A Proposed Structural Model for the Relationship between Research Anxiety and Academic Perfectionism among University Students

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ABSTRACT:
University students experience research anxiety as a significant academic challenge that can negatively affect engagement and performance. Academic perfectionism has been identified as a central cognitive factor influencing students' emotional experiences in academic contexts. This study investigated the relationship between academic perfectionism and research anxiety and examined dimension-specific predictive effects among university students. A quantitative cross-sectional design was employed with a sample of 380 psychology students, and data were collected using standardized self-report instruments. Statistical analysis included descriptive statistics, Pearson correlation, and multiple regression, with path coefficients estimated using AMOS software; however, no latent-variable path analysis with fit indices was conducted. The results indicated that participants reported moderate levels of research anxiety ($M = 2.51$) and high levels of academic perfectionism ($M = 3.97$). As hypothesized, the global correlation between the two constructs was weak and non-significant ($r = .074$, $p = .149$). Multiple regression analysis explained 14.4% of the variance in research anxiety ($R^2 = .144$). Doubts about actions significantly predicted higher research anxiety ($\beta = .270$, $p < .001$), whereas self-oriented perfectionism significantly predicted lower research anxiety ($\beta = -.252$, $p < .001$). Other dimensions (self-criticism, socially prescribed perfectionism, self-worth contingency) were not statistically significant predictors. These findings indicate that academic perfectionism does not demonstrate a meaningful global relationship with research anxiety, but its dimensions exhibit opposing effects. Total perfectionism scores should not be used to predict research anxiety.
Keywords: Research anxiety, academic perfectionism, university students, regression analysis, psychological factors

Keywords: Research Anxiety, Structural Model, University students

1. Introduction

Research anxiety has become a significant psychological concern among university students, particularly in disciplines requiring intensive engagement with research methods, statistical analysis, and academic writing. Empirical evidence indicates that a substantial proportion of students experience moderate to high levels of research-related anxiety, which can negatively affect academic engagement and performance. Previous studies suggest that a substantial proportion (70%–95%) of university students encounter difficulties in fulfilling academic requirements, including research and writing tasks, with many exhibiting avoidance behaviors and anxiety symptoms (Mills & Blankstein, 2000; Naz et al., 2021). In this context, research anxiety is conceptualized as a multidimensional construct encompassing fears related to statistics, academic writing, research processes, and evaluation procedures, all of which may hinder students' ability to perform effectively and sustain their academic engagement (McGrath, 2005; Putwain, 2008; Zhenlei et al., 2024).

From a theoretical perspective, research anxiety can be understood through cognitive frameworks, particularly Attentional Control Theory, which posits that anxiety disrupts attentional regulation and reduces cognitive efficiency, thereby impairing decision-making and performance in demanding academic tasks (Miceli & Castelfranchi, 2005; Zhenlei et al., 2024). This disruption is especially relevant in research contexts, where students must manage complex information and sustain concentration. In parallel, Cognitive Behavioral Theory (CBT) explains anxiety as a consequence of maladaptive beliefs and cognitive distortions, such as fear of failure and intolerance of uncertainty, which influence emotional responses and behavioral patterns (Derakshan & Eysenck, 2009; Eysenck et al., 2007; Simpson et al., 2010; Szentagotai & Jones, 2010). These theoretical perspectives collectively suggest that research anxiety is shaped not only by situational academic demands but also by underlying cognitive and personality-related factors.

Within this framework, academic perfectionism has been widely examined as a central cognitive factor influencing students' emotional experiences in academic settings. academic perfectionism is generally defined as a multidimensional personality construct involving the pursuit of high standards combined with critical self-evaluation (Fenwick et al., 2017; Nelson, 2000). The multidimensional model proposed by Hewitt and Flett distinguishes between self-oriented perfectionism and socially prescribed perfectionism, reflecting internally driven standards and perceived external expectations, respectively (Hewitt & Flett, 1991). Empirical evidence further suggests that perfectionism encompasses both adaptive and maladaptive components, with adaptive forms often associated with achievement and motivation, and maladaptive forms linked to psychological distress, including anxiety and depression (Sirois et al., 2017; Smith et al., 2022).

A growing body of research supports the existence of a relationship between academic perfectionism and anxiety. Students exhibiting maladaptive academic perfectionism tend to experience higher levels of anxiety sensitivity and psychological distress (Yazd et al., 2019). In particular, perfectionistic concerns such as doubts about actions and fear of mistakes have been identified as key predictors of anxiety-related outcomes (Fernández-García et al., 2022). These findings are consistent with cognitive-behavioral explanations, which suggest that excessive self-criticism, fear of failure, and intolerance of mistakes contribute to heightened emotional distress and maladaptive coping patterns (Smith et al., 2018; Wood et al., 2015).

Empirical investigations further demonstrate the predictive role of perfectionism in anxiety-related outcomes. For example, Askari (2019) demonstrated that perfectionism significantly predicted anxiety levels, accounting for a substantial proportion of variance, with doubts about actions emerging as a key predictor. Similarly, Xiong et al. (2024) reported that maladaptive components among university students is associated with increased anxiety symptoms, while Jiang and Jiang (2025) identified maladaptive components

as a significant predictor of both psychological and behavioral outcomes. Additional studies highlight

the role of mediating and moderating variables, such as resilience, stress, and coping strategies, in shaping the relationship between perfectionism and anxiety (Harrington, 2019; Khan et al., 2025; Nahar & Sekhar, 2024).

however, the literature reveals variability in findings. Some studies suggest that adaptive dimensions may appear to function as a protective factor under certain conditions, particularly among high-achieving students (UGWUANYI et al., 2025). Longitudinal evidence further indicates that the relationship between perfectionism and anxiety may be dynamic and reciprocal over time, with each construct potentially influencing the other (Pitariu & Ployhart, 2010). In addition, broader research highlights the high prevalence of anxiety among university students and its detrimental impact on academic engagement and performance (Minahan, 2017). These findings collectively underscore the dimensional complexity and multifaceted of both perfectionism and anxiety.

Despite this extensive body of research, an important conceptual and methodological gap remains. Most previous studies have examined either global correlations between perfectionism and anxiety or individual dimensions in isolation. As a result, it remains unclear whether a non-significant global relationship can coexist with statistically significant effects at the dimensional level within the same sample. This limitation reflects a broader issue in the interpretation of multidimensional constructs, where aggregation may obscure meaningful variation between adaptive and maladaptive components.

Furthermore, relatively limited attention has been given to research anxiety as a distinct domain-specific construct, particularly in non-Western and Arab academic contexts. Existing studies have largely focused on general academic anxiety, test anxiety, or broader psychological distress, without specifically examining how multidimensional perfectionism relates to research anxiety in research-intensive academic environments.

Accordingly, the present study seeks to address these gaps by examining academic perfectionism as a multidimensional construct and investigating its relationship with research anxiety using a regression-based analytical framework. By simultaneously analyzing global and dimensional effects within the same sample, the study aims to clarify whether aggregate measures obscure meaningful relationships that emerge at the dimensional level. Through this approach, the study contributes to a more nuanced understanding of how different dimensions of perfectionism influence research anxiety among university students.

Based on this framework, the study tests the following hypotheses:

H1: The global relationship between academic perfectionism and research anxiety will be weak and non-significant.

H2: Doubts about actions will positively predict research anxiety.

H3: Self-oriented academic perfectionism will negatively predict research anxiety.

H4: Self-criticism, socially prescribed academic perfectionism, and self-worth contingency will not significantly predict research anxiety.

2. Literature Review

This literature review examines the theoretical and empirical foundations underlying the relationship between academic perfectionism and research anxiety. It is organized into five parts. First, research anxiety is conceptualized as a domain-specific academic anxiety. Second, academic perfectionism is presented as a multidimensional construct with adaptive and maladaptive components. Third, empirical evidence on the relationship between academic perfectionism and anxiety is reviewed. Fourth, the dynamic and multifaceted of this relationship is discussed. Fifth, the research gap guiding the present study is identified.

2.1 Conceptualizing Research Anxiety in Academic Contexts

Research anxiety is increasingly recognized as a domain-specific form of academic anxiety that arises from research-related demands, including statistical analysis, academic writing, and methodological dimensional complexity. Unlike

general academic anxiety, it encompasses multiple dimensions such as fear of evaluation, uncertainty in research processes, and perceived lack of competence (Putwain, 2008; Zhenlei et al., 2024). These dimensions reflect both cognitive and emotional responses that can interfere with students' engagement in research tasks and negatively affect academic performance.

From a theoretical perspective, research anxiety can be understood through Attentional Control Theory, which posits that anxiety disrupts the balance between goal-directed and stimulus-driven attentional systems, thereby reducing cognitive efficiency (Eysenck et al., 2007; Derakshan & Eysenck, 2009). Under conditions of heightened anxiety, individuals may allocate excessive cognitive resources to threat-related stimuli, which can impair working memory and decision-making processes (Eysenck & Derakshan, 2011). This framework is particularly relevant in research contexts, where tasks require sustained attention and high levels of cognitive control.

In parallel, Cognitive Behavioral Theory provides a complementary explanation by emphasizing the role of maladaptive beliefs and cognitive distortions in the development and maintenance of anxiety (Simpson et al., 2010; Szentagotai & Jones, 2010). Individuals who hold distorted beliefs, such as fear of failure or intolerance of uncertainty, are more likely to perceive academic challenges as threatening, which may intensify anxiety responses. Together, these theoretical perspectives indicate that research anxiety is shaped by both situational academic demands and underlying cognitive vulnerabilities.

Consistent with this multidimensional conceptualization, the Research Anxiety Rating Scale (RARS) used in the present study assesses several dimensions, including library anxiety, writing anxiety, statistics anxiety, research process anxiety, research language anxiety, research course anxiety, and perceived competence and utility (see Table 1). Note that the translated version used in this study yielded eight subscales; see the note in Table 1.

2.2 Academic perfectionism as a Multidimensional Construct

academic perfectionism is widely conceptualized as a multidimensional construct that includes both adaptive and maladaptive components. The model developed by Hewitt and Flett (1991) distinguishes between self-oriented academic perfectionism, characterized by internally driven high standards, and socially prescribed academic perfectionism, which reflects perceived external expectations. Subsequent research has expanded this framework to include additional dimensions such as doubts about actions, self-criticism, and self-worth contingency.

Empirical evidence consistently highlights the distinction between adaptive and maladaptive forms of academic perfectionism. Adaptive academic perfectionism, often associated with self-oriented striving, has been linked to more favorable psychological and behavioral outcomes, whereas maladaptive academic perfectionism has been associated with negative psychological outcomes, including anxiety, depression, and stress (Stoeber & Otto, 2006; Sirois et al., 2017; Smith et al., 2022). In particular, perfectionistic concerns such as doubts about actions and fear of mistakes have been identified as salient predictors of anxiety-related outcomes (Fernández-García et al., 2022).

Meta-analytic and empirical studies further reinforce this distinction. For example, Smith et al. (2018) demonstrated that maladaptive dimensions of perfectionism are consistently associated with anxiety symptoms across longitudinal studies, while Wood et al. (2015) identified perfectionism as a contributing factor to anxiety-related conditions through its interaction with stress and cognitive vulnerability. These findings underscore the importance of examining perfectionism as a multidimensional construct rather than relying on global measures that may mask internal variation.

The present study operationalizes academic perfectionism using the College academic perfectionism Scale (CAPS), which assesses five dimensions: self-oriented perfectionism, doubts about actions, self-criticism, socially prescribed perfectionism, and self-worth contingency. Within

this framework, self-oriented perfectionism is generally considered adaptive, whereas doubts about actions, self-criticism, socially prescribed perfectionism, and self-worth contingency are considered maladaptive (Stoeber & Otto, 2006; Smith et al., 2018). In the present sample, self-oriented perfectionism showed the highest mean score (M = 4.46, SD = 1.52), indicating strong internally driven performance standards among participants, while socially prescribed perfectionism showed the lowest mean among the maladaptive dimensions (M = 3.40, SD = 1.13).

2.3 The Relationship Between Academic perfectionism and Anxiety

Building on the theoretical background, a substantial body of research has examined the relationship between perfectionism and anxiety, with many studies indicating that maladaptive dimensions of perfectionism are associated with higher levels of psychological distress. For instance, Yazd et al. (2019) found that higher levels of perfectionism were related to increased anxiety sensitivity among university students. Similarly, Rezaei-Gazki et al. (2024) reported that perfectionism and anxiety jointly contribute to academic procrastination, suggesting that these constructs interact in shaping academic outcomes.

Research has also explored mechanisms underlying this relationship. Askari (2019) examined maladaptive cognitive patterns associated with adaptive dimensions and their role in emotional and behavioral outcomes, while Xiong et al. (2024) found that maladaptive components

is associated with higher levels of anxiety among university students. In addition, Jiang and Jiang (2025) reported that maladaptive components

may influence behavioral outcomes through mediating factors such as nomophobia and physical exercise.

Further studies have identified mediating and moderating variables that shape the relationship between perfectionism and anxiety. Harrington (2019) highlighted the role of resilience, Khan et al. (2025) emphasized avoidance coping strategies, and Nahar and Sekhar (2024) demonstrated associations between perfectionism, anxiety, and career-related distress. These findings collectively indicate that is not uniform and may vary across dimensions, but is influenced by intervening psychological and contextual factors.

However, the literature also reveals variability in findings. Some studies suggest that adaptive dimensions appear to function asa protective factor under certain conditions, particularly among high-achieving students (UGWUANYI et al., 2025). This variability suggests that the relationship between perfectionism and anxiety is complex and may depend on the specific dimensions being examined.

Collectively, these studies indicate that maladaptive components dimensions, particularly doubts about actions and concern over mistakes, are consistently associated with higher anxiety levels across various academic contexts. However, most of these studies have examined general anxiety, test anxiety, or broadly defined academic anxiety rather than research anxiety as a distinct construct. The present study extends this literature by focusing specifically on research anxiety and by demonstrating that doubts about actions ($\beta = .270$) and self-oriented perfectionism ($\beta = -.252$) show opposing effects within the same sample.

2.4 Dynamic and Multifaceted Nature of the Relationship

Longitudinal research emphasizes that relationships between psychological constructs are not static but may evolve over time depending on context and developmental stage (Pitariu & Ployhart, 2010). This perspective suggests that cross-sectional findings represent only a partial view of more complex temporal dynamics.

The multifaceted of both perfectionism and anxiety also presents methodological challenges. While many studies report significant relationships at the dimensional level, global measures often yield weaker or inconsistent associations. This discrepancy may result from the aggregation of distinct dimensions into a single composite score, which can obscure meaningful variation between adaptive and maladaptive components.

Despite the extensive body of research, relatively few studies have explicitly examined whether a non-significant global relationship can coexist with significant dimensional effects within the same sample. Most studies report either global correlations without examining dimensional variation, or dimensional effects without reporting the overall relationship, thereby limiting interpretability.

2.5 Research Gap and Study Positioning

The existing literature demonstrates that academic perfectionism is associated with anxiety-related outcomes; however, findings vary depending on the level of analysis. While maladaptive dimensions such as doubts about actions consistently show associations with anxiety, global measures of perfectionism often produce weaker or non-significant relationships.

To date, limited empirical work has systematically examined whether a non-significant global relationship can coexist with statistically significant dimensional effects within the same analytical framework. This limitation has important implications, as reliance on aggregated measures may obscure opposing effects across dimensions, potentially leading to misleading conclusions.

Accordingly, the present study addresses this gap by examining academic perfectionism as a multidimensional construct and investigating its relationship with research anxiety using a regression-based predictive approach. By comparing global and dimensional effects within the same sample, the study aims to provide a more nuanced understanding of how different aspects of perfectionism relate to research anxiety among university students.

3 Methodology

3.1 Research Design and Analytical Approach

This study employed a quantitative, cross-sectional, correlational, and predictive research design to examine the relationship between academic perfectionism and research anxiety among university students. The design was selected to allow for the simultaneous assessment of overall associations and dimension-specific predictive effects within a single analytical framework.

Data analysis combined descriptive statistics, Pearson correlation, and multiple regression techniques to evaluate relationships between variables. Although AMOS software was utilized to estimate path coefficients, no latent-variable path analysis with global fit indices (e.g., CFI, RMSEA, SRMR) was conducted. Accordingly, the proposed model should be interpreted as a regression-based path model rather than a full SEM, where relationships between observed variables are examined without specifying a measurement model.

This analytical approach aligns with the study's objective of comparing global and dimensional effects, enabling a more precise examination of how specific components of academic perfectionism contribute to research anxiety

3.2 Participants

The study sample consisted of 380 university students enrolled in psychology-related academic programs. Participants represented different academic levels, including 51.5% bachelor's students, 43.3% master's students, and 5.3% doctoral students, ensuring representation across undergraduate and postgraduate stages. The sample consisted primarily of undergraduate (51.5%) and master's (43.3%) students, with a smaller proportion of doctoral students (5.3%).

Participants were recruited from multiple specialization, including general psychology, clinical psychology, cyber psychology, and industrial and organizational psychology, enhancing the diversity of the sample within the academic context. The majority of participants were in their second academic year (59.5%), indicating active engagement in coursework and research-related activities. Participation was voluntary, and no incentives were provided.

The demographic distribution of the sample across gender, academic level, specialization, and year of study is presented in Figure 1.

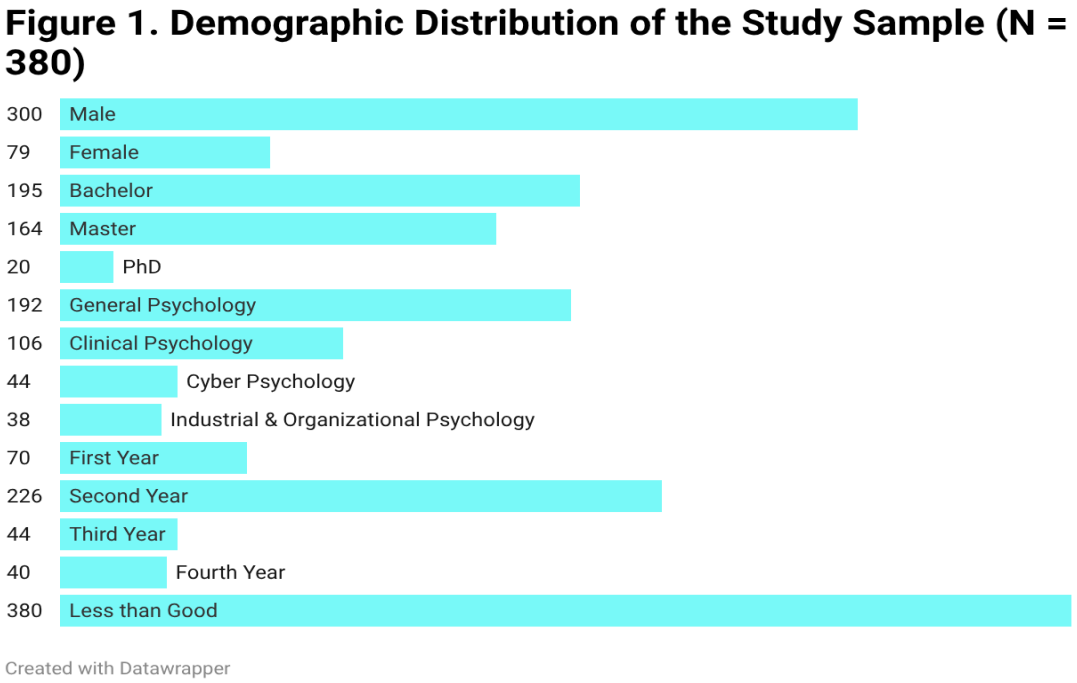

Figure 1. Demographic Distribution of the Study Sample (N = 380)

A non-probability convenience sampling strategy was employed. Data were collected using an online questionnaire distributed via Google Forms, with the survey link shared through academic communication channels. Participation was voluntary, and no incentives were provided.

Although no a priori power analysis was conducted, the sample size of 380 exceeds commonly recommended minimum thresholds for regression analyses involving multiple predictors, supporting the adequacy of the sample for the statistical procedures employed.

Eligibility criteria required participants to be currently enrolled in university programs and actively engaged in research-related tasks, including coursework, academic writing, or thesis preparation. Incomplete responses and responses indicating random or careless answering were excluded to ensure data quality and reliability.

3.3 Procedure

Data were collected using an online questionnaire administered via Google Forms. The survey link was shared through academic communication channels targeting university students enrolled in psychology-related programs. Participants reviewed an informed consent form and indicated their agreement before proceeding. Responses were collected anonymously, and incomplete or invalid responses were excluded prior to analysis. Data collection was conducted over a defined academic semester.

3.4 Ethical Considerations

The study adhered to established ethical standards for research involving human participants. Informed electronic consent was obtained from all participants prior to data collection. Participants were provided with detailed information regarding the study's purpose, procedures, confidentiality measures, and their rights as participants. All data were collected anonymously, with no personally identifiable information recorded. Responses were stored in password-protected files accessible only to the research team and were used exclusively for research purposes. Participants were informed of their right to withdraw from the study at any stage without any negative consequences. Institutional ethical guidelines governing research with university students were followed, and ethical approval was obtained in accordance with institutional policy.

3.5 Measurement

Data were collected using standardized self-report instruments designed to assess research anxiety and academic perfectionism. Both instruments were selected based on their established psychometric properties and relevance to the study constructs. Responses were recorded using Likert-type scales, with higher scores indicating higher levels of the measured variables.

3.6 Research Anxiety Scale

Research anxiety was measured using the Research Anxiety Rating Scale (RARS) developed by Onwuegbuzie. The instrument consists of 45 items assessing seven dimensions: library anxiety, writing anxiety, statistics anxiety, research process anxiety, research language anxiety, research course anxiety, and perceived competence and utility. Responses were recorded on a five-point Likert scale.

The original scale demonstrated acceptable validity and reliability, with exploratory factor analysis explaining 57% of the total variance and showing strong associations with related constructs. In the current study, the Arabic version was evaluated using a pilot sample (n = 58). Item–total correlations ranged from .32 to .71 and were statistically significant. Cronbach's alpha coefficients ranged from .74 to .82 across dimensions, with an overall reliability coefficient of .90.

3.7 Academic perfectionism Scale

academic perfectionism was measured using the College Academic perfectionism Scale (CAPS) developed by Liu and Berzenski. The instrument includes 27 items across dimensions, including self-oriented perfectionism, doubts about actions, self-criticism, socially prescribed perfectionism, and self-worth contingency.

Responses were measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The original scale demonstrated strong internal consistency (Cronbach's $\alpha \approx .92$) and acceptable construct validity.

In the present study, the Arabic version was pilot-tested (n = 58). Item–total correlations ranged from .34 to .69 and were statistically significant. Reliability coefficients ranged from .76 to .84 across dimensions, with an overall Cronbach's alpha of .88.

All reliability coefficients exceeded the commonly accepted threshold of .70, indicating acceptable internal consistency for both scales and their dimensions.

3.8 Translation of Study Measures

The study instruments were translated into Arabic using a forward–backward translation procedure to ensure linguistic accuracy and conceptual equivalence. The original English versions were translated into Arabic by a bilingual expert, followed by independent back-translation into English.

The translated version was reviewed by specialists in psychology to ensure clarity, cultural appropriateness, and content validity. Minor modifications were made based on expert feedback, and the final version was deemed suitable for the target population.

3.9 Statistical Analysis

Data analysis was conducted using IBM SPSS and AMOS software. Descriptive statistics (means and standard deviations) were used to assess levels of research anxiety and academic perfectionism. Pearson correlation coefficients were calculated to examine the relationship between the two variables.

Multiple regression analysis was conducted to examine the predictive role of academic perfectionism dimensions on research anxiety. The analysis focused on identifying the unique contribution of each dimension while controlling for other predictors.

Although AMOS was used to generate path coefficients, no latent-variable regression-based structural model was conducted. Accordingly, model fit indices (e.g., χ^2, CFI, RMSEA, SRMR) are not reported, as no measurement model or full structural model was specified. The term "structural model" in this study refers to a path-analytic interpretation of regression coefficients rather than a full SEM framework.

Statistical significance was set at $p < .05$.

4. Results

4.1 Levels of Research Anxiety and Academic perfectionism

Table 1. Descriptive Statistics of Research Anxiety and Academic perfectionism

Variable	Mean (M)	Std. Deviation (SD)
Research Anxiety (RA)	**2.51**	**0.26**
Library Anxiety	**2.93**	**0.99**
Writing Anxiety	**2.97**	**0.38**
Statistics Anxiety	**2.78**	**0.88**
Research Process Anxiety	**3.30**	**0.41**
Research Language Anxiety	**2.39**	**0.79**
Research Course Anxiety	**1.93**	**0.89**
Perceived Competence and Utility	**2.64**	**0.34**
Academic perfectionism (AP)	**3.97**	**0.87**
Self-Oriented Perfectionism	**4.46**	**1.52**
Self-Criticism	**3.72**	**1.21**
Doubts About Actions	**3.67**	**1.13**
Socially Prescribed Perfectionism	**3.40**	**1.13**
Self-Worth Contingency	**3.83**	**1.57**

Note. RA = Research Anxiety; AP = Academic perfectionism.

Note: The Research Anxiety Rating Scale includes seven dimensions; however, Table 1 reports eight subscales based on the scoring structure of the translated version used in this study.

The results presented in Table 1 indicate that university students reported moderate levels of research anxiety (M = 2.51, SD = 0.26) and relatively high levels of academic perfectionism (M = 3.97, SD = 0.87). Among research anxiety dimensions, research process anxiety showed the highest mean (M = 3.30, SD = 0.41), while research course anxiety showed the lowest (M = 1.93, SD = 0.89). Among perfectionism dimensions, self-oriented perfectionism showed the highest mean (M = 4.46, SD = 1.52), indicating strong internally driven standards, while socially prescribed perfectionism showed the lowest (M = 3.40, SD = 1.13).

4.2 Relationship Between Academic Perfectionism and Research Anxiety

Pearson correlation analysis revealed a weak and non-significant relationship between academic perfectionism and research anxiety ($r = .074$, $p = .149$), indicating that the overall association between the two constructs is negligible at the aggregate level.

To further examine predictive relationships, multiple regression analysis was conducted using the dimensions of academic perfectionism as predictors of research anxiety. The overall model was statistically significant ($R = .379$, $R^2 = .144$, $F(5, 374) = 12.572$, $p < .001$), explaining 14.4% of the variance in research anxiety.

Table 2. Multiple Regression Analysis Predicting Research Anxiety

Predictor	Beta (β)	t	p-value
Self-Oriented Perfectionism	**-0.252**	**-4.981**	**p < .001**
Self-Criticism	**0.107**	**1.827**	**.068**
Doubts About Actions	**0.270**	**4.415**	**p < .001**
Socially Prescribed Perfectionism	**-0.093**	**-1.720**	**.086**
Self-Worth Contingency	**0.094**	**1.684**	**.093**

The R^2 value of .144 indicates that the five perfectionism dimensions collectively explain 14.4% of the variance in research anxiety, leaving 85.6% of the variance attributable to other factors not included in this model.

The results indicate that doubts about actions emerged as a significant positive predictor (β = .270, p < .001), Doubts about actions was a significant positive predictor (β = .270, p < .001). and hesitation are associated with increased research anxiety. In contrast, self-oriented perfectionism showed a significant negative relationship (β = −.252, p < .001), indicating that internally driven high standards may appear to function as a protective factor.

Other dimensions, including self-criticism (β = .107, p = .068), socially prescribed perfectionism (β = −.093, p = .086), and self-worth contingency (β = .094, p = .093), did not reach statistical significance, although self-criticism approached marginal significance.

These relationships are visually illustrated in Figure 2.

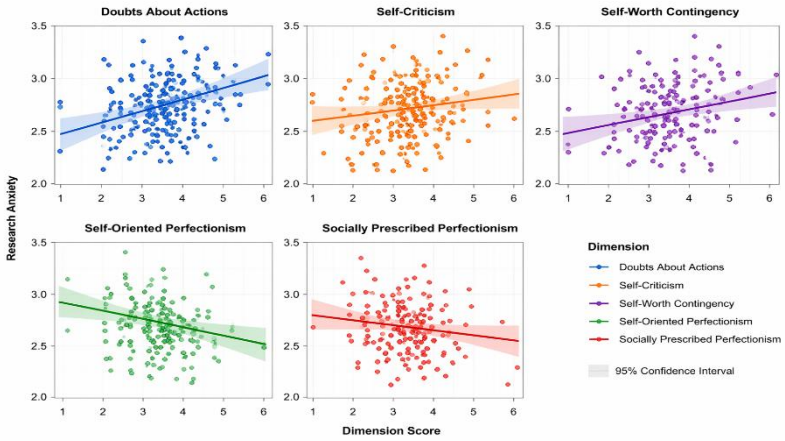

Figure 2. Effects of Academic perfectionism Dimensions on Research Anxiety.

Figure 2 presents scatterplots with fitted regression lines illustrating the relationships between each dimension of academic perfectionism and research anxiety.

3.3 Differences Based on Demographic Variables

Table 3. Multivariate Differences in Research Anxiety and Academic Perfectionism by Demographic Variables

Variable	df	Approx. F	Pillai's Trace	Num df	Den df	p-value
Year	**3**	**4.414**	**0.069**	**6**	**738**	**< .001**
Stage	**2**	**9.224**	**0.095**	**4**	**738**	**< .001**
Work Status	**1**	**0.176**	**0.001**	**2**	**368**	**.839**
Specialization	**3**	**0.961**	**0.016**	**6**	**738**	**.451**

The results indicate statistically significant multivariate differences in research anxiety and academic perfectionism based on academic year and academic stage. In contrast, work status and specialization did not show significant effects. Work status (p = .839) and specialization (p = .451) did not show statistically significant differences, indicating that these demographic factors were not associated with research anxiety or perfectionism in this sample.

Table 4. Post-hoc Comparisons (Bonferroni)

Variable	Comparison	Mean Difference	Std. Error	p-value
Year	**Year 1 – Year 3**	**0.21**	**0.07**	**.018***
	Year 1 – Year 4	**0.34**	**0.08**	**.004****
	Year 2 – Year 4	**0.26**	**0.08**	**.021***
Stage	**Bachelor – Master**	**0.28**	**0.09**	**.007****
	Bachelor – PhD	**0.41**	**0.10**	**< .001*****
	Master – PhD	**0.19**	**0.08**	**.032***

Post-hoc comparisons indicate that higher academic levels are associated with increased research anxiety and academic perfectionism scores, with statistically significant differences primarily observed between non-adjacent groups (e.g., Year 1 vs. Year 4; Bachelor vs. PhD).

3.4 Summary of Hypothesis Testing

Hypothesis	Supported?	Finding
H1: Global relationship non-significant	**Yes**	**$r = .074$, $p = .149$**
H2: Doubts about actions positive predictor	**Yes**	**$\beta = .270$, $p < .001$**
H3: Self-oriented perfectionism negative predictor	**Yes**	**$\beta = -.252$, $p < .001$**
H4: Other dimensions non-significant	**Partial**	**Self-criticism $p = .068$ (marginal)**

4. Discussion

The present study aimed to investigate the relationship between academic perfectionism and research anxiety among university students, with a particular focus on both global and dimensional effects. The key finding is that academic perfectionism and research anxiety are not significantly related at the global level ($r = .074$, $p = .149$). However, specific dimensions—particularly doubts about actions and self-oriented perfectionism—demonstrated significant predictive effects. These findings suggest that aggregating perfectionism dimensions into a total score may obscure opposing effects that operate at the dimensional level, thereby masking meaningful relationships.

The finding of a non-significant global correlation ($r = .074$) alongside significant dimensional effects illustrates a case in which aggregation obscures opposing relationships. When self-oriented perfectionism ($\beta = -.252$) and doubts about actions ($\beta = .270$) are combined into a single total score, their opposing effects (their opposing effects may cancel each other out) may partially cancel each other out, resulting in the observed non-significant global correlation ($r = .074$). This provides a plausible explanation for why global measures of perfectionism often show weak or inconsistent associations with anxiety outcomes.

The results indicate that doubts about actions was a significant positive predictor of research anxiety, which is consistent with prior research linking maladaptive components concerns to psychological distress (Hewitt & Flett, 1991; Stoeber & Otto, 2006). This finding aligns with studies showing that individuals who experience persistent uncertainty and fear of making mistakes are more likely to develop anxiety-related symptoms (Smith et al., 2018; Wood et al., 2015). From a Cognitive Behavioral Theory perspective, such patterns reflect maladaptive cognitive schemas characterized by excessive self-monitoring, fear of failure, and heightened sensitivity to evaluation (Derakshan & Eysenck, 2009; Eysenck et al., 2007; Simpson et al., 2010).

In contrast, self-oriented perfectionism showed a significant negative relationship with research anxiety, suggesting that internally driven high standards may appear to function as a protective factor. The finding that self-oriented perfectionism (M = 4.46, the highest among perfectionism dimensions) was associated with lower research anxiety (β = −.252) suggests that high internal standards, when not accompanied by excessive doubt, may serve as a psychological resource rather than a liability. This finding is consistent with research indicating that adaptive aspects of perfectionism may be associated with more positive psychological functioning under certain conditions (Sirois et al., 2017; Smith et al., 2022). It also supports the distinction between perfectionistic strivings and perfectionistic concerns, where the former may promote motivation and goal-directed behavior, while the latter contributes to anxiety and maladjustment (Fernández-García et al., 2022).

Self-criticism showed a marginal positive trend (β = .107, p = .068). While this did not reach conventional statistical significance, the trend may warrant further investigation in larger samples or different contexts. Similarly, socially prescribed perfectionism and self-worth contingency did not significantly predict research anxiety. These findings highlight that not all dimensions of perfectionism contribute equally to anxiety outcomes, reinforcing the importance of examining perfectionism as a multidimensional construct rather than relying on aggregate measures.

The findings differ from some previous studies that reported strong global associations between perfectionism and anxiety (Yazd et al., 2019; Xiong et al., 2024; Jiang & Jiang, 2025). One possible explanation for this discrepancy is the level of analysis employed. Studies that rely on global scores may report stronger associations due to aggregation effects, whereas the present study demonstrates that opposing directional effects across dimensions can reduce the overall correlation. This interpretation is consistent with literature emphasizing the dimensional complexity and multidimensionality of perfectionism (Sirois et al., 2017; Smith et al., 2018).

The model explained 14.4% of the variance in research anxiety (R^2 = .144). This indicates that academic perfectionism, as measured in this study, accounts for a relatively small portion of research anxiety, with the majority of variance (85.6%) attributable to other factors not included in the model. Notably, research process anxiety showed the highest mean among research anxiety dimensions (M = 3.30), suggesting that students experience the greatest anxiety specifically around the research process itself (e.g., designing studies, collecting data, conducting analyses), rather than around research courses (M = 1.93) or research language (M = 2.39). This pattern indicates that procedural and methodological aspects of research may represent the most challenging components for students.

The results also revealed that academic year and academic stage were associated with significant differences in research anxiety and perfectionism, whereas work status and specialization were not. The absence of differences based on specialization and work status suggests that research anxiety may reflect a broader academic phenomenon rather than a discipline-specific issue within the sampled population. However, this finding should be interpreted cautiously, as it may not generalize to other academic fields with different research demands.

From a theoretical perspective, the findings support both Cognitive Behavioral Theory and Attentional Control Theory by highlighting the role of maladaptive cognitive patterns and attentional disruptions in shaping anxiety responses. At the same time, the results extend existing literature by demonstrating that the relationship between perfectionism and anxiety is not uniform, but varies depending on the specific dimensions being considered. Importantly, the absence of a significant global relationship should not be interpreted as evidence of independence between the constructs, but rather as an indication that only certain dimensions of perfectionism are functionally related to research anxiety.

Overall, the study contributes to the literature by providing empirical evidence that global measures of academic perfectionism may conceal important

relationships that become apparent at the dimensional level. This highlights the need for more nuanced analytical approaches when examining complex psychological constructs in educational contexts.

This study has several limitations. First, the use of a cross-sectional design limits the ability to establish causal relationships between variables. Second, the reliance on self-report measures may introduce response bias. Third, the use of a convenience sampling strategy limits the generalizability of the findings beyond the sampled population.

5. Conclusion

This study examined the relationship between academic perfectionism and research anxiety among 380 university students, with a particular focus on both global and dimensional effects. Three main findings emerged from the study analysis. First, students reported moderate levels of research anxiety ($M = 2.51$) and high levels of academic perfectionism ($M = 3.97$). Second, no statistically significant global relationship was observed between the two constructs ($r = .074$, $p = .149$), indicating that overall perfectionism scores are not meaningfully associated with research anxiety at the aggregate level. Third, specific dimensions of academic perfectionism demonstrated opposing predictive effects: doubts about actions were associated with higher research anxiety ($\beta = .270$), whereas self-oriented perfectionism was associated with lower research anxiety ($\beta = -.252$). Other dimensions, including self-criticism, socially prescribed perfectionism, and self-worth contingency, did not show statistically significant predictive effects.

These findings indicate that total perfectionism scores may obscure meaningful relationships at the dimensional level. When adaptive and maladaptive components are combined into a single score, their opposing effects may cancel each other out, resulting in weak or non-significant associations. Accordingly, only specific dimensions—particularly doubts about actions—appear to be relevant for understanding research anxiety in this context.

At the same time, the model explained 14.4% of the variance in research anxiety, indicating that academic perfectionism represents only a limited component of a broader set of influencing factors. This suggests that a substantial proportion of research anxiety is associated with variables not examined in this study. Given that research process anxiety showed the highest mean among research anxiety dimensions ($M = 3.30$), interventions may benefit from prioritizing reducing anxiety around the research process itself (e.g., study design, data collection, and analysis), rather than focusing primarily on research courses or language-related aspects.

Future research should therefore investigate additional factors that may contribute to research anxiety and employ longitudinal designs to better understand the directionality of these relationships. From a practical perspective, interventions should focus specifically on reducing maladaptive components concerns, particularly students' doubts about their research actions, while preserving adaptive high standards that may support academic performance.

Data availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to ethical and confidentiality considerations.

References

Askari, I. (2019). *Core irrational beliefs and maladaptive schemas in cognitive behavioral therapy for anger and aggression* (Doctoral dissertation, Universität Duisburg-Essen).

Derakshan, N., & Eysenck, M. W. (2009). Anxiety, processing efficiency, and cognitive performance: New developments from attentional control theory. *European Psychologist, 14*(2), 168–176.

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology, 84*(1), 234–248.

Eysenck, M. W., & Derakshan, N. (2011). New perspectives in attentional control theory. *Personality and Individual Differences, 50*(7), 955–960.

Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion, 7*(2), 336–353.

Fenwick, J., Hunter, I., & Pezzotta, E. (2017). The Stanley Kubrick archive: A dossier of new research. *Journal title not fully specified in source*. Taylor & Francis, 37, 367–372.

Fernández-García, O., Gil-Llario, M. D., Castro-Calvo, J., Morell-Mengual, V., Ballester-Arnal, R., & Estruch-García, V. (2022). Academic perfectionism, psychological well-being, and suicidal ideation in college students. *International Journal of Environmental Research and Public Health, 20*(1), 85.

Harrington, C. (2019). *Trait resilience as a mediator between maladaptive perfectionism, anxiety, depression and stress in college students* (Master's thesis, National College of Ireland).

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*(3), 456–470.

Jiang, Y., & Jiang, C. (2025). The impact of maladaptive perfectionism on college students' bedtime procrastination: The chain mediating effects of nomophobia and physical exercise. *Acta Psychologica, 260*, 105504.

Khan, M. A., Khudija, M., Fatima, A., Parveen, N., & Kotera, Y. (2025). Impact of academic perfectionism on test anxiety among university students in Pakistan through mediating role of avoidance of academic coping strategies. *Journal of Psychiatry and Brain Science, 10*(6).

McGrath, R. E. (2005). Conceptual dimensional complexity and construct validity. *Journal of Personality Assessment, 85*(2), 112–124.

Miceli, M., & Castelfranchi, C. (2005). Anxiety as an "epistemic" emotion: An uncertainty theory of anxiety. *Anxiety, Stress, and Coping, 18*(4), 291–319.

Mills, J. S., & Blankstein, K. R. (2000). Perfectionism, intrinsic vs extrinsic motivation, and motivated strategies for learning: A multidimensional analysis of university students. *Personality and Individual Differences, 29*(6), 1191–1204.

Minahan, J. (2017). Helping anxious students move forward. *Educational Leadership, 75*(4), 44–50.

Nahar, K., & Sekhar, A. (2024). Perfectionism, anxiety and career distress: Insight from undergraduate/postgraduate final year students.

Naz, S., Hassan, G., & Luqman, M. (2021). Influence of perfectionism and academic motivation on academic procrastination among students. *Journal of Educational Sciences & Research, 8*(1).

Nelson, T. A. (2000). *Kubrick, new and expanded edition: Inside a film artist's maze*. Indiana University Press.

Pitariu, A. H., & Ployhart, R. E. (2010). Explaining change: Theorizing and testing dynamic mediated longitudinal relationships. *Journal of Management, 36*(2), 405–429.

Putwain, D. W. (2008). Deconstructing test anxiety. *Emotional and Behavioural Difficulties, 13*(2), 141–155.

Rezaei-Gazki, P., Ilaghi, M., & Masoumian, N. (2024). The triangle of anxiety, perfectionism, and academic procrastination: Exploring the correlates in medical and dental students. *BMC Medical Education, 24*(1), 181.

Simpson, H. B., Neria, Y., Lewis-Fernández, R., & Schneier, F. (2010). *Anxiety disorders: Theory, research and clinical perspectives*. Cambridge University Press.

Sirois, F. M., Molnar, D. S., & Hirsch, J. K. (2017). A meta-analytic and conceptual update on the associations between procrastination and multidimensional perfectionism. *European Journal of Personality, 31*(2), 137–159.

Smith, M. M., Sherry, S. B., Ge, S. Y., Hewitt, P. L., Flett, G. L., & Baggley, D. L. (2022). Multidimensional perfectionism turns 30: A review of known knowns and known unknowns. *Canadian Psychology/Psychologie Canadienne, 63*(1), 16–30.

Smith, M. M., Vidovic, V., Sherry, S. B., Stewart, S. H., & Saklofske, D. H. (2018). Are perfectionism dimensions risk factors for anxiety symptoms? A meta-analysis of 11 longitudinal studies. *Anxiety, Stress, & Coping, 31*(1), 4–20.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*(4), 295–319.

Szentagotai, A., & Jones, J. (2010). The behavioral consequences of irrational beliefs. In *Rational and irrational beliefs: Research, theory, and clinical practice* (pp. 75–97).

Ugwuanyi, B. C., Formella, Z., & Amoke, K. U. (2025). The relationship between anxiety and perfectionism among high-achieving students in Enugu State University of Science and Technology (ESUT).

Wood, C. M., Cano-Vindel, A., & Salguero, J. M. (2015). A multi-factor model of panic disorder: Results of a preliminary study integrating the role of perfectionism, stress, physiological anxiety and anxiety sensitivity. *Anales de Psicología, 31*(2), 481–487.

Xiong, Z., Liu, C., Song, M., & Ma, X. (2024). The relationship between maladaptive components and anxiety in first-year undergraduate students: A moderated mediation model. *Behavioral Sciences, 14*(8), 628.

Yazd, F. S., Gharib, N. A., Bavafa, A., & Jaberghaderi, N. (2019). Relationship of perfectionism and anxiety sensitivity with academic motivation in university students. *International Journal of Health and Life Sciences, 6*(1).

Zhenlei, Y., Boyuan, M., Lin, S., Chunxia, G., & Qiang, H. (2024). Identification of knowledge anxiety factors among researchers based on grounded theory. *Heliyon, 10*(4).