The Influence of Confidence and Worry on Fear of Public Speaking: A PLS-SEM Analysis

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ABSTRACT

Public speaking anxiety (PSA) is widely recognized as one of the most common fears among university students and can significantly affect academic performance, communication effectiveness, and confidence in learning environments. This study investigates the influence of confidence and worry on fear of public speaking by examining how these psychological factors relate to behavioural and physiological fear responses. Grounded in Self-Fulfilling Prophecy Theory and Self-Efficacy Theory, the study proposes that confidence serves as a protective factor that can reduce fear, whereas worry intensifies anxiety and heightens fear responses during speaking situations. A quantitative research design was employed, involving 446 respondents, and data were collected using a questionnaire adapted from the Public Speaking Anxiety Scale, which included 17 items measuring cognitive (confidence and worry), behavioural, and physiological dimensions of public speaking anxiety. The data were analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 4 to assess both measurement and structural models. The measurement model demonstrated acceptable reliability and validity, with satisfactory values for factor loadings, Cronbach's alpha, composite reliability, and average variance extracted. Structural model results revealed significant relationships between confidence and both behavioural and physiological fear, as well as significant relationships between worry and both fear dimensions. Effect size analysis indicated that confidence had small effects on behavioural and physiological fear, while worry had a small effect on behavioural fear and a medium effect on physiological fear. These findings suggest that although confidence helps mitigate fear-related responses, worry plays a stronger role in intensifying physiological symptoms associated with public speaking anxiety. Overall, the study highlights the importance of strengthening confidence while addressing worry in order to reduce fear of public speaking among students and enhance their communication competence in academic settings.

Keywords: Public Speaking Anxiety, Confidence, Worry, Behavioural Fear, PLS-SEM

INTRODUCTION

Public speaking anxiety (PSA) remains one of the most pervasive fears among university students and continues to pose serious challenges to academic engagement and performance across disciplines. Prior research has demonstrated that PSA is a multifaceted phenomenon shaped by cognitive, behavioral, physiological, and situational factors. For instance, Gallego et al. (2022) showed that self-reported anxiety strongly predicts speech duration and perceived speech quality, while socially anxious individuals tend to underestimate their performance compared to observer evaluations. Similarly, (Grieve et al., 2021)and (Samsudin et al., 2025)

highlighted fear of judgment, negative thoughts, physical symptoms, and avoidance behaviors as dominant contributors to PSA, with cognitive factors exerting the strongest influence. Contextual and situational elements further complicate this fear. In addition to that, Ye et al. (2024)demonstrated that audience size, engagement, and spatial dimensions interact significantly to heighten PSA, while Bin et al. (2024) reported a high prevalence of moderate to severe PSA among medical students, identifying psychological flexibility and training experience as key protective factors. Despite these advances, much of the existing literature has focused on isolated predictors of PSA, often examining anxiety outcomes without simultaneously accounting for the interplay between positive psychological resources and negative emotional states.

This gap is particularly evident in the limited empirical integration of confidence and worry within a unified explanatory framework. While fear of judgment and negative evaluation are widely acknowledged, less attention has been given to how confidence may buffer, and worry may intensify, fear of public speaking when examined together using robust multivariate techniques. Consequently, there is insufficient clarity on the structural relationships among these constructs and their relative influence on PSA. The problem, therefore, lies in the fragmented understanding of how confidence and worry jointly shape fear responses in public speaking contexts, which constrains the development of targeted and evidence-based interventions. Addressing this gap, the purpose of the present study is to examine the influence of confidence and worry on fear of public speaking using Partial Least Squares Structural Equation Modeling (PLS-SEM).

By modeling these relationships simultaneously, the study seeks to provide a more comprehensive understanding of the psychological mechanisms underlying PSA and to offer practical insights for educational institutions aiming to reduce public speaking fear and enhance students' communicative competence. Figure 1 displays the model with the positioning of each hypothesis (1-8).

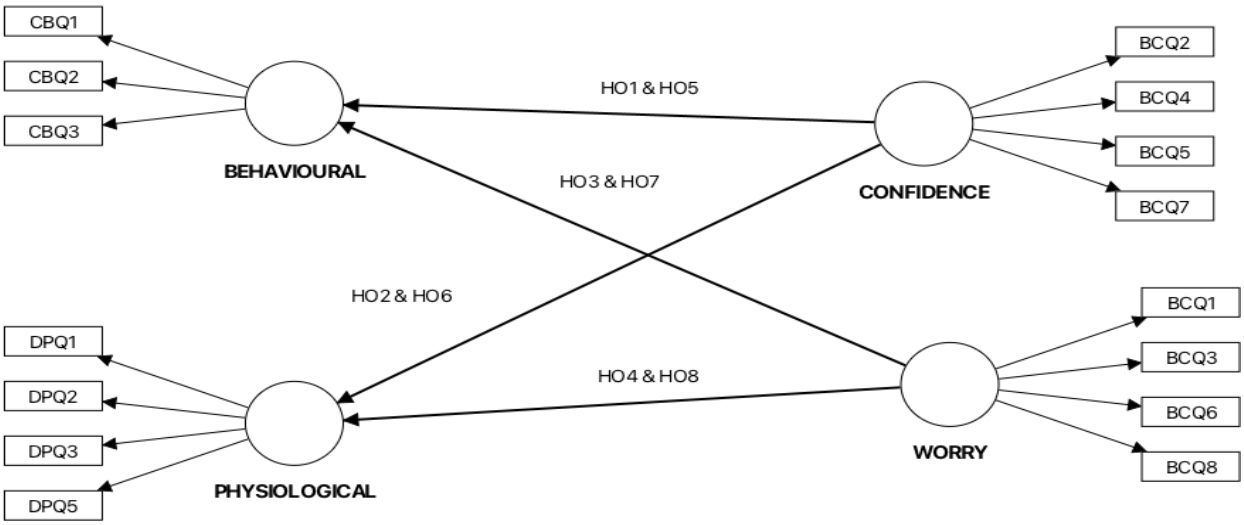

Figure 1- Model and the Positioning of Research Hypotheses (1-8)

The research questions will be answered using SmartPLS analysis using both measurement and structural models. Table 1 shows the list of research objectives, questions, and hypotheses.

Table 1- Research Objective, Questions, and Hypotheses

RO	RQ	Research Hypothesis
To investigate if there is a significant relationship between Confidence and Behavioural Fear	Is there a significant relationship between Confidence and Behavioural Fear?	Ho1: There is no significant relationship between Confidence and Behavioural Fear
To investigate if there is a significant relationship between Confidence and Physiological Fear	Is there a significant relationship between Confidence and Physiological Fear?	Ho2: There is no significant relationship between Confidence and Physiological Fear

To investigate if there is a significant relationship between Worry and Behavioural Fear	Is there a significant relationship between Worry and Behavioural Fear?	Ho3: There is no significant relationship between Worry and Behavioural Fear
To investigate if there is a significant relationship between Worry and Physiological Fear	Is there a significant relationship between Worry and Physiological Fear?	Ho4: There is no significant relationship between Worry and Physiological Fear
To investigate if there is a significant effect between Confidence and Behavioural Fear	Is there a significant effect between Confidence and Behavioural Fear	Ho5: There is no significant effect between Confidence and Behavioural Fear
To investigate if there is a significant effect between Confidence and Physiological Fear	Is there a significant effect Confidence and Physiological Fear	Ho6: There is no significant effect between Confidence and Physiological Fear
To investigate if there is a significant effect between Worry and Behavioural Fear	Is there a a significant effect Worry and Behavioural Fear	Ho7: There is no significant effect between Worry and Behavioural Fear
To investigate if there is a significant effect between Worry and Physiological Fear	Is there a significant effect Worry and Physiological Fear	Ho8: There is no significant effect between Worry and Physiological Fear

LITERATURE REVIEW

Theoretical Framework

Self-Fulfilling Prophecy

The concept of the Self-Fulfilling Prophecy, introduced by Merton (1948)provides a powerful theoretical lens for understanding the dynamics of fear of public speaking in relation to confidence and worry. A self-fulfilling prophecy occurs when an individual's belief or expectation about a situation influences their behavior in ways that cause the expected outcome to occur. In public speaking contexts, students who *anticipate failure, embarrassment, or negative evaluation* often experience heightened worry, which shapes their cognitive appraisals, emotional responses, and behavioral choices before and during a speech. This worry manifests as excessive self-monitoring, avoidance, or over-rehearsal, alongside physiological symptoms such as trembling or rapid heartbeat. These reactions can disrupt speech flow, reduce clarity, and impair audience engagement, thereby increasing the likelihood of an unsatisfactory performance, confirming the speaker's original fearful expectations.

Conversely, confidence functions as a protective mechanism that can interrupt the self-fulfilling cycle of fear. When individuals hold positive expectations about their speaking ability, they are more likely to approach public speaking situations with adaptive coping strategies, such as focused preparation, cognitive reappraisal, and controlled emotional regulation. Higher confidence reduces worry by reframing public speaking as a manageable or even rewarding experience rather than a threatening one. This positive expectancy promotes effective delivery, clearer articulation, and stronger audience connection, which in turn reinforces confidence through successful performance outcomes. In this way, confidence can generate a *positive self-fulfilling prophecy*, where belief in one's capability leads to behaviors that support success.

In relation to fear of public speaking, the interaction between confidence and worry reflects two opposing self-fulfilling processes. Low confidence coupled with high worry increases fear by sustaining negative expectations

and maladaptive behaviors, while high confidence and reduced worry weaken fear by fostering constructive engagement and successful experiences. Understanding public speaking fear through the lens of Merton's Self-Fulfilling Prophecy highlights the importance of early cognitive and emotional interventions. Strategies aimed at strengthening confidence and reducing worry—such as cognitive restructuring, gradual exposure, and supportive feedback—can help break negative expectancy cycles and promote healthier, more effective public speaking outcomes.

Self- Efficacy Theory

Self-Efficacy Theory (Bandura, 1977) provides a strong theoretical foundation for understanding how confidence and worry influence fear of public speaking. Self-efficacy refers to an individual's belief in their capability to organize and execute actions required to manage specific situations. In public speaking contexts, students with high speaking self-efficacy perceive themselves as capable of delivering a speech effectively, which enhances confidence and reduces perceived threat. This belief shapes how individuals interpret speaking tasks, regulate emotions, and persist in the face of difficulty. When self-efficacy is high, public speaking is viewed as a challenge rather than a danger, resulting in lower fear and more adaptive behavioral responses such as active engagement and clear communication.

Conversely, low self-efficacy intensifies worry and fear of public speaking. Individuals who doubt their speaking abilities are more likely to anticipate failure, negative evaluation, or embarrassment, leading to heightened worry and emotional distress. This worry increases cognitive interference, distracts attention, and amplifies physiological symptoms such as trembling or rapid heartbeat, which further undermine performance. According to Bandura, repeated experiences of perceived failure weaken self-efficacy, reinforcing fear and avoidance behaviors. Within the context of this study, confidence can be understood as a manifestation of high self-efficacy that buffers against worry, while worry reflects low efficacy beliefs that heighten fear. Thus, Self-Efficacy Theory explains how confidence and worry jointly shape fear of public speaking and underscores the importance of interventions that strengthen efficacy beliefs to reduce speaking-related fear.

Past Studies on the Public Speaking

Public speaking fear, often conceptualized as public speaking anxiety (PSA), is a prevalent phenomenon among university students and the general population, with confidence and worry playing central roles in its development and maintenance. Gallego et al. (2022) highlight the importance of self-perceived anxiety in shaping public speaking outcomes, demonstrating that higher self-reported anxiety predicts shorter speech duration and lower perceived speech quality. Notably, socially anxious individuals tend to underestimate their performance compared to observer evaluations, indicating that worry-driven cognitive distortions undermine confidence rather than actual ability. This aligns with qualitative findings by Grieve et al. (2021), who identified fear of being judged, uncertainty about content, and negative self-evaluations as dominant themes among students fearful of public speaking. These worries not only manifest as physical symptoms but also reduce students' confidence, leading to avoidance behaviours and negatively affecting their overall higher education experience. Together, these studies suggest that public speaking fear is strongly influenced by internal appraisals, where excessive worry diminishes confidence and intensifies anxiety regardless of objective performance.

Empirical evidence further supports the interaction between confidence, worry, and contextual factors in shaping PSA. Samsudin et al. (2025) found that cognitive factors, particularly fear of negative evaluation, exert the strongest influence on public speaking anxiety, surpassing behavioural and physiological responses. This underscores the role of worry-based thinking patterns in eroding speakers' confidence. Similarly, Bin et al. (2024) reported a high prevalence of moderate to severe PSA among medical students, with psychological flexibility emerging as a protective factor. Students with greater flexibility demonstrated reduced anxiety, suggesting that confidence is enhanced when individuals can adaptively manage worry. Additionally, lack of public speaking training was associated with higher PSA, indicating that insufficient skill development may exacerbate uncertainty and self-doubt. Ye et al. (2024) extend this understanding by demonstrating that situational variables such as audience size, engagement, and spatial dimensions interact to predict PSA levels. Their findings indicate that worry intensifies in evaluative and confined settings, particularly when audience engagement is high, further challenging speaker confidence. Collectively, these studies illustrate that public

speaking fear arises from a dynamic interplay between cognitive worry, situational demands, and perceived competence, highlighting the need for interventions that strengthen confidence while addressing maladaptive worry patterns.

Past Studies on Confidence

Research on confidence consistently highlights its central role in effective public speaking across student populations. (Aqso & Rimbano, 2023) found a very strong positive relationship between self-confidence and public speaking ability among university students, demonstrating that higher levels of confidence directly correspond to better performance in public communication. Similarly, Linao et al. (2025) reported a moderately significant positive correlation between self-esteem and public speaking skills, showing that students with greater confidence are better able to manage anxiety, maintain focus, and engage audiences effectively. Extending these findings, Eni et al. (2024) emphasized that self-confidence is not developed in isolation but is strongly influenced by social interactions and support from peers, family, and teachers, which help individuals overcome fear and anxiety during public speaking. Collectively, these studies underscore confidence as a key psychological factor underpinning public speaking success and suggest that supportive environments and targeted educational interventions are essential for strengthening confidence and communication skills.

Past Studies on Worry

Existing literature highlights worry as a central component of public speaking anxiety that adversely affects students' communication and academic outcomes. (Ahmed, 2019) illustrates that worry among Bangladeshi tertiary students is largely driven by fear of judgment, negative evaluation, language barriers, and inadequate preparation, which collectively manifest in speech-related difficulties such as stuttering, hesitations, memory lapses, and heightened physiological reactions during presentations. These worries are further intensified by unsupportive classroom environments and rigid academic expectations, underscoring the contextual nature of anxiety. Complementing this qualitative perspective, Ul Huda et al. (2024)quantitatively demonstrate that worry, operationalized through public speaking anxiety and fear of negative evaluation, is significantly associated with poorer academic performance among university students. While fear of negative evaluation was positively related to public speaking anxiety, it did not significantly mediate the relationship between anxiety and academic achievement, suggesting that worry itself exerts a direct and detrimental influence. Together, these studies emphasize worry as a multifaceted psychological experience shaped by personal, social, and institutional factors, reinforcing the need for targeted interventions to reduce anxiety and support students' academic and communicative success.

Conceptual Framework and Proposed Model of the Study

Figure 2 shows the conceptual framework of the study. This study aims to explore the influence of confidence and worry on fear of public speaking.

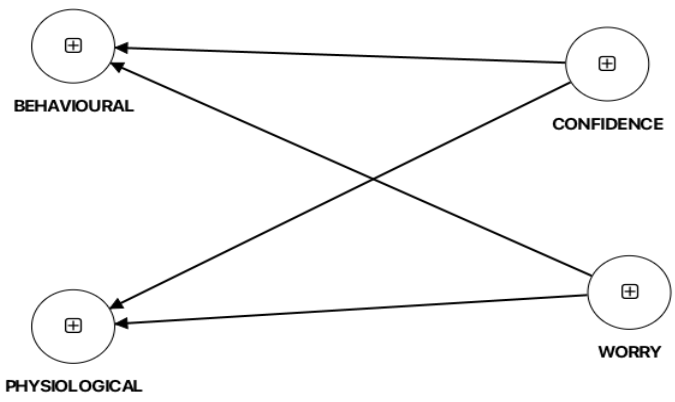

Figure 1- The Conceptual Framework –The Influence of Confidence and Worry on Public Speaking Fear

This study is grounded in a conceptual framework that explains fear of public speaking as an outcome influenced by two key psychological factors: confidence and **worry**. Confidence represents individuals' positive beliefs in their ability to speak effectively, which can reduce perceived threat and enhance emotional control during public speaking situations. In contrast, worry reflects persistent negative thoughts, fear of judgment, and anticipation of failure, which heighten anxiety and intensify fear responses. Within this framework, confidence is expected to have a negative influence on fear of public speaking, acting as a protective factor, while worry is expected to have a positive influence, exacerbating fear. Using Partial Least Squares Structural Equation Modeling (PLS-SEM) allows for the simultaneous examination of these relationships and the relative strength of each construct in predicting fear of public speaking. Accordingly, the aim of this study is to analyze the influence of confidence and worry on fear of public speaking and to determine the structural relationships among these variables using a PLS-SEM approach.

METHODOLOGY

Research Design

This study employs a quantitative design. The research goal is to explore the influence of confidence and worry on fear of public speaking. The model (Figure 1) chosen for this study is a hierarchical component model, Type II, which utilizes a combination of reflective-reflective models. According to Fornel (1982), a reflective model is employed when the construct is a trait and explains the indicators.

Population and Sample

The demographic analysis is presented in percentages. According to Ziegenfuss (2021), researchers report demographic data in percentages to establish sample representatives and allow for generalizability to a larger population. Presenting in percentages also provides an overview of participants' characteristics and offers a clear and understandable picture of the sample makeup

Table 2- 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.

Instrument

Table 3 presents the distribution of items included in the questionnaire. The instrument used a 5-point Likert scale, with scale 1 being " never". Scale 2 represents "rarely". Scale 3 represents "sometimes", while scale 4 is "often", and scale 5 is "always".

Table 3- Distribution for Item in Instrument

NO	CONSTRUCT	SUB-CATEGORY
B	COGNITIVE	8
C	BEHAVIOURAL	4
D	PHYSIOLOGICAL	5
		17

The questionnaire, adapted from (Bartholomay & Houlihan, 2016) comprises 8 items on cognitive (4 representing confidence; 4 representing worry). There are 4 items for behavioural and 5 items representing physiological.

Data Collection and Data Analysis

Data is collected via a Google Form. The data is then analyzed using SmartPLS 4 through two main stages. As suggested by Hair et.al. (2017), data analysis is done at two levels: the measurement and structural model. The first stage is the measurement model, which measures the outer model. The second stage is the structural model, which measures the inner model. The analyzed data is used to answer the research questions.

FINDINGS

The model formed for this study is that of lower order construct (LOC). The reflective measurement model was chosen. A reflective measurement model is the formation of a single unobserved latent construct, and this construct influences multiple variables (indicators). Another key feature of LOC is that the indicators are interchangeable. In this study, the constructs Confidence and Worry are examined if they have significant relationship with the construct behavioural and physiological.

The findings are presented in two stages. The first stage presents the measurement model, and the third stage reveals the structural model as well as answers research questions.

Measurement Model

In SmartPLS, the measurement model assesses the reliability and validity of the constructs. This is done by examining the relationships between them and their observable behavior. The measurement model measures the outer model. Figure 3 below shows the measurement model for this study. Further detailed explanation of this model is elaborated in tables below.

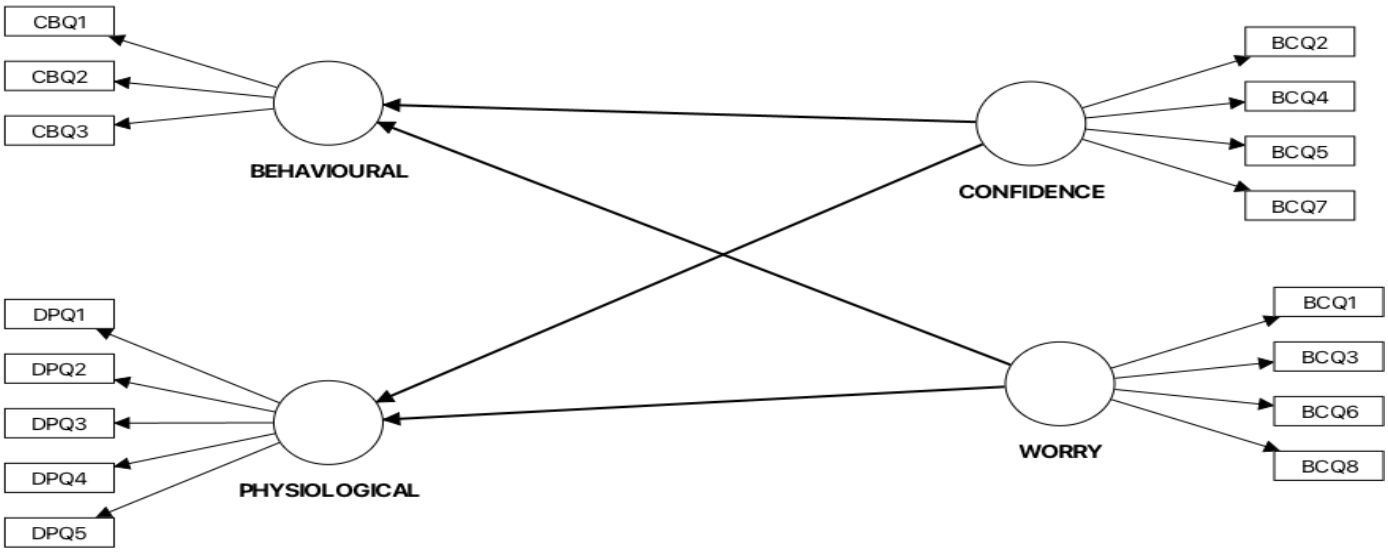

Figure 3- Measurement Model for Influence of Confidence and Worry on Behavioural and Physiological Fear

Reliability

According to Ringle & Sarstedt (2016),, reliability is assessed by checking indicator reliability and internal consistency reliability. Internal consistency is done using Composite reliability (rho_c) and Cronbach's Alpha. The cut-off value for Cronbach's Alpha is 0.70 to 0.90. The cut-off values for composite reliability (rho_c) are 0.70-0.90. For indicator reliability, the factor loadings cut-off values are >0.70 and squared loadings ≥0.50. Finally, the cut-off values for Average Variance Extracted (AVE) ≥0.50.

Table 3 -Results for Reliability- Confidence

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE)
		0.758	0.846	0.58
BCQ2	0.755			
BCQ4	0.769			
BCQ5	0.803			
BCQ7	0.717			

Table 3 presents the reliability results for Confidence. Factor loading of all items was found to be between 0.717 and 0.803. The loadings comply with the indicator reliability of more than 0.7. Next, the Cronbach's Alpha for Confidence is 0.758, the composite reliability is 0.846, and the AVE is 0.58.

Table 4 -Results for Reliability- Worry

ONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE)
		0.753	0.844	0.575
BCQ1	0.801			
BCQ3	0.77			
BCQ6	0.76			
BCQ8	0.701			

Table 4 presents the reliability results for the Worry. Factor loading of all items was found to be between 0.701 and 0.801. The loadings comply with the indicator reliability of more than 0.7. Next, the Cronbach's Alpha for Worry is 0.844, the composite reliability is 0.928, and the AVE is 0.575.

Table 5 -Results for Reliability- Behavioural

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE
		0.841	0.903	0.756
CBQ1	0.822			
CBQ2	0.899			
CBQ3	0.885			

Table 5 presents the reliability results for the Behavioural Factor loading of all items was found to be between 0.822 and 0.899. The loadings comply with the indicator reliability of more than 0.7. Next, the Cronbach's Alpha for Behavioural is 0.841, the composite reliability is 0.903, and the AVE is 0.756.

Table 6 -Results for Reliability- Physiological

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE
		0.866	0.904	0.654
DPQ1	0.858			
DPQ2	0.86			
DPQ3	0.844			
DPQ5	0.85			

Table 6 presents the reliability results for the Physiological. Factor loading of all items was found to be between 0.844 and 0.86. The loadings comply with the indicator reliability of more than 0.7. Next, the Cronbach's Alpha for Physiological is 0.866, the composite reliability is 0.904, and the AVE is 0.654.

Validity

According to Ramayah et al., 2018) for validity, the Discriminant validity (HTMT) needs to be <0.85 or <0.90.

Table 7- Discriminant Validity (HTMT)

	BEHAVIOURAL	**PHYSIOLOGICAL**
CONFIDENCE	0.296	0.216
WORRY	0.364	0.548

Table 7 presents the discriminant validity of the model under evaluation. The HTMT for Confidence and Behavioural is 0.296. The HTMT for Confidence and Physiological is 0.216. The HTMT for Worry and Behavioural is 0.364, while the HTMT for Worry and Physiological is 0.548.

Structural Model

In SmartPLS, the structural model visualizes the hypothesized causal relationships between constructs. The structural model i(Figure 4) s thus formed after the researcher has established the reliability and validity in the measurement model. For the analysis of the structural model, the researcher runs bootstrapping and examines the collinearity, path coefficients of determination, effect size, PLS predict, and IPMA. In addition to that, the analysis in the structural model allows the researcher to answer research questions 1-6 and hypotheses 1-3). Figure 4 below shows the structural model for this study. Detailed explanation is elaborated in Tables below.

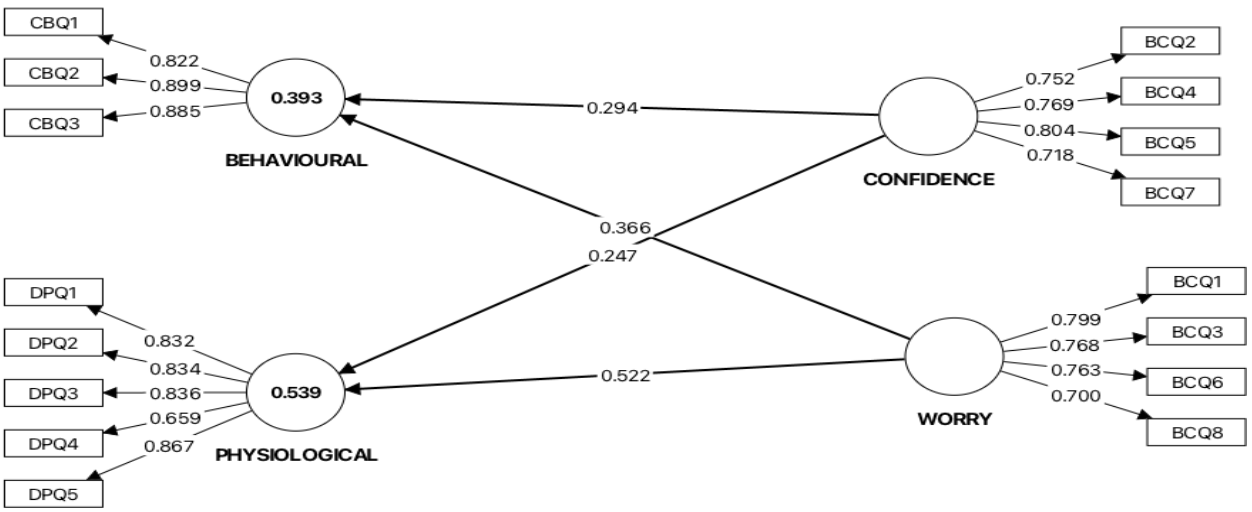

Figure 4- Structural Model for the Study

Collinearity

According to Ringle & Sarstedt (2016),), the cut-off value for collinearity inner model VIF is ≤ 5.0.

Table 8- Collinearity

	Original sample (O)
CONFIDENCE <-> BEHAVIOURAL	0.717
PHYSIOLOGICAL <-> BEHAVIOURAL	0.819
PHYSIOLOGICAL <-> CONFIDENCE	0.803
WORRY <-> BEHAVIOURAL	0.735
WORRY <-> CONFIDENCE	1.057
WORRY <-> PHYSIOLOGICAL	0.886

Table 8 above presents the collinearity results for this study. According to (C. Ringle & Sarstedt, 2015), the inner model VIF must be less than or equal to 5.0. All interactions met the threshold for Collinearity.

Coefficients of determination (R^2)

According to (Ramayah et al., 2018), the coefficients of determination (R^2) range from 0.2 to 0;7, depending on the field of study. Social Sciences & Economics follows the range above.

Table 9-R^2

	Original sample (O)
BEHAVIOURAL	0.393
PHYSIOLOGICAL	0.536

Table 9 shows the results for coefficients of determination (R^2). Results indicate that the R^2 for Behavioural is 0.393 and Physiological is 0.536.

P-Value

Table 10- Interpretation for p-value

Thresholds	Interpretation	Decision
$p \leq 0.05$	Often considered statistically significant	Reject H_0
$p \leq 0.01$	Indicates very strong evidence against H_0	Reject H_0
p> 0.05	Weak or no evidence against H_0	Fai to reject H_0

According to (Goodman (1999)a threshold of p-value is the cut-off for determining statistical significance, most commonly set at 0.05. Below is the table that interprets the threshold.

Table 10 shows the interpretation for p=value. According to (Goodman, 1999), if the p-value is $p \leq 0.05$, the data is often considered statistically significant and the hull hypothesis is rejected. If it is $p \leq 0.01$, then it indicates very strong evidence to reject the null hypothesis (H_0). However, a p> 0.05 is considered weak an there is no evidence to reject the null hypothesis.

Table 11- Interpretation for p-value

Thresholds	Interpretation	Decision
$p \leq 0.05$	Often considered statistically significant	Reject H_0

$p \leq 0.01$	Indicates very strong evidence against H_0	Reject H_0
p> 0.05	Weak or no evidence against H_0	Fai to reject H_0

Table 12-Path Coefficient for current study

	T statistics (|O/STDEV|)	P values
CONFIDENCE -> BEHAVIOURAL	4.858	0
CONFIDENCE -> PHYSIOLOGICAL	3.553	0
WORRY -> BEHAVIOURAL	5.999	0
WORRY -> PHYSIOLOGICAL	9.555	0

Table 12 presents data to answer research questions and hypotheses. Path coefficients are presented in beta and t-value. The significant value (t-statistic) must be more than 1.65, and p-values must be less than 0.05 to show significant relationships.

Fir this study, the p-value for Confidence-> Behavioral is p=0 (t=4.858); for Confidence-> Physiological is p=0 (t=3.553); Worry-> Behavioral is p=0 (t=5.999), and Worry-> Physiological is p=0 (t=9.555). Hence, all paths indicate significant relationships

Effect Size (f^2)

According to (Ramayah et al., 2018), the cutoff values for effect sizes (f^2) are 0.02 (small), 0.15 (medium), and 0.35 (large). This section presents data to answer research questions and hypotheses 5,6,7 &8.

According to (C. Ringle & Sarstedt, 2015) for effect size, values from 0.02 to 0.15 are considered small. Values between 0.15 to 0.35 are considered medium while values 0.35 and above are considered large.

Table 13- Effect Size

	Original sample (O)	Interpretation
CONFIDENCE -> BEHAVIOURAL	0.052	small
CONFIDENCE -> PHYSIOLOGICAL	0.036	small
WORRY -> BEHAVIOURAL	0.079	small
WORRY -> PHYSIOLOGICAL	0.233	medium

With reference to Table 13 above, H_{05} is rejected. Results indicate that there is a large effect size for all interactions.

PLS Predict (Q^2)

In PLS-SEM, it is stated that $Q^2 \geq 0$ (C. Ringle & Sarstedt, 2015). Table 18 below reveals the PLS Predict (Q^2) for the dependent variable. The analysis reveals the Q^2 for all items in the dependent variable -connectedness.

Table 14- PLS Predict (Q^2)

	Q^2predict	RMSE	MAE
BEHAVIOURAL	0.384	0.789	0.616
PHYSIOLOGICAL	0.53	0.689	0.538

Table 14 above shows the results for Q^2 Predict in the study. According to Cohen (1988), Q^2 Predict is used to interpret the magnitude of the predictive relevance. For **$Q^2 > 0$** indicates the model has predictive relevance. Secondly, **0.02** indicates **small** predictive relevance. Next, **0.15** indicates **medium** predictive relevance. Finally,

0.35 indicates **large** predictive relevance. Results for table 14 that all variables indicate predictive relevance.

Specifically, for this study, Behavioural shows large predictive relevance, and Physiological has large predictive relevance.

IPMA

IPMA or Importance-Performance Matrix Analysis. According to Ringle & Sarstedt (2016), IPMA is used to evaluate the performance and importance of the chosen constructs or indicators within a model. In the context of this study, individual IPMA analysis was done on each construct and reported in Table 15.

IPMA or Importance-Performance Matrix Analysis. According to (C. Ringle & Sarstedt, 2015), IPMA is used to evaluate the performance and importance of the chosen constructs or indicators within a model. In the context of this study, individual IPMA analysis was done on each construct and reported in Table 15.

Table 15- Latent Variables Average Performance (Performance)

	LV performance value, average
BEHAVIOURAL	50.677
CONFIDENCE	49.799
PHYSIOLOGICAL	58.764
WORRY	50.539

According to jointly (Hauf, 2024) for PLS-SEM IPMA (Importance-Performance Map Analysis), there isn't a single "good score," but rather constructs with high importance (total effects) but low performance scores (rescaled 0-100**)** are key areas for improvement, indicating high potential for managerial action, while high importance/high performance is good, and low importance/low performance means less priority. Performance scores range 0-100, with higher values showing better attainment, but you interpret them *relative* to their importance.

Hence, Physiological has the highest importance (58.764). Next Confidence has 50.677 importance compared to Worry at 50.539. The lowest importance is Confidence at 49.799.

CONCLUSION

Summary of Findings and Discussions

Table 14- Outcome of Research Hypothesis

RQ	RESEARCH HYPOTHESIS	RESEARCH OUTCOME
Is there a significant relationship between Confidence and Behavioural Fear?	Ho1: There is no significant relationship between Confidence and Behavioural Fear	Null Hypothesis rejected. There is a significant relationship between Confidence and Behavioural Fear
Is there a significant relationship between Confidence and Physiological Fear?	Ho2: There is no significant relationship between Confidence and Physiological Fear	Null Hypothesis rejected. There is a significant relationship between Confidence and Physiological Fear
Is there a significant relationship between Worry and Behavioural Fear?	Ho3: There is no significant relationship between Worry and Behavioural Fear	Null Hypothesis rejected. There is a significant relationship between Worry and Behavioural Fear
Is there a significant relationship between Worry and Physiological Fear?	Ho4: There is no significant relationship between Worry and Physiological Fear	Null Hypothesis rejected. There is a significant relationship between Worry and Physiological Fear

Is there a significant effect between Confidence and Behavioural Fear	Ho5: There is no significant effect between Confidence and Behavioural Fear	Null hypothesis is rejected. There is a significant effect between Confidence and Behavioural Fear. Effect=Small
Is there a significant effect Confidence and Physiological Fear	Ho6: There is no significant effect between Confidence and Physiological Fear	Null hypothesis is rejected. There is a significant effect between Confidence and Physiological Fear. Effect=Small
Is there a a significant effect Worry and Behavioural Fear	Ho7: There is no significant effect between Worry and Behavioural Fear	Null hypothesis is rejected. There is a significant effect between Worry and Behavioural Fear. Effect=Small
Is there a significant effect Worry and Physiological Fear	Ho8: There is no significant effect between Worry and Physiological Fear	Null hypothesis is rejected. There is a significant effect between Worry and Physiological Fear. Effect=Medium

Table 14 above shows the presentation of the outcome of the research questions and hypotheses. The null hypotheses are rejected for Hypotheses 1-4. There are significant relationships between confidence and Physiological Fear. There are significant relationships between worry and Physiological Fear. Additionally, the null hypotheses are also rejected for Hypotheses 5-8. Confidence-> Behavioral, Confidence-> Physiological, Worry-> Behavioral have small effects, while Worry -> Physiological has a medium effect.

Implications and Suggestions for Future Research

Figure 1 below presents the proposed model for this study. Findings revealed all interactions have significant relationships and have a variety of significant effects.

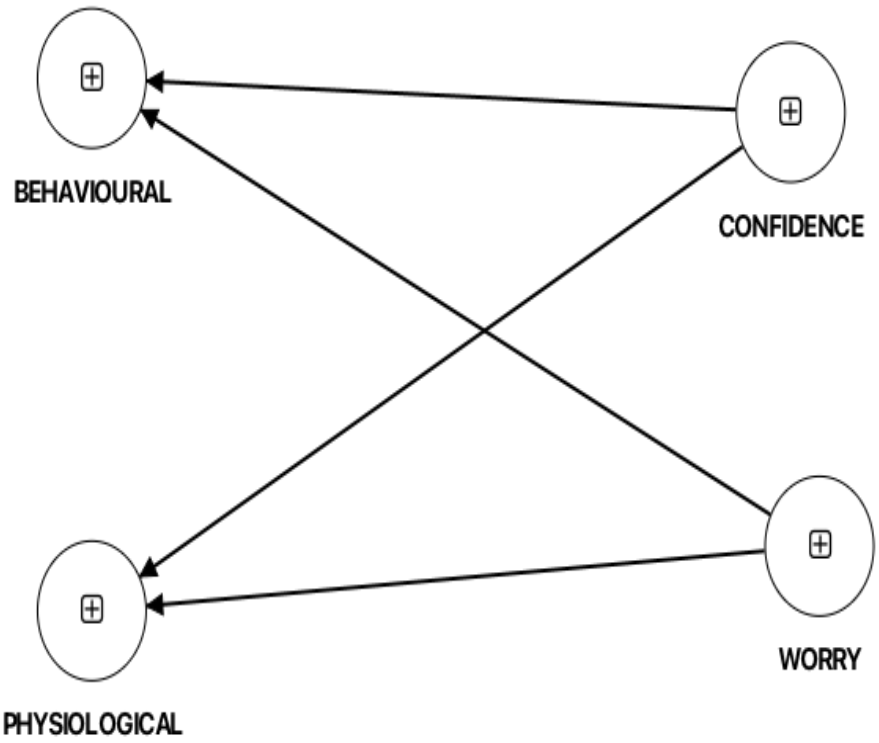

Figure 1- The Conceptual Framework –The Influence of Confidence and Worry on Public Speaking Fear

The Influence of Confidence on Fear of Public Speaking

This study has shown that confidence plays an important role in shaping the behavioural and physiological fear associated with public speaking. Similar studies also indicate that cognitive factors such as fear of judgment strongly influence public speaking anxiety, which then manifests through behavioural responses like avoidance and excessive rehearsal, as well as physiological reactions such as sweating and rapid heartbeat (Samsudin et al., 2025). Research also shows that individuals with higher self-confidence demonstrate better public speaking ability and are more capable of managing anxiety and communicating effectively in front of an audience (Aqso et al., 2023; Eni et al., 2024). Similarly, students with stronger self-esteem are more likely to control nervousness and engage confidently with their audience, indicating that confidence can reduce behavioural signs of fear during presentations (Linao et al., 2025). Evidence further suggests that public speaking anxiety is often linked to fear of negative evaluation, which can negatively affect academic performance and increase psychological stress in speaking situations (Huda et al., 2023). In experimental settings, self-reported anxiety has been found to predict behavioural outcomes such as speech duration and perceived speech quality, although physiological reactions may not always align with self-reported anxiety levels (Gallego et al., 2022). Environmental and situational factors, including audience size and engagement, can also interact with psychological states to influence anxiety levels during speaking tasks (Ye et al., 2024). Additionally, contextual stressors such as fear of judgment, language barriers, and insufficient preparation may trigger physiological symptoms like rapid breathing, trembling voice, and memory lapses during presentations (Ahmed, 2025). These findings collectively highlight that confidence acts as a protective factor that can reduce behavioural and physiological fear responses in public speaking situations (Bin et al., 2024; Grieve et al., 2021).

The Influence of Worry for Fear of Public Speaking

Worry is a significant psychological factor that influences the behavioural and physiological fear associated with public speaking. The findings in this study have indicated that worry has a significant relationship and effect on oral presentation fear. The findings is in accordance with several similar studies. Cognitive concerns such as fear of judgment and negative evaluation often trigger anxiety, which can lead to behavioural responses like avoidance, over-preparation, or hesitation during presentations, as well as physiological reactions such as sweating, rapid heartbeat, and trembling (Samsudin et al., 2025). These worries are frequently related to the fear of being judged by others, which has been identified as a common source of public speaking fear among university students and can negatively affect their academic experience and participation in oral presentations (Grieve et al., 2021). Research also indicates that anxiety related to public speaking can be intensified by situational factors such as audience size, engagement level, and environmental conditions, all of which shape individuals' anticipatory worry and overall anxiety levels (Ye et al., 2024). Empirical findings further show that self-reported public speaking anxiety can influence behavioural outcomes such as speech duration and perceived performance quality, suggesting that worry about speaking situations can directly affect how individuals perform during speeches (Gallego et al., 2022). Additionally, worry associated with fear of negative evaluation has been found to correlate positively with public speaking anxiety and negatively with academic performance, highlighting the broader impact of such concerns on students' educational outcomes (Huda et al., 2023). In classroom contexts, these worries may also manifest through speech disruptions such as stuttering, voice tremors, hesitation, and memory lapses, accompanied by physiological symptoms like rapid breathing and sweating when students face stressful speaking situations (Ahmed, 2025). Studies also report that public speaking anxiety is prevalent among students and can be influenced by factors such as lack of training or experience, further increasing worry and fear when speaking in front of an audience (Bin et al., 2024). Collectively, these findings demonstrate that worry plays a critical role in shaping both behavioural and physiological fear responses during public speaking situations.

Implications of the Findings and Suggestions for Future Research

Implications

The findings of this study provide important implications for educators and higher education institutions seeking to reduce the fear of public speaking among students. The results demonstrate that both confidence and worry significantly influence behavioural and physiological fear responses, suggesting that public speaking anxiety is

shaped by the interaction of positive psychological resources and negative cognitive states. Previous studies similarly highlight that cognitive factors such as fear of judgment and negative evaluation strongly influence public speaking anxiety and often lead to behavioural reactions such as avoidance and excessive rehearsal, as well as physiological responses including sweating and rapid heartbeat (Samsudin et al., 2025). Strengthening students' confidence therefore, becomes crucial, as higher levels of self-confidence and self-esteem have been shown to improve public speaking ability and enable students to manage nervousness and communicate more effectively with their audience (Aqso et al., 2023; Linao et al., 2025; Eni et al., 2024). At the same time, worry associated with fear of negative evaluation can intensify anxiety and negatively affect students' academic performance (Huda et al., 2023). Public speaking fear may also be triggered by contextual factors such as audience size, engagement, and environmental conditions (Ye et al., 2024), while lack of training and limited experience may further increase anxiety among students (Bin et al., 2024). These findings suggest that educational institutions should implement supportive learning environments, provide structured public speaking training, and incorporate strategies to strengthen confidence while helping students manage worry in speaking situations.

Suggestions for Future Research

Future research should further explore the psychological mechanisms underlying fear of public speaking by examining additional variables that may interact with confidence and worry. While the present study demonstrates the significant influence of these constructs, earlier research indicates that public speaking anxiety is also shaped by situational and contextual factors such as audience engagement, room dimensions, and evaluative environments (Ye et al., 2024). Future studies could therefore expand the structural model by including environmental and social variables to provide a more comprehensive understanding of public speaking fear. In addition, research has shown that worry related to fear of judgment, language barriers, and insufficient preparation can lead to speech disruptions such as stuttering, hesitation, and memory lapses, accompanied by physiological reactions like rapid breathing and trembling during presentations (Ahmed, 2025). Longitudinal or experimental studies may help determine how confidence-building interventions and anxiety management training influence behavioural and physiological fear responses over time. Furthermore, since previous studies have shown that self-reported anxiety can influence speech duration and perceived speech quality (Gallego et al., 2022), future research could integrate both self-reported and observational measures to obtain a more holistic understanding of public speaking fear. Expanding research across different academic disciplines, cultural contexts, and educational levels may also provide deeper insights into how confidence and worry influence fear of public speaking among diverse learner populations (Grieve et al., 2021; Bin et al., 2024).

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Appendix

Public Speaking Anxiety

(This instrument is adapted from (Bartholomay & Houlihan, 2016)

NO	VARIABLE	SUB-CATEGORY
B	COGNITIVE	8
C	BEHAVIOURAL	4
D	PHYSIOLOGICAL	5
		17

Likert Scale

1	Never
2	Rarely
3	Sometimes
4	Very Often
5	Always

Section B-Cognitive (8 items)

STATEMENT/QUESTION	1	2	3	4	5
BCQ1Giving a speech is terrifying					
BCQ2I am afraid that I will be at a loss for words while speaking					
BCQ3I am nervous that I will embarrass myself in front of the audience					
BCQ4If I make a mistake in my speech, I am unable to re-focus					
BCQ5I am worried that my audience will think I am a bad speaker					
BCQ6I cannot focused on what I am saying during my speech					
BCQ7I am not confident when I give a speech					
BCQ8I do not feel satisfied after giving a speech					

SECTION C- BEHAVIOURAL (4 items)

STATEMENT/QUESTION	1	2	3	4	5
CBQ1My hands shake when I give a speech					
CBQ 2I fidget before speaking					
CBQ 3My voice trembles when I give a speech					
CBQ 4I find it difficult to make eye contact with my audience					

SECTION D-PHYSIOLOGICAL (5 items)

STATEMENT/QUESTION	1	2	3	4	5
DPQ1 I feel sick before speaking in front of a group					
DPQ 2I feel tense before giving a speech					
DPQ 3My heart pounds when I give a speech					
DPQ4I sweat during my speech					
DPQ5I do not feel relaxed while giving a speech					