

Investigating the Causal Relationship Between Achievement Motivation and Academic Optimism with Grit, Mediated by Self-Regulation


Marzieh. Parsai Moghadam¹, Mehdi. Khanjani^{2*}, Ahmad. Borjali²

¹ Master student of General Psychology, Department of Psychology, Allameh Tabataba'i University, Tehran, Iran

² Professor, Department of Psychology, Allameh Tabataba'i University, Tehran, Iran


* Corresponding author email address: khanjani_m@atu.ac.ir


Editor

Gholamreza Rajabi¹
Professor of Counseling
Department, Shahid Chamran
University, Ahvaz, Iran

rajabireza@scu.ac.ir

Reviewers

Reviewer 1: Bita Bahrami¹
Assistant Professor, Department of Clinical Psychology, Tehran Medical Sciences
Branch, Islamic Azad University, Tehran, Iran.
Email: Bahrami.clinicalpsych@gmail.com

Reviewer 2: Marjan Jafari Roshan¹
Assistant Professor, Department of General Psychology, Central Tehran Branch,
Islamic Azad University, Tehran, Iran. Email: marjan.jafariroshan@gmail.com

1. Round 1

1.1. Reviewer 1

Reviewer:

In the introduction, the sentence “academic performance is not solely determined by intellectual ability but is strongly associated with motivational dispositions...” lacks a clear theoretical anchoring in a specific framework (e.g., expectancy-value theory, self-determination theory). The authors should explicitly situate their model within a dominant theoretical paradigm rather than relying on a general narrative synthesis.

In the paragraph beginning “Achievement motivation is widely recognized...”, the construct is treated unidimensionally, yet the Hermans scale includes multiple facets. The manuscript should clarify whether achievement motivation is conceptualized as a global latent construct or as multidimensional, and justify this choice in relation to the measurement model.

In the section “One such mechanism is self-regulated learning...”, the manuscript references multiple conceptualizations of self-regulation but does not specify which model (e.g., Zimmerman’s cyclical model) is operationalized in this study. This creates conceptual ambiguity that should be resolved for theoretical coherence.

In the introduction paragraph discussing grit (“In parallel, the construct of grit...”), the authors rely heavily on early foundational studies (e.g., Duckworth et al., 2007) but do not engage with more recent critiques of grit’s discriminant validity relative to conscientiousness. This omission weakens the theoretical rigor and should be addressed.

The sentence “due to the non-significance of the direct path from academic optimism to academic self-regulation, this path was removed” reflects data-driven model modification. The authors must report whether this modification was theory-driven or purely empirical and address potential overfitting.

In Table 4, the path “Academic Optimism → Grit” is reported as significant with $p = 0.049$. This marginal significance should be interpreted cautiously, especially considering multiple comparisons. The authors should discuss the risk of Type I error.

Authors revised and uploaded the document.

1.2. Reviewer 2

Reviewer:

The statement “academic optimism refers to a composite belief system...” is accurate, but the manuscript does not justify the use of a scale originally developed in school contexts for university students. The authors should provide adaptation evidence or rationale for this contextual shift.

In the “Study Design and Participants” section, the sentence “30 participants were considered per parameter” reflects a rule-of-thumb approach to sample size estimation. The authors should justify this with SEM-specific power analysis or cite more rigorous criteria (e.g., RMSEA-based power analysis).

The use of convenience sampling (“Sampling was conducted using a convenience sampling method”) raises concerns about external validity. The authors should explicitly discuss sampling bias and its implications for generalizability within the methodology section, not only in limitations.

In the instruments section for the Achievement Motivation Questionnaire, the removal of 8 items due to low factor loadings (“items 4, 10, 11... were removed”) is substantial. The authors must report the revised factor structure, factor loadings, and justification for retaining the construct validity after such modification.

Similarly, in the Academic Self-Regulated Learning Strategies Questionnaire, removing 4 out of 15 items (over 25%) raises concerns about construct coverage. The manuscript should clarify whether content validity was reassessed after item deletion.

In the Grit Scale description, the reported score range (“12 to 60”) is inconsistent with a 17-item scale scored 1–5. This suggests either a typographical error or incorrect scoring description. This must be corrected for methodological accuracy.

In the “Data analysis” section, the description is too brief (“the bootstrap method was employed”). The authors should specify the number of bootstrap samples (later mentioned as 2,000), confidence intervals used, and whether bias-corrected intervals were applied.

In Table 2 interpretation (“academic optimism had the highest mean score...”), the authors interpret raw means without standardization. Given different scale ranges, comparing means directly is misleading. Standardized scores or z-scores should be used for meaningful comparison.

In the SEM assumptions paragraph (“four assumptions... missing data, outliers, normality, and multicollinearity”), normality and multicollinearity are mentioned but not reported. The manuscript should include skewness/kurtosis indices and VIF/tolerance statistics.

In Table 3 interpretation, the authors state that $GFI = 0.87$ indicates acceptable fit. However, many contemporary SEM guidelines consider GFI less reliable. The authors should justify their cutoff criteria and prioritize indices such as CFI, TLI, and RMSEA.

Authors revised and uploaded the document.

2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.