



VALIDATION OF THE ACADEMIC SELF-EFFICACY SCALE (ASES) IN STUDENTS IN ROMANIA

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Abstract

Academic self-efficacy is considered a central determinant of motivation, persistence, and performance in higher education, yet the Romanian literature does not currently include a validated version of the Academic Self-Efficacy Scale (ASES) for university students. The present study aimed to translate, culturally adapt, and psychometrically validate the 9-item ASES for use in Romanian, in a sample of 168 students enrolled in economics-related university programs. Participants completed the ASES online, with responses given on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Statistical analyses included descriptive statistics, evaluation of internal consistency (omega and Cronbach's alpha coefficients), and exploratory factor analysis. The results indicated high levels of self-reported academic self-efficacy without marked floor or ceiling effects, excellent internal consistency ($\omega = 0.936$; $\alpha = 0.936$), and an essentially unidimensional factor structure, with a single general factor explaining 62.4% of the total variance and item loadings ranging from 0.711 to 0.852. These findings suggest that the Romanian version of the ASES is a brief, reliable, and valid instrument for assessing academic self-efficacy among Romanian university students, suitable for use both in research and in educational and counseling practice.

Keywords: *academic self-efficacy; Academic Self-Efficacy Scale; psychometric validation; university students; higher education.*

1. INTRODUCTION

Academic self-efficacy is defined in the literature as students' judgment of their ability to successfully accomplish academic tasks and cope with university demands (Chemers, Hu, & Garcia, 2001). It derives from Bandura's general concept of self-efficacy (Bandura, 1982) and is considered a central determinant of motivation, persistence, and performance in educational contexts (Bandura et al., 1996). Longitudinal studies conducted with first-year university students have shown that higher levels of academic self-efficacy are associated with better academic outcomes, more effective adjustment to university life, lower levels of stress, and greater satisfaction with the study experience.

In higher education, academic self-efficacy does not refer only to a global sense of confidence in one's abilities but also encompasses specific competences such as planning

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study time, using effective learning strategies, taking notes, academic writing and research skills, active participation in classes, and perseverance when facing difficulties. Students who perceive their academic competences as high tend to approach university tasks as manageable challenges, set realistic goals, persist in the face of obstacles, and engage in self-regulated learning behaviours, which contributes to better adjustment and long-term success.

The Academic Self-Efficacy Scale (ASES), developed by Chemers, Hu, and Garcia, is a brief instrument designed to assess students' beliefs about their ability to meet academic demands. The scale includes statements referring to time management, preparation for tests, note-taking, research and writing skills, as well as global perceptions of academic success and interest in academic work. The 9-item version of the ASES used in the present study provides a concise measure of students' confidence in performing a wide range of academic tasks, with each item rated on a Likert scale from 1 (strongly disagree) to 7 (strongly agree).

A substantial body of research has highlighted the central role of academic self-efficacy in predicting students' performance and adjustment to university. For example, the classic study by Chemers and colleagues showed that academic self-efficacy and optimism are strongly associated with performance, stress, health, and commitment to persist in studies among first-year students. Subsequent studies have confirmed that academic self-efficacy correlates with engagement in learning activities, the use of self-regulation strategies, and how students approach academic challenges, underscoring the need for valid and reliable instruments to measure this construct.

In recent years, the Academic Self-Efficacy Scale has been adapted and validated in diverse educational and cultural contexts, including among students in Arab countries (Hemade et al., 2025), in China (Zhao et al., 2024), and in European educational systems (Kampmane & Ozola, 2025; Van Zyl et al., 2022), and these studies have generally confirmed the high reliability and essentially unidimensional factor structure of the scale. For example, validation of the Arabic version of the ASES demonstrated high internal consistency coefficients and a stable factor structure, allowing the scale to be used to assess academic self-efficacy and to compare levels across sexes and different student groups. Similarly, validation of the Chinese version of the scale showed a unidimensional factor model, good fit indices, and measurement invariance across gender. The scale has retained its psychometric qualities even in versions with fewer and slightly modified items, without altering the core content (Van Zyl et al., 2022).

In the Romanian literature, the concept of academic self-efficacy appears implicitly in discussions of motivation, self-regulation, and educational success, but there is currently no validated Romanian version of the Academic Self-Efficacy Scale for university students. Nevertheless, the scale has been used in research, including in the Republic of Moldova, even though it has not yet benefited from a formal validation in Romanian. This gap limits the possibility of adequately and systematically assessing students' beliefs about their academic competences and of integrating self-efficacy into counselling programmes, psychoeducational interventions, or longitudinal studies on adjustment to university.

Students in economics-related fields often combine their student status with professional activity, which poses additional challenges in terms of time management, organisation of academic tasks, and perception of their learning competences. In this context, developing and validating a Romanian version of the ASES becomes essential for a rigorous

assessment of academic self-efficacy and for identifying factors that may support or hinder students' educational trajectories.

The present study therefore aims to translate, culturally adapt, and validate the Academic Self-Efficacy Scale (ASES) for use in Romanian, in a sample of students enrolled in economics university programmes. The goal is to evaluate the psychometric properties of the Romanian version of the ASES—in terms of internal consistency, factor structure, and metric adequacy—and to provide a brief, reliable, and valid instrument for measuring academic self-efficacy in the Romanian higher education context.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The main objective of the present study is to translate, culturally adapt, and psychometrically validate the Academic Self-Efficacy Scale (ASES) for use in Romanian among students enrolled in university programmes in the field of economics. Specifically, the study aims to evaluate the psychometric properties of the Romanian version of the ASES—in terms of internal consistency, factor structure, and item stability—and to examine the extent to which the scale provides a reliable and valid estimate of academic self-efficacy in the Romanian university context. By achieving this objective, the research seeks to offer a brief, easy-to-administer instrument, aligned with the original ASES, that can be used both in educational psychology studies and in psychoeducational practice (for example, in academic counselling programmes or in the evaluation of interventions aimed at developing learning competences).

2.2. HYPOTHESES

Considering the results of previous validation studies of the ASES in various cultural contexts, as well as the reported properties of the original version, the following research hypotheses were formulated:

H1. The Romanian version of the Academic Self-Efficacy Scale (ASES) will show good internal consistency, with Cronbach's alpha (and, if computed, omega) coefficients of at least 0.70 for the total scale score, indicating an adequate level of item homogeneity.

H2. Exploratory and/or confirmatory factor analysis will reveal a stable factor structure for the Romanian ASES, compatible with the theoretical model proposed in the original literature (e.g., a general academic self-efficacy factor or a dimensional structure similar to that reported by Chemers, Hu, and Garcia).

H3. The items of the Romanian ASES will exhibit high factor loadings on the general factor (greater than 0.40), and the principal factor will explain a substantial proportion of the total variance (at least 40%), thereby supporting the structural validity of the scale.

H4. The distribution of scores on the Romanian ASES will not show major floor or ceiling effects, and statistics such as skewness and kurtosis will fall within acceptable ranges for the use of factor analyses and linear models, thus supporting the metric adequacy of the scale in the sample of economics students.

3. METHOD

3.1. Participants

The study was conducted on a convenience sample of 168 students enrolled in university programmes in the field of economics. Participants were recruited via an online questionnaire distributed through the Google Forms platform, and participation was voluntary and conditional upon providing informed consent. Data collection took place in May 2026.

The research design was quantitative, cross-sectional, and non-experimental, with the primary aim of psychometrically validating the Romanian version of the Academic Self-Efficacy Scale (ASES) among economics students.

Inclusion criteria were being a student in an economics-related university programme, being at least 18 years of age, and providing informed consent to participate. Incomplete responses and individuals who did not meet the criterion of belonging to the economics field were excluded from the analyses.

Participants' ages ranged from 20 to 55 years ($M = 29.38$; $SD = 7.86$), indicating the presence of both students at the beginning of their university studies and adults who pursued higher education alongside professional activity. Regarding gender distribution, the sample was relatively balanced, comprising 87 women (51.8%) and 81 men (48.2%). The distribution of participants by gender is presented in Table 1.

In terms of professional status, most participants reported combining academic studies with employment ($n = 136$; 81.0%). A total of 25 participants (14.9%) indicated that they were exclusively students, whereas 7 participants (4.2%) reported being students engaged in independent activities such as freelancing or entrepreneurship. The distribution of participants by professional status is shown in Table 2.

Table 1. Distribution of participants by gender

Gen	N	%
Female	87	51,8
Male	81	48,2
Total	168	100,0

Table 2. Distribution of participants by professional status

Professional status	N	%
Student only	25	14,9
Student and employee	136	81,0
Student and freelancer/entrepreneur	7	4,2
Total	168	100,0

3.2. Instruments

Academic Self-Efficacy Scale (ASES) – original version

The Academic Self-Efficacy Scale (ASES) is a brief instrument developed to assess students' perceptions of their own academic competence. The scale has been used in longitudinal and cross-cultural studies on student adjustment and is considered an important indicator of academic motivation, engagement, and achievement.

In the present study, we used the 9-item version of the ASES. Each item is phrased as a statement referring to specific academic competences, such as planning study time, taking notes, preparing for tests, research and writing skills, global self-evaluation of academic performance, and interest in university work. Participants rated each statement on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), and the total scale score was obtained by summing the items, with higher scores indicating higher levels of academic self-efficacy.

The items used in the Romanian version are conceptually equivalent to those in the international 9-item version and cover the main domains of academic self-efficacy: time management (“I know how to schedule my time to accomplish my tasks”), note-taking (“I know how to take notes”), study strategies (“I know how to study to get good results on tests”), research and writing skills (“I am good at research and writing papers”), global self-evaluation of the student role (“I am a very good student”), perceived success on academic tasks (“I usually do very well in college and on academic tasks”), understanding academic requirements (“I understand the academic tasks and assignments I have”), interest in academic work (“I find my academic work interesting”), and general belief in one’s ability to succeed (“I am very capable of succeeding in my academic activities”). Table 3 presents the items of the original ASES, and their Romanian equivalents used in the present study.

Table 3. Academic Self-Efficacy Scale (ASES) items - original version and Romanian version (RO)

No.	Item (original, English)	Item (Romanian version)
1	I know how to schedule my time to accomplish my tasks.	Știu cum să-mi programez timpul pentru a-mi îndeplini sarcinile.
2	I know how to take notes.	Știu cum să iau notițe eficiente.
3	I know how to study to get good results on tests.	Știu cum să studiez pentru a obține rezultate bune la evaluări.
4	I am good at research and writing papers.	Sunt competent/ă în activități de cercetare și redactare de lucrări academice.
5	I am a very good student.	Sunt un/o student/ă cu performanțe foarte bune.
6	I usually do very well in college and on academic tasks.	De obicei, am rezultate foarte bune în mediul universitar și în îndeplinirea sarcinilor academice.
7	I understand the academic tasks and assignments I have.	Înțeleg cerințele sarcinilor și activităților academice care îmi revin.
8	I find my academic work interesting.	Consider activitatea mea academică interesantă.
9	I am very capable of succeeding in my academic activities.	Sunt foarte capabil/ă să am succes în activitățile mele academice.

Romanian version of the ASES

The Romanian version used in the present study corresponds to the 9-item form of the ASES, which has recently been validated in other cultural contexts (e.g., Arabic, Chinese), where the scale has demonstrated an essentially unidimensional factor structure and very high reliability. The translation–back-translation procedure and content validation aimed to

maintain the semantic and conceptual equivalence of these 9 items so that the Romanian version would faithfully reflect the domains of academic self-efficacy described in the international literature.

For the adaptation of the ASES into Romanian, we used the standard translation–back-translation procedure recommended in recent validation studies of the scale in other languages (e.g., Arabic and Chinese). In the first stage, two independent translators with experience in educational psychology and advanced proficiency in English translated the ASES items into Romanian. In the second stage, a consensual version was obtained by comparing and harmonising the two translations, with particular attention to semantic equivalence and clarity of wording for students.

Subsequently, an independent translator with expertise in English performed a backtranslation of the Romanian version into English, and this version was compared with the original items to verify that the original meaning had been preserved. Any significant discrepancies were discussed and adjusted by an expert panel (university lecturers in psychology and economics), so that the final version would be both semantically and culturally appropriate for Romanian students in economics programmes.

Before large-scale use, the Romanian version of the ASES was piloted on a small group of students ($N = 16$) to check item comprehensibility and completion time. Participants' feedback focused on the clarity of wording and any difficulties in understanding; on the basis of these observations, minor language adjustments were made without altering the conceptual content of the items.

In the present study, the Romanian ASES was administered online, with items presented in a fixed order, and the instructions reproduced, in Romanian, the guidelines from the original version regarding the response scale and how to rate each statement.

3.3. Procedure and statistical analyses

Statistical analyses were conducted using JASP software (version 0.18). Descriptive statistics (means, standard deviations, skewness, kurtosis, minimum and maximum values) were calculated for each ASES-Romanian item to examine score distributions and potential floor or ceiling effects. Internal consistency of the scale was evaluated using Cronbach's alpha and omega coefficients, with 95% confidence intervals.

The factor structure of the Romanian ASES was examined through exploratory factor analysis, employing principal axis factoring and oblique promax rotation. Factor retention was based on eigenvalues greater than 1 and inspection of the scree plot, and interpretation considered both the proportion of variance explained by the principal factor and the magnitude of item loadings, with a threshold of at least 0.40.

4. RESULTS

4.1. Descriptive statistics for ASES items

Descriptive statistics for the items of the Romanian version of the Academic Self-Efficacy Scale (ASES) are presented in Table 4. Mean scores range between approximately 5 and 6 on the 7-point Likert scale (1–7), indicating, overall, a moderate to high level of self-reported academic self-efficacy among participants. Standard deviations, which lie between

about 1.4 and 1.6, suggest an adequate variability of responses, without extreme concentration of scores at specific points on the scale.

Analysis of skewness and kurtosis did not reveal extreme values for any of the items; response distributions fall within ranges considered acceptable for the use of factor analyses and linear models. These results support hypothesis H4, indicating that the distribution of scores on the Romanian ASES does not exhibit major floor or ceiling effects and that skewness and kurtosis values are within acceptable limits for factorial analyses and linear modelling.

Table 1. Descriptive statistics for ASES items (RO)

Item	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Min	Max
ASES_01	5.256	1.616	-0.673	0.187	-0.236	0.373	1	7
ASES_02	5.375	1.577	-0.75	0.187	-0.289	0.373	1	7
ASES_03	5.381	1.472	-0.83	0.187	0.314	0.373	1	7
ASES_04	4.804	1.556	-0.256	0.187	-0.655	0.373	1	7
ASES_05	4.78	1.518	-0.338	0.187	-0.277	0.373	1	7
ASES_06	4.958	1.549	-0.478	0.187	-0.402	0.373	1	7
ASES_07	5.375	1.569	-0.8	0.187	-0.233	0.373	1	7
ASES_08	5.131	1.603	-0.684	0.187	-0.306	0.373	1	7
ASES_09	5.518	1.41	-0.757	0.187	-0.013	0.373	1	7

4.2. Internal consistency of ASES-Romanian version

The Romanian version of the Academic Self-Efficacy Scale (ASES) showed excellent internal consistency. The omega coefficient for the total scale score, calculated across the 9 items, was 0.936 (SE = 0.007, 95% CI [0.921, 0.950]), indicating a very high level of composite reliability. Cronbach's alpha coefficient had the same value, $\alpha = 0.936$ (SE = 0.009, 95% CI [0.918, 0.955]), far exceeding the threshold of 0.70 commonly considered minimally acceptable for research use and falling within the range reported in previous validation studies of the 9-item ASES.

Table 2. Internal consistency of the Academic Self-Efficacy Scale (ASES) - RO

Scale	N items	Coefficient	Estimate	Std. Error	95% CI Lower	95% CI Upper
ASES total	9	ω	0.936	0.007	0.921	0.950
ASES total	9	α	0.936	0.009	0.918	0.955

These results support hypothesis H1 regarding the excellent internal consistency of the Romanian version of the ASES. The items of the scale form a homogeneous set that reliably measures a general factor of academic self-efficacy in economics students. The high

values of ω and α , together with the narrow confidence intervals, indicate the stability of reliability estimates and provide additional support for the use of the Romanian ASES in future studies and in educational practice.

4.3. Factor structure of ASES-Romanian version

4.3.1. Eigenvalue and explained variance

Table 3. Eigenvalue and explained variance of the general factor (ASES-RO)

Solution	Factor	Eigenvalue	Proportion of variance	Cumulative
Unrotated solution	1	5.618	0.624	0.624
Promax rotated	1	5.618	0.624	0.624

To examine the factor structure of the Romanian version of the Academic Self-Efficacy Scale (ASES), an exploratory factor analysis was conducted on the 9 items of the scale. The results indicated a predominantly unidimensional factor model. The single principal component had an eigenvalue of 5.618 and explained 62.4% of the total variance in responses, both in the unrotated solution and in the promax-rotated solution, whereas any additional component had an eigenvalue below the threshold of 1.

The high proportion of variance explained by the general factor suggests that most of the common variance among the ASES-Romanian items is attributable to a single construct of academic self-efficacy, consistent with the theoretical model and with findings from international studies on the 9-item version of the scale. These results confirm hypothesis H2, indicating a unidimensional and stable factor structure for the Romanian ASES, compatible with the theoretical model proposed by Chemers, Hu, and Garcia and with international validations of the 9-item version.

4.3.2. Factor loadings and uniqueness

Table 4. Factor loadings of ASES items on the general academic self-efficacy factor (RO)

Item	Factor 1 loading	Uniqueness
ASES_06	0.852	0.274
ASES_05	0.837	0.300
ASES_09	0.833	0.306
ASES_07	0.822	0.324
ASES_08	0.780	0.391
ASES_03	0.771	0.406
ASES_02	0.770	0.407
ASES_01	0.722	0.479
ASES_04	0.711	0.494

Note. Applied rotation method is promax.

The factor loadings of the items on the general academic self-efficacy factor are presented in Table 7. All nine items showed high loadings, with values ranging from 0.711 (ASES_04) to 0.852 (ASES_06), exceeding the commonly used threshold of 0.40 for a substantial contribution to the factor. Items referring to general perceptions of academic success and being a “very good student” (ASES_05, ASES_06, ASES_09, ASES_07) had the

highest loadings (0.822–0.852), suggesting that they capture the core of academic self-efficacy beliefs.

Items referring to specific competences, such as planning study time, taking notes, preparing for tests, and research and writing skills (ASES_01, ASES_02, ASES_03, ASES_04), also showed high loadings (0.711–0.771), indicating that these abilities are integrated into the same global construct of academic self-efficacy. Uniqueness values, ranging from 0.274 to 0.494, show that a substantial proportion of the variance in each item is explained by the general factor, supporting the notion of essential unidimensionality of the scale.

Taken together with the reliability results ($\omega = 0.936$; $\alpha = 0.936$), these high factor loadings and the proportion of variance explained by the general factor support hypothesis H2, indicating that the Romanian version of the ASES exhibits a unidimensional, stable factor structure that is compatible with the theoretical model reported in international studies on the 9-item version. The high loadings and the pattern of uniqueness values also support hypothesis H3, suggesting that each item contributes meaningfully to the general academic self-efficacy factor.

5. CONCLUSIONS

The present study aimed to translate, culturally adapt, and psychometrically validate the Academic Self-Efficacy Scale (ASES) for use in Romanian among students enrolled in university programmes in the field of economics. The results indicated that the Romanian version of the ASES exhibits very good psychometric properties: high internal consistency ($\omega = 0.936$; $\alpha = 0.936$, with narrow confidence intervals) and an essentially unidimensional factor structure, with a single general factor explaining 62.4% of the total variance and factor loadings ranging from 0.711 to 0.852 for all nine items.

These findings are consistent with international validation studies of the 9-item ASES, which have likewise reported very high reliability, a unidimensional factor structure, and good model fit indices. Overall, the data support the conclusion that the Romanian version of the ASES is a brief, homogeneous, and robust instrument for assessing academic self-efficacy in Romanian university students, suitable for use both in research and for integration into counselling programmes and psychoeducational interventions aimed at developing learning competences.

At the same time, several limitations of the study should be noted. The sample was a convenience sample and included only students from economics programmes, which restricts the generalisability of the results to other university programmes or to the broader student population. The cross-sectional design does not allow examination of the temporal stability of scores on the Romanian ASES, and the absence of objective measures of academic performance limits the assessment of criterion validity. Future studies are needed to test measurement invariance across gender, field of study, and programme level (bachelor versus master), to evaluate test–retest reliability, and to investigate relationships between the Romanian ASES and external indicators such as academic performance, stress, and adjustment to university.

Despite these limitations, the findings provide strong support for the use of the Academic Self-Efficacy Scale in Romanian as a reference instrument for assessing academic self-efficacy beliefs in university students. The Romanian version of the ASES can contribute to the development of educational psychology research in Romania and can inform academic counselling practices by helping identify students who may benefit from interventions aimed at strengthening self-efficacy and self-regulation in the learning process.

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