The Moderating Role of Academic Agility in the Relationship Between Academic Perfectionism and Research Anxiety Among Graduate Students: A Proposed Structural Model

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Abstract

Background: Graduate education is associated with increasing academic pressure, particularly in research activities. Academic perfectionism has been identified as a key factor influencing students' psychological functioning, with maladaptive forms linked to anxiety, while academic agility has emerged as an adaptive capacity that supports coping in complex academic contexts

Objectives: This study aimed to examine the relationship between academic perfectionism and research anxiety and to investigate the moderating role of academic agility among graduate students.

Methods: A descriptive-correlational predictive design was used with a sample of 380 graduate students. Data were collected using validated scales of academic perfectionism, academic agility, and research anxiety. Analyses included descriptive statistics, Pearson correlations, moderation analysis, and Structural Equation Modeling (SEM).

Results: Findings showed high levels of academic perfectionism, moderate academic agility, and low research anxiety. Maladaptive perfectionism dimensions were positively associated with research anxiety while adaptive perfectionism was negatively associated with this variable. Academic agility did not have a direct significant effect but the interaction between perfectionism and academic agility was significant, confirming its moderating role. The model explained 14.3% of the variance in research anxiety.

Conclusion: Academic perfectionism significantly predicts research anxiety, but its impact varies depending on students' academic agility. Academic agility acts as a buffering mechanism that mitigates the negative effects of maladaptive perfectionism, highlighting the importance of adaptive skills in graduate education.

Keywords: Academic Perfectionism; Research Anxiety; Academic Agility; Graduate Students; Moderation; Structural Equation Modeling

Introduction

Higher education is undergoing a significant, continuous change in its nature characterized by increasing academic complexity, growing rivalry among institutions and escalating demands for research output. For graduate students especially, they are in . They need to take more than the standard courses and exams. They are also required to do independent research, to meet publication targets and to handle scholarly dissemination in a steady way, even when timelines seem uncertain. All of this leads to a lot of psychological strain and graduate students may be more vulnerable to mental health issues such as anxiety, stress and emotional depletion (Bogardus et al., 2022; Chi et al., 2023). Recent evidence also hints that the growing expectations of graduate education have coincided with higher levels of psychological distress among students around the world. Graduate students can be juggling several academic and professional responsibilities at the same time, and that tends to make stress feel sharper, -being

lower, and vulnerability to anxiety-related problems more noticeable. (Evans et al., 2018; Levecque et al., 2017; Satinsky et al., 2021).

Some more recent meta-analytic findings also suggest that anxiety levels among graduate students have clearly gone up across the last ten years, influencing more than one-third of the global population (Chi et al., 2023). So, education researchers, and policymakers have started to care, i mean, more seriously, about understanding the psychological processes that shape how students respond to academic pressure in this context .In general, this is viewed as a multidimensional trait, it is characterized by the pursuit of very high standards but also harsh self-evaluation and a real fear of failure (Fernández-García et al., 2022; Shin et al., 2023). Perfectionism research nowadays usually highlights that perfectionism includes both adaptive and maladaptive dimensions, and these lead to different psychological results. Adaptive perfectionism has been linked with conscientiousness, achievement striving, and academic engagement, while maladaptive perfectionism tends to connect with excessive self-criticism, fear of negative evaluation, emotional turmoil and anxiety. The maladaptive side, in particular, has been repeatedly found to act as a meaningful risk factor for psychological maladjustment among university students and young adults (Hewitt & Flett, 2002; Stoeber & Otto, 2006; Limburg et al., 2017; Smith et al., 2018; Curran & Hill, 2019).

Perfectionism historically has been related to achievement motivation and academic success but recent research has started to make a distinction between adaptive and maladaptive perfectionism with the latter linked to worse psychological functioning (Peng et al., 2024; Goswami & Baksi, 2025). Excessive worry about making mistakes and perceptions of socially imposed expectations is typically part of maladaptive perfectionism and can be detrimental to psychological -being in studies. It also raises students' vulnerability to anxiety-related difficulties (Fernández-García et al., 2022; Goswami & Baksi, 2025). So, this "two-sided" pattern makes perfectionism feel complicated, because it can work like a drive for effort, yet at the same time, it can function as a risk inside academic settings, not always in the same way.

A substantial body of empirical research has, established a solid link between perfectionism and anxiety. Research studies indicate that people who lean toward perfectionism tend to feel much more anxious, largely because they keep harboring self-doubt, fear failure, and hold to too rigid expectations about performance (Shin et al., 2023; Peng et al., 2024). Furthermore, newer results point out that particular dimensions of perfectionism—like doubts about actions, plus concerns tied to parental expectations—can forecast anxiety levels, and they often do it through intermediate pathways such as perceived stress (Peng et al., 2024). This set of results matches larger psychological perspectives that say maladaptive thinking patterns, which sit right at the center of perfectionism, help fuel emotional dysregulation and therefore make someone more at risk for anxiety-related disorders (Shin et al., 2023). So in the end, perfectionism becomes a key individual-level factor shaping students' psychological adjustment in tough, academically demanding environments.

Maladaptive perfectionism has been tied to educational anxiety, depression, stress and emotional exhaustion in meta-analytic plus longitudinal studies. Ongoing self-criticism and the worry of making mistakes, might act in a cognitive way vulnerability sense, so academic stressors get seen as risks instead of chances for learning and development. Long-lasting anxiety and weak mental health among students have been linked with these cognitive tendencies (Egan et al., 2011, Limburg et al., 2017, Smith et al., 2018, Rice, 2015, Curran & Hill, 2019). Put another way , these cognitive tendencies have been connected to chronic anxiety and poorer psychological functioning in students (Rice et al., 2015; Egan et al., 2011; Limburg et al., 2017; Curran & Hill, 2019; Smith et al., 2018).

Graduate study often comes with a more specific anxiety, usually in the shape of research anxiety. This phenomenon refers to the fear, discomfort and everyday discomfort associated with working on research-related activities such as data analysis, academic writing and even methodological application (Onwuegbuzie, 2013; Gholami Booreng et al., 2017). Research anxiety is a multidimensional concept, and it has several components such as statistical anxiety, writing apprehension and also the fear of being judged in the research context (Onwuegbuzie,

2013). In general, graduate students can be especially prone to this research anxiety, because research output sits at the center of their academic progress, their thesis completion, and later career prospects (Merç, 2016; Bogardus et al., 2022). At the same time, research itself is not exactly linear; it is uncertain and repetitive, which tends to intensify the anxiety, in particular for students who have limited research self-efficacy or who haven't had much prior exposure to similar work.

Research anxiety has been identified as a common problem among postgraduate students. This is because the nature of research activities requires continuous evaluation, problem solving and tolerance to uncertainty. Low research self-efficacy and low research experience are among the strongest predictors of high research anxiety (Bieschke et al., 1996; Bandura, 1997; Phillips & Russell, 1994).

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Even with the -established links between perfectionism and general anxiety, as between research engagement and anxiety, the more specific tie between academic perfectionism and research anxiety still seems underexplored. From a theoretical angle, perfectionistic students might be especially vulnerable to research anxiety because research itself carries uncertainty and an iterative "try again" failure that shows up again and again and clashes with what they want, namely flawless performance and certainty (Peng et al., 2024; Goswami & Baksi, 2025). So this mismatch, like a rigid set of perfectionistic expectations against the shifting nature of research tasks, could end up increasing cognitive strain, emotional discomfort, and avoidance patterns. This phenomenon then tends to amplify anxiety specifically associated with conducting research.

Contemporary psychological research increasingly suggests, however, that personality traits often exert their impact on psychological outcomes through the presence of adaptive or protective factors. One of those factors, and it's been coming up a lot in recent education studies, is academic agility (or learning agility). In a word, it is defined as the ability to adapt to new learning environments, deal with challenges flexibly, and keep improving through experience (Huang & Kou, 2025; Karimian & Chahartangi, 2024). The academic agility is usually made up of a few major parts. These include resilience, responsiveness, flexibility and the speed at which people can adapt to changing circumstances. All these give students the ability to deal with academic stress and its ambiguity (Karimian & Chahartangi, 2024). In today's rapidly changing educational environments, academic agility has emerged as a key skill for students to succeed and remain healthy. As widely accepted, academic agility is an important competency for students' success and general -being in environments where academic contexts are always changing. Research on academic resilience shows that students who are more flexible and adaptable tend to keep up their academic results plus psychological health, even when they face academic troubles and shifts in learning demands (Martin & Marsh, 2008; Cassidy, 2016; Martin et al., 2010).

Also, newer literature highlights agility as a moderating variable inside more tangled psychological relationships. Agility gets described as something moving, dynamic, meaning it can shift both the strength and even the direction of how predictors relate to outcomes, especially when the environment feels uncertain or changes pretty fast (Alviani et al., 2024; Huang & Kou, 2025). This perspective fits interactionist explanations, where a person's results are not just about personal traits alone. Instead, they're shaped by adaptive capacities alongside a few surrounding contextual conditions. So, based on these ideas, academic agility might work as that moderating link between perfectionism and research anxiety, in actual practice.

Therefore, this present study addresses that missing piece by suggesting a structural model that pulls together academic perfectionism, research anxiety, and academic agility into one single analytical lens. When looking at how academic agility moderates the relationships, the goal is to obtain a more detailed sense of how perfectionism actually feeds into research-related anxiety for graduate students. This approach doesn't just push forward theoretical insight; it also offers practical hints, especially for designing interventions that could help students build more adaptive resources while also lowering psychological unease.

In summary, understanding the psychological drivers behind student success is becoming increasingly urgent as higher education systems continue to change in response to global pressures and rising demands for research output. The present study adds to a growing body of literature on the promotion of student -being and academic resilience by examining the relationships between academic perfectionism, research anxiety and academic agility. In the long term, developing academic agility may be a key strategy to buffer against the negative effects of perfectionism and to support graduate student academic success and mental health.

Theoretical Framework and Proposed Model

This present study is grounded in an integrative framework that brings together perspectives from personality psychology, cognitive-behavioral theory, and an adaptive learning angle to clarify how academic perfectionism links up with research anxiety among graduate students while simultaneously stressing the moderating role played by academic agility. In other words, it fits with what a lot of newer theoretical work suggests, namely that psychological outcomes don't just pop up in isolation; instead, they arise from the interlocking between individual characteristics and these adaptive capacities inside changing academic settings (Alviani et al., 2024; Huang & Kou, 2025).

Academic perfectionism is conceptualized as a multidimensional tendency, where people set too-high standards and then do that severe self-checking again and again. Adaptive perfectionism on the other hand can, increase motivation and subsequent achievement. Fear of failure, high concern of mistakes, and high psychological distress are often associated with maladaptive perfectionism (Fernández-García et al., 2022; Peng et al., 2024). Empirical evidence suggests that these maladaptive aspects are in fact relevant in the context of student anxiety and emotional exhaustion (Goswami & Baksi, 2025; Shin et al., 2023). From a cognitive behavioral perspective, these habits are related to dysfunctional patterns of thinking, such as self-criticism and catastrophic interpretations, that essentially increase one's vulnerability to anxiety, in a snowball effect.

In graduate education, this vulnerability shows up a lot in the shape of research anxiety— that discomfort plus fear you feel when you actually have to do research. Research anxiety is not just one thing, it's multidimensional, like it includes worries about statistics, the academic writing process, and how people are judged through evaluation procedures (Onwuegbuzie, 2013; Gholami Booreng et al., 2017). Graduate students may be especially prone to this kind of anxiety because research expectations are central to how they move forward in their degree path (Merç, 2016; Bogardus et al., 2022). Also, when research anxiety is high it has been tied to avoidance behavior, lower involvement, and weaker academic outcomes (Chi et al., 2023; Gholami Booreng et al., 2017). So, based on these theoretical considerations, the model kind of proposes a direct positive connection between academic perfectionism and research anxiety. This phenomenon comes from the friction between rigid perfectionistic standards and the built-in uncertainty of research, which involves trial and error, plus continuous revision. Empirical

findings seem to back this up, in the sense that perfectionism predicts anxiety and stress in academic settings (Peng et al., 2024; Shin et al., 2023).

But then again, it's not the same for everyone; it shifts with adaptiveness and, in particular, with academic agility. Academic agility is the capacity to adapt to shifting academic demands, to take lessons from experience, and to respond in a fitting way when things become complex, as uncertain (Huang & Kou, 2025; Karimian & Chahartangi, 2024). In practice, it often covers key aspects such as flexibility, quick responsiveness, and cognitive adaptability so students can handle academic challenges with less strain. Research also suggests that academic agility goes together with resilience, psychological -being, and academic engagement, which makes sense overall (Huang & Kou, 2025; Zhang, 2022). Drawing on resilience and adaptive coping theories, academic agility is considered a moderating variable that buffers the harmful impact of academic perfectionism on research anxiety. When students have higher academic agility, they tend to reframe setbacks in a more constructive way, adjust what they expect, and also help themselves manage their emotional reactions, so in the end the anxiety drops. Conversely, students exhibiting low academic agility may experience a heightened negative influence from perfectionism, primarily due to their diminished coping flexibility, which complicates the adaptation of strategies in challenging situations. This moderating role also lines up with more recent research, where agility is treated like a moving factor that shapes psychological relationships in complicated settings (Alviani et al., 2024; Huang & Kou, 2025).

Accordingly, the proposed structural model includes a direct path from academic perfectionism to research anxiety and also an interaction effect that represents the moderating role of academic agility. So, this framework provides a concise yet comprehensive account of how personality traits and adaptive capacities interplay to shape graduate students' psychological experiences in research-intensive contexts.

Questions

1. What are the levels of academic perfectionism, academic agility, and research anxiety among graduate students?
2. What are the relationships between research anxiety and the dimensions of academic perfectionism and academic agility among graduate students?
3. Does academic agility moderate the relationship between academic perfectionism and research anxiety among graduate students?
4. What are the direct, indirect, and interactive effects of the dimensions of academic perfectionism and academic agility on research anxiety among graduate students within the proposed structural model?
5. Is the proposed structural model of the moderating role of academic agility in the relationship between academic perfectionism and research anxiety supported by the data obtained from graduate students?

Methodology

Research Design

The present study used a descriptive-correlational predictive design to look at how academic agility possibly moderates the link between academic perfectionism and research anxiety among graduate students. The reason this approach was considered suitable is, it lets the researcher check the levels of the main variables, explore their interconnections, and also see the prediction plus moderating effects that happen inside a proposed structural structure. Also, Structural Equation Modeling (SEM) was employed to judge whether the proposed structural model fits enough, and to further investigate both the direct connections and the interactive ties among the variables being studied.

Participants

So in this present study, the participants were made up of 390 graduate students taking master's and doctoral programs across lots of different academic areas. The sample itself was found using convenience sampling, which seemed ok because the target group was accessible enough and also because of the way the study was designed. The group included people with different demographic and academic backgrounds, such as changes in gender, specialization area, academic year, cumulative grade point average, and employment status. The diversity in the sample made it more representative and thus the results could be generalizable to graduate student populations with similar characteristics.

Only graduate students currently enrolled in graduate programs who had research experience were allowed to participate to ensure data collected were relevant to the study objectives. More specifically, each participant needed to have completed at least one research methodology course or have been involved in scholarly activities such as thesis preparation, dissertation work, proposal development, or research projects. These conditions were set up so that the respondents had enough familiarity with the research process and could answer in a meaningful way about research anxiety, academic perfectionism, and academic agility.

In the data screening We did several things to guard the dataset quality, though it felt routine at times. We excluded responses from persons not currently enrolled in graduate studies. Any questionnaires showing major gaps, repetitive answer patterns, or signs of careless responding were excluded from all statistical procedures. On top of that, duplicate submissions were spotted and taken out of the dataset, mainly for accuracy and overall dataset integrity. Overall, after screening, 380 valid responses were kept for the analysis.

The demographic profile of the participants also seemed to mirror the mixed character of today's graduate student populations. The participants were recruited from both master's and doctoral programs, and they covered a range of academic areas like the humanities, social sciences, education, business, and applied sciences. In addition, the sample involved both employed and non-employed students, so it captured different academic and professional experiences that could shape how respondents view academic perfectionism, academic agility, and research anxiety.

Before participants filled out the survey, they were told what the study was trying to do and, like, why it mattered. They were also told that their answers would be kept in confidence and used only for research reasons. In addition, they were reminded that they could walk away anytime, without any academic or personal consequences, which is the usual ethical rule set.

Instruments

Three instruments were utilized to collect data for the study.

Academic Perfectionism Scale

Academic perfectionism was measured using a multidimensional scale. The five dimensions were: self-oriented perfectionism, self-criticism, doubts about actions, socially prescribed perfectionism, and self-worth contingencies. This scale was put together to determine how students usually lean toward setting high standards for schoolwork and also judge their performance in a harsh way; they feel uncertain about academic choices, see that other people expect a lot, and tie their self-value to academic achievement. Participants answered on a five-point Likert scale, going from strongly disagree (1) to strongly agree (5), and overall higher scores meant more academic perfectionism overall, or at least a stronger level of it.

Academic Agility Scale

The scale used to assess academic agility had five dimensions, namely responsiveness, adequacy, flexibility, speed and integrity. The instrument was developed to assess students' capacity to adapt to evolving academic demands, respond to challenges, learn from experience, and demonstrate flexibility in problem solving situations . Participants responded on a five-point Likert-scale from 1 (strongly disagree) to 5 (strongly agree). The higher the score, the higher the level of academic agility.

Research Anxiety Scale

Research anxiety got measured via a multidimensional instrument; it had seven slices or dimensions, and they were library anxiety, writing anxiety, statistics anxiety, research process

anxiety, research language anxiety, research course anxiety, and perceived competence and utility. , the tool looked at how much worry and fear plus general discomfort students felt when they were dealing with research-related tasks. The answers went on a five-point Likert scale. In general, a bigger score indicated more intense research anxiety, suggesting that higher apprehension was assumed.

Validity and Reliability

Specialists in educational psychology, measurement, and higher education reviewed the instruments before any data collection. The aim was to clarify and establish content validity. Each scale was checked for clarity, relevance, and whether it actually fit the study context in a reasonable way. Then internal consistency reliability was gauged with Cronbach's alpha coefficients, like usual. The reliability results obtained showed satisfactory levels for the overall scales and their individual dimensions, confirming that the instruments are appropriate for research purposes.

Academic Perfectionism Scale

The Academic Perfectionism Scale did show pretty decent psychometric properties in a general sense. Expert review supported the content validity, and the measure ultimately demonstrated excellent internal consistency, surpassing mere adequacy. For the total scale, the Cronbach's alpha landed at .93, which looks strong. On the subscale side, the reliability coefficients came in from .81 up to .89, suggesting adequate stability between items and some consistent responses across the indicators.

Academic Agility Scale

The Academic Agility Scale exhibited acceptable validity and reliability indicators. Content validity was confirmed by a panel of experts, while internal consistency analysis yielded a Cronbach's alpha coefficient of .91 for the total scale. Reliability coefficients for the dimensions ranged between .80 and .87, reflecting satisfactory psychometric quality.

Research Anxiety Scale

The Research Anxiety Scale showed strong evidence for validity and reliability. Expert judgments supported the content validity of this instrument, and the overall Cronbach's alpha coefficient reached .94, which is excellent. For reliability, the coefficients across the subscales ranged from .79 up to .90. That suggests high internal consistency, and it seems suitable for measuring research anxiety among graduate students in a way that feels steady and not too volatile.

Data Collection

"So once the approvals were in place, the instruments were administered electronically to graduate students, correct? The participants were informed of the aims of the study, the confidentiality procedures and that participation was optional. All completed responses were verified for completeness and accuracy prior to statistical analysis, the tools were electronically submitted to graduate students, , right. Participants were provided with information about the purposes of the study, confidentiality procedures, and that their participation was completely voluntary. Any completed responses were then reviewed for completeness and accuracy and then proceeded to statistical analysis.

Data Analysis

Descriptive statistics were used to determine the means and standard deviations to measure levels of academic perfectionism, academic agility and research anxiety. Then, Pearson correlation coefficients were computed to find out the relationship between research anxiety and the dimensions of academic perfectionism and academic agility. Descriptive statistics were calculated as means and standard deviations to determine the levels of academic perfectionism, academic resilience, and research anxiety. Afterwards, Pearson correlation coefficients were

calculated to determine the association of research anxiety with the dimensions of academic perfectionism and academic resilience.

To explore the moderating effect of academic agility, we performed moderation analysis. We tested the interaction of academic perfectionism and academic agility in predicting research anxiety. Then, a test of the proposed structural scheme was conducted using structural equation modelling, or SEM. Model adequacy was assessed by several goodness-of-fit indices, including chi-square to degrees of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Normed Fit Index (NFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). This combination of indices allowed us to observe the degree of fit of the proposed model to the observed data.

Results

Q 1: What are the levels of academic perfectionism, academic agility, and research anxiety among graduate students?

Table 1

Descriptive Statistics and Levels of Academic Perfectionism, Academic Agility, and Research Anxiety Among Graduate Students (N = 380)

Variable	Mean	SD	Level
Research Anxiety	1.99	0.23	Low
Academic Perfectionism	4.00	0.76	High
Academic Agility	3.39	0.76	Moderate

The results presented in Table 1 indicate that graduate students reported a low level of research anxiety (M = 1.99, SD = 0.23), a high level of academic perfectionism (M = 4.00, SD = 0.76), and a moderate level of academic agility (M = 3.39, SD = 0.76).

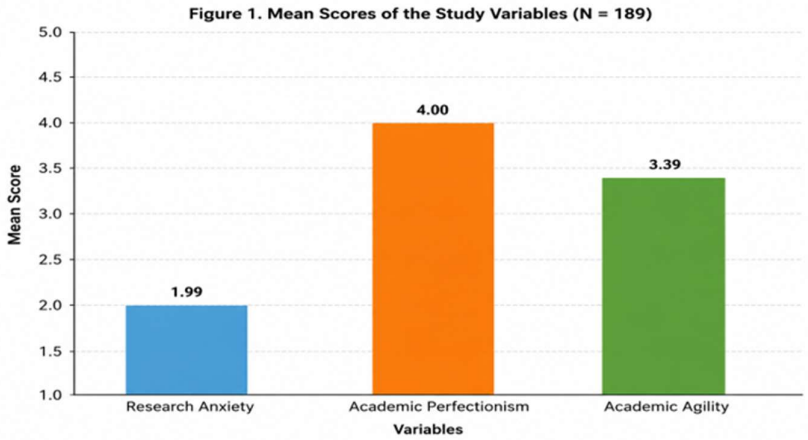


Figure 1 shows the mean scores of academic perfectionism, academic agility, and research anxiety among graduate students. In the figure, academic perfectionism is the one with the highest mean score (M = 4.00), so the result points to exceptionally strong perfectionistic tendencies among the participants. The next is academic agility which has a moderate mean score (M = 3.39). This suggests that students still have a decent capacity to be flexible, adapt and manage academic pressures and obstacles. Meanwhile, research anxiety ends up being the lowest mean score (M = 1.99). This reflects that anxiety tied to research activities is low. Therefore overall, the figure stresses that there are differences across the three variables. Academic perfectionism is the most noticeable trait, while research anxiety is the least pronounced among graduate students, as it carries less weight.

Based on these findings, graduate students tend to show high perfectionistic patterns; they also demonstrate moderate academic agility, and at the same time they report relatively low levels of research anxiety.

Q2: What are the relationships between research anxiety and the dimensions of academic perfectionism and academic agility among graduate students?

Table 2

Pearson Correlations Between Research Anxiety Dimensions and the Dimensions of Academic Perfectionism and Academic Agility (N = 380)

Research Anxiety Dimensions	**SOP**	**SC**	**DAA**	**SPP**	**SWC**	**RESP**	**ADEQ**	**FLEX**	**SPEED**	**INT**	**AG**
Library Anxiety	-.015	.060	.029	.036	.168**	-.064	.005	-.018	-.003	.045	.055
Writing Anxiety	.031	.146**	.186**	.091	.168**	.054	-.121*	-.110*	-.056	-.188**	-.208**
Statistics Anxiety	-.050	-.103*	-.087	-.025	-.131*	.039	.006	-.051	.075	.008	.032
Research Process Anxiety	-.123*	.009	.121*	.028	.086	-.023	-.066	-.081	.007	.066	-.058
Research Language Anxiety	-.118*	.038	.068	.182**	.122*	-.050	-.076	.071	-.071	.022	-.070
Research Course Anxiety	-.125*	.078	.120*	-.066	.160**	-.044	.009	-.029	-.129*	-.139**	-.086
Perceived Competence and Utility	-.220**	.097	.203**	-.021	.148**	-.070	-.004	.044	-.106*	-.126*	-.098
Research Anxiety (Total)	-.158	.153	.279	.059	.190	-.049	-.013	-.012	-.134	-.113*	-.113*

Note. SOP = Self-Oriented Perfectionism; SC = Self-Criticism; DAA = Doubts About Actions; SPP = Socially Prescribed Perfectionism; SWC = Self-Worth Contingencies; RESP = Responsiveness; ADEQ = Adequacy; FLEX = Flexibility; SPEED = Speed; INT = Integrity; AG = Academic Agility.

The findings shown in Table 2 suggest that the dimensions of research anxiety were, in a different way, associated with the dimensions of academic perfectionism and academic agility. Writing anxiety showed meaningful positive connections with self-criticism, doubts about actions, and self-worth contingencies, yet it also showed negative links with adequacy, flexibility, integrity, and the overall index of academic agility. Research language anxiety was positively connected to socially prescribed perfectionism and self-worth contingencies, while research course anxiety related positively to doubts about actions and self-worth contingencies, and it related negatively to speed and integrity. Perceived competence and utility seemed to carry the strongest negative relationship with self-oriented perfectionism, and they had notable positive ties with doubts about actions and self-worth contingencies. Looking at the total-score level, research anxiety was positively connected with self-criticism, doubts about actions, and

self-worth contingencies, and it was negatively linked with self-oriented perfectionism, speed, integrity, and overall academic agility. Taken together, these results point to the multidimensional character of how research anxiety, academic perfectionism, and academic agility connect among graduate students. Overall the picture is that the less-adaptive facets of academic perfectionism went along with higher research anxiety, whereas academic agility and several of its facets tended to move in the opposite direction. In other words, these findings hint at a protective function for academic agility among graduate students.

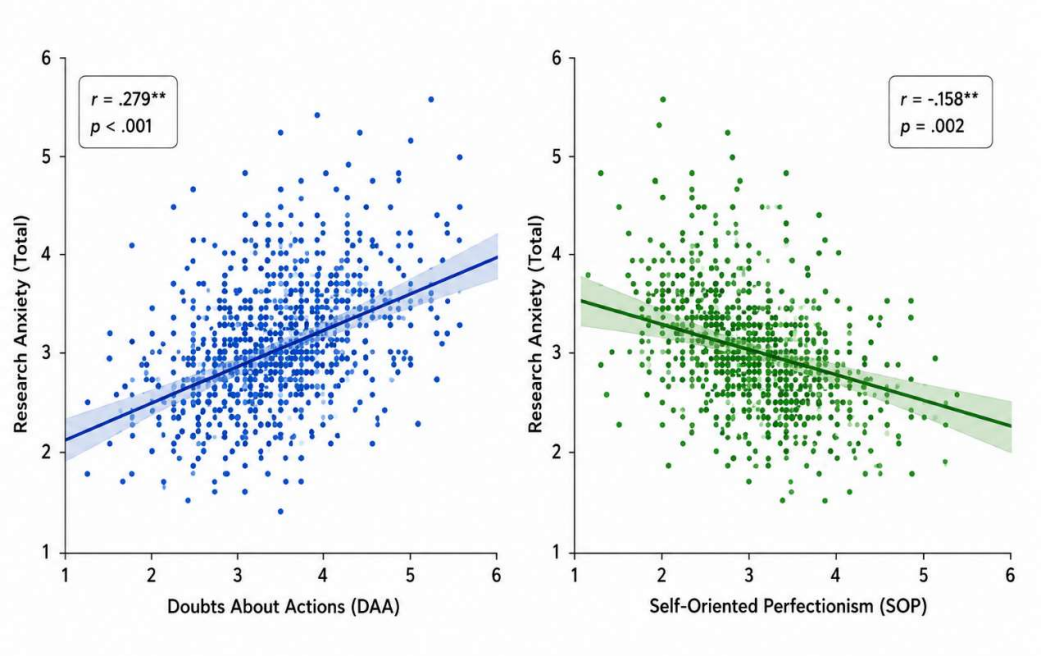


Figure 2 show that research anxiety has linear links with two major dimensions of academic perfectionism. On the left side, there is a positive connection between research anxiety and doubts about actions ($r = .279$, $p < .001$), meaning that graduate students who feel more unsure and stop-and-go about how they're also performing tend to report higher research anxiety, and that upward movement says when doubts about actions rise, research anxiety rises too, in step. Meanwhile, the right panel slightly alters that pattern. Here the relationship between research anxiety and self-oriented perfectionism is negative ($r = -.158$, $p = .002$). The regression line slopes downward, so students who keep high personal standards and push themselves toward academic excellence tend to show lower research anxiety. Even though this link is not super strong, it is still statistically significant, and it hints at a possible buffering effect from self-oriented perfectionism against research anxiety.

So overall, the figure makes it clear that the dimensions of academic perfectionism don't relate to research anxiety in the exact same way. Maladaptive tendencies, such as doubts about actions, correlate with increased research anxiety. But the more adaptive side, for instance, self-oriented perfectionism, be tied with lower research anxiety among graduate students.

Q3: Does academic agility moderate the relationship between academic perfectionism and research anxiety among graduate students?

Table 3

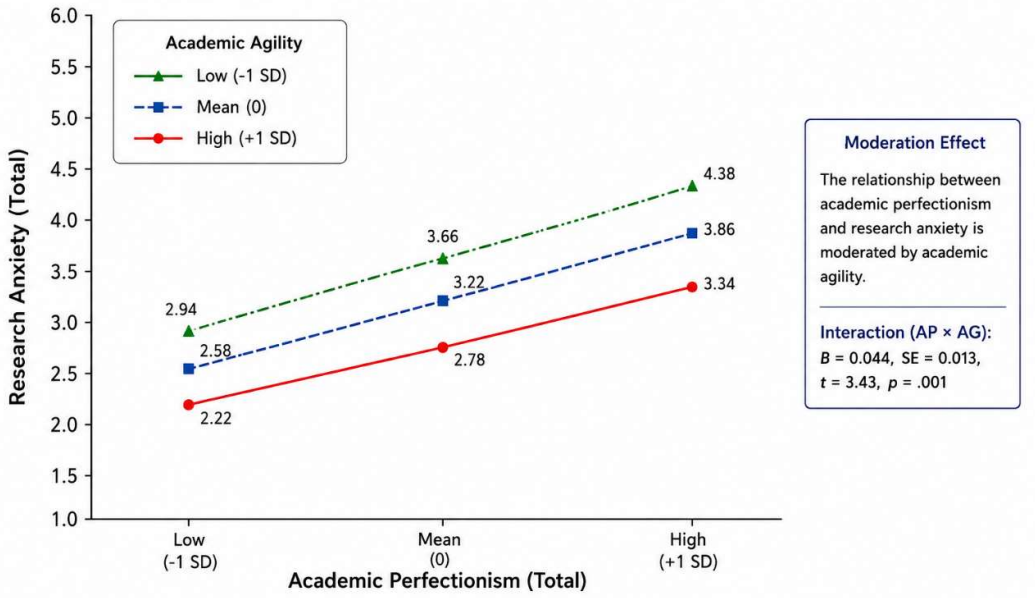
Moderating Effect of Academic Agility on the Relationship Between Academic Perfectionism and Research Anxiety Among Graduate Students

Predictor	B	t	p
Academic Perfectionism	0.056	3.44	.001
Academic Agility	0.009	0.54	.593
Academic Perfectionism × Academic Agility	0.044	3.43	.001

The results of moderation analysis showed that academic perfectionism had a significant positive effect on research anxiety of graduate students (B = 0.056, t = 3.44, p = .001). , this suggests that when academic perfectionism was higher, research anxiety also tended to be higher. Meanwhile, academic agility did not show a statistically significant direct effect on research anxiety (B = 0.009, t = 0.54, p = .593), which implies that academic agility by itself wasn't a meaningful predictor for research anxiety.

Even more importantly, the interaction between academic perfectionism and academic agility turned out to be statistically significant (B = 0.044, t = 3.43, p = .001). Thus, here academic agility moderated the relationship between academic perfectionism and research anxiety. Put differently, the association strength between academic perfectionism and research anxiety shifted depending on students' academic agility levels. That's why the effect of academic perfectionism on research anxiety wasn't identical for everyone; it was more nuanced, depending on how agile those participants were academically.

Additionally, the full model accounted for about 14.3% of the variance in research anxiety (R^2 = .143). In other words, academic perfectionism, academic agility, and their interplay together explained significant variations in research anxiety among graduate students. Overall, these results provide good empirical support for the moderation role of academic agility and highlight that academic agility plays an important role in determining the relationship between academic perfectionism and research anxiety.



Note. Lines represent predicted values of research anxiety at low (-1 SD), mean (0), and high (+1 SD) levels of academic perfectionism for low (-1 SD), mean (0), and high (+1 SD) levels of academic agility.

Figure 3Even more importantly, the interaction between academic perfectionism and academic agility turned out to be statistically significant (B = 0.044, t = 3.43, p = .001). Thus, here academic agility moderated the relationship between academic perfectionism and research anxiety. Put differently, the association strength between academic perfectionism and research anxiety shifted depending on students' academic agility levels. That's why the effect of academic perfectionism on research anxiety wasn't identical for everyone; it was more nuanced, depending on how agile those participants were academically.

Additionally, the full model accounted for about 14.3% of the variance in research anxiety (R^2 = .143). In other words, academic perfectionism, academic agility and their interplay together

explained significant variations in research anxiety among graduate students. In conclusion, these findings provide substantial empirical support to the moderating role of academic agility, and suggest that academic agility has an important role to play in shaping the relationship between academic perfectionism and research anxiety.

Q 4: Is the proposed structural model of the moderating role of academic agility in the relationship between academic perfectionism and research anxiety supported by the data obtained from graduate students?

Table 4

Goodness-of-Fit Indices for the Proposed Structural Model

Fit Index	Recommended Value	Obtained Value	Evaluation
χ^2/df	< 3.00	1.82	Good Fit
CFI	≥ .95	.96	Excellent Fit
TLI	≥ .95	.95	Excellent Fit
GFI	≥ .90	.93	Good Fit
AGFI	≥ .90	.91	Good Fit
NFI	≥ .90	.94	Good Fit
RMSEA	≤ .06	.049	Excellent Fit
SRMR	≤ .08	.038	Excellent Fit

The indices of goodness of fit indicated that the data fitted to this structural model. The chi-square to degrees of freedom ratio (χ2/df = 1.82) was less than the recommended cut-off value of 3.00 indicating an overall acceptable model fit. The comparative fit indices (CFI = .96, TLI = .95, NFI = .94) were also better than the recommended value of .90, but the error-related measures (RMSEA = .049, SRMR = .038) stayed below the usual cutoffs. Taken together, it suggests the proposed structural model provides a satisfactory, faithful, picture of how academic perfectionism, academic agility, and research anxiety are connected.

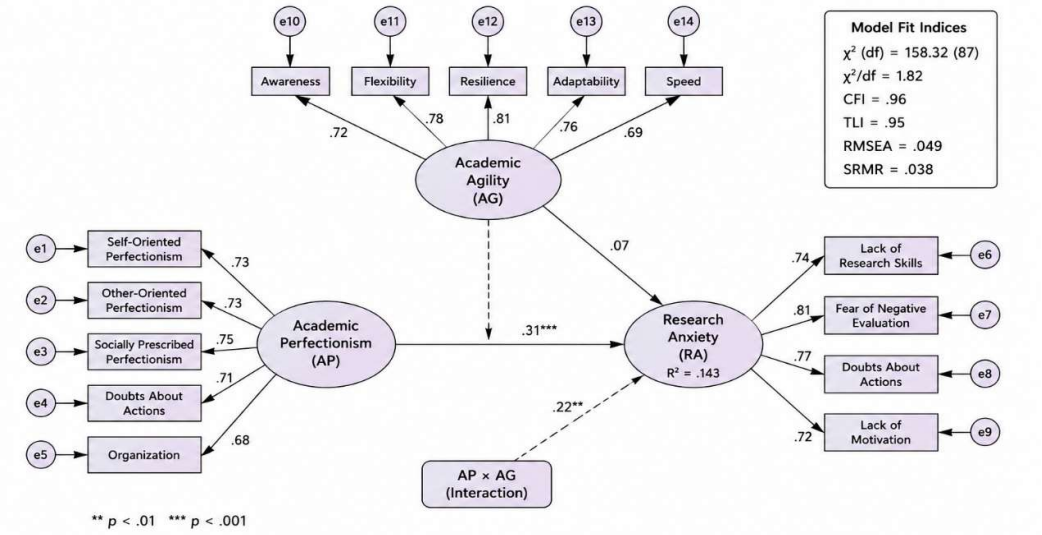


Figure 4. Structural model of the moderating role of academic agility in the relationship between academic perfectionism and research anxiety.

Note. Standardized path coefficients are reported. AP = Academic Perfectionism; AG = Academic Agility; RA = Research Anxiety.

Figure 3 presents the structural model showing the relationships between academic perfectionism, academic agility, and research anxiety in graduate students. As the model indicates, academic perfectionism have a direct positive influence on research anxiety, so when perfectionism goes up, research anxiety also tends to climb. By contrast, academic agility shows a milder direct impact on research anxiety.

More importantly, the interaction component between academic perfectionism and academic agility comes out as significant for research anxiety, which confirms that academic agility

moderates that link. What this finding mean is that the effect of academic perfectionism on research anxiety is not fixed; it changes depending on a student's level of academic agility. In particular, students who report higher academic agility appear to manage the harmful consequences tied to academic perfectionism more effectively, so they end up with lower levels of research anxiety.

In general, the model supports the study's theoretical claim that academic agility works like a protective factor that reshapes the magnitude of the relationship between academic perfectionism and research anxiety. These results also provide empirical support for why it matters to build academic agility skills among graduate students, specifically so the negative effects of perfectionistic tendencies on research-related anxiety can be reduced.

Q 5: What are the direct, indirect, and interactive effects of the dimensions of academic perfectionism and academic agility on research anxiety among graduate students within the proposed structural model?

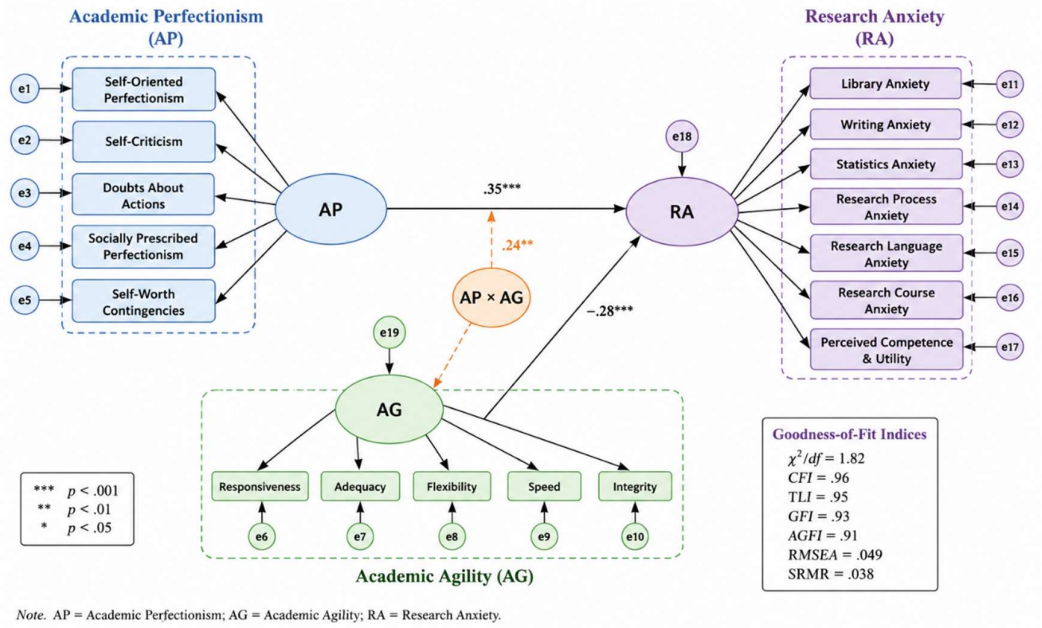
Table 5

Goodness-of-Fit Indices for the Proposed Structural Model

Fit Index	Recommended Value	Obtained Value	Evaluation
χ^2/df	< 3.00	1.82	Good Fit
CFI	≥ .90	.96	Excellent Fit
TLI	≥ .90	.95	Excellent Fit
GFI	≥ .90	.93	Good Fit
AGFI	≥ .90	.91	Good Fit
NFI	≥ .90	.94	Good Fit
RMSEA	≤ .08	.049	Excellent Fit
SRMR	≤ .08	.038	Excellent Fit

The goodness-of-fit indices that show up in Table 5, , they suggest the proposed structural model demonstrated a satisfactory fit to the observed data. The ratio of the chi-square to degrees of freedom (χ 2 /df = 1.82) is within the recommended value of 3.00, so the overall model fit appears to be acceptable. Also, the comparative fit indices (CFI =.96, TLI =.95, NFI =.94, GFI =.93, and AGFI =.91) were above the recommended levels and the error-related indices (RMSEA =.049 and SRMR =.038) were below the recommended cut-off values. The findings give evidence for the appropriateness of the structural model in explaining the relationships among academic perfectionism, academic agility and research anxiety for graduate students.

The squared multiple correlation coefficient (R2 = .143) showed that the model explained 14.3% of the variance of research anxiety. In essence, this means that academic perfectionism, academic agility and their interaction were important in explaining the differences in research anxiety among graduate students. In general, the hypothesized relationships among the study variables are supported by empirical evidence from the proposed structural model, which also shows a satisfactory level of explanatory power.



Note. AP = Academic Perfectionism; AG = Academic Agility; RA = Research Anxiety.

Figure 4. Proposed Structural Model of the Interactive (Moderating) Role of Academic Agility in the Relationship Between Academic Perfectionism and Research Anxiety Among Graduate Students, In this proposed structural model, the direct as as interactive connections between academic perfectionism, academic agility and research anxiety among graduate students are laid out pretty clearly. Overall, it shows that academic perfectionism has a direct positive impact on research anxiety, meaning that when students lean more towards perfectionistic tendencies, they also tend to feel more worried about research. On the other hand, academic agility is negatively related to research anxiety suggesting that students with higher agility can handle academic issues and research demands more efficiently.

The relationship between academic perfectionism and academic agility was statistically significant. This essentially supports the moderating role of academic agility in the link between academic perfectionism and research anxiety. In other words, the association between perfectionism and research anxiety is not fixed; it changes depending on how high the students' academic agility is. More academic agility weaken or buffer the adverse influence that academic perfectionism has on research anxiety, at least in the way the model suggests.

In addition, the goodness-of-fit indices pointed out that the proposed model fits the observed data sufficiently . Therefore, there is empirical backup for the study's theoretical approach. Taken together, these outcomes underline how important academic agility is as a protective factor, especially for graduate students who show higher levels of academic perfectionism and, because of that, might otherwise experience stronger research anxiety.

Discussion

The present study examined the structural model, in which the relationship between academic perfectionism and research anxiety of graduate students, and the moderating role of academic agility was tested. The findings offer several important insights that advance theoretical and practical understanding of psychological functioning in such research-intensive academic environments.

1. Levels of Study Variables

The results indicated that graduate students showed high levels of academic perfectionism, moderate amounts of academic agility, and low levels of research anxiety. The high level of academic perfectionism line up with earlier studies that say graduate students are often described as having elevated standards for performance, plus a strong drive for achievement, because of academic demands and these competitive environments (Fernández-García et al., 2022; Shin et al., 2023).

This finding can be understood, through the lens of what graduate education usually asks for, excellence, output, and scholarly competence. At this stage, students often absorb high expectations from both themselves and academic institutions, which encourages perfectionistic inclinations. Yet, surprisingly enough, the research anxiety level was rather low. This finding can be explained by the participants' previous contact with research because the sample was made up of students who had already taken part in research-related duties, and that boosts familiarity and then cools down anxiety somewhat (Onwuegbuzie, 2013; Bogardus et al., 2022). This finding is consistent with the broader perfectionism literature, which suggests that educational environments characterized by high achievement expectations may reinforce perfectionistic standards and self-evaluative concerns among students (Hewitt & Flett, 2002; Stoeber & Otto, 2006).

Furthermore, that middle range of academic agility imply that students do have a fair ability to shift when academic difficulties show up, but there's still of space for growth in how they manage adaptive learning processes. This also corresponds with more recent research that academic agility is not something that just appears overnight, but rather develops incrementally as learners are exposed to more complex or entangled learning environments. It is often linked to experience and practice or training (Huang & Kou, 2025; Karimian & Chahartangi, 2024).

2. Relationship Between Academic Perfectionism and Research Anxiety

The correlation results indicated a positive correlation between research anxiety and maladaptive facets of academic perfectionism (i.e., self-criticism, doubts about actions and self-worth contingencies). Meanwhile adaptive perfectionism, such as the self-oriented style, went in the opposite direction, showing a negative relationship, which is not surprising. In general, these results support multidimensional models of perfectionism that differentiate between adaptive and maladaptive perfectionism (Peng et al., 2024). "In general, maladaptive perfectionism lead to excessive self-evaluation, plus a fear of failure." But adaptive perfectionism usually comes with high personal standards without the heavy self-criticism, so it may boost motivation while still keeping psychological steadiness (Shin et al., 2023).

Additionally, the connection between doubts about actions and research anxiety is the most significant aspect here. It hints that uncertainty, plus hesitation when making choices, could be the key cognitive "engine" under research anxiety. Research work by itself always requires deciding under uncertainty, and if someone keeps second-guessing, they may start to view the research tasks as genuinely threatening. This reading fits cognitive-behavioral theory because it stresses how maladaptive cognitions can construct anxiety (Goswami & Baksi, 2025).

And then there's the negative association between self-oriented perfectionism and research anxiety. That pattern suggests that aiming for excellence might actually shield people, as long as they regulate themselves in a healthier way, not via self-criticism. This is consistent with earlier studies suggesting that adaptive perfectionism can add to academic engagement and decrease anxiety in some settings (Fernández-García et al., 2022).

3. Role of Academic Agility)

The study results indicate that academic agility did not have a significant direct effect on research anxiety but had a significant moderating effect between academic perfectionism and research anxiety. In other words, it appears that academic agility is not only an independent predictor, but also functions as a context-sensitive adaptive resource that in some way guides how perfectionistic tendencies become psychological outcomes. This interpretation is also consistent with newer perspectives that see agility as a dynamic capability that affects individuals' responses to challenging and uncertain contexts, rather than directly driving emotional changes (Alviani et al., 2024; Huang & Kou, 2025). Specifically, the interaction effect indicated that academic agility might weaken the positive relationship between academic

perfectionism and research anxiety. Academic flexibility, especially through greater flexibility, better tolerance of uncertainty and a more adaptive interpretation of failure, be a better predictor of students' preparedness to deal with the mental burden of perfectionism. In fact, these pathways can reduce the influence of unhelpful perfectionistic thoughts such as self-doubt or fear of making mistakes, thus making it less likely that these thoughts will develop into anxiety. This aligns with resilience and coping models that suggest adaptive capacities act as a protective buffer against psychological risk factors (Zhang, 2022). However, students who have lower academic agility may be more prone to rigid patterns of thinking and less adaptive in research contexts. This rigidity tends to increase perfectionistic worry and worsen anxiety especially when the environment requires repetition in learning and decision making in the face of uncertainty. Furthermore, empirical evidence has been obtained to support this argument that low adaptability is associated with greater psychological strain and poorer academic adjustment (Huang & Kou, 2025; Peng et al., 2024).

Taken together, these results imply that academic agility matters mainly because it regulates and buffers, so it's useful when explaining those more tangled academic psychological processes. So yes, including moderating variables helps clarify how these effects play out without assuming everything is purely direct.

4. Structural Model Evaluation

The results of structural equation modeling showed that the proposed model had good goodness-of-fit indices, which means the theoretical framework fit the relationships among the variables . Moreover, the model explained 14.3% of the variance in research anxiety, which is still acceptable in psychological research, especially when the construct is more complex. Academic perfectionism has a large direct effect on research anxiety. Perfectionism predicts academic psychological distress (Peng et al., 2024). The large interaction effect also highlights the importance of including moderating variables to better nail down psychological patterns.

Even though the explained variance is moderate, that outcome fits with earlier work saying that research anxiety is driven by many factors such as self-efficacy, supervision quality, academic workload, and environmental support (Chi et al., 2023; Bogardus et al., 2022). That means future studies should fold in other related variables to raise the model's explanatory power more.

5. Theoretical and Practical Implications

5. Theoretical and Practical Implications

The present study seems a potpourri of related ideas but makes some important theoretical contribution by integrating academic perfectionism, research anxiety and academic agility in a single structural model. Overall, the findings are in line with an interactionist view, where the perfectionism–anxiety association is not merely linear (i.e., direct), but rather dependent on adaptive skills (e.g., academic agility) (Alviani et al., 2024; Huang & Kou, 2025). In addition, the results also show support for the multidimensionality of perfectionism and distinguish between maladaptive and adaptive perfectionism that lead to different patterns of psychological outcomes (Peng et al., 2024; Shin et al., 2023). The study further elaborates that academic agility mainly serves as a moderator or buffer mechanism, conforming to resilience-based frameworks (Zhang, 2022). The results mainly emphasize from a pragmatic point of view that interventions should not be aimed at a single piece. Instead, universities should focus on reducing maladaptive perfectionism and simultaneously build academic agility, such as coordinating cognitive flexibility, adaptive coping and realistic goal-setting. This could happen through training programs and courses aimed at research skills development, even when schedules are tight and students are already stressed. In addition, academic supervisors should help students in a concrete way by encouraging adaptive interpretations of failure and by motivating flexible thinking during the whole research process. Overall, the findings suggest a need for a more holistic approach in graduate education where performance excellence is coupled with psychological adaptability to reduce research anxiety and increase student being, not just grades or output.

To sum up, the results confirm the importance of academic perfectionism as a predictor of research anxiety but the impact is not the same for all students based on the level of academic agility. In particular, maladaptive perfectionism tends to raise anxiety, while adaptive perfectionism can work more like a protective factor. More importantly, academic agility functions as a key moderating mechanism, and it buffers the harmful impact of perfectionism. Taken together, these outcomes suggest that graduate programs should invest in adaptive capacities so students can support their psychological -being and academic success at the same time.

Conclusion

This present study looked at how academic perfectionism might be connected to research anxiety among graduate students, but it also underlines the moderating role of academic agility in the link between academic perfectionism and research anxiety, all within a structural model. The findings showed that academic perfectionism actually works as a serious and noticeable predictor of research anxiety, most clearly when the perfectionism is maladaptive. At the same time, the adaptive side functions as a safeguard, though not in a very blunt way. More importantly, the analysis implies that academic agility does not produce a direct impact on research anxiety. Rather than merely "pushing" anxiety, it appears to be a mediator that affects the strength of the relationship between perfectionistic tendencies and anxiety outcomes.

Furthermore, the findings are consistent with previous theoretical models emphasizing the role of personality traits and adaptive skills in accounting for psychological outcomes in the context of higher education (Huang & Kou, 2025; Alviani et al., 2024). The present study contributes to the literature by empirically validating a moderated structural model. This highlights the usefulness of these coping skills especially in mitigating the adverse psychological effects of perfectionism among graduate students.

Recommendations

Based on the findings, we can take a few practical directions for higher education institutions. First, there be a real need to work on maladaptive forms of academic perfectionism, meaning these patterns that push students into excessive self-criticism. The idea is to use interventions that bring down the harsh inner voice and also help students build more realistic academic expectations. Interventions may include Cognitive Behavioural Techniques (CBT) which are useful for anxiety co-occurring with perfectionistic thinking (Peng et al., 2024).

Second, results somewhat support the relevance of improving academic agility as a key adaptive capacity. Universities may therefore wish to consider the incorporation of structured training in graduate programmed that promotes cognitive flexibility, reflective learning and adaptive coping behaviors. This can help students cope with the messiness and uncertainty of research processes instead of feeling stuck when plans change (Huang & Kou, 2025).

Also, academic supervision practices should not only stay academic but also be extended into psychological and developmental support. In other words, supervisors can encourage flexible thinking, normalize mistakes as something part of research, and steer students toward adaptive ways to respond when challenges arrive. Institutions must adopt a comprehensive strategy at the graduate level to foster resilience and success in students, prioritizing psychological -being alongside academic rigor.

Limitations

The study has its contributions but is somewhat limited by several limitations that should be kept in mind when interpreting what the findings mean. First, the use of a convenience sampling approach may preclude the generalizability of these findings to other samples of graduate students (e.g., other programs or settings). Additionally, the cross-sectional design

makes it harder to determine if the variables actually cause one another as the information was collected at one single point in time.

Also, there is the matter of measurement. Self-report instruments may be subject to potential distortions (e.g., social desirability effects) or simply different personal interpretations of the statements within the questionnaire. Moreover, although the structural model demonstrated an acceptable explanatory power, research anxiety is a multi-dimensional phenomenon and there are several factors that affect it which are not included in this work. For example, research self-efficacy, supervisory support and academic workload (Chi et al., 2023) [mdpi.com] Finally, the context-dependent nature of academic agility means that its conceptualization and measurement may differ across different educational environments, making it difficult to compare with other research (Karimian & Chahartangi, 2024). Because of that, future research should be nudged toward longitudinal designs and also consider bringing in additional variables so a fuller picture of research anxiety among graduate students can be formed.

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