found that both strategies are highly effective for academic success. This study suggests that schools and educational institutions can consider cognitive and metacognitive strategies in the curricula for positive effects on students' academic achievement.

Ilma et al. (2021) conducted a quantitative study to determine the effect of project-based learning (PjBL), predict-observe-explain (POE), and predict-observe-explain-based project (POEP) on metacognitive awareness and cognitive learning outcomes in science learning. The participants of the study were 144 high school students in Tarakan, Indonesia. The research design was a pretest-posttest non-equivalent control group. The metacognitive awareness questionnaire, consisting of 49 statements, was adapted from Schraw and Dennison's (1994) model. On the other hand, the cognitive test consisted of 10 multiple-choice questions and five essays. Findings revealed that PjBL, POE, and POEP had a significant impact on students' metacognitive awareness and cognitive learning outcomes. POEP recorded the highest posttest score amongst the others. The results confirmed that the POEP approach enhances students' metacognitive awareness and cognitive learning outcomes, both of which are essential for learners.

Behavioral Factor

A study was conducted by Rahman et al. (2017) to explore how students' attitudes and social and behavioral factors influence lecture capture use and learning outcomes in engineering courses. It used qualitative and quantitative designs that included a survey of 85 engineering students at an Australian university and an extensive literature review on historical records for 7 years (2010-2016) of the students' academic performance in engineering courses. Key findings revealed that lecture capture contributes positively to students' learning, but they still prefer live classes due to the nature of engineering course contents that need hands-on demonstrations. Social and behavioral factors involved, such as attention and past experience, also influence how the students use the technology, but it is proven that most students use them regardless of their background. These insights revealed that lecture capture is a valued learning aid in engineering education, but the technology must be adapted and improved to meet the demands of different academic fields in the future.

Masaha and Jamaluddin (2022) investigated the level of attitude, the level of performance, and the relationship between behavioral factors and the performance of the students. The selected participants were 19 form four students in Sibu, Sarawak, who enrolled for the Ikhtisas Elective Subject Accounting Principles (MPEI PP). This was a quantitative study using a questionnaire and administered tests provided by researchers. By using the descriptive analysis and Pearson correlation analysis, the study revealed that the students' behavioral factor level is moderate and there is a significant relationship between the attitude factors and the students' performance. The implications of this study highlight the importance of attitudes, behavioral factors, and contextual factors to optimize students' outcomes through a holistic educational approach.

Physiological Factor

A qualitative study was conducted by Dharmawansa and Madhuwanthi (2024) to identify the most suitable learning methods for offline classes through the cognitive and physiological factors of the students. 8 final-year students of a management program at a university in Sri Lanka were selected as the participants of the study. The study was conducted through an experiment that consisted of active and passive learning sessions. Brain activity was measured using electroencephalogram (EEG), and physiological data was collected using Galvanic Skin Response (GSR), which can detect sweat gland activity. Electrocardiogram (ECG) was used to capture the fluctuation in heart rate variation. The results found that the most suitable learning method is group activity of Problem-Based Learning (PBL) after the lecture, followed by the lecture session and individual activity. The findings highlight the best learning strategies in education by understanding the impact they have on the students' learning process.

A study by Jaramillo Gómez et al. (2025) was performed to analyze the factors that affect critical thinking development negatively and positively among university students. The study used a systematic and narrative review of scientific literature, and 3 phases were developed, which were identification, screening, and included phases. Through these phases, 83 studies were selected into the data matrix. Key findings revealed 5 factors that work together as interconnected components, which are physiological, psychological, sociocultural, technological, and educational dimensions. Among the five, physiological factors, such as sleep quality and physical activity, were recorded as the most underexplored factor, with only 7 studies out of 83. This study underscores the importance of holistic educational strategies that combine various factors to improve the development of critical thinking.

Conclusion on Past Studies of Social Cognitive Theory

The findings from Frey and Vallade (2018) and Widodo and Astuti (2024) collectively highlight the effectiveness of Social Cognitive Theory (SCT) for enhancing learning across different educational levels. Structured learning experiences significantly boost students' confidence in skills such as public speaking and writing, as seen in Frey and Vallade's (2018) study. This confirms SCT's emphasis on mastery experiences, as stated by Bandura (1986), that successful task performance strengthens self-efficacy. In contrast, Widodo and Astuti's (2024) study identified strategies for elementary education, which are the direct applications of SCT's mechanisms, particularly on observational learning and social influence. Together,

these studies reveal that SCT approaches can enhance learning systematically, whether by applying them directly in classrooms or studying the principles.

Conceptual Framework

One activity that many fear in learning in higher institutions is that students are expected to present public speaking often throughout their study time. While most students have found ways to overcome public speaking anxiety, some are more affected by others. According to Rahmat (2019), this fear can have a negative impact on learners' future learning encounters. What are the causes of public speaking anxiety? Figure 1 shows the conceptual framework of the study. This study explores factors that cause public speaking anxiety. According to Bartholomay & Houlihan (2016), there are three factors that influence public speaking anxiety. Firstly, cognitive public speaking refers to the negative thoughts and mental processes that take place when the person is about to give a speech. The second factor is behavioral public speaking. This refers to the observable actions and physical responses that the learner shows when they experience anxiety about speaking to the public. Lastly, physiological public speaking refers to physical bodily reactions that the speaker experiences when he/she is anxious about speaking to the audience. Since the three main factors are cognitive, behavioral, and physiological, this study also investigates if there is a relationship between all the factors.

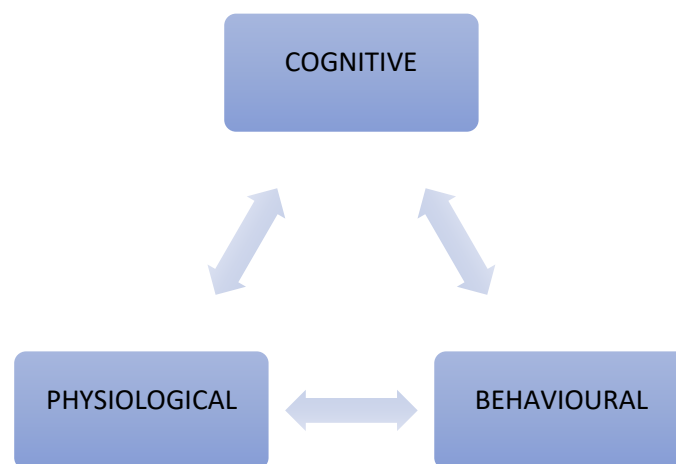


Figure 1- Conceptual Framework of the Study- Public Speaking Anxiety

Methodology

This quantitative study is done to explore fear of public speaking. A purposive sample of 446 participants responded to the survey. Data is collected online via Google Forms. The instrument used is a 5-point Likert-scale survey. The scales (table 1) used are never, rarely, sometimes, very often, and always.

Table 1

Likert Scale

1	Never
2	Rarely
3	Sometimes
4	Very Often
5	Always

The instrument is rooted from Bartholomay & Houlihan (2016) to reveal the variables in table 2 below. The survey has 4 sections. Section A has items on demographic profile. Section B has 8 items on cognitive. Section C has 4 items on behavior. Section D has 5 items on physiology

Table 2

Distribution of Items in the Survey

NO	VARIABLE	SUB-CATEGORY	CRONBACH ALPHA
B	COGNITIVE	8	.865
C	BEHAVIOURAL	4	.802
D	PHYSIOLOGICAL	5	.863
		17	.929

Table 2 also shows the reliability of the survey. The analysis shows a Cronbach alpha of .865 for cognitive, .802 for behavioral, and .863 for physiological. The overall Cronbach alpha for all 17 items is .929, thus revealing a good reliability of the instrument chosen/used. Further descriptive analysis using SPSS is done to present findings to answer the research questions for this study.

Findings*Findings for Demographic Profile*

Table 3

Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	55%
		Female	45%
2	Self-Rating Proficiency	Can communicate in English	87%
		Cannot communicate in English	12%

Table 3 shows the percentage of demographic profiles. A total of 446 individuals participated in the study. We can observe that 55% of the participants identified as male and 45% identified as female. In terms of self-rated English communication proficiency, a majority of respondents at 87% reported that they can communicate in English, while 12% of the respondents reported that they cannot. This indicates that most of the participants have at least a reasonable level of English communicative competency, which is vital for accurately calculating public speaking anxiety in English specifically. These pieces of demographic information are crucial as they provide a starting point for grasping learners' self-rated competence and confidence, which may be two factors influencing how public speaking anxiety exhibits in different groups.

Findings for Cognitive

Table 4

Mean for COGNITIVE (8 items)

STATEMENT/ QUESTION	MEAN	SD
BCQ1 Giving a speech is terrifying	3.2	0.8
BCQ2 I am afraid that I will be at a loss for words while speaking	3.3	0.7
BCQ3 I am nervous that I will embarrass myself in front of the audience	3.1	0.9
BCQ4 If I make a mistake in my speech, I am unable to re-focus	3.1	0.9
BCQ5 I am worried that my audience will think I am a bad speaker	2.9	0.9
BCQ6 I cannot focused on what I am saying during my speech	2.8	0.9
BCQ7 I am not confident when I give a speech	2.6	1.
BCQ8 I do not feel satisfied after giving a speech	3	0.9

To address Research Question 1, descriptive statistics were employed to examine learners' cognitive perceptions related to public speaking anxiety (PSA). Table 4 presents the mean scores and standard deviations for the eight items measuring the cognitive dimension. Across all items, learners reported moderate levels of cognitive anxiety, with mean scores ranging from 2.6 to 3.3 on a 5-point Likert scale. The highest mean was observed for BCQ2 ("I am afraid that I will be at a loss for words while speaking") at $M = 3.3$, $SD = 0.7$, indicating a widespread concern among learners regarding verbal fluency during public speaking. Similarly, BCQ1 ("Giving a speech is terrifying") and BCQ3 ("I am nervous that I will embarrass myself in front of the audience") yielded relatively high mean scores of $M = 3.2$ and $M = 3.1$, respectively, suggesting that fear of failure and social evaluation are dominant cognitive triggers of PSA. Notably, BCQ7 ("I am not confident when I give a speech") recorded the lowest mean score at $M = 2.6$, $SD = 1.00$, suggesting that while learners may experience anticipatory anxiety, this does not uniformly translate into diminished self-confidence. However, the relatively high standard deviation indicates variability in self-perceived confidence levels across participants.

In summary, the data reveal that learners' cognitive experiences of PSA are characterized by a strong fear of verbal breakdown, social judgment, and self-monitoring during performance. These findings align with previous research highlighting cognitive distortions as central to the experience of PSA (Gallego et al., 2022; Long et al., 2019). The implications point to the need for targeted interventions that address learners' internal thought patterns and anticipatory anxiety in public speaking contexts.

Findings for Behavioural

This section presents data to answer research question 2- How do learners perceive their behavioral factors in public speaking anxiety?

This study investigated learners' perceptions of the behavioral symptoms linked to public speaking anxiety (PSA) by analyzing four key statements concerning manifestations like physical tremors and avoidance behavior. Table 5 below presents the results.

Table 5

Mean for BEHAVIOURAL (4 items)

STATEMENT/ QUESTION	MEAN	SD
CBQ1 My hands shake when speaking	3.1	1.1
CBQ 2 I tremble before speaking	3	1.0
CBQ 3 My voice trembles while speaking	3	1.0
CBQ 4 I don't have eye contact	2.9	1.1

Table 5 indicates that the majority of students reported moderate levels of behavioral symptoms associated with anxiety regarding public speaking. The statement "My hands shake when speaking" obtained the highest mean score ($M = 3.10$, $SD = 1.1$), indicating that trembling hands are a prevalent visible indicator experienced by students during speaking activities.

The statements "I tremble before speaking" and "My voice trembles while speaking" both received an average score of 3.00, suggesting that many students feel vocal instability and anxiety before speaking in public. The findings align with recent research by Ch'ng et al. (2025), which highlighted behavioral and physiological symptoms like trembling and vocal instability as common signs of PSA among Malaysian ESL undergraduates. Hashim and Musa (2025) also noted that cognitive distress often comes with physical symptoms, such as speech exertion and hand tremors.

The statement "I don't have eye contact" received the lowest average score ($M = 2.90$, $SD = 1.1$), even though it was still within the central range of responses. This suggests that some students try to keep eye contact, while others avoid it, likely because they feel uncomfortable or insecure. These behaviors have been similarly observed in research by Zhang et al. (2022) and Gebre (2023), who found that fear of negative evaluation often leads to visual avoidance and withdrawal.

In summary, learners' perspectives reveal mild behavioral responses such as hand shaking, trembling, and difficulties with eye contact, which align with commonly observed symptoms of PSA. These behavioral signals indicate underlying mental and physical distress, and they may serve as valuable indicators for targeted support or training interventions (Zulida et al., 2024; Paridaluddin et al., 2024).

Findings for Psychological

This section presents data to answer research question 3- How do learners perceive their physiological factors in public speaking anxiety?

Table 6

Mean for PHYSIOLOGICAL (5 items)

STATEMENT/ QUESTION	MEAN	SD
DPQ1I feel nervous when speaking	3.6	0.9
DPQ 2I feel tense before giving a speech	3.3	0.9
DPQ 3My heart pounds when speaking	3.4	0.9
DPQ4I sweat during my speech	2.5	1.0
DPQ5I feel anxious while giving a speech	3.1	1.0

To address Research Question 3, descriptive statistics were employed to examine learners' physiological responses related to public speaking anxiety (PSA). As presented in Table 6, the five items measuring the physiological dimension yielded mean scores ranging from 2.5 to 3.6 on a 5-point Likert scale, indicating overall moderate to high levels of physiological anxiety among the respondents. The highest mean score was recorded for DPQ1 ("I feel nervous when speaking"), at $M = 3.6$, $SD = 0.9$, suggesting that nervousness is the most frequently experienced physiological symptom associated with PSA. This was followed by DPQ3 ("My heart pounds when speaking"), with a mean of $M = 3.4$, and DPQ2 ("I feel tense before giving a speech"), at $M = 3.3$. In contrast, DPQ4 ("I sweat during my speech") yielded the lowest mean score ($M = 2.5$, $SD = 1.0$), suggesting that while internal physiological tension is common, externally observable symptoms such as sweating are reported less frequently. Meanwhile, DPQ5 ("I feel anxious while giving a speech") recorded a moderate mean of $M = 3.1$, indicating that physiological discomfort often persists throughout the speaking process. In summary, the findings suggest that students predominantly experience PSA through internal physical symptoms, like nervousness and a racing heart. By recognizing these trends, instructors and trainers can create more effective support plans for students to help them control these reactions during public speaking.

Findings for Relationship between all factors that causes public speaking anxiety

This section presents data to answer research question 4: Is there a relationship between all factors that cause public speaking anxiety? To determine if there is a significant association in the mean scores between all factors that cause public speaking anxiety, data is analyzed using SPSS for correlations. Results are presented separately in tables 7, 8, and 9 below.

Table 7

Correlation for Cognitive and Behavioural Components

		COGNITIVE	BEHAVIOURAL
COGNITIVE	Pearson (Correlation)	1	.661**
	Sig (2-tailed)		.000
	N	446	446
BEHAVIOURAL	Pearson (Correlation)	.661**	1
	Sig (2-tailed)	.000	
	N	446	446

**Correlation is significant at the level 0.01(2-tailed)

Table 7 above shows there is an association between cognitive and behavioral components. Correlation analysis shows that there is a highly significant association between

cognitive and behavioral components ($r=.661^{**}$) and ($p=.000$). According to Jackson (2015), the coefficient is significant at the .05 level, and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between cognitive and behavioral components.

Table 8
Correlation for Behavioural and Physiological Components

		BEHAVIOURAL	PHYSIOLOGICAL
BEHAVIOURAL	Pearson (Correlation)	1	.753**
	Sig (2-tailed)		.000
	N	446	446
PHYSIOLOGICAL	Pearson (Correlation)	.753**	1
	Sig (2-tailed)	.000	
	N	446	446

**Correlation is significant at the level 0.01(2-tailed)

Table 8 above shows there is an association between behavioral and physiological components. Correlation analysis shows that there is a high significant association between behavioral and physiological components ($r=.753^{**}$) and ($p=.000$). According to Jackson (2015), the coefficient is significant at the .05 level, and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between behavioral and physiological components.

Table 9
Correlation for Physiological and Cognitive Components

		PHYSIOLOGICAL	COGNITIVE
PHYSIOLOGICAL	Pearson (Correlation)	1	.723**
	Sig (2-tailed)		.000
	N	446	446
COGNITIVE	Pearson (Correlation)	.723**	1
	Sig (2-tailed)	.000	
	N	446	446

**Correlation is significant at the level 0.01(2-tailed)

Table 9 above shows there is an association between physiological and cognitive components. Correlation analysis shows that there is a highly significant association between physiological and cognitive components ($r=.723^{**}$) and ($p=.000$). According to Jackson (2015), the coefficient is significant at the .05 level, and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between physiological and cognitive components.

Conclusion

Summary of Findings and Discussions

Social Cognitive Theory (SCT) is a psychological theory that proposes that cognitive, behavioral, and environmental factors interact dynamically to shape performance (Bandura, 1988). People learn knowledge, skills, and attitudes by observing and interacting with others. These social experiences teach them which behaviors are effective and what consequences to expect. Ultimately, people's actions are guided by their confidence in their abilities and their expectations of the results. This study examined public speaking anxiety (PSA) among undergraduates using SCT's triadic model.

From the findings, the researchers found that students perceived fear of verbal failure and social evaluation as their top cognitive challenges. Self-confidence scored lowest, which suggests anxiety does not always equate to low confidence. Similar results were found by Almulla & Al-Rahmi (2023), where reflective thinking and inquiry-based learning improved students' ability to manage self-doubt. Although their study focused on digital contexts, the parallels suggest that similar metacognitive strategies such as post-speech reflection journals or peer feedback loops could disrupt the negative thought cycles observed in PSA (e.g., fear of verbal failure).

The behavioral factors perceived by the students were moderate. Trembling voices and shaking hands were the most prominent, while having poor eye contact was least frequent. Khudzari et al. (2019) linked poor time management (a behavioral factor) to academic failure, mirroring how PSA behaviors hinder performance. In their study, poor attendance and participation (behavioral factors) stemmed from low self-regulation. While their study examined academic performance, the similarities indicate that PSA avoidance behaviors also represent defensive responses to perceived threats. These findings highlight how unaddressed behavioral factors in SCT can perpetuate negative outcomes across different domains, from classroom learning to public speaking.

The findings on physiological factors in public speaking anxiety are more prominent compared to the other two. Feeling nervous scores the highest, while sweating was the least reported. This can be explained as physiological arousal (e.g., rapid heartbeat) reinforcing negative feedback loops where bodily stress amplifies cognitive anxiety, further impairing performance (Bandura, 2001). The correlation between physiological and behavioral factors is parallel with Harrison et al.'s (1997) finding that performance deficits arise when stress disrupts self-efficacy.

From this study, it is revealed that cognitive, behavioral, and physiological factors in public speaking anxiety are deeply interconnected, supporting Social Cognitive Theory's principle of triadic reciprocity. Negative thoughts (e.g., fear of embarrassment) fuel physical avoidance behaviors (e.g., trembling), which then intensify bodily stress responses (e.g., rapid heartbeat) and create a self-sustaining cycle of anxiety. This mirrors prior SCT research showing how cognitive appraisals, actions, and physiological states continuously influence one another across performance contexts. Just as students' academic struggles arise from overlapping personal, behavioral, and environmental factors (Khudzari et al., 2019), PSA persists through similar feedback loops. The interdependence of these elements underscores the need for comprehensive interventions—such as cognitive reframing paired with gradual

exposure—to disrupt all three components of anxiety simultaneously. These interdependence factors require combined strategies to target anxiety's cognitive, behavioral, and physiological roots.

The findings from this study give significant theoretical and practical advancements for understanding and addressing Public Speaking Anxiety (PSA) in ESL higher education. Theoretically, it empirically validates Social Cognitive Theory's (SCT) triadic reciprocity model, while extending its cross-cultural applicability to Malaysian contexts, a gap highlighted by Hashim and Musa (2025). The results challenge the assumption that language proficiency mitigates anxiety, instead revealing PSA as a multifaceted phenomenon requiring integrated interventions. Applying SCT's triadic model to ESL contexts reveals targeted interventions: cognitive (reflective journaling), behavioral (gradual exposure tasks), and environmental (safe speaking spaces), formalising anxiety management in educational systems.

Implications and Suggestions for Future Research

The findings of this study present considerable value from both theoretical and pedagogical perspectives. Furthermore, it has expanded and opened numerous avenues in the realm of Public Speaking Anxiety (PSA), especially within the contexts of ESL and higher education.

Theoretical and Conceptual Implications

SCT suggests that our actions stem from the lively interplay of humans' thoughts, behaviors, and the world around them (Bandura, 1988). This study found strong positive correlations among the cognitive ($r=.661$), behavioral ($r=.753$), and physiological ($r=.723$) dimensions of PSA. Students who shared their experiences of cognitive symptoms, such as the fear of being judged, exhibited physical signs, such as trembling hands or a shaky voice. These findings support Bandura's (1997) focus on self-efficacy and how it impacts performance in high-pressure situations.

The study also confirmed Bartholomay and Houlihan's (2016) three-factor model, highlighting the complex and varied aspects of PSA. This highlights that PSA isn't just a simple idea; it's a complex mix of thoughts, actions, and physical responses. As a result, interventions should take a comprehensive approach, addressing all three areas instead of focusing on just one.

This study has reaffirmed the significance of Social Cognitive Theory (SCT). This research significantly contributes by anchoring theoretical models in empirical evidence from Malaysian higher education. This study enhances the cross-cultural applicability of SCT and the three-factor model, addressing a significant gap in the current literature (Hashim & Musa, 2025). The findings of this study present considerable value from both theoretical and pedagogical perspectives. Furthermore, it has expanded and opened numerous avenues in the realm of Public Speaking Anxiety (PSA), especially within the contexts of ESL and higher education.

Pedagogical Implications

Based on the results, there are some important insights that are worth noting in order to address public speaking anxiety in terms of teaching and instructions. First and foremost, considering that learners frequently experience moderate to high levels of public speaking

anxiety through cognitive, behavioural, and physiological dimensions, it is essential to reevaluate the methods employed in teaching public speaking and the support provided for individuals suffering from PSA. Educators should be knowledgeable about the signs of anxiety that may not manifest through language errors. Some of the indicators to observe are physical discomfort or behaviours indicating avoidance. Other than that, incorporating SCT-based practices like peer modeling, goal-setting, and self-reflection into public speaking tasks can help students build their confidence over time. Students can calm their anxious feelings when they see their peers reach their goals, specifically if they are at a similar level of skill (Ryan, 2015; Dahri et al., 2023).

Additionally, teaching should be structured to provide gradual exposure, practice, and feedback that focus on emotional readiness and creating a safe psychological environment. Methods like cognitive-behavioural training (CBT), mindfulness, and guided imagery can assist in managing physiological symptoms. Moreover, including psychological and emotional aspects in current public speaking modules could also help in addressing this issue. Other than that, educational institutions could provide useful spaces and helpful resources such as speech labs, counseling support, or anxiety-screening tools to take a proactive approach in managing PSA. It is interesting to note that most participants felt confident in their English skills, yet many still faced public speaking anxiety. This shows that just being good at a language doesn't necessarily protect learners from feeling anxious, as well as pointing out how crucial it is to include emotional support in language programs.

Suggestions for Future Research

There are many opportunities to explore in advancing the research on public speaking anxiety (PSA). Firstly, researchers could consider conducting a longitudinal study to reveal how PSA changes over time, particularly as students develop intellectually or acquire specialized training. This could provide important insights into the long-term effects of exposure and intervention. Second, pursuing intervention-based research is a fitting approach to understand the causal connections between interventions and outcomes. Thus, such studies could evaluate how effective peer modeling, mindfulness training, CBT, and video-based feedback can be in reducing anxiety and enhancing public speaking skills.

Next, to capture students' complex PSA experiences, future studies could include qualitative approaches like interviews or focus groups. This would illuminate personal, cultural, and contextual factors, specifically in Malaysian higher education. Cross-cultural comparative research could also examine how public speaking anxiety develops in different educational and cultural settings to better understand its culturally particular versus universal elements.

Moreover, as digital communication becomes more common, it would be useful to examine PSA in technological and virtual settings, such as how anxiety differs in face-to-face and online presentations and how virtual reality or AI-driven platforms can mitigate PSA. Finally, research on how curriculum design and institutional policies might address PSA at a broader level, through organized support networks or anxiety-sensitive instructional practices would also assist in informing policy development and institutional transformation.

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