

Psychometric Properties of the Greek Version of the Subjective Academic Achievement Scale (SAAS): A Validation Study

Maria Efstathiou¹, Georgios Tsitsas², Stefanos Mantzoukas³, Mary Gouva¹, Matthias Stadler⁴, Elena Dragioti¹

¹Scientific Laboratory of Psychology and Person-Centered Care, Department of Nursing, School of Health Sciences, University of Ioannina, Ioannina, Greece

²Department of Economy and Sustainable Development, Harokopio University, Athens, Greece

³Research Laboratory of Integrated Health, Care and Well-Being, Department of Nursing, School of Health Sciences, University of Ioannina, Ioannina, Greece

⁴Institute of Medical Education, LMU University Hospital, LMU Munich, Munich, Germany

Email: tsitsas@yahoo.com

How to cite this paper: Efstathiou, M., Tsitsas, G., Mantzoukas, S., Gouva, M., Stadler, M., & Dragioti, E. (2026). Psychometric Properties of the Greek Version of the Subjective Academic Achievement Scale (SAAS): A Validation Study. *Creative Education*, 17, 827-840.

<https://doi.org/10.4236/ce.2026.175052>

Received: March 29, 2026

Accepted: May 25, 2026

Published: May 28, 2026

Copyright © 2026 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Students' self-evaluation of academic success does not always align with their performance, yet this subjective dimension shapes how they engage with their studies and respond to academic demands. The Subjective Academic Achievement Scale (SAAS) is a brief, five-item instrument designed to measure this construct; however, no validated Greek version currently exists. The present study aimed to translate, adapt, and examine the psychometric properties of the Greek SAAS in a sample of Greek university nursing students. A total of 496 undergraduate nursing students from eight Greek universities participated. The sample was randomly divided into two equal subsamples for Exploratory Factor Analysis (EFA; $n_1 = 248$) and Confirmatory Factor Analysis (CFA; $n_2 = 248$). Reliability was assessed using Cronbach's α and McDonald's ω . Convergent validity was examined through Pearson correlations with the Self-Efficacy subscale of the Student Coping Instrument (SCOPE), the four subscales of the Achievement Goal Questionnaire (AGQ), and academic GPA. The EFA supported a unidimensional solution accounting for 59.2% of the total variance, with all factor loadings above 0.40. The CFA confirmed the single-factor structure, with very good incremental fit indices (CFI = 0.996; TLI = 0.992) and acceptable absolute fit (RMSEA = 0.078; SRMR = 0.039). Internal consistency was satisfactory ($\alpha = 0.843$; $\omega = 0.848$). Convergent validity was supported by significant positive correlations with self-efficacy ($r = 0.483$), achievement goal orientations ($r = 0.397 - 0.486$), and academic GPA ($r = 0.201$). These findings indicate that the Greek version of the SAAS is a reliable

and valid instrument for assessing subjective academic achievement among Greek university students.

Keywords

Subjective Academic Achievement, Scale Validation, Greek Nursing Students, Psychometrics, Convergent Validity

1. Introduction

Academic achievement constitutes a central outcome of higher education, closely linked to students' academic progression, persistence, and future educational and professional opportunities (Jansen & Bruinsma, 2005). Although often described as an umbrella construct encompassing the knowledge, skills, and attitudes developed through higher education, academic achievement does not correspond to a single, universally agreed-upon definition and is commonly operationalized through diverse objective academic indicators (Mašková et al., 2024; Sadler, 1983). It is generally conceptualized as the set of performance-related outcomes through which students accomplish specific educational goals within instructional environments, reflecting the acquisition and application of knowledge and skills relevant to future professional practice (Ishaq et al., 2019; Schneider & Preckel, 2017).

In higher education, academic achievement is defined through multiple criteria, including the attainment of specific educational goals, individual performance in exams or assessments, and cumulative performance across all courses, typically summarized as aggregate academic indicators such as average grades or grade point average (GPA) (Bacon & Bean, 2006). However, assessment practices vary substantially across countries and educational systems, and summary measures such as GPA do not constitute a universally applied metric of academic performance. In the Greek educational context, GPA-based grading has been documented primarily at the secondary education level, whereas university-level assessment is based on performance across the required courses of each degree program (Papadogiannis et al., 2023).

Within this context, prior research among Greek university students has examined several academic-related constructs, including achievement goal orientations (Apostolou, 2013), academic hardiness (Kamtsios & Karagiannopoulou, 2013), and academic well-being (Katsarou et al., 2025), as well as structural and social factors associated with academic performance conceptualized as objective outcomes (Tzafea & Sianou, 2018). However, academic achievement has also been conceptualized beyond grade-based indicators as a subjective construct, reflecting students' own evaluation of academic success in relation to personally meaningful goals, effort investment, and perceived accomplishment. In this context, Stadler et al. (2021) developed the Subjective Academic Achievement Scale (SAAS) to operationalize subjective academic achievement as a distinct construct that captures dimensions of goal attainment and effort not fully represented by objective per-

formance indicators. The SAAS has demonstrated sound psychometric properties in its original validation study and has subsequently been applied in international research (Gatzka, 2021; Hammoudi Halat et al., 2023; Munguiko et al., 2025). To date, however, academic achievement has not been examined within the Greek higher education literature as a subjective construct, nor has the Greek version of the SAAS been evaluated with respect to its psychometric properties in samples of Greek university students. Therefore, the aim of the present study was to translate, adapt, and examine the psychometric properties of the Greek version of the SAAS, including evidence of reliability and construct validity.

2. Method

2.1. Participants

The study sample consisted of 496 nursing students recruited through convenience sampling from eight nursing schools across Greece, representing a geographically diverse student population. Participants were enrolled in different years of study. Inclusion criteria were enrollment in a nursing department, irrespective of age and gender. Exclusion criteria included inactive students, students on long-term leave of absence (e.g., due to military service or medical recovery), and individuals not enrolled in a nursing department. Participation was voluntary and anonymous, and informed consent was obtained from all participants prior to data collection. Ethical clearance was granted by the Research Ethics Committee of the University of Ioannina (Approval No. 46852/05-12-2024). Data collection was conducted either electronically via university learning platforms (e.g., Moodle) or through printed questionnaires administered in person during lessons. Printed questionnaires were used only at the University of Ioannina, allowing direct supervision of the data collection process, whereas participants from the remaining institutions completed the questionnaires electronically.

2.2. Measures

2.2.1. Subjective Academic Achievement Scale (SAAS)

The Subjective Academic Achievement Scale (SAAS) is a brief five-item self-report measure assessing students' evaluation of their academic achievement in relation to personal goals, invested effort, and perceived success (Stadler et al., 2021). Responses are rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating higher perceived academic achievement. Total SAAS scores were calculated by averaging item responses. Item 4 ("My fellow students study more successfully than I") is negatively worded and was reverse scored prior to analysis. Prior to the main data collection, the Greek item wording was pilot tested with a small group of nursing students to confirm comprehensibility; no difficulties in understanding were reported.

2.2.2. Student Coping Instrument (SCOPE)

Convergent validity of the SAAS was examined using the Greek-validated version of the Student Coping Instrument (SCOPE) (Struthers et al., 2000), as adapted for

the Greek context by [Vakrou \(2019\)](#). The SCOPE assesses students' perceived strategies for managing academic stress and has been widely used in research examining academic functioning and adjustment. Items are rated on a five-point Likert scale, with higher scores indicating greater use of the corresponding coping strategies. The SCOPE was selected as a theoretically related construct given its established association with students' academic engagement and perceived academic competence.

2.2.3. Achievement Goal Questionnaire-Revised (AGQ-R)

The Achievement Goal Questionnaire-Revised AGQ-R ([Elliot & Murayama, 2008](#)) was used to assess achievement goal orientations in university students. The questionnaire includes 12 items and four subscales: Mastery Approach, Mastery Avoidance, Performance Approach, and Performance Avoidance, with three items per subscale. Responses were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores correspond to stronger endorsement of the respective achievement goal orientation. The Greek version of the AGQ-R has demonstrated satisfactory psychometric properties in Greek university student populations ([Apostolou, 2013](#)).

2.3. Translation Procedure

The Greek adaptation of the SAAS was based on the published English item formulations provided by the original authors ([Stadler et al., 2021](#)). Two bilingual members of the research team with expertise in psychological assessment and higher education research translated the items into Greek, prioritizing conceptual equivalence and linguistic appropriateness over literal translation, with minor wording adjustments where necessary to ensure fluency and clarity ([van de Vijver & Hambleton, 1996](#)). The final Greek version was submitted to the original scale developer (M. Stadler) for review and approval. A formal back-translation procedure was not carried out, as this was deemed unnecessary given the brevity of the scale. The resulting Greek item formulations are presented alongside their English equivalents (see Appendix).

2.4. Statistical Analysis

All analyses were performed using Jamovi (Version 2.3.28; lavaan package) and SPSS (IBM Corp) statistical software. No missing item responses were recorded for the questionnaire-based measures; all 496 participants provided complete responses. GPA data were not available for all participants, as cumulative grade averages had not yet been issued or reported for some students at the time of participation. Therefore, analyses involving GPA were conducted on available cases only ($n = 439$). Descriptive statistics were computed for all variables. For the psychometric evaluation, analytical approaches widely accepted in scale development and standardization research were adopted ([Dragiotti et al., 2011](#); [Kyriazos, 2018](#)). The internal consistency of the scale was assessed using Cronbach's alpha coefficient ([Cronbach, 1951](#)) and McDonald's omega ([Malkewitz et al., 2023](#)). Item re-

liability statistics, including item-rest correlations and the effect of item removal on overall reliability, were also examined. To evaluate the construct validity of the SAAS, the sample was randomly divided into two equal subsamples ($n_1 = 248$ for EFA and $n_2 = 248$ for CFA). This procedure was adopted to avoid recycling the data in the same dataset, given that exploratory and confirmatory factor analyses serve different analytical goals (Dragiotti et al., 2011). The two subsamples did not differ significantly in terms of age or gender ($p > 0.05$). An Exploratory Factor Analysis (EFA) was first conducted on the first subsample ($n_1 = 248$) using maximum likelihood extraction. Although varimax rotation was initially specified, the final solution retained a single factor and therefore rotation was not applied. The suitability of the data for factor analysis was assessed using Bartlett's Test of Sphericity (Dziuban & Shirkey, 1974) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (KMO = 0.842). The number of factors was determined on the basis of parallel analysis and the scree plot criterion. Following the EFA, a Confirmatory Factor Analysis (CFA) was performed on the second subsample ($n_2 = 248$) using the Diagonally Weighted Least Squares (DWLS) estimation method with robust standard errors, given the ordinal nature of the scale items (Rosseel, 2012). The goodness-of-fit of the single-factor model was evaluated using the following indices: the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), for which values above 0.95 indicate good fit (Bentler, 1990); the Root Mean Square Error of Approximation (RMSEA), for which values below 0.08 are considered acceptable (Steiger, 1990); and the Standardized Root Mean Square Residual (SRMR). Both classical and robust fit statistics were reported. Convergent validity was examined by computing Pearson correlation coefficients between the SAAS total score and scores on the Self-Efficacy subscale of the Student Coping Instrument (SCOPE) (Struthers et al., 2000), as well as the four subscales of the Achievement Goal Questionnaire (AGQ) (Apostolou, 2013): Mastery Approach, Mastery Avoidance, Performance Approach, and Performance Avoidance goals. In addition, the association between SAAS scores and academic GPA was examined as an indicator of criterion-related convergent validity. Pearson correlations were used, as composite scores were treated as approximately continuous variables, a practice widely adopted in psychological research involving Likert-type scales. Statistical significance was set at $p < 0.001$ (two-tailed).

3. Results

3.1. Characteristics of the Sample

The study included a total of 496 nursing students from eight nursing schools across Greece. The sample was predominantly female (79.6%, $n = 395$), with 20.4% male ($n = 101$). Participants' mean age was 22.77 years ($SD = 7.69$), ranging from 18 to 56 years. Mean BMI was 23.73 ($SD = 4.04$). The majority of students were in their third year of studies (36.7%), followed by first-year (27.0%) and second year (23.0%) students. Of the participants, 58.9% reported that nursing was their actively chosen field of study. Mean academic GPA was 7.92 ($SD = 0.83$),

available for 439 participants. Full demographic characteristics are presented in **Table 1**.

Table 1. Characteristics of the sample (N = 496).

Variable	N	Column %
Sex		
Female	395	79.6%
Male	101	20.4%
Year of Study		
1st year	134	27.0%
2nd year	114	23.0%
3rd year	182	36.7%
4th year	41	8.3%
Graduate	25	5.0%
Enrolled in desired field of study		
Yes	292	58.9%
No	204	41.1%
Age (Mean ± SD)	22.77 ± 7.69	n = 496
BMI (Mean ± SD)	23.73 ± 4.04	n = 496
Academic GPA (Mean ± SD)	7.92 ± 0.83	n = 439

Note. The sample was randomly divided into two equal subsamples for psychometric analysis. ($n_1 = 248$ for EFA; $n_2 = 248$ for CFA).

3.2. Internal Consistency

The internal consistency of the SAAS was satisfactory for the total scale (Cronbach's $\alpha = 0.843$; McDonald's $\omega = 0.848$). Item-rest correlations ranged between 0.575 and 0.748, indicating that all items contributed meaningfully to the scale (**Figure 1**). Reliability estimates when each item was individually removed ranged from $\alpha = 0.784$ to $\alpha = 0.831$, confirming that no single item substantially reduced overall reliability. Descriptive statistics and item reliability indices are presented in **Table 2**.

Table 2. Item reliability statistics (N = 496).

Item	Mean	SD	Item-rest correlation	Cronbach's α if dropped	McDonald's ω if dropped
SAAS1	3.75	1.023	0.630	0.816	0.823
SAAS2	3.90	0.946	0.722	0.793	0.799
SAAS3	3.59	0.999	0.748	0.784	0.791
SAAS4	4.03	0.997	0.575	0.830	0.838
SAAS5	3.72	1.091	0.584	0.831	0.834
Total Scale	3.80	0.793	—	$\alpha = 0.843$	$\omega = 0.848$

Note. Item-rest correlations are based on the corrected item-total correlation. α = Cronbach's alpha; ω = McDonald's omega.

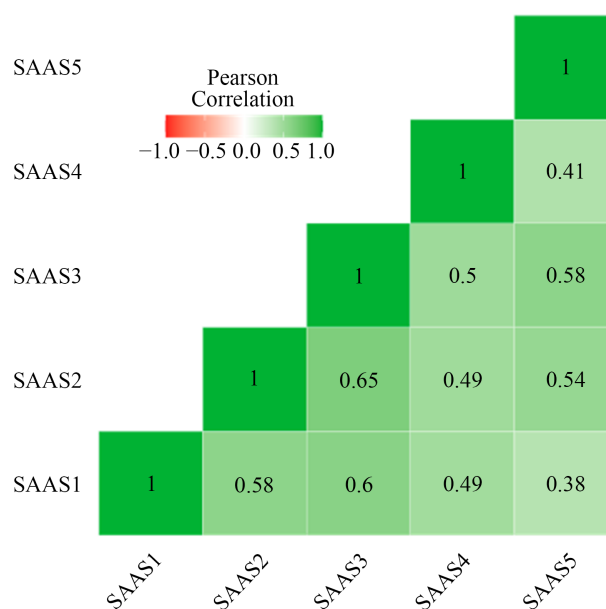


Figure 1. Item-rest correlation of the Greek version of the SAAS questionnaire.

3.3. Construct Validity

3.3.1. Exploratory Factor Analysis

To explore the latent structure of the SAAS, an Exploratory Factor Analysis was conducted on a random subsample of 248 participants. Bartlett's Test of Sphericity yielded $\chi^2(10) = 597$, $p < 0.001$, and the Kaiser–Meyer–Olkin measure of sampling adequacy was $KMO = 0.842$ both confirming that the data were suitable for factor analysis. The EFA supported a unidimensional solution: a single factor accounted for 59.2% of the total variance (SS Loadings = 2.96). Factor loadings ranged from 0.689 to 0.862, with all items demonstrating loadings above the conventional threshold of 0.40, and uniqueness values ranging from 0.357 to 0.526. These results are presented in **Table 3**.

Table 3. Exploratory factor analysis-factor loadings and uniqueness (N = 248).

Item	Factor Loading	Uniqueness	SS Loadings
SAAS1	0.786	0.383	
SAAS2	0.800	0.360	
SAAS3	0.862	0.357	
SAAS4	0.698	0.513	
SAAS5	0.689	0.526	
Factor 1	% Variance: 59.2%	Cumulative: 59.2%	2.96

Note. Maximum likelihood extraction method was used. As a single factor was identified, rotation was not applied

3.3.2. Confirmatory Factor Analysis

A Confirmatory Factor Analysis was subsequently conducted to test the single-

factor structure identified by the EFA. The analysis employed the DWLS estimation method with robust standard errors, treating the five items as ordered categorical variables on a separate subset of 248 participants. The single-factor model converged in 14 iterations with 25 free parameters. The fit indices indicated good fit of the one-factor model to the data. The incremental fit indices were very good (CFI = 0.996; TLI = 0.992; NNFI = 0.992; IFI = 0.996), consistently surpassing the recommended threshold of 0.95. The classical RMSEA was 0.078 (90% CI: [0.024, 0.134]), with a non-significant p -value for close fit ($p = 0.160$), and the classical SRMR was 0.039, indicating acceptable absolute fit. Robust fit statistics also supported the adequacy of the model (Robust RMSEA = 0.127; Scaled RMSEA = 0.123), which is expected given the ordinal nature of the data and the conservative nature of robust corrections for small models (Beauducel & Wittmann, 2005; Xia & Yang, 2019). The standardized factor loadings were 0.715 for SAAS1 (“My grades are appropriate for my effort”), 0.841 for SAAS2 (“I am successful in my studies”), 0.850 for SAAS3 (“I progress adequately fast in my studies”), 0.613 for SAAS4 (“My fellow students study more successfully than I”) and 0.641 for SAAS5 (“I am satisfied with my grades at university”), all statistically significant at $p < 0.001$. Fit indices are summarized in Table 4. Figure 2 presents the path diagram for the Greek Version of the SAAS questionnaire.

Table 4. Goodness-of-fit statistics for the single-factor CFA model (N = 248).

Model	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	χ^2/df
Single-factor (CFA)	0.996	0.992	0.078	[0.024, 0.134]	0.039	12.6/5

Note. CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual. Classical fit indices based on standard chi-square test; robust indices based on mean-adjusted scaled and shifted test statistic.

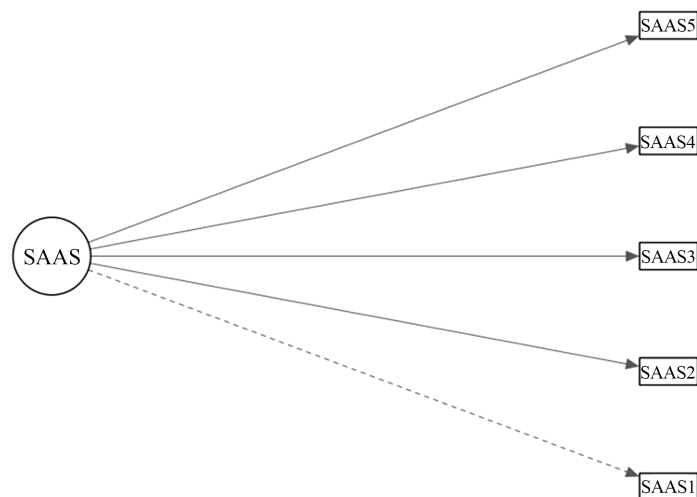


Figure 2. Path diagram for the Greek Version of the SAAS questionnaire.

3.3.3. Convergent Validity

Prior to the analyses, the internal consistency of the AGQ-R subscales and the Self-Efficacy dimension of the SCOPE were examined. Reliability estimates were as follows: Mastery-Approach ($\alpha = 0.479$, $\omega = 0.485$), Mastery-Avoidance ($\alpha = 0.547$, $\omega = 0.575$), Performance-Approach ($\alpha = 0.630$, $\omega = 0.655$), and Performance-Avoidance ($\alpha = 0.798$, $\omega = 0.805$); Self-Efficacy $\alpha = 0.880$, $\omega = 0.885$. Item-rest correlations ranged from approximately 0.30 for the mastery-based subscales to 0.55 - 0.70 for the Performance-Avoidance subscale, indicating that items were positively and consistently related to their respective subscale totals. Moreover, the brevity of each subscale (three items) further constrains the theoretical maximum of α , as this coefficient is sensitive to the number of items. These values should be interpreted with appropriate caution, particularly for the mastery-based subscales, as they fall below conventional reliability thresholds. Nonetheless, the positive and consistent item-rest correlations support the use of these subscales as indicators of convergent validity in the present study. Convergent validity was assessed by examining the correlations between the SAAS total score and the Self-Efficacy subscale of the SCOPE, as well as the four sub-scales of the Achievement Goal Questionnaire (Apostolou, 2013). All correlations were statistically significant at $p < 0.001$. The SAAS demonstrated moderate-to-strong positive correlations with Self-Efficacy ($r = 0.483$), Mastery Approach goals ($r = 0.486$), Mastery Avoidance goals ($r = 0.418$), Performance Approach goals ($r = 0.473$), and Performance Avoidance goals ($r = 0.397$). These findings indicate that students who perceive themselves as higher academic achievers also tend to report higher self-efficacy and endorse a broader range of achievement-oriented goals, providing supporting evidence for the convergent validity of the SAAS. To further examine convergent validity, the correlation between SAAS total scores and academic GPA was computed for the subsample of participants for whom GPA data were available ($n = 439$). A small but statistically significant positive correlation was observed ($r = 0.201$, $p < 0.001$), indicating that students who reported higher subjective academic achievement also tended to have higher objective academic performance. The modest magnitude of this association is consistent with the theoretical distinction between subjective and objective academic achievement and aligns with findings from the original validation study (Stadler et al., 2021), where a comparable pattern was reported. These results suggest that while the SAAS captures a dimension of academic success that overlaps with GPA, it also reflects aspects of students' academic self-evaluation that are not fully represented by objective performance indicators. The full correlation matrix is presented in Table 5.

Table 5. Convergent validity: Pearson correlation matrix ($N = 496$).

	SAAS	Self-Efficacy	Mastery Approach	Mastery Avoidance	Perf. Approach
SAAS	—				
Self-Efficacy (SCOPE)	0.483***	—			
Mastery Approach Goals	0.486***	0.235***	—		

Continued

Mastery Avoidance Goals	0.418***	0.164***	0.748***	—	
Performance Approach Goals	0.473***	0.231***	0.682***	0.577***	—
Performance Avoidance Goals	0.397***	0.181***	0.676***	0.726***	0.462***

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. SAAS = Subjective Academic Achievement Scale; Self-Efficacy = Self-Efficacy subscale of SCOPE; Achievement goal dimensions from the Achievement Goal Questionnaire.

4. Discussion

The present study aimed to translate, adapt, and examine the psychometric properties of the Greek version of the Subjective Academic Achievement Scale (SAAS) in a sample of Greek university nursing students. The results provided evidence supporting the reliability and construct validity of the Greek SAAS, consistent with the findings of the original validation study (Stadler et al., 2021). The unidimensional factor structure of the scale was confirmed, internal consistency was satisfactory, and convergent validity was supported through significant positive correlations with theoretically related constructs.

The single-factor solution accounted for 59.2% of the total variance, with factor loadings ranging from 0.689 to 0.862, which are comparable to those reported in the original study (ranging from 0.45 to 0.90). The CFA confirmed the adequacy of the one-factor model, with incremental fit indices well above the recommended threshold of 0.95 (CFI = 0.996; TLI = 0.992). The classical RMSEA of 0.078 and SRMR of 0.039 indicated acceptable absolute fit. The elevated robust RMSEA (0.127) is attributable to the use of the DWLS estimator with robust corrections, which is the appropriate method for ordinal Likert-type data but is known to produce fit statistics that are not directly comparable to the conventional cutoff values developed under maximum likelihood estimation with continuous data (Beauducel & Wittmann, 2005; Xia & Yang, 2019). The internal consistency of the Greek SAAS was satisfactory, with Cronbach's $\alpha = 0.843$ and McDonald's $\omega = 0.848$. These values compare favorably with those reported in the original validation study, in which α ranged from 0.79 to 0.82 across two independent samples (Stadler et al., 2021), as well as with a subsequent application of the scale reporting $\alpha = 0.80$ (Gatzka, 2021). Item-rest correlations ranged from 0.575 to 0.748, indicating that all items contributed meaningfully to the scale, and no single item substantially reduced overall reliability when removed. Convergent validity of the Greek SAAS was supported by significant positive correlations with all theoretically related constructs examined. The SAAS demonstrated moderate-to-strong correlations with the Self-Efficacy subscale of the SCOPE ($r = 0.483$), indicating that students who perceive themselves as higher academic achievers also report greater confidence in their ability to manage academic demands. This finding is consistent with the well-established role of self-efficacy as a key correlate of academic achievement in higher education (Schunk & DiBenedetto, 2021). In the present study, SAAS scores also demonstrated a small but significant positive correlation with academic GPA, supporting the relationship between subjective and

objective indicators of academic achievement while also suggesting that the two constructs are not fully overlapping. Furthermore, significant positive correlations were observed across all four subscales of the Achievement Goal Questionnaire, including Mastery Approach ($r = 0.486$), Mastery Avoidance ($r = 0.418$), Performance Approach ($r = 0.473$), and Performance Avoidance goals ($r = 0.397$). The positive associations with both mastery- and performance-oriented goals suggest that students who subjectively perceive themselves as academically successful tend to demonstrate stronger motivational engagement across different achievement domains, regardless of whether these orientations are directed toward personal growth or normative comparison. This pattern also extended to avoidance-oriented goals and may reflect a broader investment in academic engagement, including concerns related to avoiding failure or falling behind peers, rather than exclusively threat-related motivational processes. These findings provide further support for the convergent validity of the Greek SAAS and are consistent with theoretical frameworks linking subjective academic achievement to motivational dimensions in higher education (Elliot & McGregor, 2001; Frumos et al., 2024). The present study provides initial evidence for the reliability and construct validity of the Greek SAAS; however, additional forms of validity remain to be established, and further validation work is recommended before the scale is applied more broadly in Greek higher education research.

Limitations

The present findings should be interpreted with several methodological considerations in mind. The sample consisted exclusively of nursing students, which may limit the generalizability of the findings to other academic disciplines or educational contexts. Although nursing education provides a theoretically relevant and homogeneous context for examining subjective academic achievement, future studies should replicate these findings across diverse student populations and academic settings. Additionally, the cross-sectional design of the study precludes any examination of the stability of SAAS scores over time. Test-retest reliability and measurement invariance across demographic groups (e.g., sex, year of study) were not assessed, and therefore the temporal stability and measurement equivalence of the scale across subgroups remain to be established in future research. Finally, the extent to which the SAAS captures a construct distinct from related but conceptually different variables such as academic self-concept or academic satisfaction warrants further investigation.

5. Conclusion

The present study provides evidence for the psychometric adequacy of the Greek adaptation of the Subjective Academic Achievement Scale in a sample of nursing students. The single-factor structure of the original scale was replicated, with incremental fit indices surpassing recommended thresholds in the Greek context. Internal consistency was satisfactory, as indicated by both Cronbach's α and

McDonald's ω , while convergent validity was supported by significant positive associations with self-efficacy, achievement goal orientations, and academic GPA. These findings suggest that the Greek SAAS is a reliable and valid measure for assessing how nursing students evaluate their own academic success. The scale may serve as a practical tool for researchers and educators seeking to incorporate students' self-appraisals of academic performance into studies of academic functioning, stress, and coping within Greek higher education. Future research should extend validation efforts to other student populations and examine the longitudinal relationships between students' self-appraisals of academic success and educational outcomes in nursing.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Apostolou, M. (2013). Psychometric Properties of the Achievement Goal Questionnaire-Revised Administered to Greek University Students. *Psychological Reports, 113*, 380-403. <https://doi.org/10.2466/14.11.pr0.113x22z1>
- Bacon, D. R., & Bean, B. (2006). GPA in Research Studies: An Invaluable but Neglected Opportunity. *Journal of Marketing Education, 28*, 35-42. <https://doi.org/10.1177/0273475305284638>
- Beauducel, A., & Wittmann, W. W. (2005). Simulation Study on Fit Indexes in CFA Based on Data with Slightly Distorted Simple Structure. *Structural Equation Modeling: A Multidisciplinary Journal, 12*, 41-75. https://doi.org/10.1207/s15328007sem1201_3
- Bentler, P. M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin, 107*, 238-246. <https://doi.org/10.1037/0033-2909.107.2.238>
- Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika, 16*, 297-334. <https://doi.org/10.1007/bf02310555>
- Dragiotti, E., Vitoratou, S., Kaltsouda, A., Tsartsalis, D., & Gouva, M. (2011). Psychometric Properties and Factor Structure of the Greek Version of the Cardiac Anxiety Questionnaire (CAQ). *Psychological Reports, 109*, 77-92. <https://doi.org/10.2466/08.09.15.pr0.109.4.77-92>
- Dziuban, C. D., & Shirkey, E. C. (1974). When Is a Correlation Matrix Appropriate for Factor Analysis? Some Decision Rules. *Psychological Bulletin, 81*, 358-361. <https://doi.org/10.1037/h0036316>
- Elliot, A. J., & McGregor, H. A. (2001). A 2x2 Achievement Goal Framework. *Journal of Personality and Social Psychology, 80*, 501-519. <https://doi.org/10.1037/0022-3514.80.3.501>
- Elliot, A. J., & Murayama, K. (2008). On the Measurement of Achievement Goals: Critique, Illustration, and Application. *Journal of Educational Psychology, 100*, 613-628. <https://doi.org/10.1037/0022-0663.100.3.613>
- Frumos, F., Leonte, R., Candel, O. S., Ciochină-Carasevici, L., Ghițău, R., & Onu, C. (2024). The Relationship between University Students' Goal Orientation and Academic Achievement. The Mediating Role of Motivational Components and the Moderating Role of Achievement Emotions. *Frontiers in Psychology, 14*, Article 1296346. <https://doi.org/10.3389/fpsyg.2023.1296346>

- Gatzka, T. (2021). Aspects of Openness as Predictors of Academic Achievement. *Personality and Individual Differences, 170*, Article 110422. <https://doi.org/10.1016/j.paid.2020.110422>
- Hammoudi Halat, D., Hallit, S., Younes, S., AlFikany, M., Khaled, S., Krayem, M. et al. (2023). Exploring the Effects of Health Behaviors and Mental Health on Students' Academic Achievement: A Cross-Sectional Study on Lebanese University Students. *BMC Public Health, 23*, Article No. 1228. <https://doi.org/10.1186/s12889-023-16184-8>
- Ishaq, E., Bashir, S., Khan, A. K., Hassan, M. M., & Zakariya, R. (2019). Epistemic Curiosity and Perceived Workload: A Moderated Mediation Model of Achievement Striving and Overwork Climate. *The International Journal of Human Resource Management, 32*, 3888-3911. <https://doi.org/10.1080/09585192.2019.1641734>
- Jansen, E. P., & Bruinsma, M. (2005). Explaining Achievement in Higher Education. *Educational Research and Evaluation, 11*, 235-252. <https://doi.org/10.1080/13803610500101173>
- Kamtsios, S., & Karagiannopoulou, E. (2013). *Exploring Academic Hardiness in Greek Students: Links with Achievement and Year of Study*. <https://doi.org/10.12681/jret.762>
- Katsarou, E., Chatzipanagiotou, P., Katsarou, E., & Chatzipanagiotou, P. (2025). Examining the Association of Personality Traits and Grit on Greek Students' Wellbeing in Higher Education. *Education Sciences, 15*, Article 57.
- Kyriazos, T. A. (2018). Applied Psychometrics: Writing-Up a Factor Analysis Construct Validation Study with Examples. *Psychology, 9*, 2503-2530. <https://doi.org/10.4236/psych.2018.911144>
- Malkewitz, C. P., Schwall, P., Meesters, C., & Hardt, J. (2023). Estimating Reliability: A Comparison of Cronbach's α , McDonald's ω t and the Greatest Lower Bound. *Social Sciences & Humanities Open, 7*, Article 100368. <https://doi.org/10.1016/j.ssaho.2022.100368>
- Mašková, I., Kučera, D., & Nohavová, A. (2024). Who Is Really an Excellent University Student and How to Identify Them? A Development of a Comprehensive Framework of Excellence in Higher Education. *European Journal of Psychology of Education, 39*, 4329-4363. <https://doi.org/10.1007/s10212-024-00865-y>
- Munguiko, C., Ngeno, A., Atukwatse, J., & Museene, S. (2025). Institutional Determinants of Academic Achievement in Biomedical Sciences: A Cross-Sectional Study of Nursing Students in Uganda. *Advances in Medical Education and Practice, 16*, 2439-2462. <https://doi.org/10.2147/amep.s556809>
- Papadogiannis, I., Pouloupoulos, V., Platis, N., Vassilakis, C., Lepouras, G., & Wallace, M. (2023). First Grade GPA as a Predictor of Later Academic Performance in High School. *Knowledge, 3*, 513-524. <https://doi.org/10.3390/knowledge3030033>
- Rosseel, Y. (2012). Lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software, 48*, 1-3.
- Sadler, D. R. (1983). Evaluation and the Improvement of Academic Learning. *The Journal of Higher Education, 54*, 60-79. <https://doi.org/10.1080/00221546.1983.11778152>
- Schneider, M., & Preckel, F. (2017). Variables Associated with Achievement in Higher Education: A Systematic Review of Meta-Analyses. *Psychological Bulletin, 143*, 565-600. <https://doi.org/10.1037/bul0000098>
- Schunk, D. H., & DiBenedetto, M. K. (2021). Self-Efficacy and Human Motivation. In *Advances in Motivation Science* (pp. 153-179). Elsevier Academic Press.
- Stadler, M., Kemper, C. J., & Greiff, S. (2021). Assessing Subjective University Success with the Subjective Academic Achievement Scale (SAAS). *The European Educational Re-*

- searcher*, 4, 283-290. <https://doi.org/10.31757/euer.431>
- Steiger, J. H. (1990). Structural Model Evaluation and Modification: An Interval Estimation Approach. *Multivariate Behavioral Research*, 25, 173-180. https://doi.org/10.1207/s15327906mbr2502_4
- Struthers, C. W., Perry, R. P., & Menec, V. H. (2000). An Examination of the Relationship among Academic Stress, Coping, Motivation, and Performance in College. *Research in Higher Education*, 41, 581-592. <https://doi.org/10.1023/a:1007094931292>
- Tzafea, O., & Sianou, E. (2018). Understanding Student Retention in Greece: The Impact of Socioeconomic Factors on Academic Success. *Open Journal for Sociological Studies*, 2, 59-70. <https://doi.org/10.32591/coas.ojss.0202.02059t>
- Vakrou, A. (2019). *Παράγοντες στρες, ακαδημαϊκής επαγγελματικής εξουθένωσης (Burnout) σε φοιτητές και στρατηγικές διαχείρισης [Stress Factors, Academic and Professional Burnout in Students, and Coping Strategies]*. Doctoral Dissertation, University of Patras. <https://doi.org/10.12681/eadd/45689>
- Van de Vijver, F., & Hambleton, R. K. (1996). Translating Tests: Some Practical Guidelines. *European Psychologist*, 1, 89-99. <https://doi.org/10.1027/1016-9040.1.2.89>
- Xia, Y., & Yang, Y. (2019). RMSEA, CFI, and TLI in Structural Equation Modeling with Ordered Categorical Data: The Story They Tell Depends on the Estimation Methods. *Behavior Research Methods*, 51, 409-428. <https://doi.org/10.3758/s13428-018-1055-2>

Appendix

Greek Version of the Subjective Academic Achievement Scale (SAAS)

English	Greek
My grades are appropriate for my effort.	Οι επιδόσεις μου είναι αντίστοιχες της προσπάθειάς μου.
I am successful in my studies.	Η πορεία των σπουδών μου είναι επιτυχημένη.
I progress adequately fast in my studies.	Σημειώνω πρόοδο με αρκετά γρήγορο ρυθμό.
My fellow students study more successfully than I.	Η πορεία των συμφοιτητών μου είναι πιο επιτυχημένη από τη δική μου.
I am satisfied with my grades at university.	Είμαι ικανοποιημένος/η από τις επιδόσεις μου στο πανεπιστήμιο.